Governor's Blue Ribbon Panel on Ocean Acidification

Summary of Second Meeting
Wednesday, April 25, 2012, 2:00 p.m. – 4:00 p.m.
Webinar

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

Meeting Attendance and Objectives

The Blue Ribbon Panel on Ocean Acidification held its second meeting on April 25, 2012, as a two-hour webinar, hosted by Washington State Department of Ecology. A group of panel members convened informally for the webinar at the Washington Sea Grant conference room.

Panel members and project managers participating in this meeting included Hedia Adelsman, Lisa Ayers, Steven Bloomfield, Shallin Busch, Meg Chadsey, Chris Davis, Bill Dewey, Richard Feely, Carolyn Friedman, Peter Goldmark, Kate Kelly (EPA alternate for Dennis McLerran), Sara Kendall, Terrie Klinger, Jay Manning, Dennis McLerran, Ed Miles, Jan Newton, Betsy Peabody, Bill Ruckelshaus, Jennifer Ruesink, Norma Smith, Terry Williams, Brad Warren, and Lara Whitely Binder.

Special guests invited to present at this meeting included: Christopher Krembs (Washington State Dept. of Ecology), John Stein (NOAA Northwest Fisheries Science Center), and Ryan Kelly (Stanford University, Center for Ocean Solutions). Over 70 members of the public and interested stakeholders participated.

Meeting Objectives:

1. Inform Panel members of current monitoring efforts and gaps related to ocean acidification (OA) in Washington State.
2. Update Panel members on federal activities related to OA, the status of the science white paper, the Panel work, and the results of the requests to Panel members.
3. Allow Panel members to comment on planned policy tool kit white paper.

Welcome

Co-chair Jay Manning welcomed the Panel members. Facilitator Lara Whitely Binder explained that due to time constraints, participants would be muted during the presentations. Panel members should submit questions and comments via the webinar chat box, or by requesting to be unmuted during scheduled Q&A sessions. Members of the public should submit comments and questions via email.

Presentations and Discussions

All presentations are available on the Dept. of Ecology Ocean Acidification webpage: http://www.ecy.wa.gov/water/marine/oceanacidification.html

Review of Current Marine and Related Monitoring Programs in Washington

Jan Newton, UW Applied Physics Laboratory and Christopher Krembs, WA Dept. of Ecology

This set of presentations provided an overview of existing OA monitoring efforts in Washington state, as well as gaps in data collection and potential opportunities to expand the network. Dr. Newton's presentation highlighted aspects of the existing marine monitoring network in Washington, which includes:

- Survey cruises: provide the highest quality data and cover a broad geographic range, but the cruises are infrequent.
- Buoys/fixed marine sensors: 167 total and funded by 19 entities but only a subset provide data on OA. This part of the network includes monitoring conducted at Washington shellfish hatcheries.
- Terrestrial observations: includes monitoring of daily atmospheric CO_2 fluctuations measured from the top of the Seattle Space Needle, and NASA/DOE Vulcan project that models statewide CO_2 emissions by sector (transportation, residential, etc.).
- WA Dept. Ecology seaplane: samples pH around Admiralty Inlet

Dr. Newton noted that Puget Sound does not have an adequate monitoring network. Many monitoring programs lack sustained funding and there are many spatial and temporal gaps in the existing monitoring network. Identified needs and opportunities include: conducting biannual survey cruises in Puget Sound (there is currently no regular program), expanding variables measured by existing sampling programs, and adding new instrument moorings in key unmonitored locations.

Dr. Krembs' presentation focused on the Washington Department of Ecology Marine Monitoring Program, which focuses on long-term trends in eutrophication and dissolved oxygen. The Marine Monitoring Programs measures more than 15 water quality indicators at 27 stations on a monthly basis. An extensive historic dataset provides Ecology with a unique perspective into the complexity, variability and large-scale climatic influences on water quality. He emphasized the importance of quantitatively separating the effects of oceanic, natural and human contributions, improving data on marine boundary conditions, and the need to expand existing water quality models by the carbonate system.

Questions and comments related to the monitoring presentations:

- Q: Is Ecology's historical pH data set of sufficient quality to establish trends over time?
  A: No—the issue is not one of accuracy, but precision. There is a great deal of noise in these data, and separating small-scale trends, particularly those resulting from human input is very challenging.
- Q: Could DOE seaplane sampling program be expanded to include carbonate parameters, such as DIC and DOC, with NOAA's assistance?
  A: No, the equipment is already at capacity. Sampling regime could perhaps be *revised* with guidance from NOAA.
- Q: What information is coming from the monitoring efforts in Bellingham Bay and Samish Bay, and does it tell us anything about Puget Sound?
  A: The Lummi Hatchery data indicate that oceanic conditions there are very different from Puget Sound. Better understanding of such spatial differences is needed for effective mitigation and adaption.
- C: Washington tribes are telling the US that it has failed to protect their cultural resources (through the Treaties at Risk document).
- Q: Is it possible to distinguish nitrate vs. nitrite inputs in Puget Sound?
  A: No—just total nitrogen.

Review of Federal and International Efforts to Address Ocean Acidification

Ed Miles, UW CIG and John Stein, NOAA NWFSC

This set of presentations summarized the approaches being taken in the U.S. and Europe to address OA. Dr. Miles generalized the European institutional response as far more advanced and organized than ours, and noted that the U.S. Strategic Plan for Federal research and monitoring is delayed. He praised the Washington Blue Ribbon Panel, which involves both scientists and policy makers, as the right model, and hopes that it will be sustained beyond Oct 2012, and scaled up at the national level.

Dr. Stein explained that as part of NOAA's mission and numerous legislative mandates (including the 2009 FOARAM Act), they are required to understand and manage OA impacts at both the environmental and societal levels. The 2010 NOAA National Ocean and Great Lakes Acidification Research Plan details plans for monitoring OA trends, modeling and predicting the ecosystem response, education and outreach, and the development of adaptation strategies. NOAA insures that research complimentary and coordinated. He reviewed relevant federal Acts that can be brought to bear on this issue.

Questions and comments related to the federal overview presentations:

- C: Since the Panel is not informed about the National Strategic Plan, it would be good to talk further about how national process can help us and vice versa.

Overview of Addressing the Science of Ocean Acidification Responses

Brad Warren, Sustainable Fisheries Partnership

This brief presentation described plans to summarize available scientific knowledge about the technical feasibility and potential effectiveness of the three broad categories of response for ocean acidification: mitigation, adaptation, and remediation. This stand-alone document is intended to complement Ryan Kelly's forthcoming policy toolkit white paper.

Questions and comments related to Brad's presentation:

- C: Good idea to address technical issues explicitly; political feasibility is another matter.

Overview of Policy Tools Identified for California and Potential Approach for Washington's Ocean Acidification Policy Toolkit White Paper

Ryan Kelly, Stanford University, Center for Ocean Solutions

This brief presentation described the policy tools identified by the Center for Ocean Solutions for the State of California to address OA, and plans for developing a similar catalog of policy tools for Washington. The intellectual framework for this analysis is that although atmospheric CO_2 is the key long-term driver of OA, local land-based drivers make a significant contribution, and are amenable to suite of policy tools. The relative importance of these drivers will determine the most effective policy response; source budgets for nutrient and carbon inputs would be very helpful to this process. Numerous existing regulatory and incentive programs should be enlisted in the effort to control such inputs. Finally, Dr. Kelly reviewed the ongoing legal question of whether WA waters are impaired with regard to pH; a memo on this subject will be shared with the Panel.

Questions and comments related to Ryan Kelly's presentation:

- Q: What accounts for 53.3% of WA waters being listed as 'impaired' by EPA?
  A: First, most of these bodies of water are fresh, not marine, and it is not due to pH decline. Second, WA state water quality standards are very strict; it doesn't take much to qualify as impaired. Review the 303(d) list on WA Dept. of Ecology website.
- Q: If the relative importance of OA drivers, such as different types of nutrient pollution, aren't known, how can we determine which policy options ought to be pursued?
  A: This type of 'source budget' information is hard to obtain, so we need to weigh the cost/benefits of doing nothing, vs. taking action under uncertainty.
- C: The economic costs of reducing CO2 emissions are lower in Washington, because we *don't* rely on coal for electricity.

Results of Pre-Meeting Requests to Panel Members and Other Updates

Lara Whitely Binder, UW CIG; Hedia Adelsman, WA Dept. of Ecology; Meg Chadsey, WA Sea Grant

This session included oral and PowerPoint updates on the results of the pre-meeting requests to Panel members about key questions, major action categories, and key programs & groups; the draft work plan; and the science white paper.

Communications strategy. The need for a communication strategy was identified during the March 30 meeting and is being developed. The communication strategy is focusing on communication needs related to the Panel process (i.e., more broadly advertising the meetings), the Panel's final report to the governor, and general outreach and education on the issue of OA. We will be seeking ideas and potential involvement from Panel members in the near future. . An Ocean Conservancy representative will present findings of a survey about public perception of OA at the May 23rd Panel meeting and discuss approaches and recommendations for engaging with the public with the Panel.

Science White Paper update. This document is being prepared with the assistance of Panel scientists, and input from outside experts, and will be presented in summary at the May 23rd Panel meeting. A request was made for Panel members with local knowledge of nutrient inputs to contribute information.

General meeting logistics updates. Panel members will be asked in an email after the webinar to hold Wednesday, August 8, on their calendars for a possible Panel meeting. We hope that we do not need to meet in August, however it is necessary to have a date saved in case it is needed to meet the October 1 deadline. A summary work plan will also be sent to Panel members. While provided an example of what the work plan looks like. It is an Excel table organized by week that shows generally how the Panel will progress through various key tasks in the coming months. Orange shading is used to show tasks requiring general Panel input and participation; blue shading is used to show work being done by the facilitation team.

Results of Panel "asks". Prior to the webinar, Panel members were asked to provide input on the major "Action Bins" under which recommendations could be grouped. Lara emphasized that the recommendations will cover a wide range of topics, not just regulatory or policy changes. Major action bins that evolved from the limited number of responses included the following, which were structured to resemble Brad Warren's suggested grouping of responses:

- Research
- Monitoring
- Public Outreach & Education
- Source Reduction (includes regulatory & non-regulatory measures, technology changes, public outreach & education, etc.)
- Remediation (includes regulatory & non-regulatory measures, technology changes, public outreach & education, etc.)

- Adaptation (includes regulatory & non-regulatory measures, technology changes, public outreach & education, etc.)

Responses for key questions and programs that could be part of a response strategy were also limited. The importance of responding to e-mail requests was emphasize. We will use e-mail requests as a way of getting started on the development of recommendations. We hope to avoid an August meeting; responding to e-mail requests will help with that goal and help ensure we meet our October 1 deadline.

Document Appendix

April 25, 2012 Blue Ribbon Panel on Ocean Acidification Meeting Agenda: http://www.ecy.wa.gov/water/marine/oa/20120425_agenda.pdf