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## Introduction

In 2014-15 Clallam Marine Resources Committee (CMRC) hosted, coordinated or participated in numerous educational outreach events. This report summarizes the highlights of these events including media releases, articles, produced materials and evaluation results. The 2014-15 events included:

- September 26<sup>th</sup> and 27<sup>th</sup> CMRC booth at the Dungeness River Festival.
- February 5<sup>th</sup> CMRC coordinated with Northwest Straits Foundation to offer an oil spill awareness workshop and forum.
- March 21<sup>st</sup> CMRC organized an 8-hour HazWoper training.
- March 26<sup>th</sup> Hansi Hals, Jamestown S’Klallam Tribe, talked about tribal resources sensitive to climate change.
- March 28<sup>th</sup>, April 11<sup>th</sup>, May 30<sup>th</sup> and June 13<sup>th</sup> CMRC organized oiled wildlife rescue trainings.
- June 3<sup>rd</sup> CMRC presented a moderated panel to explore the topic, “The Future of Fish.”
- July 22<sup>nd</sup> Tori Cantelow, one of the Clallam MRC 2015 summer interns, talked about the successful restoration effort of the Olympia oyster in Sequim Bay.
- August 17<sup>th</sup> public presentations by the five CMRC summer interns on their respective projects.
- August 27<sup>th</sup> Ian Miller, Washington Sea Grant, and Cindy Jayne, North Olympic Development Council, discussed sea level rise and adaptation strategies on the North Olympic Peninsula.
- September 25<sup>th</sup> and 26<sup>th</sup> CMRC booth at the Dungeness River Festival.

Each of these events are described in more details in the following sections.

## Dungeness River Festival 2014



September 26<sup>th</sup> and 27<sup>th</sup> CMRC had a booth at the Dungeness River Festival. Participating in the Dungeness River Festival is an MRC tradition, and an opportunity to connect with thousands of people. CMRC members Bob Vreeland, Jeff Ward, Brad Collins, Lyn Muench, and CMRC staff used live geoducks to communicate the importance of good habitat and clean water for healthy shellfish populations. The geoducks were provided by CMRC member Doug Morrill.

The CMRC members enjoyed the opportunity to reach out to the festival participants including 800 – 1,000 were students in the Sequim elementary and middle schools. Students visit each booth at the festival to answer a question. With a correct answer, each student receives a stamp under the question that is printed on their festival passport. CMRC members asked the question, ‘How long does a geoduck live?’ while providing live geoducks for students to examine. The question and the live geoduck provide a way to talk about water quality and other essentials of marine habitat, and the stamped passport offer a reminder to the student about both the geoduck and the importance of marine habitats.



People of all ages enjoy learning about geoducks and water quality

### Media Coverage

The Dungeness River Festival event was posted on Dungeness River Audubon and CMRC websites. The festival was also covered in the Sequim Gazette

<http://www.sequimgazette.com/news/251047081.html>

### Produced Material

None

## Evaluation Results

CMRC potential reached 2,750 festival participants of which 800 – 1,000 were grade school students.

## Oil Spill Awareness Workshop

February 5<sup>th</sup> CMRC coordinated with Northwest Straits Foundation to offer an oil spill awareness workshop and forum. The afternoon workshop focused on Incident Command and other technical issues. The evening forum sponsored by the CMRC, was geared for the general public and explored how agencies respond to an oil spill. Both events presented the results of current oil spill risk research.



## Media Coverage

The following press release was send to Peninsula Daily News.



### Be prepared for an oil spill

A free workshop on oil spill response and readiness will be held on Thursday, February 5, from 5:30 to 7:30 pm at Port Angeles City Council Chambers, 321 East Fifth Street in Port Angeles.

At the workshop you will learn:

- What happens when a major oil spill occurs near our shores
- Who is in charge when oil is spilled
- How you can help when oil is spilled

Area residents may see increased oil tanker and cargo ship traffic in the Strait. For example, a dramatic increase in tanker traffic could result from Trans Mountain pipeline proposal\* from about 5 tankers a month currently to more than 30 tankers a month.

How does an increase in tanker traffic affect the potential of a major oil spill? What will happen if a major oil spill occurs off the shores of Clallam County? How will it impact our shores and our resources? Who is in charge of spill response and what happens behind the scenes? How can citizen volunteers be involved in the clean-up?

These questions and others will be answered for community members at the workshop.

Local, state, and federal agency staff will describe their roles as a part of "Incident Command", how they plan for and make decisions during spills, and how they strive to protect valuable natural and community assets. Learn from the U.S. Coast Guard about the decisions they face when oil is spilled. Meet spill response managers from the Department of Ecology and Department of Fish and Wildlife to hear about their roles in the event of a major oil spill. Learn about the challenges spill responders would face in dealing with a spill in our community and how you can help before, during, and after a spill.

Chad Bowe of the Makah Tribe will present the recently completed Makah Tribe Vessel Traffic Risk Assessment and share its findings with the community.

To volunteer during an oil spill, you need to have received training ahead of time. At this workshop you will learn about additional opportunities for volunteer training, including upcoming workshops to prepare you to help out on the beach or behind the scenes cleaning oiled wildlife, for example.

RSVP for the February 5 workshop to Heidi Lehman, Northwest Straits Foundation at [lehman@nwstraits.org](mailto:lehman@nwstraits.org), 360-733-1725

The workshop is sponsored by the Clallam County Marine Resources Committee, the Northwest Straits Commission, Washington State Department of Fish and Wildlife, Washington State Department of Ecology, and the Washington State Department of Natural Resources. This project has been funded wholly or in part by the U.S. Environmental Protection Agency.

An article about the forum appeared in the Peninsula Daily News and a letter complimenting the Clallam MRC's forum appeared in the Peninsula Daily News' Letters to the Editor column.

<http://www.peninsuladailynews.com/article/20150217/NEWS/302179997/0/SEARCH>



## Produced Material

None

## Evaluation Results

The audience was asked to evaluate the event with the following questions:

1. Were there specific points made that you found especially interesting or thought-provoking?
2. Will you use/share information provided to you this evening?
3. Are you interested in training to respond to an oil spill?
4. Please provide your name and email address if you'd like to learn more about volunteer training to respond to an oil spill.

Six people returned evaluation forms, a 20% response rate. All respondents identified specific points that they found especially interesting. All respondents plan to share or use the information. About half were interested in training to respond to an oil spill.



A summary of the event written by Nhi Irwin, Veda Environmental, is included in Appendix A.

## HazWoper Training

CMRC provided an 8-hour training in Hazardous Waste Operations and Emergency Response (HazWoper) March 21<sup>st</sup> in the Port Angeles City Council chambers. The training was held in partnership with state and federal agencies, and nonprofit organizations. Partners included Department of Ecology, Washington Department of fish & Wildlife, Focus Wildlife, and the US Coast Guard.

The training provided basic information about who is involved in oil spill response, precautions required for those responding to a spill, and the current state of spill response preparedness. The participants learned about safety and health, personal protective equipment, site characterization, and control and spill management.



Learning the fine points of personal protective equipment at HazWoper training

## Media Coverage

The HazWoper training was posted on CMRC website.

## Produced Material

The flyer below was produced by CMRC and posted at several locations throughout Port Angeles.



**FREE OILED WILDLIFE HAZWOPER TRAINING CLASSES**

**Port Angeles Class:**  
March 27, 2015, 8 a.m. - 5 p.m.  
Port Angeles, WA, City Council  
Chamber, 321 First St. Street

**Everett Class:**  
March 28, 2015, 8 a.m. - 5 p.m.  
Everett, WA, Everett Community College,  
Jackson Conference Center, 2000 Tower St.

**FREE OILED WILDLIFE HAZWOPER TRAINING**  
*If you're interested in helping oiled wildlife response efforts here is your chance to receive training - in advance of an oil spill.*

**REGISTER FOR THE FREE TRAINING**  
Log onto [www.oilspillx101.wa.gov](http://www.oilspillx101.wa.gov). Click on "training" and follow the prompts. Please register no later than March 7th for the Port Angeles class and March 14th for the Everett class. Classes fill quickly, so register ASAP.

**RECEIVE YOUR 8-HOUR HAZWOPER CERTIFICATION**  
Upon completion, you will receive an 8-hr Hazardous Waste Operations and Emergency Response (HAZWOPER) certificate. This class satisfies the annual HAZWOPER renewal requirement.

**LEARN IMPORTANT SAFETY SKILLS**  
This one-day training will help you understand how to recognize, react, and protect yourself from the hazards associated with an oil spill. The class will cover hazardous situation recognition, personal protective equipment, decontamination procedures, and an overview of how oil spill response operations are conducted. The class also examines hazards associated with working around oiled wildlife. **NOTE:** While some of the subject matter discussed is related to oiled wildlife specific hazards, this training is not a wildlife handling or treatment course.

**CLASS AMENITIES**  
Light refreshments will be served, but you are on your own for lunch. The Port Angeles facility does not have a working surface so you may want to bring a notebook or clipboard. The Everett facility provides desks.

**QUESTIONS ABOUT REGISTRATION?**  
Contact Lisa Sobush, 360-907-7213 or [lisa491@citywa.gov](mailto:lisa491@citywa.gov). If you have questions about registration.

Logos at the bottom include: Clallam County, NOAA, Port Angeles, and others.

## Evaluation Results

More than 45 volunteers completed the HazWoper training.

## Climate Change and Tribal Resources Presentation

March 26<sup>th</sup> Hansi Hals, Environmental Planning Program Manager at the Jamestown S’Klallam Tribe, talked about a newly published report which focused on identifying tribal resources sensitive to climate change. The presentation included possible impacts to the vulnerable resources and actions to improve resiliency.

## Media Coverage

The following press release was sent to Peninsula Daily News and posted on Feiro Marine Life Center’s website.

Join us for an evening at the Feiro Speaker Series  
Sponsored by the Clallam MRC

'Jamestown S'Klallam Tribe's Long Term Climate Resilience Strategies'  
Hansi Hals, Environmental Planning Manager

Thursday, March 26, 6:30 pm

Feiro Marine Life Center  
315 North Lincoln  
Port Angeles

To promote long-term community vitality, preserve and protect cultural resources, and ensure continued economic growth it is important to incorporate climate change into the Tribe's planning efforts and operations. Hansi Hals, Environmental Planning Program Manager, will focus on a report identifying resources sensitive to climate change impacts that are important to Jamestown S'Klallam Tribe. Possible impacts to vulnerable resources and actions to improve resiliency are presented.

Hansi Hals works to improve water quality and salmon habitat and plan ahead for long-term resource sustainability. Developing the Tribe's climate change vulnerability assessment and adaptation plan was an exceptional learning experience. It took the vast concept of global emissions and refined it to a level that could be responded to. Hansi and her husband Tom Butler live in Port Angeles and are the proud parents of two high school students.

After Hansi's presentation, hear about Feiro's participation in an NSF-funded climate change education program, and also about the "Planning for climate change on the North Olympic Peninsula" project, which will develop a regional Climate Action Plan.

For more information, call Feiro Marine Life Center at 360.417.6254.

We hope to see you there!



## Produced Material

None

## Evaluation Results

Approximately 35 people attended the presentation at Feiro Marine Life Center. A large portion of the audience was students from Port Angeles High School.

## Oiled Wildlife Training



Two oiled wildlife training sessions were held in the spring of 2015 for volunteers interested in learning how to rescue and rehabilitate wildlife affected by an oil spill. Trainings focusing on Basic Intake and Stabilization were held on March 28<sup>th</sup> and May 30<sup>th</sup>. The participants learned basic bird anatomy and how to take care of oiled birds which included holding, washing, weighing, giving the birds fluids and performing a general health examination.

Trainings focusing on Search and Capture were held on April 11<sup>th</sup> and June 13<sup>th</sup>. The participants learned about search and collection planning and procedures including how to find and stalk the birds, how to team up to capture the birds using nets and how to safely hold and place the birds in transportation boxes.



Both trainings covered health & safety and general facility requirements. Each training concluded with an exercise that required volunteer participants to demonstrate lessons learned. Classroom trainings were conducted at the Clallam County Fairgrounds; the search & capture field practice was conducted at Ediz Hook.

## Media Coverage

The oil wildlife trainings were posted on CMRC website. Because the classes filled up quickly further advertising was not needed.

## Produced Material

The four flyers below were produced by CMRC and posted at several locations throughout Port Angeles.

**Oiled Wildlife Basic Intake & Stabilization**  
March 28, 2015 8:30 a.m. to 4:30 p.m.

Register online at <http://www.clallam.net/marine/resources>, or call 360.417.2361  
Maximum attendance: 25



Where: Exposition Hall, Clallam County Fairgrounds, 1608 West 16th Street, Port Angeles  
[Open a Map Online](#)

Lunch: Please remember to bring your lunch! Snacks will be provided.

Expect: Approx. 2/3 day indoors, 1/3 day outdoors.  
Classes will cover:

- Health & safety: Facility requirements.
- Bird anatomy & family characteristics, live & dead specimen practice sessions.
- Effects of oil & secondary complications.
- Hands-on bird anatomy and basic examination (breathing, pulse, eyes, temperature).
- Bird handling, intubation / hydration (optional blood drawing).

Bring:

- Your lunch
- Comfortable, casual clothes that you don't mind getting a little dirty (as in yard work wear)
- Layover clothing in case room temperature is difficult to adjust

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**Oiled Wildlife Search, Collection, & Initial Stabilization**  
Saturday, April 11, 8:30 AM to 4:30 PM

Register online at <http://www.clallam.net/marine/resources>, or call 360.417.2361  
Maximum attendance: 30



Where: Exposition Hall, Clallam County Fairgrounds, 1608 West 16th Street, Port Angeles  
[Open a Map Online](#)

Expect: About 3/4 day indoors, 1/4 day outdoors. Physically demanding; walking exercises on beach; uneven terrain. Rain or wind or shine. Dress warm & dry.

Classes will cover:

- Health & safety: Facility requirements.
- Bird anatomy & family characteristics, live & dead specimen practice sessions.
- Effects of oil & secondary complications.
- Search & collection planning.
- Search & collection procedures (netting, stalking, teamwork, gear).
- Initial "beak-to-tail" examination & treatment (breathing, pulse, eyes, temperature, etc).
- Bird handling, intubation / hydration (optional blood drawing).

Bring:

- Lunch Remember to bring your lunch! Snacks will be provided
- Hiking gear: binoculars, rain gear, sturdy boots (waterproof if possible), sunglasses, hat, layers.
- Clothes that you don't mind getting dirty (crawling over logs, sand, gravel, etc.).


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**Oiled Wildlife Basic Intake & Stabilization**  
May 30, 2015 8:30 a.m. to 4:30 p.m.

Register online at <http://www.clallam.net/marine/resources>, or call 360.417.2361  
Maximum attendance: 25



Where: Exposition Hall, Clallam County Fairgrounds, 1608 West 16th Street, Port Angeles  
[Open a Map Online](#)

Lunch: Please remember to bring your lunch! Snacks will be provided.

Expect: Approx. 2/3 day indoors, 1/3 day outdoors.  
Classes will cover:

- Health & safety: Facility requirements.
- Bird anatomy & family characteristics, live & dead specimen practice sessions.
- Effects of oil & secondary complications.
- Hands-on bird anatomy and basic examination (breathing, pulse, eyes, temperature).
- Bird handling, intubation / hydration (optional blood drawing).

Bring:

- Your lunch
- Comfortable, casual clothes that you don't mind getting a little dirty (as in yard work wear)
- Layover clothing in case room temperature is difficult to adjust

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**Oiled Wildlife Search, Collection, & Initial Stabilization**  
Saturday, June 13, 8:30 AM to 4:30 PM

Register online at <http://www.clallam.net/marine/resources>, or call 360.417.2361  
Maximum attendance: 30



Where: Exposition Hall, Clallam County Fairgrounds, 1608 West 16th Street, Port Angeles  
[Open a Map Online](#)

Expect: About 3/4 day indoors, 1/4 day outdoors. Physically demanding; walking exercises on beach; uneven terrain. Rain or wind or shine. Dress warm & dry.

Classes will cover:

- Health & safety: Facility requirements.
- Bird anatomy & family characteristics, live & dead specimen practice sessions.
- Effects of oil & secondary complications.
- Search & collection planning.
- Search & collection procedures (netting, stalking, teamwork, gear).
- Initial "beak-to-tail" examination & treatment (breathing, pulse, eyes, temperature, etc).
- Bird handling, intubation / hydration (optional blood drawing).

Bring:

- Lunch Remember to bring your lunch! Snacks will be provided
- Hiking gear: binoculars, rain gear, sturdy boots (waterproof if possible), sunglasses, hat, layers.
- Clothes that you don't mind getting dirty (crawling over logs, sand, gravel, etc.).

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## Evaluation Results

More than 80 volunteers participated in the two wildlife training sessions.



## **“Future of the Fish” Panel**

June 3<sup>rd</sup> CMRC and its partner, Feiro Marine Life Center, presented a moderated panel to explore the topic, “The Future of Fish.” Panel members included Robert Elofson of the Lower Elwha Klallam Tribe; Neil Conklin, owner of local restaurant Bella Italia; Graham Young of the UW School of Aquatic & Fisheries Sciences; Alan Cook, of Icicle Seafoods; and moderator Pete Granger, of Washington Sea Grant.

Brief opening comments were followed by an extensive and wide-ranging Q&A session. Topics ranged from sourcing seafood for local restaurants to finfish aquaculture techniques to worldwide seafood consumption patterns.



Melissa Williams, Feiro Marine Life Center Executive Director, welcomes audience members as she opens “The Future of Fish”



Pete Granger kicks off “The Future of Fish” panel discussion



Neil Conklin, local restaurateur and owner of 'Bella Italia', shares his views on the value of local food and seafood during "Future of Fish"

### Media Coverage

The event was posted on CMRC and Feiro Marine Life Center's websites.

### Produced Material

The flyer below was made by Feiro Marine Life Center and posted at several locations throughout Port Angeles.

**The Future of Fish**  
on the North Olympic Peninsula

 How many fish are in the sea? It's a question that everyone is asking, including fishers, Tribes, scientists, aquaculturists and seafood consumers. The global demand for fish is higher than ever. Some studies are reporting a 37% increase in fish consumption by 2050 that could collapse the world's wild fisheries. What does that mean for us? Join us for a unique panel discussion that will provide a local lens on the global seafood system, by bringing together multiple stakeholders from the North Olympic Peninsula who are playing different roles in harvesting or providing the seafood that ends up on our plates.



**Featured Panelists:**  
Robert Eloffson, Lower Elwha Klallam Tribe  
Neil Conklin, Bella Italia restaurant  
Graham Young, UW Aquatic & Fisheries Sciences  
Alan Cook, Icicle Seafoods  
Moderated by: Pete Granger, seafood industry specialist, WA Sea Grant

**Wednesday June 3, 2015**  
6:30pm at the Landing Mall in Port Angeles

This project has been funded wholly or in part by the United States Environmental Protection Agency

### Evaluation Results

About 40 people attended and the questions and answers sessions lasted more than one hour.



## Olympia Oyster Restoration Presentation

July 22<sup>nd</sup> Tori Cantelow, one of the Clallam MRC 2015 summer interns, talked about the successful restoration effort of the Olympia oyster in Sequim Bay. The restoration effort started in 2012 with the goal of adding 1.5 acres of Olympia oyster bed to the 35 acres already established in Puget Sound.



The project is a collaborative effort between Jamestown S’Klallam Tribe, CMRC and Puget Sound Restoration Fund. In 2015 a new project was initiated which monitors larval survival and dispersal in the bay. Future restoration efforts include assessing the feasibility of introducing Olympia oysters into Washington Harbor, including areas of the north lagoon recently reconnected to Sequim Bay and the Strait of Juan de Fuca. If successful, the project could

add 1-2 acres of new Olympia oyster beds in Clallam County.

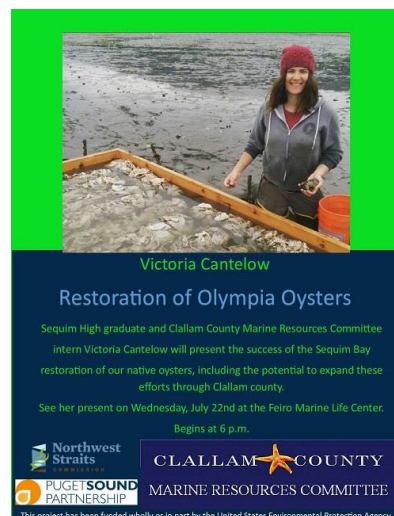
The presentation was organized by Emily Larson, another MRC 2015 summer intern, whose focus was educational outreach to Clallam County community members.

## Media Coverage

The event was posted on CMRC and Feiro Marine Life Center’s websites.

## Produced Material

The MRC summer intern, Emily Larson, made the following flyer which was distributed throughout Port Angeles and posted on CMRC website.



## Evaluation Results

Twenty-five people enjoyed the presentation and the provided refreshments. The audience was asked to take a brief survey after the presentation. The general response was that it was a thorough presentation that covered a topic that many of the participants did not know much about. Another general comment was that people did not know the importance of the Olympia oyster as a filtration system in the ocean.

## Summer Intern Presentations

The five students completed their CMRC internships August 17<sup>th</sup> by giving poster presentations for the local community at the Port Angeles Yacht Club. The 2015 intern projects included:



Marine debris removal on Ediz Hook. The intern organized two beach cleanups on Ediz Hook, The first cleanup July 5<sup>th</sup> removed 20 bags of debris primarily fireworks and the second cleanup August 2<sup>nd</sup> removed about 7 bags of debris including bottles, cups, shoes and clothes. To raise awareness of the July 5<sup>th</sup> cleanup the intern organized a float for the Fourth of July parade in Port Angeles.

Community outreach - build awareness and public support for marine recovery actions. The intern organized a short speaker series. July 22<sup>nd</sup> Tori Cantelow talked about the restoration of Olympia oysters in Sequim Bay. August 27<sup>th</sup> Ian Miller, Washington Sea Grant, and Cindy Jayne, North Olympic Development Council, talked about sea level rise on the peninsula. In addition, the intern worked on CMRC booth material for the Dungeness River Festival.



Assist in updating the Geographic Oil Spill Response Plan. The intern updated the information on the Elwha River estuary using Google Earth with a focus on the large changes in sediment distribution and type at the mouth of the river. The effort was summarized in an appendix to be included in the revised Geographic Response Plan.

Survey of invasive plants along the shore of Port Angeles Harbor. The intern worked with the Port of Port Angeles to document the distribution of invasive plant species on port property. The effort was summarized in a shoreline management plan on how to control the invasive plants.



Restoration of the Olympia oyster in Sequim Bay. For the second year the CMRC intern worked closely with Jamestown S'Klallam Tribe on the Olympia oyster restoration project. By summer 2015 the Olympia oyster bed has reached a size of approximately 0.64 acres with a density of 18 oysters/m<sup>2</sup> for a total of population of approximately 46,600 oysters.

### Media Coverage

The following press release was sent to Peninsula Daily News and the presentation event was posted on CMRC website.

#### Clallam County MRC Celebrates Student Interns

The Clallam County Marine Resources Committee invites the public to a free event to celebrate the work of its student interns. The event will be held on Monday, August 17th from 5:30 to 7:00 pm at the Port Angeles Yacht Club at 1305 Marine Drive.

Each year, the Clallam MRC utilizes part of a grant from the Northwest Straits Commission to provide learning experiences for local students interested in environmental science. This year, the MRC is sponsoring five interns: Emily Larson, Haley Gray, Kelli McHenry, Katelyn McLean, and Victoria Cantelow.

The students have been working closely with MRC members and other partners to study the environmental effects of marine debris and invasive plants on marine and nearshore ecosystems, collect baseline environmental data to support oil spill preparedness activities, participate in restoration efforts to reestablish Olympia oyster populations in Sequim Bay, and develop community involvement and outreach events to raise public awareness of existing and emerging issues and challenges that could affect local marine resources.

During the celebration at the Yacht Club, the students will present the results of their work during a poster session, and be available to answer general questions from the public. Clallam MRC members will also be present to describe the work being done locally and regionally that benefits the residents of Clallam County as part of the Northwest Straits Initiative, a Federally authorized program that promotes restoration and protection of the marine resources in the Salish Sea.

In addition to the funding provided by the Northwest Straits Commission, the work of the MRC is supported by the U.S. Environmental Protection Agency, the Puget Sound Partnership, and the Northwest Straits Foundation, the nonprofit part of the Northwest Straits Initiative.

## Produced Material

The Northwest Strait Foundation made the following flyer which was distributed throughout Port Angeles and posted on CMRC website.



Port Angeles Yacht Club | 1305 Marine Drive

Students will share their summer projects, engaging community members to address troubling issues that affect the people, species and habitats of our local marine waters, including:

- marine debris and invasive species
- Olympia Oyster restoration in Sequim Bay
- oil spill preparedness

All community members are welcome to this free event to thank Emily Larson, Haley Gray, Kelli McHenry, Katelyn McLean and Victoria Cantelow and learn more about Clallam MRC's marine restoration and stewardship projects. For more information contact Helle Andersen at [ardecoco@yahoo.com](mailto:ardecoco@yahoo.com) and 360-808-4984.

The Clallam County MRC Student Intern Program is a project of the Northwest Straits Commission and Puget Sound Partnership and is funded by the U.S. Environmental Protection Agency.

event sponsored by:



partners in marine conservation

[www.clallamcountymrc.org](http://www.clallamcountymrc.org) [www.nwstraitsfoundation.org](http://www.nwstraitsfoundation.org)



## Evaluation Results

About 30 people enjoyed the intern presentations and the provided refreshments.

## Sea Level Rise and Adaptation Strategies Presentation



August 27<sup>th</sup> Ian Miller, Washington Sea Grant, and Cindy Jayne, North Olympic Development Council, discussed sea level rise and adaptation strategies on the North Olympic Peninsula. They presented for a packed audience as the presentation had been featured on the front page of Peninsula Daily News a couple of days earlier.

Cindy Jayne started the presentation describing the process for the nearly completed climate change vulnerability assessment for the North Olympic Peninsula. Ian Miller then took over and gave a very engaging presentation about the causes behind climate change, sea level rise and the predictions for the North Olympic Peninsula focusing on Neah Bay, Port Angeles, Port Townsend and the area near the Dungeness River estuary.



This was the second and last presentation organized by Emily Larson, the CMRC educational outreach summer intern.

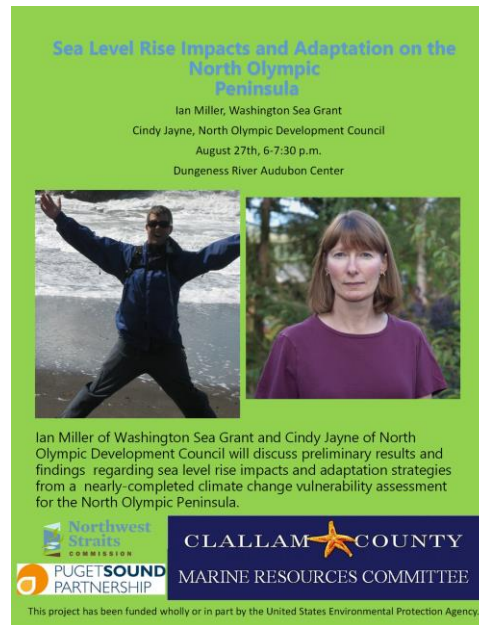
## Media Coverage

Peninsula Daily News wrote an article promoting the speaker event

<http://www.peninsuladailynews.com/article/20150825/NEWS/308259969>. The speaker event was posted on CMRC website.

## Produced Material

The MRC summer intern, Emily Larson, made the following flyer which was distributed throughout Port Angeles and posted on CMRC website.



## Evaluation Results

More than 90 people enjoyed the presentations and the provided refreshments. The audience was asked to take a brief survey after the presentation. The general response was that they thought they had a better understanding of sea level rise and how it affects their community. The audience also expressed interest in seeing more presentations like this in the community.

## Dungeness River Festival 2015

September 25<sup>th</sup> and 26<sup>th</sup> CMRC had a booth at the Dungeness River Festival. The booth displayed posters and handed out flyers about NWSC's kelp monitoring project and the Olympia oyster restoration efforts in Sequim Bay. The booth also displayed three posters made by the summer interns about marine debris, native plant removal, and Geographic Response Plan update of the Elwha estuary.



Participating in the festival provided an opportunity to connect with thousands of people. CMRC members Alan Clark, Kathy Cooper, Arnold Schoute, Jeff Ward, Bob Campbell and CMRC staff used live geoducks, Olympia and Pacific oysters to communicate the importance of good habitat and clean water for healthy shellfish populations. The geoducks were provided by CMRC member Doug Morrill and the Olympia oysters by Jamestown S'Kallam Tribe.





Similar to 2014, CMRC members enjoyed the opportunity to reach out to the festival participants including more than 900 grade school students. The student interaction with the festival booths was similar to last year. At each booth the students answered a question and with a correct answer, received a stamp in their festival passport. The CMRC question, 'How long does a geoduck live?' sparked similar conversations with the students as in 2014.

### Media Coverage

The Dungeness River Festival event was posted on Dungeness River Audubon and CMRC websites. The festival was also featured in Sequim Gazette

<http://www.sequimgazette.com/news/328874001.html>

### Produced Material

A fact sheet about the kelp monitoring effort and an update of the Olympia oyster restoration brochure were made before the festival and distributed to visitors. In addition, two posters about the two projects were made and displayed in the booth during the festival.

project update

## Kelp Protection and Recovery Local Action in the Northwest Straits

Puget Sound has many fish and diverse marine habitats that include kelp beds. The kelp-covered shoreline is important for many species of fish and invertebrates. Kelp beds are also important for the local economy. Kelp beds are also important for the local economy. Kelp beds are also important for the local economy.



Of the 23 species of large brown algae (kelp) that are native to Puget Sound, the beautiful *Neorhopile clathrata* or bull kelp is the largest. Reaching a canopy height of 100 ft or more, this is likely the one you've tangled in a propeller, mistaking it for a jellyfish, or seen it as a giant, floating giant in the water. It's a native species – pulled, not a body of water.

In response to concerns about declining bull kelp populations in some parts of the Sound, and mounting interest in kelp restoration, the Northwest Straits Commission is gathering information for use in local and regional planning and research.

Marine Resources Committee (MRC) in Clallam, Jefferson, Island, San Juan, Skagitway and Whatcom counties are field testing a local-based protocol developed by the Commission in 2014. Tracking the density and distribution of bull kelp populations. Surveys are done during the peak of annual growth in June/September.



partners in marine conservation

### what actions are we taking for kelp

- conducting citizen science surveys to track changing kelp populations.
- producing aerial images for use in conservation planning.
- collaborating with leading experts to foster a better public understanding about the importance of kelp.

As with eelgrass and other marine plant habitats, there are many factors affecting bull kelp populations. Known stressors include reduction in light (often due to overwater structures), sedimentation, excessive nutrient runoff, increases in water temperature, and competition from the invasive seaweed *Codium*.

Grading by sea urchins and kelp can also have a dramatic impact on kelp. In order to protect this valuable habitat, there is no commercial harvest in Whatcom County, the allowable recreational harvest is 10 pounds per day.

In summer months, one can sometimes see Southern Resident Killer Whales circling the outer edges of bull kelp beds in search of salmon, herring and other prey. Bull kelp provides shelter and food for an astounding variety of fish, birds and other marine wildlife.



In January 2015 the Commission launched the Salish Sea International Kelp Alliance, the outcome of discussions among researchers with state and provincial agencies and nongovernmental organizations involved in protecting and restoring kelp in Washington and British Columbia.

This group, which includes the MRCs, aims to:

- Monitor changes in local kelp populations.
- Foster awareness about the ecological and cultural importance of kelp.
- Promote citizen science contributions to regional research, and
- Provide a forum for exchanging relevant information and ideas.

Over the next year we will present and compare our work to regional forums such as the 2016 Salish Sea Ecosystem Conference, and prepare a survey plan for the 2016 field season.

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### Adding Sequim Bay to the Restoration Project

It is estimated that less than 4% of historic oyster populations of Olympia oysters remain. A key restoration project is to restore Sequim Bay, making the bay an excellent habitat for the restoration of the species.

Between 2012-2013 the Jefferson & Whatcom Tribes has added an acre and a half of Olympia oyster habitat to the 40 acres already established in other areas.

- In 2012, grow-out bags with approximately 8,000 Olympia oyster spat (larvae) were placed on Washington's Sequim Bay.
- These spat and growth is being monitored. These spat, once in being, should be compared to the current restoration project of Olympia oysters. This will show whether the Sequim Bay Olympia oyster has different genetic traits than other Olympia oyster populations in Puget Sound.
- In 2013, seeded oyster bags (PacifiC oyster spat) with Olympia oyster spat attached to it with approximately 800,000 oysters were placed on the bottom adjacent to the grow-out bags.
- In 2014, seeded oyster bags with approximately 200,000 spat were placed on an additional half acre of bottom.
- In 2015, 100 seeded oyster bags were placed on the bottom to provide substrate for native Olympia oysters to be added.

The project will be one of the first in the Northwest Straits Commission's restoration project. The project will be one of the first in the Northwest Straits Commission's restoration project.

### Sequim Bay Olympia Oyster Project

The 2013 population survey estimated that there are 40,000 Olympia oysters in the restoration area.

#### Ongoing Research

A large focus has been placed on monitoring Olympia oyster spawning in Sequim Bay, as well as continuing to survey and evaluate the survival of the existing Olympia population after spawning.

**Survey and data:**

- Spotted collectors have been placed in the bay to measure settlement and juvenile recruitment.
- A spawning pool constructed to retain water at low tide, in an effort to increase spawning events, controlled by water temperature, has been placed in the bay.

The Sequim Bay Olympia Oyster Project is a partnership of:

- CLALLAM COUNTY
- JEFFERSON COUNTY
- WHATCOM COUNTY
- ISLAND COUNTY
- SAJUN COUNTY
- SKAGITWAY COUNTY
- WASHINGTON STATE

The project is part of a larger goal for the entire Puget Sound region: restoring Olympia oyster habitat by utilizing genetically diverse hatchery propagated oyster seed and integrating various restoration materials and methods.

#### The Project Goal:

To restore an acre and a half of self-sustaining native Olympia oyster bed in Sequim Bay, and provide structured habitat for a diverse community of organisms.

### Washington's Only Native Oyster

The Olympia oyster (*Ostrea lurida*) is Washington's only native oyster, once thriving in oyster, mussels and other protected habitats of the Puget Sound, and farther north from Bays, California north to Alaska. They were an important food source for Native Americans, as evidenced by the massive shell middens built up over thousands of years. George Vancouver's expedition in 1792 reported that the shores of Discovery Bay were "strewn with oysters" with oysters.

#### What Happened?

Heavy harvesting prompted by the Gold Rush in the mid-19th century combined with decades of overfishing, pollution and habitat destruction led to a near-total loss of the oyster. By the 1930s, oyster harvests had declined to near zero. In the 1930s, shellfish growers began importing and raising oysters, later growing Pacific oysters (*Ostrea edulis*) from Japan to meet market demand for the baby shellfish.

#### Rebuilding Olympia Oyster Populations

Olympia oyster enhancement efforts in Puget Sound – ranging from seeding to habitat enhancement – have been underway since 1980. The purpose of restoring native oyster habitat in historic locations is to restore the ecosystem services that dense accumulations of oyster once provided.

The Puget Sound Restoration Fund and its partners aim to restore 100 acres of Olympia oyster habitat by the year 2020. This effort has resulted in:

- Over 40 acres of enhanced native oyster habitat.
- Over 100 partners involved with Olympia oyster restoration, and
- Partnerships with Island property owners, Marine Resources Committees, The Nature Conservancy, NOAA, Washington Department of Fish and Wildlife, commercial growers and other Tribes.

#### Planted for Filtration, Not for Food

These oysters are not being planted as a source of food for humans. They are being planted to create important habitat that naturally filters water in total flow and volume, helping to create habitat and food for many indigenous species to thrive.

Olympia oysters are filter feeders:

- Individuals are capable of filtering 8-12 gallons of water per day.
- By removing nutrients from the water, oysters reduce the frequency of algal blooms that are harmful to marine life and have caused recent shellfish closures in Sequim and Dungeness Bays.
- Olympia oyster gills filter food particles (phytoplankton) that are smaller than those taken up by Pacific oysters, so they serve a different filtration role in controlling algal blooms.

## Olympia Oyster Restoration in Sequim Bay

Local Action in the Northwest Straits



### Olympia Oyster

The Olympia oyster is Washington's only native oyster. They once thrived in coves, inlets and other protected tidelands of the Puget Sound.

Heavy harvesting prompted by the mid-19<sup>th</sup> century Gold Rush, and decades of nearshore lumber mill pollution and habitat devastation had a huge detrimental impact on this slow growing shellfish. Less than 4% of the Olympia oyster population remains.

Olympia oysters are filter feeders capable of filtering 8-12 gallons of water per day. By removing nutrients from the water, oysters reduce the frequency of harmful algal blooms.



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Jamestown S'Klallam Tribe

### What Are the Goals of the Restoration Project?

- To restore 1.5 acre of self-sustaining Olympia oyster bed in Sequim Bay; and providing habitat for a diverse community of organisms.
- Part of a larger goal to restore 100 acres of Olympia oyster habitat in Puget Sound by 2020. To date more than 35 acres have been restored.



Jamestown S'Klallam Tribe



Jamestown S'Klallam Tribe

### Restoration Efforts

2012 grow-out bags with approximately 6,200 Olympia oyster seeds were planted on the tidelands.

2013 seeded clutch bags with approximately 500,000 oysters were spread onto the tidelands.

2014 seeded clutch bags with approximately 250,000 seeds were spread on to an additional half acre of tidelands.

2015 the Olympia oyster bed has reached a size of approximately 0.67 acres with a density of 18 oysters/m<sup>2</sup>.



Jamestown S'Klallam Tribe



This project is funded by the EPA.



## Kelp Protection and Recovery

*Local Action in the Northwest Straits*



### Bull Kelp

Puget Sound has many rich and diverse marine habitats that include bull kelp, the floating seaweed familiar to boaters, divers, beachcombers and fishermen.

Bull kelp has disappeared in some areas, where in others it's thriving.

A new program to map and monitor local kelp populations is engaging volunteer kayakers around the region.



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Snohomish MRC

### What Actions Are We Taking for Kelp?

- Conducting citizen science surveys to track changing kelp populations.
- Producing aerial images for use in conservation planning.
- Coordinating with leading experts to foster a better public understanding about the importance of kelp.



This project is funded by the EPA.



Florian Graner

### Surveys

Starting next year surveys in Clallam County will be done from kayaks between late July and mid September.

During low tides volunteers will be using handheld GPS units to map the boundaries of bull kelp beds.

The surveys will be used to estimate the size and density of the kelp beds.



Caroline Gibson

## Evaluation Results

CMRC potential reached 3,000 festival participants of which more than 900 were grade school students.

## Appendix A



### **Clallam County Public Workshop Community Oil Spill Preparedness Summary Report**

**Submitted by Nhi Irwin, Veda Environmental**

The purpose of this document is to summarize the tasks completed for the Clallam County Marine Resources Committee (MRC) public workshop on oil spill preparedness held in Port Angeles on February 5, 2015. The following information is a summary of comments and recommendations as a result of the workshop.

**Task 1:** Work with the Clallam County MRC to develop an agenda focused on addressing concerns around the level of prevention, preparedness and response in the region.

**Task 2:** Work with state, federal and tribal agencies to identify topics and speakers to present on the topic of prevention, preparedness and response in the state.

**Task 3:** Facilitate public meeting on February 5, 2015

**Task 4:** Provide summary of workshop comments and recommendations for MRC action plan.

#### **Summary of results**

The workshop focused on addressing the concerns of Clallam County residents on the issue of the changing oil spill risk picture in the region, specifically around increases in vessel traffic risk. The speakers included state and federal agency and industry representatives as well as representatives from the Makah Tribal Nation. The agenda topics included:

- State Oil Spill Prevention, Preparedness and Response Program
- Federal Oil Spill Prevention, Preparedness and Response Program
- Industry Investment in Prevention, Preparedness and Response
- Vessel Traffic Risk Assessment Studies

The workshop was well attended by community members. There were approximately 30 in attendance. The workshop was formatted to start with an overview of the topics and then open discussion with questions from the audience for the speakers.

The following is a summary of some of the questions and concerns that were addressed during the workshop. We were able to get to as many of the questions as time permitted. Several follow-ups were done after the workshop through emails.

**Questions from the audience that were addressed by the speakers:**

- The vessel traffic risk assessment study did not take in consideration the increase traffic in the region as a result of the coal exports. Do you plan to include that information in the next update?
- How do locals get notified of spills?
- Is the size of tankers going to get bigger?
- The 8 and 24 hour HAZWOPER training is an annual requirement. Are there plans to have this be a 3-5 year requirement instead?
- What is the main factor in oil spill incidents?
- What is the trend in the vessel traffic in the region? When will it be enough?
- How is the Canadian VTS/AIS system comparable to the US?
- What is the status of the herring population near Cherry Point Refinery?
- Can you pull contractors from Canada?
- If it is not safe to pre-boom, at what point is it not safe to transfer?
- How much of the increase in oil by rail add to the overall risk picture – how much more?

The speakers had an opportunity to share what they see as actions and emerging issues that both community and MRC can address in order to stay involved and be proactive in the arena of oil spills. The following are recommendations made by the speakers.

**Joe Raymond, Captain of Port Sector Puget Sound, US Coast Guard**

1. We need to use technology, VTS interventions, and the various vessel traffic assessments to pinpoint potential problem areas and then work together to create collaborative solutions (such as the Rosario Call-in Point Standard of Care) to prevent future incidents.
2. We need additional spill response equipment caches and training for those areas with emerging risks of spills (e.g. the rail lines along the Columbia River).
3. We need to better target our prevention programs on the fishing and recreational vessels that are currently spilling the most oil products in Puget Sound.

**Dave Byers, Response Section Manager, Department of Ecology**

1. Communities need to stay engaged in the issues. We have a low probability of a major oil spills but the consequence is high. People need to stay aware and engaged in the issues.
2. Keep a dialog and share your concerns with local elected officials
3. Volunteer your time and get involved in programs. Register at [www.oilspills101.wa.gov](http://www.oilspills101.wa.gov).

**Don Noviello, Acting Unit Supervisor, Department of Fish and Wildlife**

WDFW is concerned about the potential impact of increasing oil movement through Washington's waters on fish and wildlife resources that are both endangered and particularly



sensitive to oil injury. These include: southern resident killer whales, northern sea otters, and sea birds such as marbled murrelets. Preventing oil spills is the most effective way to protect fish and wildlife resources followed by effective spill response.

Citizens should become familiar with the recommended mitigation measures identified in the Vessel Traffic Risk Assessment study and the recommendations made in the Washington State Marine & Rail Oil Transportation Study and make their elected official aware of their interest in having those recommendations fully implemented. This will help reduce the potential for oil spills and help mitigate their impact if they do occur.

**Laura Nelson and Keith Ledford, Makah Tribal Nation**

1. Follow the oil transportation bill in the state legislature and encourage people to contact their representative to know they support increased regulation on oil transport by rail.
2. Keep engaged in forums like this and encourage your friends and neighbors to do the same.
3. Recognize the mutual benefit of the federal, state, tribal, and local governments working in a collaborative manner with industry and NGOs to strive to maintain and improve safety regulations.

In conclusion, the workshop was both informative and valuable to both speakers and participants. The following was an article written after one of the participants attended the workshop. <http://www.peninsuladailynews.com/article/20150217/NEWS/302179997/risk-of-oil-spills-shifts-from-big-ships-to-smaller-vessels-coast>