

County: **Skagit County**  
Grant No: **SEANWS-2014-SkCoPW-00003**

**PROJECT TITLE: Northwest Straits Project: Skagit County MRC Operations and Projects**

**DELIVERABLES FOR TASK NO: Task 1.4 Annual Report**

PROGRESS REPORT: [ ]

FINAL REPORT [X]

**PERIOD COVERED: October 1, 2014 – September 30, 2015**

**DATE SUBMITTED: September 30, 2015**



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### **Task Number: Task 1: MRC Operations**

#### **Project Summary:**

The Skagit County Marine Resources Committee (MRC) receives staff support to administer MRC Operations through the Natural Resources Division of Skagit County Public Works. October 1, 2014 – September 30, 2015 Skagit MRC Operations involved multiple subtasks and related activities including: scheduling and holding monthly MRC meetings with guest speakers and project updates; providing summary of activities for MRC representative to share at Northwest Straits Commission (NWSC) meetings; providing NWSC updates at monthly MRC meetings; grant administration; maintaining and regularly updating the MRC web site; preparing an annual report that summarizes MRC activities and progress on projects; developing and implementing an annual work plan; and attending the NWSC training as well as additional conferences, trainings, and workshops related to the goals of the MRC. The MRC was also tasked with participating in meetings and operations of the Local Integrating Organization (LIO) in order to contribute a marine water and nearshore focus to the process. However, Skagit County does not currently have a LIO in place.

#### **What was the goal of this project and did you accomplish it?**

The goal of MRC Operations is to carry out administrative functions in support of the mission including: work plan preparation, developing and preparing grant proposals, programmatic staff support, project monitoring and performance tracking, sponsoring and hosting education programs, program planning and coordinating, travel for training and conferences, and planning and participating in training opportunities. The goal for Task 1: MRC Operations has been accomplished.

#### **Please provide a list of measurable outcomes or accomplishments from this project (e.g. number of people trained, miles of shoreline restored, etc.):**

#### **MRC Membership, Meetings, and Communication:**

- **MRC Membership:** Four new MRC members were appointed. Jamey Selleck was appointed to represent the marine scientist interest group, Sara Tchang was appointed to represent the Port of Anacortes interest group, Nate Biletnikoff was appointed to represent the Shell Oil Refinery interest group, and Todd Woodward was appointed to represent the Samish Indian Nation interest group. The Skagit MRC Orientation Packet was updated and provided to help train new MRC members. There are currently a total of 12 Skagit MRC members representing diverse interest groups: Skagit County Public Works, Swinomish Tribe, Samish Indian Nation, City of Anacortes, Skagit County Planning, Shell Oil Refinery, Skagit Land Trust, Commercial and Recreational Fishing, Concerned Citizen, and Marine Scientists.
- **MRC Meetings:** MRC meetings were held on the second Thursday of each month (except August) from 9AM – 11AM and rotating between Anacortes and Mount Vernon. All MRC meetings were open to the public. MRC members provided project updates. Guest speakers were also invited to share their work: Diver/videographer Laura James presented stormwater educational videos that she helped produce, Kari Odden presented the Marine Shoreline Protection Assessment project, Sharon Riggs presented on the Padilla Bay National Estuarine Research Reserve, Caroline Gibson reported on forage fish and kelp monitoring opportunities, Todd Woodward provided a presentation on the Samish Indian Nation/Washington State Department of Natural Resources Beach Cleanup, and Jason Morgan presented on the Nearshore Monitoring project in Skagit County. Attendance averaged around 13 people.
- **Volunteer Hours:** MRC members and alternates contributed over 1,166 volunteer service hours towards MRC Operations and projects. Non MRC members contributed over 1,101 hours of

volunteer service toward MRC projects. The total estimated volunteer hours combined = 2,267.

#### **Grant Administration:**

- Grant tasks, contracts, budget, progress reports, timelines, and deliverables were administered, tracked, and managed primarily by the MRC Coordinator. Most of the deliverable deadlines were met and all of the tasks were right on or slightly below budget.
- MRC members helped identify project priorities, develop project proposals, coordinated projects, provided project updates, and reported volunteer hours.

#### **MRC Website:**

- The Skagit MRC website address is: [www.skagitmrc.org](http://www.skagitmrc.org). The website was regularly updated with meeting announcements, meeting minutes and other special event notices.

#### **Annual Report:**

- The Annual Report has been completed. Skagit MRC plans to provide the report to the County Commissioners in November or December 2015.

#### **Work Plan:**

- The 2014 - 2015 Work Plan has been fully implemented. The 2015-2016 Work Plan is currently being drafted. The 2015-2016 Work Plan is a working document that includes the objectives, project description, timeframe, products, and benchmarks addressed.

#### **MRC Training, Conferences, Workshops:**

- 2014 MRC Conference: seven Skagit MRC members participated in the 2014 MRC training conference in Port Townsend. The MRC display was updated to highlight our nearshore restoration work, Pinto Abalone restoration, and the Salish Sea Stewards program. Christine Woodard (MRC member and NWSF Chair), provided opening and closing remarks. MRC member Morty Cohen gave a presentation on the Skagit MRC's Salish Sea Stewards program.
- Ocean Health Forum: Skagit MRC and the NWSF co-sponsored the Ocean Health Forum on June 11. 2015. The main focus was on ocean acidification and how it is impacting us locally. MRC Chair Jay Lind was the moderator for the event and MRC member Christine Woodward served on the panel. Presenters included: Dr. Brooke Love, the Shannon Point Marine Center "How are Changes in Ocean Chemistry Affecting Sea Life in Puget Sound?"; Christine Woodward, Samish Indian Nation and the Skagit MRC "Effects of Ocean Acidification on a Coast Salish People"; Bill Dewey, Taylor Shellfish Farms "How is Ocean Acidification impacting the Local Shellfish Industry?"; and Ginny Broadhurst, Northwest Straits Commission "Ocean Acidification: What's Being Done Here in Puget Sound?". Around 18 people attended the event including six MRC members.
- Oil Spill Preparedness and Response Workshop: Skagit MRC and the Northwest Straits Foundation co-sponsored the Oil Spill Preparedness and Response Workshop for emergency workers and elected officials on February 25, 2015 at the Padilla Bay Research Reserve. Over 20 people attended the workshop including four MRC members. Jay Lind (MRC Chair and NWSF board member) provided opening remarks on behalf of the Skagit MRC and NWSF.
- MRC Forum: The MRC Forum took place in Olympia in February 2015. The purpose of the forum was to identify common priorities and challenges of the Coastal MRCs and the Northwest Straits MRS and raising these issues with key legislators. Three Skagit MRC members attended.
- Forage Fish Spawning Survey Training: The NWSF hosted a forage fish survey training workshop for Skagit MRC members and volunteers at the Fidalgo Bay RV Resort on May 21, 2015. The workshop was well attended by over 25 people and taught by the Washington Fish & Wildlife. Topics included; an overview of forage fish and their management in Puget Sound; Intertidal Habitat Survey Methods and Recently Updated Protocol; Lab Procedures/Egg Identification; and Sampling Beach Substrate.
- Presentation Skills Training: The Northwest Straits Commission in partnership with WA Coastal Training Program offered free two day presentation skills training in June 2015 specifically for scientific information and environmental projects for MRC members and staff. One Skagit MRC member attended the training.
- Northwest Straits Marine Conservation Initiative (NWSI) Derelict Gear Removal Celebration: The event was held on August 13, 2015 in Everett and was well attended by MRC members

(including three Skagit MRC members), NWSC, NWSF staff and board members, government agencies, and elected officials, and the media. Several elected officials attended the celebration including Skagit County Commissioner Ron Wesen, Washington State Representative Norma Smith, Senator Patty Murray, and family members of the late Senator Jack Metcalf. Senators Murray and Metcalf were responsible for establishing the Northwest Straits Marine Conservation Initiative. The derelict gear removal project was widely covered by the local media.

- Fundraising for Nonprofits Workshop: MRC member and NWSF board member Jay Lind attended the one day training in September to learn how to raise funds for the Northwest Straits Foundation to help support the work of the MRCs and NWSC.
- Additional conferences, trainings, and workshops related to the goals of the MRC attended by MRC members and reported back to the MRC included: Restore America's Estuaries Conference in Washington DC, In addition, MRC member Jamey Selleck participates on the Puget Sound Environmental Program (PSEMP) Forage Fish Work Group.

#### **Representation at NWSC meetings:**

- NWSC meetings were typically held the last Friday of each month. Meetings rotated between different counties and WebEx Conference calls. Meetings were not held in November, December, or September.
- Representatives of the MRC attended NWSC meetings and provided an update on current activities of the MRC. MRC members appointed to represent at the NWSC meetings included: Christine Woodward (2014-2015 NWSC Rep), Jay Lind (NWSC Alternate), and Jamey Selleck (2015 NWSC Rep).

#### **MRC Representation at Special Events:**

- MRC display was updated with new project posters and two fun games: forage fish food web bean bag toss game and the stormwater putputt game. The games are a great way to initiate conversations about the issues impacting the Salish Sea, the work of Skagit MRC, and what individuals can do to help.
- The MRC display was hosted by the MRC Coordinator and volunteers at several events including: the MRC Conference, the Padilla Bay Watershed Homeowners Workshop, the Anacortes Waterfront Festival, the Mount Vernon High School Science Night, the Clean Samish Initiative Open House Celebration, Shoreline Landowner Workshop, NWSI Derelict Gear Removal Celebration, Fidalgo Bay Day, and Skagit River Salmon Festival.

#### **Please list the specific deliverables associated with this project (e.g. educational/outreach materials, monitoring protocol, summary report):**

- Quarterly progress reports (4)
- Quarterly meeting agendas and minutes (4)
- Annual report
- Quarterly list of Northwest Straits Commission meetings, conferences and workshops attended and names of MRC members attending (4)
- Quarterly matching funds/volunteer time tracking (4)

#### **Any difficulties encountered or lessons learned during the project?**

- The low attendance for some of the workshops and events was a little disappointing. We might need to rethink how we schedule and promote these events.
- Regularly keeping the MRC website up to date is always a bit of a challenge with only one part-time MRC Coordinator.

#### **If this task was part of an ongoing project, please provide a brief summary of the project to date, including initiation and expected completion dates, overall goals and anticipated outcomes:**

MRC Operations will be ongoing pending funding and continued County support.

#### **Were any other resources or funding leveraged for this project?**

Funding for staff time was leveraged through the Skagit County Clean Water Funds.

**Did you work with any partners or other MRCs to carry out this project?**

The MRC members represent different interest groups including: Skagit County Public Works, Skagit County Planning Department, City of Anacortes, Skagit Land Trust, Port of Anacortes, Swinomish Tribe, Samish Indian Nation, Shell Oil Refinery, concerned citizens, and are all considered partners to carry out MRC operations.

**What are the regional cumulative significance/impacts/results of this project?**

MRC Operations are coordinated and implemented under the regional oversight of the NWSC. Participating at the NWSC meetings and the MRC conference allows MRC members the opportunity to network and learn about other MRC projects which could also lead to new project ideas that have a greater regional/collective impact. The monthly MRC meetings, MRC website, MRC display and educational materials will continue to raise public awareness and keep citizens informed on issues impacting marine resources and MRC activities that are helping to restore and protect the marine environment. The educational materials can also be used as training tools. Continued County administrative staff support will help facilitate and coordinate contractual agreements and grant deliverables, committee operations, information exchange between the MRC members and outside agencies, and the implementation of the MRC Work Plan which will allow for the important restoration and conservation work to proceed.

**Which NWSC Performance Benchmarks or PSP Near Term Actions does this project address?**

Some of the educational workshops and trainings that MRC members participated in or that were sponsored by the MRC addressed the Education and Outreach NWSC Performance Benchmark.

Please attach ALL project deliverables, including:

- Media coverage and press releases
- JPEG images of flyers, maps, outreach materials, event photos
- List of volunteers and project partners
- Training curricula/educational materials
- Roster of participants
- Monitoring protocol/data collected
- Summary report

**Task Number: Task 2: Fidalgo Bay Day****Project Summary:**

Skagit MRC coordinated with multiple organizations and volunteers to plan and sponsor the twelfth annual Fidalgo Bay Day that was held August 29, 2015 at the Fidalgo Bay Resort in Anacortes. This year's event was dedicated in memory of former MRC member Ric Boge. Fidalgo Bay Day featured interactive educational displays from 19 different organizations, educational games and activities, children's arts and crafts, and free samples of local seafood. Two of the most popular educational activities were the Shannon Point Marine Center's mobile marine sea creature touch-tank, and the beach seining demonstration. Forage fish specialist Dan Pentilla provided several guided forage fish walks along the beach where they discovered lots of surf smelt eggs. Children's art activities included fish prints, marine creature stamps on notecards, button making, 3-d fish, and face painting. Unfortunately, several planned activities had to be canceled or modified due to the strong winds, rain, and power outage including: the Samish Canoe Family canoe rides, showing the "Maiden of Deception Pass" and the Northwest Straits Foundation's Derelict Gear Removal videos. Several of the Trail Tales passport stations along the Tommy Thompson Trail had to be moved indoors. In addition to all of the fun educational activities, three local restaurants provided free samples of local chowders (Adrift Restaurant, Johnny Picassos, and Mary Anne's Kitchen). Taylor Shellfish donated complimentary shellfish grilled to perfection by volunteers. Gere-A-Deli donated free brownies and Penguin Coffee donated free coffee. Skagit MRC provided free lemonade and popcorn made with the popcorn machine borrowed from the Anacortes Boys and Girls Club. And the Cayou/Bailey family of the Samish Indian Nation offered a no-host salmon BBQ lunch.

**What was the goal of this project and did you accomplish it?**

The goal of Fidalgo Bay Day was to provide a fun, free, educational event that would help increase public awareness of the marine environment and the creatures that live there, encourage people to become good stewards of Fidalgo Bay and the Salish Sea, build partnerships, and increase the visibility of the Skagit MRC. A lot of positive feedback was received from participants and guests.

**Please provide a list of measurable outcomes or accomplishments from this project (e.g. number of people trained, miles of shoreline restored, etc.):**

- Over 250 visitors
- Over 50 volunteers
- Over 414 volunteer hours
- 19 organizations with interactive educational displays and activities
- 5 businesses provided free samples of chowder, shellfish, brownies, and coffee
- 5 surveys were completed

**Please list the specific deliverables associated with this project (e.g. educational/outreach materials, monitoring protocol, summary report):**

- Quarterly progress reports (4)
- Project summary report

**Any difficulties encountered or lessons learned during the project?**

Lesson learned: It is good to have a backup plan in case of foul weather or power outage. It would also be a good idea to advertise for both indoor and outdoor activities, so that people will know that there will still be fun activities even in bad weather. Moving the passport stations indoors with the educational

displays worked out really well because it helped the presenters and public be more engaged.

Difficulties: It was difficult to accurately track the number of visitors. Over 200 guests checked in at the front desk, but we know that many missed the check in table or just walked around back for the outdoor activities. The check-in table might need to be moved to a different location for better visibility. We could consider giving door prizes to those visitors who stop by the check in station. Another option would be to give the visitors a sticker, so we know who checked in and who got counted. We also hoped to survey more visitors, but the power outage made it too challenging.

**If this task was part of an ongoing project, please provide a brief summary of the project to date, including initiation and expected completion dates, overall goals and anticipated outcomes:**

Fidalgo Bay Day has been an annual event of the Skagit MRC since 2003. The overall goal is to continue hosting this event each year as funding allows.

**Were any other resources or funding leveraged for this project?**

Funding was leveraged through in-kind support and volunteer hours for an estimated amount of over \$2,626:

- Samish Indian Nation provided their facility, kitchen, grill, & food handler permits free of charge
- Friends of Skagit Beaches provided insurance coverage for the facility, sandwich board signs, and passport activity and prizes
- Complimentary seafood chowder provided by 3 local restaurants (Adrift Restaurant, Johnny Picassos, and Mary Anne's Kitchen)
- Complimentary shellfish provided by Taylor Shellfish
- The Anacortes Boys and Girls Club's popcorn machine
- Gere-A-Deli donated free brownies
- Penguin Coffee donated 4lbs of coffee
- Materials and supplies were donated to construct Skagit MRC's educational forage fish food web bean bag toss game and stormwater puttputt game.
- Northwest Straits Foundation provided a donation of \$110 that was used to purchase lunch for some of the scheduled presenters and the planning committee at the event
- Over 414 volunteer hours

**Did you work with any partners or other MRCs to carry out this project?**

- Friends of Skagit Beaches: helped with event planning, shared resources, provided insurance for the facility, provided a passport activity with great prizes for the Trail Tales National Estuaries Day.
- Samish Indian Nation: helped with event planning, hosted the event at their Fidalgo Bay Resort facility, and Cayou/Bailey family provided no-host salmon BBQ. They also planned to offer free canoe rides and planned to show "The Maiden of Deception Pass" video, but both had to be canceled due to high winds and power outage.
- Coastal Volunteer Partnership: recruited and coordinated volunteers and tracked volunteer hours.
- Shannon Point Marine Center: setup and staffed the portable aquarium touch-tank stocked with marine critters and recruited young students to assist.
- Northwest Straits Foundation (NWSF): Jason Morgan from the NWSF coordinated the beach

seining activity

- Dan Pentilla: provided expertise while leading forage fish walks on the beach and presented interesting facts about the marine critters and fish caught during the beach seining activity.
- 19 organizations provided interactive educational displays and activities: Skagit County Marine Resources Committee, Shannon Point Marine Center, Skagit Fisheries Enhancement Group, Skagit County Public Works, Skagit Conservation District, Skagit Conservation Education Alliance, NWSF, Padilla Bay NERR, Friends of Skagit Beaches, Salish Sea Biological, Environmental Science Center, Fidalgo Bay Aquatic Reserve, WA Dept of Ecology, Pacific Biodiversity Institute, ORCA Network, Samish Indian Education Program, WA Department of Natural Resources, Skagit Land Trust, Trail Tales, Washington Environmental Council

**What are the regional cumulative significance/impacts/results of this project?**

People from all over the country and the world who stay at the Fidalgo Bay RV Resort have been known to participate at Fidalgo Bay Day. We've even had visitors from as far away as Germany and New Zealand. Many commented that they enjoyed Fidalgo Bay Day so much that they will start planning their trips around this annual event. Those people who completed the passport activity and the survey indicated that they learned something new about the marine environment at Fidalgo Bay and plan to share that information with others.

**Which NWSC Performance Benchmarks or PSP Near Term Actions does this project address?**

NWSC Performance Benchmarks: Education and Outreach

Please attach ALL project deliverables, including:

- Media coverage and press releases
- JPEG images of flyers, maps, outreach materials, event photos
- List of volunteers and project partners
- Training curricula/educational materials
- Roster of participants
- Monitoring protocol/data collected
- Summary report

### **Task Number: Task 3: Salish Sea Stewards & Beach Naturalists**

Skagit MRC continued to build on and enhance the Salish Sea Stewards and Beach Naturalist program that was developed and initiated by the Skagit MRC in 2014. Skagit MRC contracted with the Padilla Bay Foundation to hire a volunteer coordinator under the administration of the newly established *\*Coastal Volunteer Partnership* (CVP) to recruit, train, and coordinate volunteers.

#### **Salish Sea Stewards**

In 2015, 25 new volunteers completed the 40 hour Salish Sea Stewards training program that consisted of classroom and field training for citizen scientists. The classes were taught by qualified experts and covered marine science related topics, current issues impacting the Salish Sea, and priorities of the Skagit MRC and the NWSC. Volunteers who completed the training program were asked to commit at least 50 hours of volunteer services within one year. Within a five month period, the 25 new Salish Sea Stewards have already contributed a combined total of over 800 hours of volunteer service toward MRC and partner projects. Over 445 hours of volunteer service was contributed just towards Skagit MRC projects (not including Fidalgo Bay Day).

#### **Beach Naturalists**

Six Beach Naturalist volunteers completed the one day interpretive training refresher class in 2015. The training consisted of an orientation to Washington Park, interpretive procedures, intertidal outreach resource packets, and a guided intertidal exploration of Sunset Beach at Washington Park. Nine Beach Naturalist interpretive programs were scheduled at Washington Park in Anacortes to educate visitors about appropriate stewardship behaviors that prevent harm and destruction of intertidal marine life and habitat of the Salish Sea. The interpretive programs also added value to the experience of visitors by offering a unique perspective to better appreciate these fragile ecosystems. The Shannon Point Marine Center brought their portable marine aquarium touch tank to help enhance two of the interpretive programs at Washington Park. Not surprisingly, the touch tanks were very popular with visitors and drew the largest crowds. The Beach Naturalists made the most contacts with visitors on the days they had the touch tanks at the beach. Six Beach Naturalists contributed over 70 hours of volunteer services and made over 200 hundred contacts over a five month period.

#### **What was the goal of this project and did you accomplish it?**

The goal of this project was to increase public awareness of the marine environment and the creatures that live there, encourage people to become good stewards of the Salish Sea, build, engage, and support a strong volunteer base of citizen scientists to support Skagit MRC and partner projects and increase the visibility of the Skagit MRC. The goals of the Salish Sea Stewards and Beach Naturalist programs were met, and the value of stewardship and interpretive based volunteer trainings meet the larger objectives of the MRC mission. The Salish Sea Stewards program served as an entry point for citizens to become involved as volunteers and created a solid network of volunteers who can help support MRC projects and inform the larger Skagit County community about the work of the MRC. The Beach Naturalist program also offered an outlet to share the MRC mission and stewardship ethic to an audience that may not normally be reached.

*\* The CVP is a collaborative partnership between the Padilla Bay Foundation, Padilla Bay National Estuarine Research Reserve, the Friends of Skagit Beaches and the Skagit County Marine Resources Committee who share similar goals and needs for volunteers. The CVP serves as a clearing house for a large network of volunteers and an administrative umbrella for the different partners*

#### **Please provide a list of measurable outcomes or accomplishments from this project (e.g. number of people trained, miles of shoreline restored, etc.):**

#### **Salish Sea Stewards Accomplishments**

- 25 volunteers completed the Skagit MRC Salish Sea Stewards training in 2015 ( there are now a

total of 36 trained Skagit MRC Salish Sea Stewards)

- Over 40 hours of free training provided by 23 professional experts
- Over 800 total hours of volunteer service contributed by the 25 new Salish Sea Stewards class of 2015
- Over 445 hours of volunteer service contributed by the new Salish Sea Stewards class of 2015 towards MRC specific projects (not including Fidalgo Bay Day)
- Over 280 people (ie volunteers, partners, local reporters, and interested community members) receive THE WAVE, a bi-monthly bulletin distributed through the CVP that includes information about Skagit MRC's projects, events, and volunteer opportunities
- 53 'Likes' on the CVP Facebook page which is updated weekly with program information including Salish Sea Stewards and other Skagit MRC activities

### **Beach Naturalist Accomplishments**

- 6 volunteers completed the Beach Naturalist refresher training. 5 of the Beach Naturalist volunteer also completed the 2015 Salish Sea Stewards training
- 9 Beach Naturalist interpretive programs at Washington Park in Anacortes
- Over 200 contacts made with visitors at Washington Park during the interpretive programs
- Over 70 hours of volunteer service contributed

### **Please list the specific deliverables associated with this project (e.g. educational/outreach materials, monitoring protocol, summary report):**

- Quarterly progress reports (4)
- Copy of curriculum and supporting materials, program outline, timeline and evaluation plan
- Summary report
- Beach Naturalist Interpretive Program summary

### **Any difficulties encountered or lessons learned during the project?**

#### Salish Sea Stewards:

- Daytime training is ideal for most volunteers and speakers.
- Spring time training supports summer field season and community outreach events.
- 20-25 is a good class size.
- 40-50 hours of weekly sessions worked well for the participants.
- More hands-on, practicum/lab skill building sessions are needed. Training will need to be modified to include combining some classroom sessions with relevant field training the same day or same week.
- It would be beneficial to develop a website and calendar for the CVP to keep the volunteers better informed.
- It was difficult to get volunteers to record their service hours even though they received training on how to use the new online database. Ongoing trainings to familiarize volunteers with the online database will continue to be provided and a plan for improving this process is in discussion with members of the planning committee for 2016.
- We need to clearly identify volunteer appropriate roles for new & existing MRC projects.
- We need to develop a diagram to show how the MRC and all of the partner organizations fit together, what projects the MRC is the lead on, and where volunteers are needed.

**Beach Naturalists:**

- Incorporating interpretive skills training and invertebrate species identification into the Salish Sea Stewards training curriculum, rather than having it as a separate training program, might help empower volunteers to take on the role of "naturalist" and increase the overall number of volunteers who would be willing to participate in the program.
- The number of contacts made by Beach Naturalists was not as high as anticipated, especially based on the number of programs offered throughout the summer. Offering 2-3 highly structured interpretive programs in partnership with organizations like Shannon Point Marine Center would likely offer the most value to both volunteers and park visitors.
- Beach Naturalist volunteers cannot be at the beach at all times, so having permanent interpretive signage at Washington Park to help educate visitors about intertidal marine life and habitats and appropriate stewardship behavior would be highly beneficial. Not only would interpretive signage aid in the protection of nearshore habitat, it would also offer the MRC an opportunity to increase its public presence, at a highly visible destination in Skagit County.

**If this task was part of an ongoing project, please provide a brief summary of the project to date, including initiation and expected completion dates, overall goals and anticipated outcomes:**

The Skagit MRC developed and initiated the Salish Sea Stewards and Beach Naturalist program in 2014. Skagit MRC plans to continue to build on and enhance the program for many years to come.

**Were any other resources or funding leveraged for this project?**

- 23 professionals provided their expertise for free as part the Salish Sea Stewards training
- The Shannon Point Marine Center provided their portable aquarium touch tank and expertise for two special Beach Naturalist interpretive programs scheduled at Washington Park

**Did you work with any partners or other MRCs to carry out this project?**

The primary partner who helped carry out this project is the CVP at Padilla Bay administered by the Padilla Bay Foundation. Other partners include: NWSC, NWSF, Puget Sound Restoration Fund, Skagit Fisheries Enhancement Group, Western Washington University/Shannon Point Marine Center, Swinomish Tribe, Citizen Action Training School & Nooksack Salmon Enhancement Group, Samish Indian Nation, WA Department of Ecology, Skagit County Public Works, Puget Sound Partnership, RE-Sources for Sustainable Communities, Padilla Bay National Estuarine Research Reserve, Friends of Skagit Beaches Trail Tales, Taylor Shellfish Company, Wolf Hollow Wildlife Rehab, Future-Wise, and US Geological Survey/Pacific Coastal and Marine Science Center.

**What are the regional cumulative significance/impacts/results of this project?**

Skagit MRC hopes to expand the Salish Sea Stewards volunteer program to other MRCs who are interested. Expanding the program to the other MRCs will help give it regional recognition and more validity.

**Which NWSC Performance Benchmarks or PSP Near Term Actions does this project address?**

- NWSC Performance Benchmarks: This project primarily addresses the Education and Outreach Performance Benchmark of the NWSC. Building a strong team of trained volunteers to help support Skagit MRC projects will also address the Marine Habitats and Marine Life Performance Benchmarks of the NWSC.
- PSP Nearshore Term Actions: Building a strong team of trained volunteers to help support Skagit MRC projects will also address several PSP Near Term Actions including habitat restoration and protection and shellfish restoration and protection.

**Please attach ALL project deliverables, including:**

- Media coverage and press releases
- JPEG images of flyers, maps, outreach materials, event photos
- List of volunteers and project partners
- Training curricula/educational materials
- Roster of participants

- Monitoring protocol/data collected
- Summary report

## **Task Number: Task 4: Shoreline Landowner Workshop**

### **Project Summary:**

Skagit MRC partnered with the NWSF to host a workshop to educate shoreline landowners on shoreline processes, the potential impact of bulkheads on nearshore ecology, alternatives to bulkheads for protecting and enhancing properties, and how to better manage their land through use of native vegetation and improved and appropriate drainage. The workshop was held on Saturday, March 14, 2015 at the Samish Indian Nation's Fidalgo Bay Resort. Skagit MRC Chair and NWSF board member Jay Lind provided welcoming remarks on behalf of the MRC and NWSF. Skagit MRC Project Lead Betsy Stevenson set up the Skagit MRC display and helped answer questions. The three hour workshop taught by Jim Johannessen of Coastal Geologic Services, included classroom and field elements that focused on shoreline processes and erosion – the issue repeatedly identified as the greatest concern by shoreline property owners. The workshop provided an excellent overview of marine shoreline processes, habitat values of the shoreline areas and examples of various enhancement and protection projects that address erosion, but also looked at the other functions and processes as well as provided specific examples of alternative soft shore protection methods and their application and performance over time. The outdoor portion of the class provided an excellent opportunity to point out various coastal processes on the beach and reinforce what was discussed in the lecture. The recent shoreline restoration work by the Samish Indian Nation in partnership with Skagit MRC provided design alternatives for the class to observe and discuss. The landowners indicated a desire to share the information about impacts from armoring and options and alternatives to bulkheads and riprap, with their neighbors.

As a follow-up to the workshop, property owners were invited to apply to receive a free site visit from a qualified professional to obtain site specific management recommendations regarding erosion concerns. In order to achieve the goal of armoring prevention or removal where feasible, property owners who did not currently have shoreline armoring were prioritized. Property owners who were seeking permits to replace failing structures were also prioritized. Site visits were conducted at various locations on Samish Island and Guemes Island by a qualified professional to address their specific concerns. A total of four site visits were held on Samish Island all along one stretch of shoreline where multiple property owners were represented. Similarly on Guemes Island, several workshop participants gathered together with their neighbors for a full day of site visits on the west side of the island. Some parcels were adjacent to each other, while others were separated. This group had a strong interest in trying to remove armoring or improve habitat where feasible. Unfortunately, most have minimal setbacks so their options are limited.

### **What was the goal of this project and did you accomplish it?**

The goal of this project was to provide at least one educational workshop for shoreline landowners that will bring awareness of the impacts of shoreline armoring and alternative solutions, possibly leading to a reduction of negative ecosystem impacts caused by hard shoreline armoring. The goal of this project was accomplished.

### **Please provide a list of measurable outcomes or accomplishments from this project (e.g. number of people trained, miles of shoreline restored, etc.):**

- Shoreline Landowner Workshop: Provided a customized two hour classroom presentation on coastal processes and shoreline stabilization alternatives to shoreline landowners at the Fidalgo Bay Resort. And a one hour field trip to the Weaverling Spit beach restoration site where participants could see a continuum and diversity of features and processes from currently armored, natural and restored along a single shoreline reach
- Over 1300 postcards were mailed to marine shoreline landowners inviting them to attend the workshop
- 55 people attended the workshop
- 21 participants completed the workshop evaluation. The program was very well received
- 4 site visits from a coastal geologist were held on Samish Island along one stretch of shoreline to obtain site specific management recommendations regarding erosion concerns. Multiple property owners were represented
- Several workshop participants and their neighbors living on the west side of Guemes Island

received a full day of site visits from a coastal geologist to obtain site specific management recommendations regarding erosion concerns

- The workshop participants had a strong interest in trying to remove armoring or improve habitat where feasible, unfortunately, most have minimal setbacks so their options are limited

**Please list the specific deliverables associated with this project (e.g. educational/outreach materials, monitoring protocol, summary report):**

- Quarterly progress reports (4)
- Project summary report

**Any difficulties encountered or lessons learned during the project?**

It was difficult trying to determine the best time and location to have the workshop. We were hoping to have a larger attendance.

**If this task was part of an ongoing project, please provide a brief summary of the project to date, including initiation and expected completion dates, overall goals and anticipated outcomes:**

The NWSF received Washington State Department of Fish and Wildlife (WDFW) and Natural Resources and Nearshore Grant funding to provide multiple shoreline landowner workshops and technical site visits in several different counties across the region in 2015 and 2016. The NWSF grant funding will be used to supplement an additional workshop and site visit consultations in Skagit County in the fall of 2015.

**Were any other resources or funding leveraged for this project?**

The Samish Indian Nation provided the use of the Fidalgo Bay Resort free of charge. The NWSF received WDFW and Natural Resources and Nearshore Grant funding that provided a few hours of consultation with a social marketing expert to help plan and market the workshop in Skagit County. The NWSF grant funding will also be used to supplement an additional workshop and site visit consultations in Skagit County in the fall of 2015 or spring of 2016.

**Did you work with any partners or other MRCs to carry out this project?**

Skagit MRC partnered with the NWSF.

**What are the regional cumulative significance/impacts/results of this project?**

Recent data and mapping show that 27% of Puget Sound's shorelines are armored and there has been a trend of one mile of new armoring installed each year (WDFW). In order to reverse that trend, the NWSF and several Marine Resources Committees are working together to educate shoreline property owners across the region and provide them with the information and tools necessary to make different management decisions in regards to erosion on their properties. Long-term outcomes will be achieved as property owners make informed decisions for management of their shoreline property and implement those choices over time. This will result in preservation and restoration of nearshore sediment source supply and important nearshore habitats that serve a variety of species, including endangered salmonids, surf smelt, sand lance, eulachon, and the species that depend upon them within the marine food web.

**Which NWSC Performance Benchmarks or PSP Near Term Actions does this project address?**

NWSC Performance Benchmarks: Education and Outreach, Marine Habitats, and Marine Life

PSP Near Term Action: Bulkhead removal, prevention, and alternatives

**Please attach ALL project deliverables, including:**

- Media coverage and press releases
- JPEG images of flyers, maps, outreach materials, event photos
- List of volunteers and project partners
- Training curricula/educational materials
- Roster of participants
- Monitoring protocol/data collected
- Summary report

## **Task Number: Task 5: Bowman Bay Nearshore Restoration**

### **Project Summary:**

Skagit MRC partnered with NWSF and Washington State Parks, in a coordinated effort, to remove approximately 540 feet (1,600 tons) of armoring from the shoreline at Bowman Bay in Deception Pass State Park. Bowman Bay is a pocket beach located in the Whidbey basin at Deception Pass State Park. The riprap had originally been placed by WDFW to protect a fish hatchery that had operated from approximately 1947 until it was torn down in 1972. Due to the presence of the riprap, the project site is currently void of large woody debris, overhanging vegetation, and a significant wrack line. Restoration of the shoreline and the cross-shore sediment transport processes at Bowman Bay will improve forage fish spawning habitat, improve nearshore habitat for juvenile salmon and bull trout, and restore resilience to the system, allowing for lateral shifts in sea grass beds in response to sea level rise. Removal of the riprap will also provide easier and safer access to the beach for park users. Since 2014, trained volunteers have been collecting baseline including: beach seining surveys for nearshore fish use, intertidal monitoring, and forage fish spawning surveys. Monitoring will continue for at least three years following construction to identify changes that result from the project and analyze the effectiveness of the restoration project.

This MRC grant funding was used to pay for the final project design and planting plan, construction bidding process, permitting, and plants. The construction costs will be covered through additional grant funding received by the NWSF including the Estuary and Salmon Restoration Program (ESRP) and the WDFW Marine and Nearshore Grant Program. In addition, the NWSF recently received a \$15,000 education and outreach grant for this project which will include: interpretive signage, a special event/signage unveiling, and low-tide beach walks, website development, a video, outreach materials, and volunteer planting parties etc.

### **What was the goal of this project and did you accomplish it?**

The short-term goal of this project includes: completing the final project design and planting plan, permitting, bidding process, purchasing plants, and initiating construction. The long-term goals of this project includes: restoring natural sediment transport processes; improving 0.6 acres of nearshore habitat for salmon, bull trout, and forage fish; improving public access to the beach and; demonstrating the value of natural shorelines over armored shorelines to thousands of visitors each year. This project completed the short-term goals except for initiating construction. Construction was originally anticipated to begin in September 2015, but had to be postponed until October or November 2015.

### **Please provide a list of measurable outcomes or accomplishments from this project (e.g. number of people trained, miles of shoreline restored, etc.):**

- Completed the project design and planting plan
- Completed the monitoring plan and Quality Assurance Project Plan (QAPP)
- Preconstruction monitoring with trained volunteers (beach seining, forage fish surveys, beach wrack/large woody debris/ insect fall-out, and intertidal monitoring)
- Completed the education and outreach plan
- Obtained all of the necessary permits (no federal permits were required)
- State Parks completed the tribal consultation
- Bid process is complete. 11 bidders registered. 8 bids were received. The contractor has been selected and contract negotiations are underway
- Construction is scheduled to begin in October or November of 2015
- Purchased all riparian vegetation and planting materials including protective fencing, deer exclusion fencing, bird netting, and other hardware associated with the plant protection
- It is anticipated that the following outcomes will occur with construction:
  1. 540 feet (1,600 tons) of rock riprap will be removed from the shoreline at Bowman Bay to restore nearshore processes, improve 0.6 acres of nearshore habitat for forage fish

spawning juvenile salmon and bull trout, and restore resilience to the system, allowing for lateral shifts in sea grass beds in response to sea level rise

2. Upland riparian planting
3. Improved public access
4. Interpretive signage to educate the public about the restoration work to the nearshore environment
5. Post construction monitoring to measure success of the restoration project

**Please list the specific deliverables associated with this project (e.g. educational/outreach materials, monitoring protocol, summary report):**

- Quarterly progress reports (4)
- Project design and planting plan
- Project photos before and after construction

**Any difficulties encountered or lessons learned during the project?**

Because no federal permits were required, there was some confusion regarding which agency was required to be the lead for the cultural and historical resources process, including tribal consultation. State Parks was determined to be the lead agency and completed the tribal consultation.

**If this task was part of an ongoing project, please provide a brief summary of the project to date, including initiation and expected completion dates, overall goals and anticipated outcomes:**

This task is part of an ongoing project that was initiated in 2014 and will continue through 2016. The project design, planting plan, plant purchase, permits and bidding process have all been completed. A contractor has been selected and contract negotiations are underway. Construction will likely take place in October or November 2015. There is also an education and outreach component that includes interpretive signage, a video generated and posted on various social media outlets and websites, and special outreach events will be scheduled.

**Were any other resources or funding leveraged for this project?**

Project funding for construction is primarily through the Washington Recreation and Conservation Office (RCO) for WDFW and Natural Resources' Marine and Nearshore Grant Program. The NWSF received grant funding from the RCO for the Education and Outreach component of the project.

**Did you work with any partners or other MRCs to carry out this project?**

Partners include: Northwest Straits Foundation and Washington State Parks.

**What are the regional cumulative significance/impacts/results of this project?**

The Bowman Bay Nearshore Restoration project is one of several armor removal projects being conducted on public lands throughout Puget Sound to demonstrate the feasibility of armor removal. It will provide for public education and outreach to address the issues and impacts of hard shoreline armor and will continue the trend towards removal over installation of hard armor. Removal of hard shoreline armor is a key action under the Marine and Nearshore strategy of the Puget Sound Action Agenda.

**Which NWSC Performance Benchmarks or PSP Near Term Actions does this project address?**

- NWSC Performance Benchmarks: Marine Habitats, Marine Life, and Education and Outreach
- PSP Near Term Actions: Nearshore Restoration and Protection

**Please attach ALL project deliverables, including:**

- Media coverage and press releases
- JPEG images of flyers, maps, outreach materials, event photos
- List of volunteers and project partners
- Training curricula/educational materials
- Roster of participants
- Monitoring protocol/data collected
- Summary report

## **Task Number: Task 6: Nearshore Restoration Monitoring**

### **Project Description:**

Skagit MRC the NWSF to conduct physical and biological monitoring of nearshore restoration sites in Skagit County before and after construction with the help of trained volunteers. Nearshore monitoring sites included: Bowman Bay, Shannon Point, and NW March's Point. Monitoring efforts within Skagit County has been a highly successful and collaborative effort. The MRC and NWSF worked closely with partners to develop protocols, monitoring plans and Quality Assurance Project Plan (QAPP) for each nearshore restoration site. Monitoring parameters include: photo points; beach profile surveys, sediment sampling, forage fish spawning surveys, nearshore fish use (beach seining), beach wrack analysis, vegetation, and percent shade.

Citizen volunteers have played a large role in successful implementation of monitoring plans and establishing baseline data. The MRC and NWSF worked collaboratively with other partners to provide training for volunteers in several monitoring parameters. 51 volunteers completed the beach seining, 10 volunteers completed the forage fish egg identification lab training, 30 volunteers completed the intertidal monitoring training, and five volunteers completed the beach wrack/large woody debris/insect fallout survey training. Volunteers contributed more than 798 hours conducting monitoring activities, project coordination, construction and maintenance of field equipment, and data entry. Quality assurance and control was conducted periodically to ensure protocols were being followed.

Baseline data has been collected and is currently being compiled and analyzed for all of the nearshore restoration sites. Preliminary beach seining results indicate a diversity of fish species caught at all nearshore restoration sites. No forage fish spawning activity has been observed at the Bowman Bay and Shannon Point restoration sites. However, the NW March's Point beach enhancement site that was completed during the fall of 2014 is now experiencing a return of surf smelt spawning beginning in July 2015 where spawning activity had ceased to exist prior to restoration. Beach seining activities to monitor status and trends of nearshore fish use throughout Fidalgo Bay is being conducted by the Samish Indian Nation and their team of volunteers. Restoration site monitoring will assist in determining if restoration actions improve the physical processes and function of the site as well as the habitat diversity as compared to pre-project conditions.

### **What was the goal of this project and did you accomplish it?**

The goal of this project was to monitor nearshore habitat restoration sites to help establish baseline conditions before restoration and identify changes that result from the project and fill data gaps in status and trends throughout Fidalgo Bay.

### **Please provide a list of measurable outcomes or accomplishments from this project (e.g. number of people trained, miles of shoreline restored, etc.):**

- 51 volunteers received training in beach seining
- 10 volunteers received training in forage fish egg identification lab training
- 30 volunteers received training in intertidal monitoring
- 5 volunteers received training in beach wrack/large woody debris/insect fallout surveys
- Over 798 hours of volunteer services contributed to nearshore monitoring activities
- Baseline conditions at Bowman Bay and Shannon Point were established prior to construction
- Forage Fish spawning activity was observed at the NW March's Point beach enhancement site after years of no activity. The NW March's Point beach enhancement project was completed in 2014
- Monitoring of status and trends of nearshore fish use throughout Fidalgo Bay is currently being

lead by the Samish Indian Nation Natural Resources Department. Monitoring commenced in March 2015 and has been continuous

**Please list the specific deliverables associated with this project (e.g. educational/outreach materials, monitoring protocol, summary report):**

- Quarterly progress reports (4)
- Summary report
- Monitoring protocols and QAQC for each site (3)

**Any difficulties encountered or lessons learned during the project?**

- It was difficult to recruit volunteers to help with the intertidal monitoring effort because many were not comfortable with species identification or the monitoring protocols even after participating in the training. The Intertidal Monitoring training will need to be modified to help build a stronger core of volunteers willing to take a lead role in the monitoring effort.
- We will need to determine the best way to share and maintain the monitoring data collected.

**If this task was part of an ongoing project, please provide a brief summary of the project to date, including initiation and expected completion dates, overall goals and anticipated outcomes:**

This task is part of an ongoing project to collect at least three years of nearshore monitoring data Skagit MRC's nearshore restoration sites to establish baseline conditions and identify changes that result from the project and fill data gaps in status and trends throughout Fidalgo Bay.

**Were any other resources or funding leveraged for this project?**

The Samish Indian Nation received grant funding to monitor nearshore fish use throughout Fidalgo Bay.

**Did you work with any partners or other MRCs to carry out this project?**

Partners included: Northwest Straits Foundation, Coastal Volunteer Partnership, Samish Indian Nation Department of Natural Resources, RE-Sources for Sustainable Connections, National Oceanic and Atmospheric Administration, and WDFW.

**What are the regional cumulative significance/impacts/results of this project?**

Nearshore monitoring conducted primarily by trained citizen scientists provides valuable pre and post construction data to assess the habitat responses of restoration actions. The data collected can assist with determining the effectiveness of a given project and will also contribute to data being collected at other armor removal and restoration sites throughout the Sound. Status and trends monitoring provides a baseline assessment of habitats and organisms in the nearshore that can be used into the future to determine if there are changes in species composition and habitat over time. All the data that is being collected is being shared with regional partners to assess trends across a greater geographic scale than the individual sites we are working on. The use of citizen scientists also helps to build awareness and understanding of the issues of Puget Sound and the recovery effort - this too is another strategy of the Puget Sound Action Agenda.

**Which NWSC Performance Benchmarks or PSP Near Term Actions does this project address?**

NWSC Performance Benchmarks: Education and Outreach, Sound Science, Marine Habitats, and Marine Life

PSP Near Term Actions: Habitat restoration and protection

**Please attach ALL project deliverables, including:**

- Media coverage and press releases
- JPEG images of flyers, maps, outreach materials, event photos
- List of volunteers and project partners
- Training curricula/educational materials
- Roster of participants

- Monitoring protocol/data collected
- Summary report

**Task Number: Task 7: Sound IQ****Project Description:**

Sound IQ is an important tool for sharing and accessing nearshore data online (<http://www.iqmap.org/SoundIQ>). It is comprised of three different modules: Map Module (displays geographic data); Search Research Results Module (records search including: beach access, boat launch, points of interest, shellfish beaches, etc); and Beach Report Module (displays additional details about the location along with photos). The project was initiated by the Island County Marine Resources Committee and has since expanded to include other counties in the Northwest Straits region including Jefferson and Whatcom Counties. Skagit MRC will participate in the expansion of the online data sharing system by preparing local datasets, coordinating with local government entities, and hosting a public meeting to share information about the system.

**What was the goal of this project and did you accomplish it?**

The goal of Sound IQ is to provide a clearing house for the MRCs to share and access data. Skagit MRC was able to collect most but not all of the existing datasets before the grant expired.

**Please provide a list of measurable outcomes or accomplishments from this project (e.g. number of people trained, miles of shoreline restored, etc.):**

- Created an inventory of existing MRC reports, datasets, and maps
- Some of the reports have been posted on Sound IQ. The datasets will take more time

**Please list the specific deliverables associated with this project (e.g. educational/outreach materials, monitoring protocol, summary report):**

- Quarterly progress reports (4)
- Summary of datasets included in the Sound IQ system

**Any difficulties encountered or lessons learned during the project?**

We did not have the datasets or GIS shapefiles for many of our reports. Most of the maps were imbedded in the reports and need to be converted.

**If this task was part of an ongoing project, please provide a brief summary of the project to date, including initiation and expected completion dates, overall goals and anticipated outcomes:**

This project is part of a larger regional project to share data with all of the other MRCs in all 7 counties. We will continue to post data and reports as it comes in.

**Were any other resources or funding leveraged for this project?**

The NWSC had some funding to continue the contract with the City of Bellingham to maintain the Sound IQ program and for Suzanne Shull to sort through and post the data with some help from the NWSC intern.

**Did you work with any partners or other MRCs to carry out this project?**

Partners: NWSC, Padilla Bay National Estuarine Research Reserve and the City of Bellingham

**What are the regional cumulative significance/impacts/results of this project?**

Sound IQ provides a clearing house for the MRCs to share and access data. Access to scientific information about local shorelines will be enhanced through the expansion of the Sound IQ online data sharing system.

**Which NWSC Performance Benchmarks or PSP Near Term Actions does this project address?**

NWSC Performance Benchmarks: Sound Science

Please attach ALL project deliverables, including:

- Media coverage and press releases
- JPEG images of flyers, maps, outreach materials, event photos
- List of volunteers and project partners
- Training curricula/educational materials
- Roster of participants
- Monitoring protocol/data collected
- Summary report

## **Task Number: Task 8: Pinto Abalone**

### **Project Summary:**

Since 1969, worldwide abalone populations have declined by more than 50% with many species now recognized as threatened, endangered, or a species of concern (Hale et al. 2012). The pinto (northern) abalone, *Haliotis kamtschatkana*, is a species indigenous to Washington waters. They are considered functionally extinct by the state of Washington because the current number and distribution of reproductive wild abalone is too low and too widely distributed to maintain a sustainable population. Abalone are broadcast spawners, meaning they release sperm and eggs into the water column, so there must be other abalone in close proximity for successful fertilization. It is believed that the remaining Puget Sound pinto abalone population is not currently dense enough to facilitate the reproduction necessary for the population to recover. The pinto abalone recovery project is a long-term collaboration between state and federal agencies, NGOs, universities, and tribes lead by the Puget Sound Restoration Fund (PSRF). As part of this ongoing collaborative effort, a total of approximately 6,500 genetically diverse hatchery-reared juvenile abalone have been introduced to six sites within the San Juan Archipelago between 2009 and 2014.

For this particular project, Skagit MRC partnered with the PSRF and WDFW to monitor growth, density, and survivorship of the nearly 1,500 juvenile abalone that were introduced at four locations around Burrows and Allan Islands in Skagit County in March 2014. An additional estimated 2,300 genetically diverse juvenile abalone seed were outplanted at four established sites around Burrows and Allan Islands and two new sites at Cypress Island during the early spring of 2015. Approximately 400 juvenile abalone were uniquely tagged with numbered, colored bee tags at the new Cypress Island outplant sites. In addition, divers surveyed the 50 abalone that were tagged in 2013 with Passive Integrated Transponders (PIT) and outplanted onto the SPMC seawater intake reef system. The purpose of the PIT survey was to collect data on long term tag recovery and survival along with continued testing of several different underwater tag readers. This data will provide valuable insight on growth, survivorship and movement of introduced abalone.

### **What was the goal of this project and did you accomplish it?**

The goal of this project was to collect monitoring data to measure the success of the most recent pinto abalone restoration efforts and conduct an additional juvenile outplant to increase the genetic diversity and build a sustainable pinto abalone population around six abalone outplant sites in Skagit County. The goal of this project was accomplished. However there is still much work to be done to build a sustainable pinto abalone population in Skagit County. To date, a total number of 8,512 individuals from 65 unique genetic families have now been introduced to eight different outplant sites throughout the San Juan Archipelago since 2009.

### **Please provide a list of measurable outcomes or accomplishments from this project (e.g. number of people trained, miles of shoreline restored, etc.):**

- Monitoring data was collected in 2015 from the most recent pinto abalone restoration efforts (ie 1,500 juvenile pinto abalone introduced to four locations near Burrows, Allan, and Cypress Islands in 2014).
- More than 2,300 additional juvenile pinto abalone were outplanted at six restoration sites at Burrows and Allan Islands and Cypress Island to increase genetic diversity and build a sustainable pinto abalone population.
- Approximately 400 juvenile abalone were uniquely tagged with numbered, colored bee tags and released at the Cypress Island restoration sites.
- An estimated 4,000 genetically diverse, disease free, juvenile abalone are currently being reared at the Mukilteo hatchery. These animals represent 11 unique families. A portion of these abalone will be available for outplanting to Skagit County restoration sites in 2016.
- Preliminary data indicates that abalone are growing larger in size and density with their numbers

doubling and spreading beyond the four original restoration plots.

- Only two live abalone were observed during the final survey for Passive Integrated Transponder (PIT) tags on pinto abalone at the Shannon Point Marine Center reef, 26 months after the initial outplant occurred.
- One pinto abalone with the PIT tag grew 46mm, increasing in shell length from 48mm to 94mm in 26 months. It also traveled almost 20 meters from where it was originally outplanted.

**Please list the specific deliverables associated with this project (e.g. educational/outreach materials, monitoring protocol, summary report):**

- Quarterly progress reports (4)
- Monitoring plan and protocols
- Summary report

**Any difficulties encountered or lessons learned during the project?**

- Although the low number of PIT tagged abalone observed during the final survey was disappointing, it was likely due to predation and emigration. More invasive survey methods covering habitat further afield from the outplant modules may have revealed additional PIT tagged abalone.
- Recent survey results indicate that tagging abalone with both the numbered/colored bee tags and with PIT tags provide the best potential for obtaining short term and long term data.

**If this task was part of an ongoing project, please provide a brief summary of the project to date, including initiation and expected completion dates, overall goals and anticipated outcomes:**

This task is part of this ongoing collaborative project. Skagit MRC started participating in this collaborative effort in 2014 and plans to continue at least through 2016 or longer pending funding. It is anticipated that additional outplanting will continue to build a sustainable population in Skagit County by increasing both the density and genetic diversity of abalone on the site.

**Were any other resources or funding leveraged for this project?**

WDFW funding was used to support the management and oversight of the pinto abalone hatchery. WDFW dive team assisted with the outplant surveys. WA Department of Natural Resources helped fund the outplanting of juvenile pinto abalone at two new restoration sites at Cypress Island.

**Did you work with any partners or other MRCs to carry out this project?**

Partners: PSRF, Western Washington University/Shannon Point Marine Center, WDFW, and WA Department of Natural Resources

**What are the regional cumulative significance/impacts/results of this project?**

PSRF leads a strong collaborative team of organizations, government agencies, universities and tribes pursuing recovery strategies for pinto abalone. Since 2003, the restoration group has been investigating tools including conservation aquaculture and captive breeding, juvenile and larval outplanting, aggregation and other strategies. There are several pinto abalone restoration sites within the San Juan Archipelago, most of which are within Skagit County. A total number of 8,512 individuals from 65 unique genetic families have now been introduced to eight different juvenile outplant sites throughout the San Juan Archipelago since 2009. Skagit MRC hopes to continue working with the PSRF and other MRCs to expand to other sites throughout the northwest straits region, particularly in San Juan County.

**Which NWSC Performance Benchmarks or PSP Near Term Actions does this project address?**

NWSC Performance Benchmarks: Marine Life and Sound Science

PSP Near Term Actions: Shellfish restoration

**Please attach ALL project deliverables, including:**

- Media coverage and press releases
- JPEG images of flyers, maps, outreach materials, event photos

- List of volunteers and project partners
- Training curricula/educational materials
- Roster of participants
- Monitoring protocol/data collected
- Summary report