MARINE RESOURCES ADVISORY COUNCIL

Meeting Summary
March 7, 2014, 9 am to 12 pm
Washington Department of Natural Resources, Room 172
Olympia, WA

Meeting documents are available on the Washington Department of Ecology Ocean Acidification webpage:
http://www.ecy.wa.gov/water/marine/oceanacidification.html

Meeting Attendance and Objectives
The Washington Marine Resources Advisory Council (MRAC) held its second meeting on March 7, 2014. The meeting was open to the public and facilitated by Angie Thomson of EnviroIssues and Martha Kongsgaard, MRAC Chair.

Members in attendance: Martha Kongsgaard (Chair), Representative Larry Seaquist, Mike Cassinelli, Terry Williams, Paul Dye, Maia Bellon, Bill Dewey, Tony Floor, Tom Davis, Dick Sheldon, Brian Allison, Christine Woodward, Garrett Dalan, Kelly Wood, Peter Goldmark, Mark Clark (Washington State Conservation Commission alternate for James Peters), David Allnutt (EPA Region 10 alternate for Dennis McLerran), Rich Childers (Washington Department of Fish and Wildlife alternate for Philip Anderson), Chad Bowechop (Makah Tribal Council alternate for T.J. Greene), Lisa Graumlich (via conference call), Libby Jewett (via conference call).

MRAC members not in attendance:
Dave Hayes, Steve Hollenhorst, Senator Steve Litzow, Senator Kevin Ranker, Norm Dicks, Phil Rockefeller, Joel Carben.

Meeting objectives:
- Agree on a strategic plan and action plan for the MRAC
- Focus on Blue Ribbon Panel recommendations for science and monitoring, identify science gaps and opportunities to advance recommendations
- Convene the Science and Monitoring ad hoc committee to continue work on and science monitoring and prepare proposals for action.

Materials distributed:
- MRAC Strategic Plan
- Blue Ribbon Panel Science and Monitoring Status document

Welcome and introductions
Chair Martha Kongsgaard opened the meeting by sharing her recent trip to Washington, D.C., highlighting the traction that ocean acidification is receiving among policymakers, particularly from Senator Maria Cantwell, Secretary of the Interior Sally Jewell, and Director of Fish & Wildlife Daniel Ashe. She said that while the Pacific Northwest is a

leader in ocean acidification, the MRAC needs to keep working to integrate the topic into the priorities and future planning of agencies and political actors.

Martha thanked Commissioner Peter Goldmark for the use of the meeting room and invited Jay Manning (Cascadia Law Group) and Brad Warren (Global Ocean Health Program) to talk about regional and local efforts on ocean acidification.

Jay Manning talked about the Pacific Coast Collaborative (PCC) between California, Oregon, Washington, and British Columbia, and the recent letter to President Obama signed by the three West Coast Governors on climate, energy, and ocean issues. Ocean acidification was recently added to the PCC's agenda, and the focus areas for action include continuing to build the partnership between federal, state, and Canadian actors, recruiting Alaska to rejoin the PCC, and forwarding ocean acidification as a central regional issue. The Western states currently have no reliable funding source, legislative construct, or science and monitoring plan, but the group is discussing how to address these gaps. Marine economic sectors are also a focus of discussion and the group is hoping to reach out to the shellfish and salmon growers for leadership and collaboration. Jay noted that the PCC is eager to stay in touch with the Council for input into what should be added to the regional agenda.

Brad Warren announced an upcoming workshop sponsored by the Global Ocean Health Program to educate local stakeholders on strategies to adapt to and remediate local effects of ocean acidification. The event will be held from 9 am to 6pm on April 8, 2014 at the Rotary Log Pavilion in Aberdeen, WA. MRAC members are invited to attend.

Strategic plan and action plan

Martha introduced the new facilitation team, including Angie Thomson and Pat Serie of EnviroIssues, hired since the last meeting in November to guide the Council through its discussions. Martha and Angie presented the Strategic Plan and noted that any questions or revisions could be submitted to them. The Strategic Plan was approved by the Council, though a few members provided comments, including the suggestion that a sense of urgency should be underscored in the document. Comments will be incorporated and a revised Strategic Plan will be circulated to the council members.

Angie and Martha explained that the role of the MRAC's ad hoc committees is to delve into identifying gaps, developing implementation plans, and determining resources needs for each of the following focus areas:

1) Science and Monitoring – chaired by Libby Jewett, NOAA
2) Local Land-Based Contributions – chaired by Paul Dye, Nature Conservancy
3) Adaptation and Remediation – chaired by Bill Dewey, Taylor Shellfish
4) Education and Outreach – chair *TBD*

They encouraged council members to sign up to participate on their committees of interest. These committees will conduct their initial work from March to June 2014, with work products expected at the June MRAC meeting to prepare for agency budget

requests. EnviroIssues will facilitate the committees and provide support by writing reports, leading communications and providing technical assistance.

Presentation: Blue Ribbon Panel Recommendations on Science and Monitoring
Several members of the scientific community provided an overview of progress in understanding and implementing recommendations of the Blue Ribbon Panel. The presenters also discussed next steps and how to address existing gaps.

Jan Newton and Terrie Klinger (Washington Ocean Acidification Center) presented the Blue Ribbon Panel recommendations for Science and Monitoring, offering a summary of the recommendations, progress on action items to date, and current existing gaps. In particular, they focused on panel recommendations 6 ("Foster adaptation and remediation to protect the shellfish industry and marine ecosystems") and 7 ("Increase research and monitoring of acidification in state waters"). Progress has been made towards ensuring water quality monitoring and treatment (Actions 6.2.1 and 6.2.3), establishing monitoring network (Action 7.1.1), conducting laboratory studies on ecosystem effects of ocean acidification (Action 7.3.2), and short-term forecasting on corrosive conditions (Action 7.4.1). The Washington Ocean Acidification Center has funded four out of the five awards they are authorized to fund, and is actively planning implementation of the fifth. A number of recommendations remain to be addressed, and the Center will work with the MRAC to identify priority gaps and next steps.

Richard Feely (NOAA) presented progress in the scientific understanding of ocean acidification and techniques of modeling acidification levels. Conclusions from current modeling efforts are: 1) there is seasonal progression in acidification of coastal waters in Washington and Oregon; 2) a higher volume of the water column is undersaturated by the end of the upwelling season; 3) local retention creates hot-spots of acidification; and 4) some species are already being impacted.

Mindy Roberts (Washington State Department of Ecology) presented the progress on source attribution in a regulatory framework, related to Actions 5.2.1, 5.2.2, and 7.2.1 from the Blue Ribbon Panel recommendations. She explained that Ecology has been developing a nitrogen intensity map to understand nitrogen contributions from a variety of land uses throughout the watershed and from point sources. Coordinated efforts between state, federal, and university partners are already underway in monitoring, modeling, and management and adaptation, but additional resources are needed to continue implementation.

Rob Duff (Governor's Office), discussed engaging policymakers in addressing existing gaps. In light of recent budget cuts, Rob encouraged the Council to prioritize efforts that can leverage dual purposes. He noted that policymakers are very interested in response metrics and utilizing monitoring efforts to adjust real-time management practices. He suggested an ocean acidification work session at the legislative assembly days to educate policymakers. Rob also noted that while monitoring efforts have previously been challenging to fund, he is willing to work towards finding resources for them.

Discussion on Science and Monitoring Recommendations

Highlights from the questions and discussion that followed the presentations include the following:

- The Tulalip Tribes are developing a model integrating upland management and marine ecosystem dynamics to understand baseline conditions. The next step is to incorporate plankton studies into the model. The MRAC needs to prioritize refining monitoring and research on understanding baseline conditions.
- It is very important that legislators understand the full requirements of our budget and funding needs, as opposed to presenting only prioritized requests.
- What work is being done on hindcast modeling? According to Jan, Terrie, and Richard, the Washington Ocean Acidification Center and NOAA are working towards integrating and synthesizing historical physical, chemical, and biological datasets. This is helpful for anticipating monitoring needs.
- How are these synthesis and modeling results being shared? Jan noted that the Ocean Acidification Center has dedicated funds for outreach and engagement of its awarded research and is holding outreach and briefing events. Richard noted that NOAA is also working on outreach and if there are any clear interests in specific synthesis products, they should be clearly stated so that they may guide research efforts. Mindy added that the Washington Department of Ecology is also modeling future freshwater oxygen trends through the 2070s. Ecology is conducting outreach on this modeling and welcomes suggestions.
- A lot of research efforts seem to be targeted in Puget Sound, but Willapa Bay is the largest oyster producer in Washington State and should not be forgotten. Terrie noted that monitoring is prioritized on the coast.
- If the general public thinks that technical solutions can take the place of behavioral changes, we will go down the same road as climate change. We need to be careful about sending that message.
- To engage policymakers, we need accurate modeling on the effects of management efforts on local conditions. Jan noted that there are complementary forecasting models being developed by the Washington Department of Ecology and the Ocean Acidification Center that can be used for this purpose. Integrating local sources of sewage and atmospheric carbon dioxide into the models is additionally important; this is also part of current efforts.
- There currently is not a strong linkage between modeling efforts and impacts to species. While NOAA has begun to work on this, there is still a lot to understand and this needs to a focus in the next biennium. A next step is to identify important biological thresholds.
- How can the modeling results be used by shellfish growers? Knowing the level of stress will help make management decisions about when to open or close a fishery, which has practical implications for resource and staff planning for individual growers. Additionally, hindcast modeling efforts are beneficial because they can show areas of resilience and thus inform shellfish practices. Models should have value for both the wild and farmed shellfish industries, as market demand for wild products is increasing.
- There is a significant lack of funding for adaptation research to inform remedial practices for shellfish growers and resource managers. There is little focus from

federal agencies on developing adaptation strategies; one of the MRAC recommendations could be to increase funding for these efforts.

Science and Monitoring ad hoc committee

Libby Jewett (NOAA – Ocean Acidification Program), Chair of the Science and Monitoring ad hoc committee, provided remarks by phone. She noted that synthesis products and forecasting are very relevant for determining monitoring needs. She also said that she is engaged on ocean acidification in both national and global networks in addition to her involvement with the MRAC, and that she could be a conduit to federal interagency efforts. She welcomed all interested council members to join the Science and Monitoring ad hoc committee.

Public Comment

One person provided a public comment announcing the Global Ocean Health Program's upcoming report on ocean acidification, and noted that they would share it with the MRAC.

Next steps

- The next MRAC meeting will be a full-day meeting in April, held in Aberdeen. Martha and Angie will follow up with the determined date.
- Angie and Martha will communicate with MRAC members to finalize ad-hoc committee membership. These committees will convene via conference calls before the April meeting.
- Angie will set up a Dropbox folder for file-sharing amongst MRAC members and its ad-hoc committees.