



SNOHOMISH COUNTY MARINE RESOURCES ADVISORY COMMITTEE



2015 ANNUAL REPORT & RECOMMENDATIONS



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Snohomish County Marine Resources Advisory Committee (MRC)

Background / Introduction

This report outlines the Snohomish County Marine Resources Advisory Committee's (MRC) accomplishments between January and December 2015. It includes a description of current projects and provides recommendations for the Snohomish County Executive and Council.

Established in 1999, the MRC advises Snohomish County on approaches to protect, restore, and conserve the local marine environment. Chapter 2.800 of the Snohomish County Code authorizes the MRC.

MRC members represent a diverse group of environmental, recreational, conservation, economic, local and tribal government interests. The MRC is part of the Northwest Straits Marine Conservation Initiative (NWSI), guided by the Northwest Straits Commission (NWSC) and the Northwest Straits Foundation (NWSF). Together these entities comprise a non-partisan regional effort to protect and restore marine resources in northern Puget Sound and the Strait of Juan de Fuca. Snohomish County Public Works Surface Water Management Division (SWM) provides staff support for the MRC.



Snohomish MRC Staff at the annual MRC Conference

Since its inception, the MRC has developed an effective citizen-based process for examining local marine resource issues, engaging and educating the public and initiating efforts to address established priorities. These priorities are guided by the MRC Strategic Plan (2016-2018) and the NWSC Benchmarks.

NWSC Benchmarks

The NWSC performance benchmarks include the following:

- ✓ marine habitat
- ✓ marine life
- ✓ marine water quality
- ✓ science
- ✓ education and outreach

Throughout this annual report, the NWSC benchmarks achieved through MRC activities are listed in inset boxes.

The MRC continues to develop a variety of partnerships with government agencies, non-profit organizations and citizen groups to share resources and improve its long-term success. An integral part of the MRC's work is public education and involvement, which includes the training and use of volunteers. The help of volunteers allows the MRC to effectively implement a variety of important projects.

With a strong emphasis on accountability, the MRC strives to maximize results, build stakeholder confidence, and leverage external funds and partnerships. The MRC is now implementing a number of marine conservation research, outreach, and on-the-ground restoration projects throughout the county. The MRC members are proud of their accomplishments over the past year and look forward to facilitating continued support and improvements for the marine resources in Puget Sound.

Summary of Accomplishments

2015 Metrics

The table below summarizes performance metrics for the MRC during 2015.

Committee members	13
MRC volunteer hours	1,369
Beach Watcher volunteer hours	5,150
Value of volunteer time	\$179,533.26
Training events attended	14
Media releases	6
Advisory committees participated in	45
Restoration projects in progress	2
Outreach event participation	7



View of Meadowdale Beach

Project Highlight: MRC Oil Spill Prevention, Preparedness, and Response

The Snohomish MRC held an oil spill prevention, preparedness, and response meeting on November 18, 2015. Representatives from Snohomish County Department of Emergency Management (DEM), Burlington Northern Santa Fe (BNSF), and Washington Department of Fish and Wildlife (WDFW) presented information on oil spill management relative to their fields. The meeting aimed to bring several of the key players of oil spill prevention and response to Snohomish County to collaborate on current and future preparation and planning.

Project Highlight: Port Susan Bulkhead Removal Phase 1

In October 2014, the MRC began Phase 1 of the Port Susan Bulkhead Removal project. This phase began educating homeowners on the benefits of bulkhead removal along shoreline property. In 2015, the MRC held two workshops to spread awareness and gain interest in property bulkhead removal. Several homeowners expressed interest and had site visits to determine the feasibility of bulkhead removal along their property.

Public Education and Outreach

Recreational Fisheries Education – The Snohomish MRC began preparation for the distribution of crabber and rockfish educational materials in 2016. MRC members and staff will hand out information and products to support sustainable fishing and crabbing practices throughout Snohomish County in an effort to reduce both marine debris and wildlife loss.

Starlight Beach Walk – MRC Members, staff, and WSU Snohomish County Extension Beach Watchers hosted Starlight Beach Walks in Edmonds and Mukilteo in 2015. During the two evening low tides, people of all ages combed the beach to find and learn about starfish, anemones, limpets, crabs, and other intertidal organisms.



Participants of a Port Susan Workshop

Washington State University Snohomish County Extension Beach Watchers

The MRC continued partnership and support for the WSU Snohomish County Extension Beach Watchers program

Seventeen Beach Watchers graduated from the 2015 training program and became involved in MRC projects and other local efforts. WSU Beach Watcher volunteers contributed 5,150 hours of service for the community.

Education and Outreach Events

Staff displayed the MRC booth at four community events to promote awareness of the MRC and information on a variety of marine stewardship topics. The MRC displayed the booth at the following events in 2015:

- Sound Waters (~500+)
- Port Susan Bulkhead Removal Workshops (~70+)
- NWSC Conference (~200+)

NWSC Benchmarks Achieved:

- ✓ Education and Outreach
- ✓ Marine Life



MRC member Susan Tarpley and MRC staff Autumn Moore conducting Caged Mussel Study deployment



Speed Crabbing Derby Safe Boating Demonstrations

Communicating Science

Communications Specialist

The MRC hired Alyson Rae as a temporary communications specialist. The addition of this staff role increased the communication capacity of the MRC. A few of the new tasks included:

- Finalized and implemented a recreational crabbing social marketing strategy
- Developed an Instagram photo contest to encourage best management practices
- Developed a communications plan
- Assisted with website updates and coordinating public forums on topics of interest to Snohomish County citizens.
- Developed new series of factsheets



PORT SUSAN MSA PROGRESS REPORT

January 2012 - December 2014



Conservation Action Plan

Between 2009 and 2012, over 30 federal, state, local, tribal and non-profit partners worked to create a conservation action plan for the area associated with Port Susan. This plan is unique in that it addresses target species and habitats and looks to encompass a wide range of issues, strategies and contributors.


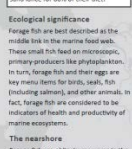


The final plan was adopted by the Snohomish County and Island County Marine Resource Committees, and Tulalip and Stillaguamish Tribes in 2012. The Port Susan Marine Stewardship Area (MSA) was officially designated by the Snohomish County Council in 2014.

Strategies for Recovery

This progress report is intended to highlight partner progress since 2012 related to the six key strategies in the plan. The goals are to reconnect Port Susan partners, share and demonstrate the success that is occurring across the landscape, and galvanize new efforts.



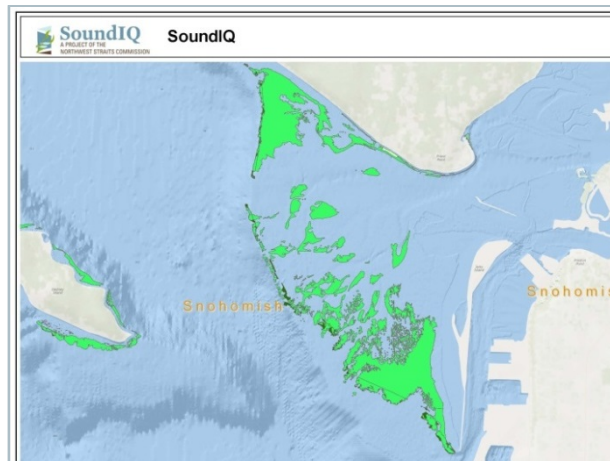
NWSC Benchmarks Achieved:
✓ Education and Outreach

<h3>Eelgrass</h3> <p>SNOHOMISH COUNTY MARINE FACT SHEET</p> <p>As its name hints, eelgrass (<i>Zostera marina</i>) is a species of grass. Though commonly thought of as a type of seaweed, eelgrass is actually a vascular plant that produces flowers and cellulose rhizomes (stems) to extract nutrients from the sediment. Eelgrass typically spreads with new shoots springing up from rhizomes, but can disperse by seeds as well. Large eelgrass meadows form in the shallow, subtidal zone. These plants prefer to grow on muddy or silty bottoms, and are especially common in eelgrass. As perennial plants, they grow during the spring and summer, and decay in the fall and winter. Eelgrass beds provide important habitat for a number of marine species.</p> <p>Who lives in eelgrass? Eelgrass hosts an abundance of marine invertebrates and vertebrates; providing shelter and food for many species including herring, juvenile salmon, Dungeness crab, and gophers. Bacteria, diatoms, and detritus-eating invertebrates (amphipods, isopods, polychaete worms, brittle stars, some mollusks, etc.) live attached to the eelgrass beds, and then become food for a number of species. Eelgrass leaves, when they die, provide an abundant food source for bacteria and fungi, helping to start the cycle over again.</p> <p>Did you know? Herring, a species of forage fish, lay eggs on eelgrass blades!</p> 	<h3>Forage Fish</h3> <p>SNOHOMISH COUNTY MARINE FACT SHEET</p> <p>Forage fish are small, schooling fish common in the Puget Sound. Forage fish are not a phylogenetic group, but rather an ecological group. They are considered forage fish because they feed, or forage, on marine plankton. Forage fish are extremely important links in the marine ecological food web.</p> <p>Did you know? Juvenile Chinook salmon depend on sand lance for 60% of their diet!</p> <p>Ecological significance Forage fish are best described as the middle link in the marine food web. These small fish feed on microscopic, primary producers like phytoplankton. In turn, forage fish and their eggs are key menu items for birds, seals, fish (including salmon), and other animals. In fact, forage fish are considered to be indicators of health and productivity of marine ecosystems.</p> <p>The nearshore Forage fish are obligate spawners in the nearshore. They deposit their eggs in vast quantities on nearshore vegetation and beaches. The nearshore also acts as a nursery for juvenile forage fish, which take refuge and feed in the shallow, vegetated waters.</p> <p>Common species Three forage fish species of concern in Snohomish County are: Pacific herring (<i>Clupea pallasii</i>) — Grows up to 9 inches long. Bluish green to olive dorsal with silver sides. No adipose fin. Large scales on body, none on the head and tail. The largest stock is in the heavy weed area (northern Puget Sound). Starlet sea bream (<i>Paromisrus pinnatus</i>) — Grows up to 9 inches long. Olive green dorsal, silver or yellow band on sides. Adipose fin. Small scales. Pacific sand lance (<i>Ammodytes hexapterus</i>) — Grows up to 8 inches long. Gray to green dorsal, silver sides. Large dorsal fin. Elongated pointed body. No adipose fin. Scales almost invisible.</p> 
<h3>Bull Kelp</h3> <p>SNOHOMISH COUNTY MARINE FACT SHEET</p> <p>Bull kelp (<i>Exocoetia lemaneiformis</i>) is a species of large brown algae native to Puget Sound. Beach combes are familiar with this species as the long, smooth bull whips wash up on beaches. The stalk can grow to be 120 feet long and reach to an air-filled hollow float with long leafy blades. The opposite end of a kelp stalk is a disc-shaped, root-like structure that clings to rocks and/or shallow bottoms. Bull kelp often grows in dense patches, called kelp forests, in the rocky subtidal. Other these forests are visible by their bulbous floats floating on the surface. Bull kelp can be found off the coast from Southern California to the Aleutian Islands in Alaska.</p> <p>An underwater forest Bull kelp is known as the fastest growing seaweed in the world. During the spring, summer, and early fall, bull kelp grows rapidly and in dense patches to form underwater forests. These forests provide shelter and habitat for a myriad of species. Small invertebrate isopods feed off the blades, and plankton take refuge in these calmer waters. Fish such as juvenile salmon, rockfish, and forage fish hide in the kelp forests, feeding on the variety of smaller species. Mussels, oysters, shrimp and crabs often hide at the base of kelp stalks. Herring, a species of forage fish, spawn in kelp forests, with eggs attaching to kelp blades! These forests are critical nesting spots for seabirds, waterfowl, and sea otters.</p> <p>Did you know? Bull kelp can grow up to two feet per day!</p> 	<h3>Dungeness Crab</h3> <p>SNOHOMISH COUNTY MARINE FACT SHEET</p> <p>Dungeness crabs (<i>Cancer magister</i>) have a shell with a purple-orange hue, grayish stripes on the back, and white-tipped claws. Just like lobsters and shrimp, crabs are crustaceans, having an exoskeleton or shell called a carapace. Dungeness crabs are found from Alaska to Mexico. They are most abundant in coastal areas of Puget Sound including the Northwest Straits, Hood Canal, and along the outer coast. The Dungeness crab is named after one of their representative habitats — Dungeness Spit, found on the Olympic Peninsula in Washington.</p> <p>Habitat Dungeness crabs breed in nearshore areas and females may move to deeper water to hatch eggs. Threats to crab habitat include modifications to the shoreline from development (bulkheads), disruption of eelgrass beds, and pollution.</p> <p>Life cycle and growth Mating occurs between hard-shelled males, and newly molted soft-shelled females. The female carries the fertilized eggs, as many as 2.5 million, under her abdomen until they hatch.</p> <p>Did you know? Dungeness crab have several pairs of appendages, which they regenerate if lost! As juvenile crabs grow to adulthood, they shed their hard shell. This process is called molting and allows them to increase in size incrementally. They reach harvest size between 4-6 years of age. It is important that crabs survive long enough to become sexually mature, which occurs between 2-3 years. Dungeness crab can live 8-13 years, and grow greater than 10 inches in size.</p> 

MRC Factsheets, published November 2015

Sound IQ

Snohomish County MRC worked with SWM and NWSC staff to make MRC GIS data available on Sound IQ in 2015. Sound IQ is an online mapping and database tool that displays nearshore data for the Northwest Straits Initiative.



Sound IQ Map depicting Eelgrass in Port Gardner

Dungeness Crab

Education at Puget Sound Speed Crabbing Derby

MRC members and staff attended the daylong derby hosted by Eddie Adams at the Everett waterfront. Event organizers and MRC members distributed 40 packets of education materials, including copies of the “Keep Your Crab Pot, Eat More Crab” nautical chart, which features best management practices to reduce the number of lost crab pots. The MRC also assisted at the weigh station, measuring crabs, testing shell hardness, and educating participants on local regulations and best practices.



Social marketing advertising card



MRC Staff and volunteers at the Speed Crabbing Derby

Marine Resources Committee Conference

Kathleen Herrmann presented at the Northwest Straits Initiative Marine Resources Committee Conference in Bellingham on November 7, 2015. Her presentation “#CatchMoreCrabSnoCo” described how the Snohomish County MRC used social media as a tool in a social marketing campaign to encourage recreational crabbers to employ best practices and reduce the number of recreational crab pots lost in local marine waters.

Crab Pot Escapement Study Advisory Committee

MRC members and staff served on the advisory committee for a study conducted by the NWSF. The study evaluated crab pot design in the context of crab escapement potential should a pot be lost. The MRC will participate in the next phase of this study in 2016.

Dungeness Crabber Education

In July, the MRC launched a social marketing photography contest to help raise awareness on various different sustainable crabbing practices. The MRC selected eight Best Management Practices (BMPs) to be the focus for this campaign. Recreational crabbers were encouraged to post photographs of best crabbing practices on Instagram, using the hashtag #CatchMoreCrabSnoCo. The contest ran through the 38-day summer recreational crabbing season 5. During the event, the MRC posted 124 photos and awarded prizes to five randomly selected participants. The NWSC is planning to expand this model program to other MRC’s throughout the state and provide staff support to conduct this social marketing campaign in 2016.

Did you know?

Researchers estimate that 12,000 crab pots are lost each year in Puget Sound! These pots catch and kill an estimated 129,000 crabs. The MRC and partners focus their education efforts on reducing that number.

NWSC Benchmarks Achieved:

- ✓ Education & Outreach
- ✓ Marine Life
- ✓ Marine Habitat
- ✓ Science

Kelp Monitoring

MRC Participates in Groundbreaking Kelp Study

MRC members and staff identified and mapped kelp beds off County marine shorelines for the NWSC 2015 bull kelp monitoring pilot study. This survey data will support future monitoring of bull kelp; researchers know very little about the species in north Puget Sound. The Everett Herald reported on the project, highlighting the importance of kelp in shoreline ecosystems and the crucial role research plays in protecting kelp beds.

Little is known about bull kelp, which nearly all marine life here relies on



Dan Bates / The Herald

Assisted by Snohomish County Park Ranger Doug Dailer (far left), MRC members and staff Loehr, (big hat) Alyson Rae, Taylor McDowell and Kathleen Herrmann (nearest) prepare their kayaks for the open water excursion.

By [Noah Haglund](#)
Herald Writer

Herald news article on the Snohomish MRC's kelp monitoring project



MRC Volunteers and Staff survey bull kelp beds in Edmonds, WA.

NWSC Benchmarks Achieved:
✓ Science

Bull Kelp Monitoring

MRC members and staff collaborated with other MRCs and the Northwest Straits Commission to conduct a volunteer based pilot study of bull kelp beds in Snohomish County. Participants conducted surveys via kayaks equipped with GPS from July 13 to July 17, 2015 and found 14 individual kelp beds, which covered nearly 15 acres. The MRC used the data to develop maps outlining the boundaries of bull kelp beds. Information on kelp density and abundance allows data comparison over time. Surveys will continue in 2016.



Map of kelp bed ranges in Mukilteo based on 2015 kelp pilot study

Meadowdale Beach Restoration

Forage Fish Spawning Surveys

The MRC continued to conduct pre-restoration monitoring of potential forage fish spawning within the Nearshore Restoration Project reach. MRC members, and SWM staff, with the assistance of forage fish expert Dan Penttila, collected samples between January and February 2015 to look for the presence or absence of surf smelt and sand lance eggs. Surveys were conducted again beginning in November 2015 and will continue through January 2016. The results of the surveys will provide data for the Nearshore Restoration Project.



Lund's Gulch Creek entering Possession Sound at Meadowdale Beach Park



MRC Member Traci Sanderson and forage fish expert Dan Penttila conduct winnowing with sediment samples

Forage Fish Spawning Surveys

The MRC started a forage fish spawning survey at Meadowdale Beach Park. Surveys were conducted beginning in November 2015 and will continue through January 2016. The results of the surveys will provide data for the Meadowdale Feasibility Project.

NWSC Benchmarks Achieved:

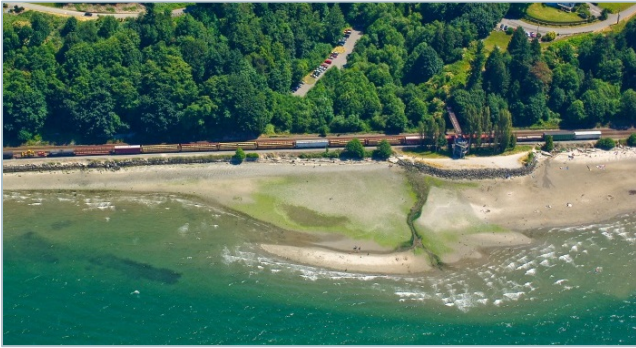
- ✓ Marine Life
- ✓ Marine Habitat
- ✓ Science

Meadowdale Beach Restoration

Snohomish County Parks, SWM, and the MRC are working to evaluate long-term solutions for the public access and maintenance issues at the Lund's Gulch Creek culvert at Meadowdale Beach Park. The undersized culvert creates problems for park users, park maintenance, and salmon trying to access the creek. Currently, beach access for park visitors is limited due to high flows in the culvert through which visitors must pass. Winter conditions also cause sediment pile-up due to the creek overflowing its banks upstream of the culvert. The walking grate for people to access the beach limits fish passage into the creek. This affects natal and non-natal juvenile salmonids, including ESA listed Chinook, who attempt to use this stream.

The goals of the project include enhancing recreational and education uses of the park, improving fish habitat, and reducing maintenance on the current culvert. MRC and SWM staff will continue working with Snohomish County Parks to determine the best alternative for this site.

Nearshore Habitat Protection & Restoration



Howarth Park at present (above) and artist's rendering of the restoration project (below)

Nearshore Beach Restoration Project

This project will advance restoration along the railroad-impounded shoreline between Mukilteo and Everett by removing 422 feet of armoring at Howarth Park and placing 4500 feet of additional beach material at three locations. 18,000 cubic yards of material will be barged in for placement.

The MRC staff and members supported this project in 2015 through pre-construction beach monitoring, preparing additional funding requests, grant administration, and working with project partners to move this project forward. Work to secure a bid for the nearshore project construction began in 2015 and will continue into 2016.

Project partners include the Port of Everett, Snohomish County, the USACE, the City of Everett, and the Tulalip Tribes.

NWSC Benchmarks Achieved:

- ✓ Education & Outreach
- ✓ Science
- ✓ Marine Habitat
- ✓ Marine Life
- ✓ Marine Water Quality

Long-Term Nearshore Beach Restoration Maintenance and Management Study

The Long Term Nearshore Beach Restoration Maintenance and Management Study will provide recommendations on future funding, maintenance, management, and beach nourishment for the Snohomish County Nearshore Beach Restoration Project. The study will create a collaborative strategic plan with several alternatives to support the restoration project after the initial construction is complete.

The goal of this project is to determine both the funding levels and mechanisms for recurring beach nourishment of the project sites along the 4.5 mile reach between Mukilteo and Everett and also to increase and improve public access and nearshore habitat. If successful, this initiative may provide a long-term solution to maintaining continued nourishment in the nearshore project area for the foreseeable future with limited costs to taxpayers. This approach may also be applied to other areas of Puget Sound.

Nearshore Marine Culverts Assessment

The MRC is collaborating with NOAA to develop a preliminary assessment of nearshore marine culverts within the railroad-impounded nearshore of Snohomish County. This work will identify potential beach nourishment locations along the Snohomish County's nearshore areas south of Everett and will result in a ranked list of marine culverts BNSF could upgrade along the Snohomish County portion of the shoreline.

Port Susan Marine Stewardship Area



MRC staff and members conducting Port Susan armor removal assessments

Port Susan Public Outreach and Education

The MRC developed and mailed outreach materials concerning shoreline armoring and preventions. The MRC also co-hosted two workshops in 2015 in Port Susan on March 28 and October 17 in partnership with the Northwest Straits Foundation. The workshops provided local homeowners with information on coastal processes and shoreline erosion management.

Port Susan Report Card

The MRC completed the Port Susan Report Card, which highlighted progress made toward the protection and restoration strategies identified in the Port Susan Marine Stewardship Area Conservation Action Plan (CAP) in 2012. The MRC distributed a final graphic version of the report card to project partners in 2015. The report card documented progress made towards each of the six targets: embedded invertebrates, Dungeness crab, beaches and forage fish, deltas, shorebirds, and Chinook salmon.

What is a Marine Stewardship Area?

A Marine Stewardship Area (MSA) is a non-regulatory conservation designation that works to generate responsibility within relevant authorities and users of marine environments for the conservation of natural, cultural, and scenic values.

Port Susan Bulkhead Removal Feasibility Study

The MRC worked to advance the concept of residential bulkhead removal projects in the Port Susan area of Snohomish County. Of the 382 parcels assessed in the study, 29 bluff shores and 63 accretion shores were determined to be feasible armor removal priorities, and 66 bluff shores were determined to be protection priorities. The MRC will continue work to ground truth the results of this project and to conduct site visits with willing landowners. The MRC's work to reduce the amount of armored shoreline within Port Susan will continue into 2016.



Bulkhead in Snohomish County

NWSC Benchmarks Achieved:

- ✓ Education & Outreach
- ✓ Science
- ✓ Marine Habitat
- ✓ Marine Life
- ✓ Marine Water Quality

Marine Water Quality

Derelict Vessel Removal

MRC Staff and members worked with the Washington Department of Natural Resources (WDNR) to support removal of a derelict vessel in the Snohomish River Estuary in late September. This is a great partnership between Snohomish County Public Works, the MRC, Snohomish County Sheriff's Department, and WDNR. This partnership helps direct state funds to Snohomish County to help address pollution and habitat concerns that have affected the estuary for a number of years.



Derelict vessel *Safari Spirit*, removed from Steamboat Slough



Justin Piper, BNSF, presents to the MRC on oil spill preparation, prevention, and response

Oil Spill Preparedness

The MRC Oil Spill Preparedness subcommittee met with Snohomish County Department of Emergency Management (DEM) and Washington Department of Ecology on separate occasions to explore gaps in oil spill preparedness in Snohomish County and where the expertise of the MRC would be beneficial. MRC members attended Northwest Area Committee meetings and helped develop Quick Response guides for elected officials. The MRC plans to continue to work with DEM on this project and begin filling some of the gaps in County oil spill preparedness in the coming year.

Did you know?

In Washington State, oil transport by rail has increased from zero shipments of oil in 2011 to 700 million gallons in 2013. Currently, ten oil trains per week travel through Snohomish County.

Source: Washington Department of Ecology

Oil Spill Response Quick Reference Guide For Local Elected Officials



Caged Mussel Study—The MRC assisted with the Department of Fish and Wildlife's Caged Mussel Study. Mussel cages were secured to several beaches for three months and their tissue will be analyzed for toxins absorbed from the environment. Volunteers deployed mussels in October 2015 at three different sites within Snohomish County. Work on this project will continue through February 5, 2016.

Administrative Tasks

MRC Staffing

MRC staff received support from the Snohomish County Public Works and the Surface Water Management Division for the Marine Resources Program. Beyond the MRC Program Manager and Lead Staff, Kathleen Herrmann, Communications Specialist Alyson Rae, and WCC Individual Placements, Taylor McDowell and Autumn Moore, and many SWM employees have contributed time and expertise to MRC projects this year.

MRC Meetings and Communication

MRC staff organized MRC meetings, facilitated meeting and training logistics, and transcribed meeting minutes. Staff maintained phone and email contact with MRC members, MRC subcommittees, County staff, contractors, local community groups, volunteers and the public.

The MRC's Northwest Straits Commission (NWSC) Representative and/or the Designated Alternate attended NWSC meetings on January 30, February 27, March 12-13, April 24, May 29, June 26, July 31, August 21, September 25, and October 30, 2015. Ten Snohomish County MRC members and three MRC staff attended the NWSC conference in Bellingham, WA on November 6-7, 2015.



MRC member monthly meeting

MRC Subcommittees

The MRC maintains an Executive subcommittee and several ad-hoc committees including Mussel Watch, Port Susan, Crabber Education, Derelict Gear, Sound IQ, and Oil Spill Preparedness.

Strategic Plan

The MRC functions under the framework of the 2015-2017 Strategic Plan. The plan guides current and future MRC projects and efforts.

Grant Administration

MRC staff submitted progress reports, provided detailed deliverable task reports, and included all associated pictures and hardcopies to the Northwest Straits Commission. Staff also developed and tracked the MRC budget.

The current NWSC Grant also provides funding to conduct the Long Term Nearshore Beach Restoration Maintenance and Management Study that began in 2015 and will continue in 2016.

MRC Website

The MRC website features a user-friendly interface and individual project pages. It is regularly updated with events, project progress and interesting marine-related information. In 2015, the site received over 3,800 visits.



MRC Website: www.snocomrc.org

MRC Members

The MRC re-appointed Paul Schlenger to serve as the MRC Chair. The MRC re-appointed Simon Geerlofs to serve as MRC Co-Vice Chair and appointed Franchesca Perez as Co-Vice Chair. Lincoln Loehr was elected as the MRC representative to the NWSC, with Tom Hoban and Kathleen Herrmann as alternates.

Brent Hackney ended his term on the Snohomish MRC in December 2014. Sarah Brown, Paul Clampitt, and Traci Sanderson began terms with the MRC in March 2015. Keeley O'Connell ended her term with the MRC in December 2015.

MRC Member Training

See Attachment A for details.

Opportunities for 2016

Continuation of Existing Projects:

Derelict Gear Removal and Outreach

In an effort to combat the 12,000 crab pots lost annually in Puget Sound, Snohomish County MRC Staff and members worked with various partners to support the removal of derelict crab pots in the commonly fished commercial, tribal and recreational Dungeness crab fishing areas of Gedney (Hat) Island. The weeklong process took place in September of 2015 and these efforts removed 172 crab pots and one crab ring. Of the 172 derelict pots recovered, 28 pots contained 154 Dungeness crab. This work highlights the value of proper gear maintenance and practices in the Dungeness crab populations within the Puget Sound. The NWSI estimates a cost of \$190 to remove a single derelict crab pot. This high cost emphasizes the value of prevention.

In 2016, the MRC will continue outreach efforts with project partners. The outreach will promote best management practices to prevent crab pot loss and reduce derelict gear within Snohomish County waters and throughout the Salish Sea.

Oil Spill Preparedness and Response

The MRC is working to increase participation in Snohomish County in the State's Vessel of Opportunity Program (VOO). The MRC has written a letter, which highlights the VOO administered by the Washington Department of Ecology. As a larger effort to strengthen county oil spill prevention, preparedness, and response, the MRC letter will be distributed along with VOO informational pamphlets to local commercial fisherman.

In 2016, the oil spill subcommittee will continue to pursue the implementation of projects that will have the greatest impact on Snohomish County's oil spill preparedness. Planned projects include:

- Observing a tabletop exercise,
- Joining a Northwest Area Contingency Plan (NWACP) task force, and
- Preparing comments for the upcoming Geographic Response Plan update.



MRC members and staff observe Natural Resources Consultants remove a derelict crab pot at Gedney Island

ESRP Nearshore Learning Grant

The MRC received grant funding for an "Effects of Nourishment on Railroad Grade Beaches" study through the ESRP Learning Program. The MRC began preliminary planning in 2015 to conduct sampling at various armored and unarmored sites within Snohomish County in partnership with the University of Washington. The sampling will occur pre-construction and post-construction of the beach nourishment in order to study nearshore health and project impacts. The study will observe sediment transport following nourishment on a railroad grade beach, with implications for the selection and design of drift cell scale beach management activities across Puget Sound. Methods for sampling may include:

- Sediment grain size analysis
- Beach profiles surveys
- Wrack composition
- Wrack invertebrates and insects
- Forage fish spawning
- Macroflora and fauna abundance
- Riparian vegetation and logs

The MRC will continue implementation of this grant study in 2016.

New Project Ideas:

- Ocean Acidification Outreach
- Develop Spill Response Guidance Plans for Resource Managers
- Puget Sound Starts Here Campaign
- Recreational Fisheries Education

Recommendations to the Snohomish County Executive & Council

The Snohomish County Marine Resources Advisory Committee presents the following recommendations for consideration by the Snohomish County Council and Executive. These include actions that Council and/or the Executive can take, in addition to general support of the current MRC work program. The MRC welcomes further discussion of these recommendations.

Primary Recommendations

1. Support hiring additional MRC staff to assist the MRC. The MRC has requested that SWM fund a part time staff member to support the MRC workplan.
2. Maintain dedicated, stable funding sources and staff for the Marine Resources Advisory Committee.
3. Support the Nearshore Beach Restoration Project for enhancement of the marine nearshore between the Cities of Mukilteo and Everett. Continue partnership with the City of Everett, the Port of Everett, and other landowners to implement project.
4. Support and fund the efforts of the Parks Department and the MRC to restore nearshore habitat at Meadowdale Park.
5. Encourage implementation of the strategies developed in the Port Susan Marine Stewardship Area Conservation Action Plan.
6. Engage with MRC Members in relevant marine conservation issues in which they can provide expertise.
7. Authorize the County and MRC to implement an incentives program as described in the Futurewise report to reduce shoreline armoring in the County.
8. Support, encourage, and fund nearshore habitat restoration capital projects, especially softshore demonstration projects.



MRC member Lincoln Loehr participating in bull kelp survey

Additional Recommendations

Public Involvement and Education

1. Continue to encourage citizen involvement in marine resource monitoring and protection opportunities.
2. Promote and expand partnerships with agencies, tribes, municipalities, universities, community colleges, non-profit organizations and citizen groups

Dungeness Crab Stewardship/Derelict Gear Removal

1. Support the efforts of the NWSI to complete the removal of derelict fishing gear in local waters including participation in the NWSF Strategic Crab Pot Advisory Committee.
2. Support efforts of the MRC to implement education and outreach projects to reduce recreational crab pot loss in Snohomish County waters using social marketing concepts.
3. Encourage and facilitate partnerships with agencies, tribes, municipalities, universities, community colleges, non-profit organizations and citizen groups to protect and restore Dungeness crab habitat.



Port Susan at Kayak Point County Park

Nearshore Habitat Protection and Restoration

1. Acknowledge and begin to address the impact of climate change and anticipated sea level rise on marine resources.
2. Support restoration projects led by project partners in Snohomish County such as Mukilteo Tank Farm, Qwuloolt, Mid-Spencer, Blue Heron Slough, and Edmonds Marsh.
3. Support partnerships targeted to protect and restore marine shoreline habitat, and encourage private ownership participation in these activities.
4. Ensure marine shoreline development projects in Snohomish County are coordinated with respect to mitigation of comprehensive and cumulative effects on our shoreline and marine resources.

Marine Water Quality

1. Support the recommendations of the 2011 Oil Spill Preparedness and Response report and projects that will improve Snohomish County oil spill preparedness and response.
2. Monitor and support legislation that promotes a study of the risks associated with the

increased transport of oil by rail along the Snohomish County shoreline.

3. Support continued mussel watch monitoring efforts through WDFW.

Regional Puget Sound Conservation Efforts

1. Continue to participate in the Puget Sound Partnership's Local Integrating Organization Implementation Team to select Near-Term Actions for the 2015 PSP Action Agenda Update to improve the health of Puget Sound and enhance the quality of life for Snohomish County citizens.
2. Support the efforts of the Northwest Straits Marine Conservation Initiative and encourage the continuation of federal funding for this nationally recognized, locally driven program.



MRC staff Kathleen Herrmann participating in forage fish monitoring sampling

Acknowledgements

The accomplishments and current activities of the Snohomish County MRC depend on contributions from volunteers, Snohomish County staff members, and individuals from other organizations. Their interest and participation in MRC activities is greatly appreciated. We apologize for any omissions.

Snohomish County MRC Members

Paul Schlenger, Chair, Confluence Environmental Company, Fish Biologist and Marine Ecologist, Environmental Interest
Simon Geerlofs, Co-Vice Chair, Pacific Northwest National Laboratory, Marine Science and Policy Analyst, Conservation/Environmental Interest
Sarah Brown, College Instructor, Conservation and Environmental Interests
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Snohomish County Staff Members & Elected Officials

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Gregg Farris, Interim Co-Director	Sean Edwards, Senior Planner
Karen Kerwin, Interim Co-Director	Scott Moore, Native Plant Steward
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Department of Parks and Recreation

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Sharon Swan, Senior Planner	Logan Daniels, Engineer

Snohomish County Executive 2015

John Lovick

Snohomish County Council 2015

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Brian Sullivan - District 2	Dave Somers, Chair - District 5
Stephanie Wright - District 3	

WSU Snohomish County Extension Beach Watchers

Adrienne Lauman	Deanna Stiles	Joanne Rousslang	Mary Vanderway
Alex Ho	Debbie Werner	Jourdan Keith	Mauricio Calderon
Ani Williams	Denise Mannery	Joy Lynch	Melanie Wyffels
Annette Rosebrook	Diane Patterson	Judy Atkins	Melonique Riall
Barbara Keithly	Donna Bennett	Judy Ness	Michael Kyte
Bea Wilson	Donna Kinsey	Karen Siebrass	Nancy Engen
Bernie Busch	Donna Maupin	Kathy Konarzewski	Nancy Jo Cushman
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Bill McLaughlin	Emma Rodriguez	Larry Burgher	Paul Granquist
Bob McCort	Fred Benedetti	Laura Milleville	Sandy Evans
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Chris Betchley	Hugh Matheson	Lisa Parkinson	Tom Hoban
Christine Longdon	Ila Osburn	Liz Heisler	Trish Mayfield
Chuck LoPresti	Janet Loehr	Lucinda Diann	Ursula Gallagher
Craig Wollam	Jayne Vaughan-Ellis	Lynn Lichtenberg	Veda Rosier
Darla Gay Smith	Jerry Anderson	Lynn McCort	Wendy Oresik
Dave Compton	Joan Douglas	Margarita Molina	

**ATTACHMENT A:
SNOHOMISH COUNTY MRC
SUMMARY OF TRAINING EVENTS**

MRC members and staff participated in the following training sessions in 2015:

- **LIO Implementation Subcommittee Meeting**
January 27, 2015
Attendees: Tom Hoban
- **Sound Waters**
February 6, 2015
Attendees: Bob Hillmann, Lincoln Loehr, Alyson Rae
- **Oil Spill Workshop**
February 26, 2015
Attendees: Kathleen Herrmann and Mike Ehlebracht
- **Volunteer Management Training**
March 6, 2015
Attendees: Kathleen Herrmann, Alyson Rae
- **Workshop for Marine Shoreline Landowners (Stanwood)**
March 28, 2015
Attendees: Kathleen Herrmann, Alyson Rae, Traci Sanderson, Tom Hoban
- **Meadowdale Beach Park Feasibility Study Community Stakeholder Meeting**
April 20, 2015
Attendees: Kathleen Herrmann, Taylor McDowell
- **LIO Implementation Subcommittee Meeting**
April 28, 2015
Attendees: Tom Hoban
- **LIO Implementation Subcommittee Meeting**
May 26, 2015
Attendees: Tom Hoban
- **Mukilteo Town Hall Meeting on Oil and Coal Train Safety**
May 27, 2015
Attendees: Susan Tarpley, Lincoln Loehr, Mike Ehlebracht
- **Green Shores for Homes Workshop**
June 11-12, 2015
Attendees: Kathleen Herrmann (June 11), Traci Sanderson (June 12)
- **LIO Implementation Subcommittee Meeting**
June 30, 2015
Attendees: Tom Hoban

- **NWSF Presentation Training**
June 4 & 18, 2015
Attendees: Taylor McDowell
- **NOAA Project Design and Evaluation Training**
June 22-23, 2015
Attendees: Alyson Rae, Taylor McDowell
- **Kayak Safety Training**
June 30, 2015
Attendees: Taylor McDowell
- **Speed Crabbing Derby**
July 11, 2015
Attendees: Kathleen Herrmann, Alyson Rae, Mike Ehlebracht
- **Port Susan Bay Day**
August 1, 2015
Attendees: Kathleen Herrmann
- **LIO Implementation Subcommittee Meeting**
August 3, 2015
Attendees: Tom Hoban
- **NWSF Derelict Gear Celebration**
August 13, 2015
Attendees: Kathleen Herrmann, Alyson Rae, Taylor McDowell, Lincoln Loehr, Paul Clampitt, Sarah Brown, Traci Sanderson, Tom Hoban
- **SHARP Advisory Team Conference Call**
August 31, 2015
Attendees: Taylor McDowell and Paul Schlenger
- **Seascape Ecology Conference**
September 8, 2015
Attendees: Kathleen Herrmann
- **Nearshore Project Web Ex Meeting**
October 16, 2015
Attendees: Kathleen Herrmann
- **Port Susan Bulkhead Removal Workshop**
October 17, 2015
Attendees: Kathleen Herrmann, Autumn Moore
- **Title IV Training**
October 22, 2015
Attendees: Alyson Rae

- **Nearshore Project Conference Meeting**
October 28, 2015
Attendees: Kathleen Herrmann
- **Puget Sound Partnership Science Panel**
October 28, 2015
Attendees: Kathleen Herrmann, Autumn Moore, Traci Sanderson
- **Sound Living: One Day Communiversality**
October 31, 2015
Attendees: Kathleen Herrmann, Autumn Moore, Mike Ehlebracht
- **Crab Pot Escapement Study Data Release**
November 2, 2015
Attendees: Kathleen Herrmann, Alyson Rae, Tom Hoban, Paul Clampitt, and Mike Ehlebracht
- **NWSC Annual MRC Conference**
November 6-7, 2015
Attendees: Cathy Stanley, Franchesca Perez, Kathleen Herrmann, Keeley O'Connell, Alyson Rae, Paul Schlenger, Bob Hillmann, Simon Geerlofs, Susan Tarpley, Mike Ehlebracht, Thom Hoban
- **NWSC Kelp Monitoring Workshop**
December 5, 2015
Attendees: Autumn Moore, Traci Sanderson, Lincoln Loehr
- **Meadowdale Nearshore Restoration WebEx Conference Meeting**
December 8, 2015
Attendees: Kathleen Herrmann
- **Meadowdale Nearshore Restoration Follow-Up Meeting**
December 11, 2015
Attendees: Kathleen Herrmann
- **Derelict Gear Removal Conference**
December 15, 2015
Attendees: Kathleen Herrmann, Autumn Moore, Paul Clampitt