



MARINE RESOURCES ADVISORY COUNCIL

Meeting Summary

October 13, 2015, 10:00 a.m. to 3:30 p.m.

WDFW office, Port Townsend, WA

Meeting Attendance and Objectives

The Washington Marine Resources Advisory Council (MRAC) held its ninth meeting on October 13, 2015. The meeting was facilitated by Angie Thomson of EnviroIssues and Martha Kongsgaard, MRAC Chair.

Members in attendance: Martha Kongsgaard (Chair), Garrett Dalan, Kelly Susewind (Department of Ecology alternate for Maia Bellon), Paul Dye, Ginny Broadhurst (Northwest Straits Commission alternate for Nan McKay), Bill Dunbar (Environmental Protection Agency alternate for Dennis McLerran), Erika McPhee-Shaw (Western Washington University alternate for Steve Hollenhorst), Gus Gates, Rich Childers (Washington Department of Fish and Wildlife alternate for Michele Culver), Dick Sheldon, Chad Bowechop (Makah Tribal Council alternate for T.J. Greene), Libby Jewett (by phone), Bill Dewey (by phone),

MRAC members not in attendance: Brian Allison, Mike Cassinelli, Lisa Graumlich, Representative Dave Hayes, Senator Steve Litzow, James Peters, Senator Kevin Ranker, Phil Rockefeller, Tom Davis, Tony Floor, Terry Williams, Kelly Wood

Other participants: Meg Chadsey (Washington Sea Grant), Jan Newton (WOAC), Terrie Klinger (WOAC), Parker MacCready (WOAC), Shallin Busch (NOAA), Mindy Roberts (Ecology), Paul Williams (Suquamish Tribe), Kirsten Feifel (WDNR), Nina Bednarsek (NOAA), Richard Feely (NOAA), Jennifer Kuan (WDFW), Julie Horowitz (Governor's Office), Micah Horwith (DNR), Phillipa Kahn (WDFW)

Meeting objectives:

- Hear from other ocean acidification groups on recent events and efforts
- Hear updates on several science efforts currently underway
- Review key players in the ocean acidification landscape within Washington State
- Review progress towards Blue Ribbon Panel's recommendations related to local land-based contributions, and discuss MRAC's targeted priorities for future activities

Materials distributed:

- Local Land-Based Contributions Blue Ribbon Panel Recommendation Progress Tracker
- MRAC Local Land-Based Contributions Priorities – July 2014
- MRAC Outreach Plan Matrix
- Ocean Acidification Landscape

Welcome and introductions

Chair Martha Kongsgaard opened the meeting, thanked council members for their participation, and thanked Rich Childers and the Washington Department of Fish & Wildlife for hosting.

Recent ocean acidification happenings

Martha invited council members to share updates on recent happenings related to ocean acidification.

- Ginny Broadhurst (Northwest Straits Commission) shared that her organization has been conducting general education community forums on ocean acidification and recently received funding from NOAA to reach out to targeted local leaders about how they can take action on ocean acidification. Funding will also aid in creating a webinar to spread the message about ocean acidification, and these materials could be shared with coastal Marine Resource Committees. She added that she and Meg Chadsey (Washington Sea Grant) have submitted a proposal to present on mitigation and adaptation to ocean acidification at the Salish Sea Conference.
- Erika McPhee-Shaw (Western Washington University) noted that she attended presentations on the warm “blob” and ENSO at the Eastern Pacific Ocean Conference (an annual meeting of scientists from the entire eastern Pacific, including the United States, Canada, and Mexico). Jan Newton (Washington Ocean Acidification Center) gave a talk at the conference about heat in the north Pacific making its way to Puget Sound and impacts to oxygen dynamics. The conference also included presentations on modeling and predicting harmful algal blooms. Erika added that there has been an update on the endurance array administered by Oregon State, which will make monitoring data collected at 1,000 meters available to the entire scientific community through NANOOS.
- Kristen Fiefel (Washington Department of Natural Resources) shared that DNR has been working to define a refuge in the context of ocean acidification, based on discussion in the last MRAC meeting about advancing the Blue Ribbon Panel’s ocean acidification refuge goal. DNR has established four ideas for refugia: areas that are buffered, hotspot areas, experimental areas that could be improved, and resilient areas. Rich Childers (Washington Department of Fish & Wildlife) explained that the resilient areas being considered for refuge studies would have minimal human impact, such as the nuclear submarine bases near Bangor Base, WA and Indian Island, WA.
- Rich shared that after discussion at the last MRAC meeting, his team conducted a risk analysis of a shell recycling program in Washington State and determined that it may not be feasible. Currently under state law it is illegal to put restaurant shells back into the ocean due to risk of diseases. Recycling shells from hatcheries is possible and a common practice, but shells generated outside of Washington cannot be easily recycled.
- Julie Horowitz (Governor’s Office) recently traveled to Washington, DC to meet with representatives from EPA, NOAA, CEQ and an interagency workgroup to discuss ocean acidification and advance federal partnerships. As a follow up to this meeting, she will be meeting with the Governance Coordinating Council to advance regional priorities at the federal level. She added that Governor Inslee is planning to attend COP21 in Paris this December. The Office of Science and Technology Policy at the White House will be hosting an event on the energy, water, and food nexus at COP21, which Governor Inslee will attend.
- Angie Thomson, facilitator, explained that the Puget Sound Partnership is currently in the planning cycle for the next update to the Action Agenda. They have put out a solicitation for near term actions, which includes a section for ocean acidification actions. The solicitation also includes a statement asking all submitters to consult with the MRAC

before submitting proposals. She noted that some MRAC members may be contacted to help provide feedback. Ginny asked why Olympia oyster restoration is not a top priority in the Partnership's near term actions list. Martha responded that she would discuss the issue within the Partnership. Kristen asked for clarification about the ownership of the proposal. As written, it seems the submitter automatically becomes the owner of the work. Angie responded that she would research the submittal and ownership conditions and provide more information via email.

Acidification monitoring results

Mindy Roberts (Washington Department of Ecology) presented a study of aragonite saturation state in Puget Sound surface waters. The study was a joint project between NOAA and Ecology, and established six monitoring stations around Puget Sound. The study found that dissolving occurred in January-March and October-November. Surface pH followed the same pattern: it was more acidic in January-March and October-November. They also found that the water pressure of CO₂ is higher than air pressure in winter months, when saturation state is low. The researchers are currently working on setting up and testing the model to understand the system overall. The model will allow scientists to alter and adjust many factors to understand possible future scenarios.

Washington OA Center updates

Jan explained the work of WOAC on four Blue Ribbon Panel tasks. The Center has 40 stations measuring water column parameters, and eight of those stations also monitoring biological response. WOAC has made its monitoring data available to other organizations to improve models. Terrie Klinger (WOAC) presented the topics currently being examined by post doctoral associates at the OA Center, including: establishing natural variability in pH and CO₂, developing bioindicators of exposure to ocean acidification, evaluating response of benthic forams to ocean acidification, and estimating future conditions in Washington based on IPCC scenarios. Parker MacCready (WOAC) presented his work on coastal modeling and ocean acidification forecasting. The goal is to provide short-term forecasts of aragonite saturation state and pH for waters relevant to local growing areas. The model currently has 3-day forecasts for water quality, as well as multiyear hindcasts, all of which is available through the NANOOS website. The chemical components of the forecast are still under development. The model covers Washington, Oregon, and British Columbia coasts as well as the Salish Sea. Bill Dewey (Taylor Shellfish) asked if there would be an effort to correlate natural recruitment events with water chemistry, and noted that Taylor Shellfish has had a historical recruitment event this year. Parker responded that he would connect with Bill separately to discuss this.

Eelgrass and ocean acidification refugia

Micah Horwith (Washington Department of Natural Resources) presented recent research on the potential for eelgrass beds to improve carbonate chemistry and provide ocean acidification refugia. In a study of larvae passing over marina eelgrass habitat, oyster habitat, and bare habitat, the study found that the pH of water that passes through eelgrass increases dramatically during the day. No net change was found for water passing over oysters or bare habitat. At night, the opposite was observed. The study also explored whether larvae move up or down in the water column depending on water conditions. Nearshore monitoring will continue at five sites for several years to determine whether the eelgrass benefit is more significant in the summer or

winter, and at night or during the day. The study did not control for the larval stage of development, nor did it study post-settlement survival rates. It is possible that the eelgrass could have benefits at certain life stages, and detriments at other stages.

The ocean acidification landscape in Washington State and beyond

Angie led the council through a review of the draft ocean acidification landscape graphic and asked for feedback. Several clarifications and corrections were suggested. Paul Williams (Suquamish Tribe) asked where education organizations would fit in, noting that in February 2016 there will be a summit of environmental education group leaders that will help organize the sector. Terrie noted that a clean, accurate version of this document would serve as a good tool for communicating with legislators. Julie added that it could be useful as a tool to understand what gaps exist and how to engage federal partners in a targeted manner.

MRAC outreach strategy

Paul D. led the MRAC through the outreach plan matrix and summarized the recent work of the outreach ad hoc committee. He explained the importance of relating to resource managers, elected officials, tribes, and environmental organizations. Martha added that understanding the competencies of the MRAC and its ability to make the link between science and the legislature is critical for making strides in ocean acidification outreach. Erika suggested that the maritime industry be included in outreach efforts because of its close link to the seafood industry, noting that the industry likely cares about the issue and may be interested in the MRAC's ocean acidification actions. Chad Bowe chop (Makah Tribal Council) commented that if the target audience is the legislature, it is important to identify who is responsible. The matrix is useful in building a framework that established who has responsibility and influence. Paul D. noted that the goal is to target specific organization with a focused outreach effort. The next step is to develop an outreach plan that speaks to the priorities of the MRAC. Meg explained that the University of Washington is currently developing a capstone project for undergraduates in the College of the Environment that would include identifying outreach opportunities with relevant organizations and a presentation to the MRAC. Dick Sheldon (coastal shellfish grower) commented that the general public needs to understand the true threat of ocean acidification and fear the consequences. Jan responded that at this point the scientists refer to the effects as risks because there is still no certainty, but the continued work will help reach that point. Paul D. commented that the next step to increase visibility may be to meet with high priority audiences. Bill added that the impacts to the shellfish industry generally do get the message across, and can be spread more widely. Keith Ledford (Makah Tribal Council) noted that Smokey the Bear still stands as the most effective environmental messaging campaign because it was relatable, identifiable, and memorable. It will be difficult to get public interest and support when discussing krill and pteropods. Bill suggested that the science be condensed into the common language of jobs so that local elected officials can support the efforts.

Local land-based contributions priorities discussion

Angie led the MRAC through a discussion of its role in advancing action against local land-based contributions to ocean acidification. She referred council members to the four priority actions developed by the Local Land-based Contributions ad hoc committee in July 2014. The four priority actions include:

- Nutrient and carbon pollution control programs

- TMDL implementation
- Voluntary Stewardship Program
- Failing septic systems

Angie invited council members and the public to comment on these efforts and any progress not captured in the tracker. Comments are listed below and the Local Land-Based Contributions Blue Ribbon Panel Recommendation Progress Tracker is available on the [MRAC webpage](#).

Angie asked the council to discuss what adaptation and remediation efforts should be prioritized for funding.

- Ginny expressed concern that there is overlap in tracking work that is being done. She commented that the information compiled in this matrix is already compiled elsewhere, making it seem duplicative.
 - Martha responded that the matrix is a way to keep track of work related to ocean acidification. Some of the work documented through other organizations is not necessarily specific to ocean acidification, despite having an ocean acidification component.
- Julie commented that action 5.1.4 does not distinguish between failing and functioning septic systems, but rather aims to address nutrients expelled by any and all septic tanks.
- Paul D commented that addressing gaps related to carbon and nutrient loads in watersheds should be addressed. He noted that the matrix does not expose the gaps or opportunities for additional work. He suggested a gap analysis within the ad hoc committee to help prioritize.
- Gus expressed excitement about the work happening at the local level and the need to be more strategic about prioritizing the actions and develop proper messaging.
- Dick expressed concern that the actions are mainly focused on Puget Sound, and noted that one-size solutions do not fit all.
- Mindy expressed concern that science has not yet established the degree to which local land-based contributions worsen ocean acidification. She suggested being cautious about making the direct link to ocean acidification. The modeling work she discussed earlier will be ready in 2016 and can help inform this.

Next steps and action items

The council agreed that the next MRAC meeting will likely be in January 2015, date and location to be determined. The meeting will cover Monitoring and Investigation priorities.

A few final action items were noted:

- Angie and the EnviroIssues team will update the Local Land-Based Contributions Progress Tracker based on the discussion and distribute to the group.
- Martha and Angie will be in touch with ad hoc committee members to schedule additional future meetings.
- Martha and Angie will be in touch with the council to provide more information about the Puget Sound Partnership near-term action submittals.

Martha thanked everyone for their participation and adjourned the meeting.