



State of Washington
DEPARTMENT OF FISH AND WILDLIFE

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January 9, 2024

The Honorable Kevin Van De Wege
Chair, Senate Agriculture, Water
Natural Resources, and Parks
212 John A. Cherberg Building
Post Office Box 40424
Olympia, WA 98504-0424

The Honorable Mike Chapman
Chair, House Rural Development,
Agriculture, and Natural Resources
132B Legislative Building
Post Office Box 40600
Olympia, WA 98504-0600

Dear Chairs Van De Wege and Chapman,

I am writing to provide you with the Washington Department of Fish and Wildlife's annual report regarding the Coastal Marine Resource Committees (MRCs). In the 2007 and 2008 legislative sessions, the Legislature endorsed the MRC approach to implement locally directed and regionally coordinated marine resource conservation in the five coastal counties and designated the Washington Department of Fish and Wildlife as the regional coordinating entity for coastal MRCs.

The MRCs are county-based organizations that promote dialogue between different interest groups regarding marine resource sustainability and opportunities, including enhancing existing efforts to improve scientific knowledge, public understanding, conservation and restoration, and management of marine resources through non-regulatory mechanisms. They provide grants to local groups for projects that forward the MRC mission and pertain to marine habitats, marine life, marine and freshwater quality, sound science, education and outreach, and promote sustainable and resilient coastal communities.

RCW 36.125 requires the Department to report to the Legislature on Coastal MRC Program activity each December. The attached report describes more detail of this year's accomplishments and upcoming activities.

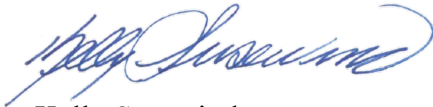
Each year the coastal MRCs do outstanding work with the limited funds they receive. This year's notable projects and accomplishments of the Coastal MRC Program include:

- Citizen science projects focused on seabirds at Quileute Tribal School
- Coastal Teacher's Workshop to help teachers implement watershed education programs
- Inventory of shellfish education resources and performance tasks by discipline and grade with the Pacific Education Institute
- Annual Marine Resource Committee Annual Summit in Westport attended by all coastal MRCs and focused on (1) increasing awareness, marketing, and investments of Washington's fresh seafood and (2) European Green Crab

- Science Conference hosted by the Pacific County MRC with a diverse group of speakers and stakeholders
- Wahkiakum County MRC provided opportunities for Marine Science Education field trips
- Raised general awareness of marine and estuarine issues through MRC-sponsored newspaper publications, creation of educational signs, and other outreach and communication activities

For more detailed information, please contact Chris Waldbillig, Coastal Restoration Coordinator, at (360) 480-8128 or Chris.Waldbillig@dfw.wa.gov.

Sincerely,



Kelly Susewind
Director

Coastal Marine Resources Committees Program

2024 Report to the Legislature



Washington
Department of
**FISH &
WILDLIFE**

Dec. 31, 2023

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Cover photo by Kay Gaensler

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Acknowledgements

This report summarizes the hard work of the Coastal Marine Resources Committees (MRCs) Program. We acknowledge the coordinators of MRCs in each county for their organization, vision, dedication, and facilitation skills. Coordinators include: Tami Pokorny (Jefferson County), Kristina Hollatz and Hailey Smith (Grays Harbor County), Alexander Birk (Pacific County Conservation District), and Carrie Backman and assistant coordinator Shari Parker (WSU Wahkiakum County Extension).

We acknowledge the continued support of the Washington State Legislature and the Washington State Department of Fish and Wildlife. WDFW Region 6 Director Chris Conklin, along with WDFW staff involved in fiscal, budgets, and contracts, Janice Jackson and Tiffany Hicks, are also acknowledged for their help and support in making the Coastal MRC Program run smoothly. We would also like to recognize that sections of this report were originally written by F. Brie Van Cleve and Jenna Jewett in prior reports to the Legislature.

Department Staff

Chris Waldbilig, Coastal MRC Program Coordinator, Habitat Program

Overview

Goal

The goal of the Coastal Marine Resources Committees Program is to understand, steward, and restore the marine and estuarine ecological processes of the Washington coast in support of the ecosystem health, sustainable marine resource-based livelihoods, cultural integrity, and coastal communities.

Overview

Washington's coastal and ocean resources provide vital economic, recreation, transportation, and cultural benefits to coastal and state residents. Identifying and implementing realistic, effective, and efficient solutions to the unique conservation and management issues of Washington's outer coast requires utilizing the available knowledge and creative approaches of coastal citizens and leaders. Citizen-based Marine Resources Committees (MRCs) are an effective mechanism to harness the dedication, innovation, and wisdom of coastal residents.

MRCs are county-based, volunteer committees that carry out local projects and activities and advise counties on marine resource issues. MRCs are composed of representatives from the scientific community, local and tribal governments, local citizens, and economic, recreational, and conservation interests.

The Washington State Legislature endorsed and funded the MRC model in the 2007 and 2008 legislative sessions. As directed by RCW 36.125, the Washington Department of Fish and Wildlife (WDFW) created the Coastal MRC program. The program provides support for the development, administration, and coordination of the coastal MRCs and their projects. All the coastal counties (Clallam and Jefferson are one MRC, Grays Harbor, Pacific, and Wahkiakum) have created unique MRCs and currently implement community-based projects.

Coastal MRC activities are guided by a set of interim program priorities, benchmarks, and a program goal statement developed by the Coastal MRC workgroup in 2009. These measurements were developed to ensure coordination among MRCs, and to provide accountability to WDFW and the Legislature. The program priorities are to: 1) establish and maintain coastal MRCs, 2) complement existing efforts, 3) build participation, 4) utilize science, and 5) promote healthy communities and resources. The program benchmarks focus on the following broad categories: 1) marine habitats, 2) marine life, 3) marine and freshwater quality, 4) sound science, 5) education, and 6) coastal communities. The following pages summarize each of the MRC activities during 2023 with the respective benchmarks that their activities address.

Program Actions

Allocate programmatic funding

In 2021, WDFW awarded each county MRC \$77,000 for operational and project activities, for the 2021-2023 biennium (July 1, 2021 through June 30, 2023). At the start of the 2023-2025 biennium, WDFW again awarded the initial administration funds for each MRC; contracts were developed that included a Scope of Work and two-year administration schedules.

MRCs receive operational funds at the start of a new fiscal year on July 1, and start the solicitation of project proposals for the fiscal year. After projects are submitted, reviewed, and ranked, a decision is made on how much funding is awarded to each project. Applicants submit a Scope of Work and Deliverables to the MRCs coordinators. WDFW amends the contracts with each MRC to include the projects or tasks with deliverables and due dates. Because this report spans two separate biennia, it will include the closing details of the 21-23BN and the beginning of the 23-25BN. Therefore, some projects may have been covered in previous annual reports, some projects may be complete, and others are just getting underway.

Regional performance benchmarks

WDFW staff measure MRC activities against regional performance benchmarks throughout the year. The MRC benchmarks were developed by the Coastal MRC Work Group in 2009 to account for MRC activities. They focus on marine habitats, marine life, marine and freshwater quality, sound science, education and outreach, and coastal communities. At the conclusion of each state fiscal year, MRCs are required to report annual activities and projects.

Coordinate MRC projects to complement regional priorities

WDFW reports monthly to the State Ocean Caucus, the group designated to oversee implementation of the Washington Ocean Action Plan. Program staff continue to build awareness within WDFW and with other natural resource agencies regarding availability of MRC volunteers for marine resource projects on the coast. The MRCs report regularly on their activities to the Washington Coastal Marine Advisory Council to coordinate project actions.

Coordinate and promote interaction among Coastal MRCs and other similar groups on issues of common interest

WDFW and MRC representatives continue providing briefings to county and state officials, the Northwest Straits Commission, the Washington Marine Debris Task Force, and the Olympic Coast National Marine Sanctuary Advisory Council when appropriate.

WDFW will redevelop and maintain a website dedicated to the Coastal MRC program providing updates and announcements for upcoming activities with links to current individual MRC websites that contain contact information for county-based coordinators.

Program Priorities

The following priority statements or operating principles, developed and adopted by the Coastal MRC Program Work Group, are used to guide the development of the Coastal MRC Program, and focus the work of the coastal MRCs.

Establish MRCs

- Establish coastal MRCs to provide a non-regulatory mechanism to discuss and develop solutions for issues facing coastal resources and communities
- Ensure MRC and program accountability and alignment with regional priorities by measuring performance against program benchmarks
- Act in consult with tribal and state co-managers
- Ensure that local residents are selected and participate in MRCs

Complement Existing Efforts

Complement and support ongoing efforts to improve scientific knowledge, public understanding, conservation and restoration, and management of marine resources.

Build Partnerships

- Coordinate and communicate with MRCs, the Northwest Straits Commission, tribal and state co-managers, local, regional, federal, and other stakeholders and organizations about local and regional projects and issues
- Expand partnerships with tribal governments and continue to foster respect for tribal cultures and treaties

Utilize Science

- Conduct scientific investigations and monitoring efforts to fill key gaps in knowledge about valuable coastal species and habitats (e.g., ecosystem-based management)
- Monitor and assess impacts of coastal and marine development

Promote Healthy Communities and Resources

- Promote healthy coastal communities through improved infrastructure and sustainable practices relating to marine resources
- Promote marine resources stewardship through community volunteer opportunities and public education efforts
- Promote coastal hazards awareness and community preparedness through education and outreach programs
- Support conservation and restoration of coastal habitats and marine populations to healthy and sustainable levels and prevent future state and federal species listings
- Conduct and implement strategic planning to identify marine resource-related threats to and opportunities for sustainability
- Assess sources of and reduce marine and estuarine pollution and debris

Program Benchmarks

Performance benchmarks are used by the Coastal MRC Program to account for MRC activities and achievement in discrete but broad categories.

Marine Habitats

Understand, steward, and restore marine, estuarine, coastal, and nearshore habitats, prevent loss, and achieve a net gain of healthy habitat areas by:

- Enhancing ecosystem and community resilience by protecting and restoring marine and coastal habitats
- Designing and implementing local and regional projects that restore natural processes
- Surveying and mapping marine and estuarine resources to better define physical and biological characteristics of marine habitats
- Making scientifically based recommendations about management tools to protect marine and estuarine habitats
- Understanding and evaluating erosion and promoting sound sediment-management practices

Marine Life

Understand, steward, and restore marine and estuarine populations to healthy, sustainable levels by:

- Maintaining the health of marine and estuarine species and preventing further Endangered Species Act (ESA) listings while increasing access to marine resource enjoyment and harvest where feasible
- Balancing protection focus on ecosystem versus target species
- Identifying and carrying out actions to protect and restore species of interest and concern
- Designing and implementing projects to prevent the introduction and spread of invasive species
- Making scientifically based recommendations about management tools for species recovery

Marine and Fresh Water Quality

Understand, steward, and restore marine and estuarine water quality of Washington's coast and coastal embayments by:

- Conducting or supporting science to fill critical data gaps
- Working to reduce pollutants
- Promoting management actions that would restore degraded water quality and contaminated sediment
- Working with and training students and citizens to conduct water quality monitoring

Sound Science

Collect high-quality data and promote its transparent presentation, acceptance, and timely dissemination by:

- Utilizing established scientific protocols for the collection, analysis, and use of data that support the Coastal MRC Program goal
- Identifying gaps in data and working to fill those gaps by promoting the development of comprehensive, accessible marine resource databases
- Promoting peer-reviewed science

Education and Outreach

Promote stewardship and understanding of coastal estuarine and marine resources through science-based education and outreach by:

- Informing the public about threats to living marine resources and coastal communities and presenting them with practical measures they can take to prevent further harm, especially regarding land use, erosion control, and individual homeowner decisions
- Informing citizens and governmental agencies about ocean energy activities and associated effects on coastal communities
- Coordinating outreach and education programs with other organizations, including local community colleges, and evaluating their effectiveness
- Engaging the public in active stewardship opportunities through community workshops, restoration projects, and educational programming
- Translating and disseminating scientific information about the status of Washington's coastal habitats, resources, and communities to regional policy makers, resource managers, and the public in a timely manner
- Expanding partnerships with tribal governments and continuing to foster respect for tribal cultures and treaties
- Striving to maintain and improve coordination and communication among stakeholders and all managers

Coastal Communities

- Promote sustainable and resilient coastal communities by:
- Supporting sustainable marine resource-based industries
- Supporting cultural and economic integrity of coastal communities
- Encouraging citizen participation in local and governmental decisions regarding marine resources
- Engaging in activities aimed at hazard prevention and preparedness, e.g., education
- Increasing sustainable access to marine resource enjoyment and harvest



Figure 1. Oyster dredge in Willapa Bay. Photo provided by WDFW staff.

North Pacific Coast

Mission

The North Pacific Coast Marine Resources Committee will actively promote ecosystem resilience through understanding, conserving, and restoring our marine resources. This will be accomplished through research, education, community engagement and advocacy for our shared marine environment and the sustainability of its coastal communities.



Members

Tami Pokorny, Jefferson County, Coordinator

Jill Silver, Jefferson County Citizen

Rod Fleck, City of Forks

Jennifer Hagen, Quileute Tribe

John Hunter, Clallam County Citizen

Alice Ryan, Clallam County Citizen

Rebecca Mahan, Clallam County

Katie Krueger, Clallam County Citizen

Wendy Feltham, Jefferson County Citizen

Eileen Cooner, Jefferson County Citizen

Julie Ann Koehlinger, Hoh Tribe

The North Pacific Coast MRC has the 23-25 BN Administration contract in place and is working on a project list and deliverables.

Program Highlights

Beached Birds Tell a Story of Citizen Science to Students

As a classroom science teacher at Quileute Tribal School, Alice Ryan is trying to bridge the gap between science in the classroom and science that has an impact beyond these four walls and has more relevance to “real life.”

During the COVID-19 pandemic, Alice jumped into [Coastal Observation and Seabird Survey Team \(COASST\)](#) beached bird surveys. A COASST beached bird survey requires that adults travel to their designated beaches once a month to make observations as they walk along the beach, recording various data points including any beached (dead) birds. Observers take photos, measure the birds, and use a bird guide to identify each species. The data is then collected and sent to COASST.

Alice brought her students out with her on monthly beach walks to teach them about the surveys. COASST received funding from the North Pacific Coast Marine Resources Committee to develop a program to encourage and support high school students to complete their own surveys. Last summer, two seniors from the Quileute Tribal School applied and were accepted to the program. Alicia Black and

Debbie Sheriff were the first two high school interns for COASST and began to complete monthly beached bird surveys. These tasks addressed the program benchmark for Marine Habitats.

Seabird Survey and Artificial Lights at Quileute Tribal School

Teacher Alice Ryan continued the work above in her classroom at Quileute Tribal School when seabirds began to appear dead or stranded in a courtyard on campus. Because of their experience with COASST, they knew where to turn when the birds started to appear. Alice’s Marine Science Class quickly sprang into action to learn more about the birds, mostly storm petrels, and why they were showing up so far above the tsunami inundation zone.

The students initiated a Monday “bird walk” and put out a call to all staff and students to notify the Marine Science Class if an injured or dead bird was located on campus. The class received permission from COASST to collect birds. Alice taught the students how to identify the birds that were found and how to record their data. COASST staff member Jackie Lindsey also provided training on how to preserve the best of the deceased birds for future teaching and classes.

Appropriately trained and prepared, students formulated hypotheses on what was causing the birds to appear at the school. Students noted that the school was lit up like a football stadium at homecoming every night during the beginning of the school year. This included the courtyard where most of the birds were appearing, which is surrounded by glass windows and is open to the sky in the center. Students hypothesized that it was the lights that attracted the birds. Additionally, they learned that storm petrels are unable to take off from the ground. They also hypothesized that most of the birds were juveniles that had not yet learned the survival skills to overcome such man-made challenges.

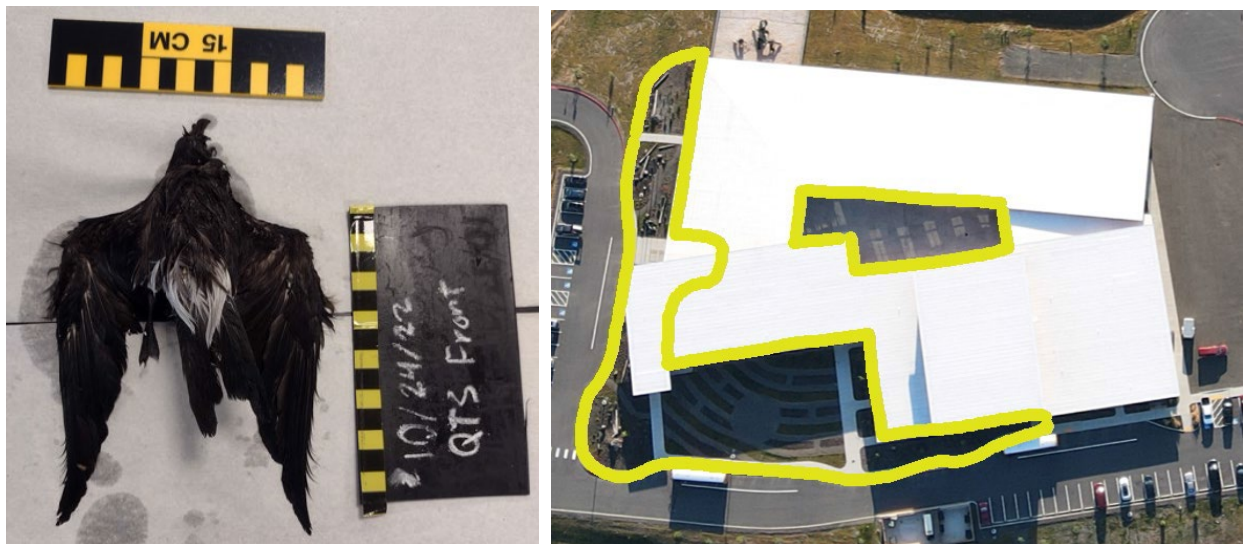


Figure 2. Left: Storm petrel found by students on the Quileute Tribal School campus. Right: Overhead shot of the Quileute Tribal School with bird survey area outlined in yellow.

The class collected data on the birds that were found. The first four birds were all storm petrels, found in September and October. In addition to the storm petrels, songbirds, a Red Phalarope, a wader, a hummingbird, and gulls were also found.

The lights at the school were turned down around the end of October and beginning of November. After the lights were turned down, the class no longer found any storm petrels in the courtyard. Alice plans to continue the bird survey with the following year’s Environmental Science Class.

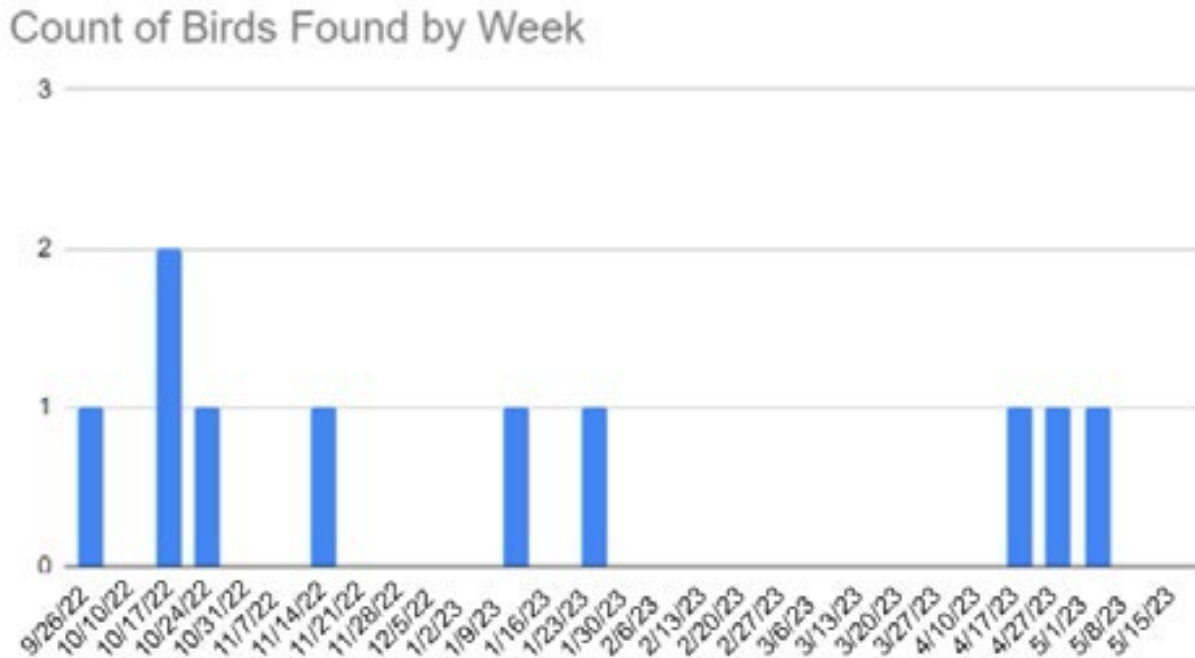


Figure 3. Number of birds discovered trapped or dead at the new campus each week that the bird walk was conducted. Graph provided by: Quileute Tribal School Marine Science Class 2023.

Coastal Teachers Workshop: “Muddy Boots in Your Watershed”

In late June 2023, Twin Harbors Waterkeeper convened a three-day teacher workshop on the Washington Coast near Ocean Shores. Sixteen teachers in coastal watersheds from Willapa Bay to La Push and from schools including Oakville, Hoquiam, Aberdeen, and Grand Mound attended. The goal of the workshop was to build capacity and strengthen existing partnerships so teachers can begin implementing watershed education programs that include experiential learning in their watersheds. The three-day workshop included presentations and field work “from the headwaters to the ocean.” The goal was to engage teachers in local, relevant sciences, dynamic field experiences, and a connected community.

The teachers visited a floodplain restoration site in the upper Quinault River watershed to learn about engineered log jams (ELJs) and water quality. A series of ELJs were installed to increase channel complexity for habitat benefits – especially for salmon. As part of this experience, monitoring stations were set up to demonstrate how to collect water quality data and identify fish and macroinvertebrates. The workshop was designed so that teachers had the opportunity to meet local resource managers and specialists, so that they can bring hands-on learning into their classrooms.

For example, Washington rivers experienced critical low summer flows. During the workshop, teachers learned lessons on how important cold, clean water flow is to coastal rivers. Impaired habitat, warm water temperatures, lack of riparian buffers, stormwater pollution, and fish barriers are all factors that contribute to drastically reduced populations of salmon and steelhead.



Figure 4. Clockwise from top left: 1. WDFW Fish and Habitat Biologists Curt Holt and Megan Tuttle talk about salmon species and habitat restoration in the Quinault River. 2. Teachers learned how to use a pH test kit, a dissolved oxygen meter, a secchi tube, and a flow meter. 3. Biologist and naturalist extraordinaire Alan Ramer led a beach walk on the second evening. 4. Christine VanDeen (right), Education Associate at Olympic Coast National Marine Sanctuary, demonstrates the use of a plankton net to identify phytoplankton.

Table 1. 2023-25 North Pacific Coast MRC Projects by Benchmark.

Project Name	MRC Award	Marine Habitats	Marine Life	Marine and Fresh Water Quality	Sound Science	Education & Outreach	Coastal Communities
MRC Coordination and Operations	\$75,331.00						
University of Washington – Geological Hazards and Rapid Terrace Erosion at Rialto Beach, Olympic National Park, WA	\$28,884						
University of Washington – Dead Bird Citizen Science for Youth Community	\$11,951						
Twin Harbors Waterkeeper – Remote Cleanups on Olympia National Park Beaches	\$2,657						
Twin Harbors Waterkeeper – Micro-plastic Education and Outreach for Youth on the North Pacific Coast	\$3,687						
National Marine Sanctuary Foundation – MATE Olympic Coast Remotely Operated Vehicle (ROV) Competition: Taking Blue Tech to New Depths	\$1,300						
Washington CoastSavers – Rebuilding of Online Volunteer Registration System and Expanding Outreach	\$5,390						
Seattle Aquarium – Remotely Operated Vehicle (ROV) Testing and Artificial Intelligence (AI) Analyses	\$24,800						
From Headwaters to the Ocean - Muddy Boots in Your Watershed for Coastal High School Students	\$14,076						

2023 Project Partners

COASST

Washington CoastSavers

Olympic Coast National Marine Sanctuary

Olympic Coast NMS Foundation

Clallam County

Jefferson County

City of Forks

Makah Tribe

Quileute Tribe

Hoh Tribe

Quileute Tribal School

Forks Chamber of Commerce

Pacific Education Institute

University of Washington Sea Grant

University of Washington Engineering/Geology

10,000 Years Institute

Forks High School

Coast Salmon Partnership

North Pacific Coast Lead Entity

Olympic National Park

Olympic Discovery Trail

Northwest Straits Commission

Twin Harbors Waterkeeper

Other Marine Resource Committees

Grays Harbor County

Mission

The mission of the Grays Harbor County MRC is to understand, steward, and restore the natural function and economic vitality of the marine resources in Grays Harbor County for all citizens through research, action, and outreach and education.



Members

John Shaw, Chair, Westport, Local Citizen
Kyle Deerkop, Vice Chair, Pacific Seafoods
Arthur “RD” Grunbaum, Local Citizen
Garret Dalan
Kevin Decker
Megan Tuttle, WDFW
Katy Wrubel

Sarah Bisson, Ocean Shores Citizen
Scott Mazone, Quinault Indian Nation
Michael Bruce, Westport Seafoods
Julie Nelson, Grays Harbor College
Molly Bold, Port of Grays Harbor
Hailey Smith, Coordinator, Grays Harbor
Kristina Hollatz, Assistant, Grays Harbor

Program Highlights

Elections

Chair and Vice Chair elections were held, and John Shaw was elected as the new Chair of the MRC. Kyle Deerkop was elected as Vice Chair. WDFW Habitat Biologist Megan Tuttle was appointed as the state interest. The remaining board members from 2022 returned for 2023.

Hailey Smith is the new MRC coordinator as of August 2023 and Kristina Hollatz continues to assist where needed. Monthly meetings are still being held virtually with the consensus of the MRC board.

The Grays Harbor MRC has the 23-25 BN Administration contract in place and is working on a project list and deliverables.

PEI Shellfish Education Resources Inventory and Performance Tasks

The Pacific Education Institute (PEI) collected lesson plans, curriculum, and resources related to shellfish, vetted the resources, and identified which grade levels they are appropriate for and which Next Generation Science Standards (NGSS) Disciplinary Core Ideas (DCI) they meet. PEI discovered that the East Coast has a great deal of educational material around the oyster fishery. Some is relevant to the West Coast, but not all. PEI found that most of their local educational resources focus on Puget Sound habitats and impacts. The final document includes lesson plans and resources for early elementary, upper elementary, and secondary schools. It also lists the lessons and curricula by NGSS Disciplinary Core Ideas which is useful for educators. Resources that create economic and cultural connections were

also selected. The selected resources link to PEI’s relevant career cards and a Google document with community partners and potential field experiences listed for educators.

PEI English Language Arts (ELA) and Math Performance Tasks

PEI recruited a writing team to create four performance tasks relating to shellfish and asked teachers to pilot the tasks with their students for feedback. The teachers provided revisions that were incorporated into the final performance tasks. PEI will be publishing these on the Grays Harbor County MRC website soon. We recommend creating a link to PEI’s webpage for performance tasks from the MRC web page.

Table 2. PEI English Language Arts and Math Performance Tasks produced by grade level, discipline, and topic.

Grade Level(s)	Discipline	Topic
5	ELA	Harmful Algal Blooms
5	Math	Green Crabs
9-12	ELA	Ghost Shrimp
9-12	Math	Ghost Shrimp

Coastal Interpretive Center-Tidal Pool and Coastal Erosion Monitoring

The tidal pool and coastal erosion monitoring (TPACEM) project was created and hosted by the Coastal Interpretive Center in partnership and through funding by the Grays Harbor County Marine Resources Committee. The TPACEM project is in Ocean Shores, Washington. Tidal pools are complex ecosystems defined by extreme changes in the environment. Tides come in and go out alternately inundating and exposing the pools daily. Tidal pool biodiversity and function are threatened by invasive species, disease, and coastal erosion. Coastal erosion is common and expected to increase with the changing climate. Ocean Shores has two easily accessed tidal pool areas: Damon Point and the North Jetty. Residents and visitors alike enjoy visiting these pools. The aim of this project is to create, organize, and conduct a citizen science project surveying the biodiversity of these pools and monitoring the condition of pools and coastal erosion. The focus for year one of the TPACEM project was to engage volunteers in monitoring sea star populations, estimate biodiversity for sampling sites, and establish baseline beach erosion and water quality conditions. Monitoring was done only at Damon Point so that methods could be tested prior to use at the more challenging and dangerous North Jetty Park tidal pool system. Major work and outcomes of this project include:

- Four citizen science monitoring events involving 14 volunteers and two staff were held during winter, spring, and summer of 2023: three sea star surveys and one beach erosion and water quality event.
- Databases for each type of monitoring were created and populated with the data gathered by volunteers and were analyzed by staff of the Coastal Interpretive Center.
- A total of 1537 ochre sea stars were identified and counted. Colors were noted with the orange color being more prevalent at Damon Point. Sea star populations varied over the monitoring period with the highest number of sea stars monitoring during May. Four individuals were found

to have the sea star wasting disease and the incident was reported to Washington Department of Natural Resources and WDFW.

Marine Resource Committee Annual Summit

The Grays Harbor MRC hosted the annual summit in October 2023 in Westport, Washington. It was well attended by all four coastal MRCs and featured updates from each group over the last year including a presentation from Ian Miller and other scientists on the Cascadia Coastlines and Peoples Hazard Research Hub, and a walking tour of local hazards and coastal management. Day 2 was dedicated to increasing awareness, marketing, and investments of Washington’s fresh seafood and dining at local restaurants that also feature “Westport Fresh” seafood. Washington Sea Grant presented their seafood market research survey findings, which showed that consumer preference is driven by price and freshness. A discussion followed on necessary seafood infrastructure, topics for future collaborative communications, and how to increase WA seafood visibility. One theme that emerged from the conversation was the need for marketing that frozen is fresh and local is sustainable. The final day was focused on European Green Crab (EGC) on the Washington Coast and what WDFW, the Makah Tribe, Washington Sea Grant, the shellfish industry, and other partners are working to achieve. Finally, a group of 20+ attendees boarded a commercial oyster dredge and transited Grays Harbor to South Bay to see Pacific Seafoods crew pulling and setting EGC traps and observe how crabs are removed, measured, and sexed. An EGC biologist was on hand to answer questions.



Figure 5. Left: MRC summit attendees aboard Pacific Shellfish's oyster dredge on a beautiful October day on Grays Harbor. Right: Kyle Deerkop, Pacific Shellfish, showing a bag of European Green crab to MRC summit attendees.

Table 3. 2023-25 Grays Harbor County MRC Projects by Benchmark.

Project Name	MRC Award	Marine Habitats	Marine Life	Marine and Fresh Water Quality	Sound Science	Education & Outreach	Coastal Communities
MRC Coordination and Operations	\$40,000						
PEI Shellfish Educations Resources Inventory and Performance Task (along with Pacific MRC)	\$8,836						
Westport Marina Waterfront Educational Signage	\$3,500						
Grays Harbor Stream Team Outreach	\$12,875						
Coastal Interpretive Center	\$18,956						

2023 Project Partners

CoastSavers

Coastal Interpretive Center

Montesano School District

Aberdeen School District

Washington State University Extension

Pacific Education Institute

Pacific and Grays Harbor Conservation Districts

Quinault Indian Nation

Lake Quinault School District

Port of Grays Harbor

Pacific County

Mission

The Pacific County Marine Resources Committee serves as a steward for the marine and estuarine resources in our county by facilitating science-based policies, research, and education that enhance the sustainability of the economy and ecology of our communities.



Members

Mike Nordin, Chair

Jackson Blalock, Vice Chair

Jack Berryman

Ann Skelton, Local Citizen

Tom Kollash

Larissa Pfleeger

Richard Ashley

Dale Beasley

Key McMurray

Brian Sheldon

Lauren Baurenschimdt, WDFW

Alexander Birk, Coordinator

The Pacific MRC created subcommittees to work on important topics like revising MRC bylaws and implementing a code of conduct for meetings which were outdated. They also restructured board seats to be more effective and inclusive to the citizens of the county.

Program Highlight: Pacific MRC Science Conference

The science conference was held May 20 and went as planned with a diverse group of speakers and local stakeholders in attendance, 48 people total. The Pacific MRC will continue to work to improve the experience and value of the topics at this conference in future years. Conference topics included:

- Coastal Bird Populations (Julia Parish)
- Sharks and the Big Fish Lab in Newport, OR (Jessica Schulte)
- European Green Crab Trapping Update
- Upwelling Off the Coast (Parker MacCready)
- Updates on the Shoreline Master Program
- North Willapa Erosion Master Plan
- Baker Bay Sea Level Rise (Jackson Blalock)
- Local Legislative Updates (Mike Nordin)
- Burrowing Shrimp Update (David Beugli)
- Ecosystem Based Management (Washington Sea Grant)
- Integrated Pest Management
- Shellfish and Cranberries (WSU Extension: Laura Croft)
- Wildlife Refuge Project Updates (Jackie Ferrier)

Table 4. 2023-25 Pacific County MRC Projects by Benchmark.

Project Name	MRC Award	Marine Habitats	Marine Life	Marine and Fresh Water Quality	Sound Science	Education & Outreach	Coastal Communities
MRC Coordination and Operations	\$40,000						
Washington Coastal Marine Advisory Council Representation (WCMAC)	\$800						
Beach Cleanup, Grass Roots Garbage Gang	\$5,570						
PEI Shellfish Education Resources Inventory and Performance Task (along with Grays Harbor MRC)	\$3,000						
Science Conference	\$6,000						
Shoalwater Bay Indian Tribe Willapa Bay European Green Crab Removal and Population Monitoring	\$3,500						
Pacific County Vegetation Management Willapa Bay European Green Crab Removal	\$10,000						

2023 Project Partners

Grass Roots Garbage Gang

Sea Resources

Port of the Peninsula

CoastSavers

Pacific County Drainage

Pacific Education Institute

Paul Leback

Chris Jacobsen

Pat Schenk

Pacific County Vegetation Management

City of Raymond

Ocean Beach

Pacific County School Districts

Wahkiakum County



Mission

The Wahkiakum County Marine Resources Committee’s mission is to understand, steward, and restore the marine and estuarine ecological processes of the Washington coast in support of ecosystem health, sustainable marine resource-based livelihoods, cultural integrity, and coastal communities.

Members

Carol Ervest, Chair

Sol Mertz, Vice Chair

Brett Deaton

Terry Ostling

Mick Backman

Paula Culbertson

Todd Souvenir

Sam Shogren

Jeanne Hendrickson

Carrie Backman, Coordinator

Shari Park, Assistant Coordinator

The Wahkiakum County MRC has the 23-25 BN Administration contract in place and has selected a suite of projects allocating most of their \$37K in is working on a project list and deliverables.

Program Highlights

Marine Science Education Field Trips

An MRC Marine Science Educational Grant gave students the opportunity to learn about the influence of Columbia River ecosystems and its benefits to Washington’s economic, cultural, and historical lives in the Pacific Northwest. This project focused on educating high school students and familiarized them with issues related to healthy marine and aquatic ecosystems. It provided the students with a solid foundation for these complex issues with the intent to prepare them to make well-informed decisions on them in the future. This project encouraged them to think about the challenges they will face in the future, understand the importance of estuarine health for future generations, and helped them see the positive impacts they can make by protecting this natural resource that all Washingtonians depend on.

These educational activities helped students view fisheries and estuary issues through a variety of social, economic, and environmental viewpoints. These viewpoints challenge them to examine the issue with

critical-thinking skills and multiple perspectives, thereby giving them the skills to make well-informed decisions in the future.



Figure 6. Zach Forster, a WDFW shellfish biologist stationed out of Nahcotta, talks about the biology of Willapa Bay near the North Nemah to the group of WHS students, with Jerzie Coleman (Class of '21) front and center. Subjects included manila clams, oyster propagation, invasive species (i.e., European green crabs and ghost shrimp), the changing ecosystem on the bay, and future WDFW projects on adjoining properties. Photo provided by Julie Johnson.



Figure 7. Jeff Rooklidge and Keegan Johnston (Class of '23) conduct a ghost shrimp survey above the North Nemah River on Willapa Bay. The tidelands here are owned by WDFW, and are a favorite for field trips, steamer clam raking, and green sturgeon education. Photo provided by Jeff Rooklidge.

Fish Preservation Workshops

Five fish preservation workshops were held, two at Johnson Park in Rosburg and three at the Grays River Grange. Both kitchens were made available without charge. 250 pounds of headed and gutted frozen

salmon were processed by 26 participants resulting in 160 pints of salmon. Attendees learned about pressure canning of salmon, including following instructions for use of a pressure canner, and choosing to reference USDA sources for processing, resulting in a good shelf stable source of protein.

Other methods of preservation including salting, pickling, and smoking were demonstrated and discussed. Washington State University materials were provided on these topics. A couple of the classes were introduced to pin bone pulling and the use of tweezers made especially for the process.

Each class included cooking with canned salmon. Creamed Salmon on toast was enjoyed by all. Sharing ideas and possibilities for use is always fun and engaging for participants. Volunteers gave about five hours of time per class, which included filleting, travel, set up, teaching, and clean up.

Volunteers gave an additional three hours of time for securing kitchen use, supply pickup, submitting news articles to local papers, and promotion on social media.



Figure 8. The fish preservation workshop held in 2023 taught MRC members how to preserve salmon via salting, pickling, and smoking.

Table 5. 2023-25 Wahkiakum County MRC Projects by Benchmark.

Project Name	MRC Award	Marine Habitats	Marine Life	Marine and Fresh Water Quality	Sound Science	Education & Outreach	Coastal Communities
MRC Coordination and Operations	\$41,000						
Washington Coastal Marine Advisory Council Representation (WCMAC)	\$0						
Fish Preservation Workshops	\$1,000						

Cathlamet Town Dock Repair & Replacement	\$10,545						
Wahkiakum Outdoors	\$2,330						
Wahkiakum Fish Center HACCP Manual Development	\$2,360						
Fish Hatchery Transportation & Gear	\$4,128						
Marine Science Education Field Trips	\$3,400						
County Line Park Pathway	\$12,737						
2022 Coastal MRC Summit	\$1,563.03						

2023 Project Partners

Wahkiakum School District

Washington State University Extension

Town of Cathlamet

Wahkiakum Port District #1

Wahkiakum Port District #2

Wahkiakum Chamber of Commerce

Southwest Washington Workforce

The Nature Conservancy

Columbia Land Trust

Beaver Creek Fish Hatchery

University of Washington Sea Grant

Priority Actions for 2024

The following are priority actions for the Marine Resource Committees in 2024 and the remainder of the 2023-25 biennium.

- Continued MRC representation and participation in the Washington Coastal Marine Advisory Council (WCMAC)
- Prioritize networking and increase distribution of Requests for Proposals for FY23-25 projects
- Increase MRC networks, encourage MRC collaboration, and find new areas where MRCs can develop coast wide projects
- Continue to adapt to modernize remote meeting and offer in-person alternatives to increase awareness of MRC
- Filling vacant MRC Board openings as soon as possible
- Community involvement and active stewardship
- Funding diverse and valuable projects
- Continue to provide seafood industry/jobs preservation workshops to the public with trained WSU Food Safety Volunteers
- A WA coast marine environment downloadable high school curriculum has been developed, determine paths for sharing
- Continue to partner with local agencies to meet their monitoring and restoration goals in the marine environment while providing important workforce skill development
- Support involvement, operations, and activities of the Wahkiakum 4H Robotics Club
- Continue the Grays Harbor MRC Speaker Series by developing new and exciting topics
- Coordinate educational field trips for high school and elementary students
- Continue to support and fund opportunities for local students to experience hands-on marine education
- Cultivate the best possible projects to support Coastal MRC Program benchmarks.
- Continue to explore better options for managing human and pet waste at beach trail parking areas
- Continue partnerships with educational institutions to expand research into coast resources
- Explore additional funding for MRCs, including coordination, training, and project funding
- Consider updating benchmarks and MRC workplan in FY25-27 with Program Work Group
- Determine options for streamlining contracting between WDFW, Counties, and MRC's