NOAA Response to the SAB Recommendations on Ocean Acidification

A Presentation to the NOAA Science Advisory Board

Ned Cyr
Director, Office of Science and Technology
NOAA Fisheries

March 24, 2010
Outline

- Purpose
- Issue
- Presentation of Briefing
- NOAA Coordination and Views
- Desired Outcome
Purpose

Informational briefing on the status of NOAA’s ocean acidification activities relative to the SAB’s May 2007 recommendations.
The March 2007 SAB meeting included an agenda item on Ocean Acidification. The SAB made the following recommendations:

1. NOAA should be the primary agency for ocean acidification observations;
2. NOAA should coordinate its research with other agencies;
3. NOAA should coordinate its research with the international research community;
4. NOAA move ahead quickly with a National Research Council study on ocean acidification, but scope it out carefully to ensure policy relevance; and
5. Any NOAA ocean acidification research program should include studies on feedback loops, both positive and negative.
Recommendation #1

SAB Recommendation: NOAA should be the primary agency to deploy observing systems for ocean acidification

Status:
- Ocean acidification observing network established in FY 2010
- Coral reef test beds established in FY 2010
- Technology for carbon measurements on moorings is under development.
- Caribbean ocean carbon chemistry monitoring through assimilation of satellite and in situ data established in FY 2009
- Some ocean acidification-related variables are made accessible and preserved by NOAA. NOAA is working on future access to other ocean acidification data and information both within NOAA and in collaboration with existing partnerships, such as the Department of Energy (Carbon Dioxide Information Analysis Center)
- Organism response studies are underway
Recommendation #2

SAB recommendation: NOAA should coordinate its research with other agencies.

Status:

• JSOST Interagency Working Group on Ocean Acidification (IWG-OA) established in October 2009 under the terms of the FOARAM Act of 2009 (Ned Cyr, Chair)
• IWG-OA is developing a Strategic Plan for Ocean Acidification Research and Monitoring
• Some coordination occurring now (e.g., NOAA-NSF collaboration; work with USGS and NASA on coral reef test beds)
Recommendation #3

SAB recommendation: NOAA should coordinate its research with the international research community;

Status:

- In December 2009 SOLAS-IMBER-IOC established the SOLAS-IMBER Coordination Program. The Goal of this program is to develop international coordination of ocean acidification research, education and policy issues. US members of this committee include Dr. James Barry (MBARI), Dr. Lisa Robbins (USGS) and Dr. Richard Feely (NOAA).

- Ocean acidification data quality control and management is coordinated with the international community (i.e., through IOC’s International Oceanographic Data and Information Exchange)
Recommendation #4

SAB recommendation: NOAA move ahead quickly with a National Research Council study on ocean acidification, but scope it out carefully to ensure policy relevance

Status:

- NRC study Development of an Integrated Science Strategy for Ocean Acidification Monitoring, Research, and Impacts Assessment initiated in Feb 2009. The study’s terms of reference were reviewed by NOAA for policy relevance.

Recommendation #5

SAB recommendation: Any NOAA ocean acidification research program should include studies on feedback loops, both positive and negative.

Status:
• Feedback loops are being addressed as part of NOAA’s CLIVAR/CO\textsubscript{2} Repeat Hydrography Program which determines decadal changes in ocean carbon sources and sinks.
NOAA Coordination & Views

• Coordination with:
  – NOAA Working Group on Ocean Acidification

• What has NOAA done to address this issue?
  – NOAA has an active and expanding ocean acidification research program, consistent with the SAB recommendations
  – A NOAA Ocean Acidification Program Office is being established
  – A NOAA Implementation Plan for Ocean Acidification Research is in preparation
  – A monitoring program for ocean acidification has been initiated in 2010
  – NOAA is communicating the results of its OA work to other Federal agencies, the academic community, Congress and the public through a variety of publications, presentations and through the IWG-OA

• What are NOAA’s views on the subject?
  – NOAA supports the SAB recommendations and is working actively to implement them.
Desired Outcome

Informational briefing for the SAB that represents NOAA’s comprehensive response to the SAB’s OA recommendations.

Bring to the SAB’s attention:

• Oceanography Magazine’s special issue on Ocean Acidification that NOAA co-led
• NOAA participation in developing the “Best Practices” manual with EPOCA and the Ocean Carbon and Biogeochemistry (OCB) program
• NOAA leadership in developing Ocean Acidification School (WHOI, November 2009)
Backup Slides

NOAA OCEAN AND GREAT LAKES ACIDIFICATION RESEARCH IMPLEMENTATION PLAN

NOAA OCEAN ACIDIFICATION STEERING COMMITTEE FEBRUARY 2010
Backup Slides
Editors of the special issue of Oceanography Magazine

• Ulf Riebesell
• Vicky Fabry
• Lina Hansson
• Jean-Pierre Gattuso
Chapter leads and editors of the NOAA implementation plan

Chapter I -- Rationale and Strategy for a National Ocean Acidification Program

- Richard A. Feely
- Chris Sabine
- Rik Wanninkhof
- Simone R. Alin
- Elizabeth Jewett
- Dwight K. Gledhill
- John Dunne
- Paul McElhany
- Adrienne J. Sutton
- D. Shallin Busch
- Felipe Arzayus
- Bill Sunda
- Jessica Geubtner
- Jon Hare
- Oliver Vetter
- Steve Hankin
Chapter 2 -- NOAA Alaska Region Ocean Acidification Research Implementation Plan

- Mike F. Sigler
- Robert J. Foy
- Mark Carls
- Michael Dalton
- Lisa B. Eisner
- Thomas P. Hurst
- Joseph F. Morado
- Phyllis Stabeno
- Robert P. Stone
Chapter leads and editors of the NOAA implementation plan

Chapter 3 -- West Coast Region Ocean Acidification Research Implementation Plan

- Paul McElhany
- Simone R. Alin
- D. Shallin Busch
- Robert Pavia
- Kelley Higgason
- Steve Katz
- Jonathan Phinney
- Adrienne J. Sutton
- Richard A. Feely

- John Stein
- Mary Sue Brancato
- Ed Bowlby
- Jan Roletto
- Lisa Etherington
Chapter leads and editors of the NOAA implementation plan

Chapter 4 -- Pacific Islands Region Ocean Acidification Research Implementation Plan

• Russell E. Brainard
• David Butterfield
• Mark Eakin
• Richard A. Feely
• Dwight K. Gledhill
• Elizabeth Kehn
• Kathyrn Shamberger

• Adrienne J. Sutton
• Oliver Vetter, and
• Charles Young
Chapter 5 -- Southeast Atlantic and Gulf of Mexico Region
Ocean Acidification Research Implementation Plan

- Dwight K. Gledhill
- Theresa Goedeke
- Kevin Helmle
- James Hendee
- Anna Hilting
- Elizabeth Jewett
- Brian Keller
- Derek Manzello

- Margaret Miller
- Erica Rule
- Bill Sunda
- Rik Wanninkhof
Chapter 6 -- Northeast Region Ocean Acidification Research Implementation Plan

• Beth Phelan
• Jon Hare
• Ellen Mecray
• Gary Wikfors
• Shannon Meseck
• Christopher Chambers
• Daniel Wieczorek

• Vincent Guida
• Ronald Goldberg
• Dean Perry
• Michael Fogarty
• Paul Ticco
• Charles Stock
Chapter leads and editors of the NOAA implementation plan

Chapter 7 -- Great Lakes Region Acidification Research Implementation Plan

- Simone R. Alin
- Jennifer Day
- Galen McKinley
- Craig Stow
- Mary Baker
- Ellen Brody

- Reed Bohne
- Thomas Nalepa
- Terry Heatlie
- Adrienne J. Sutton
- Richard A. Feely

Chapter 8 -- Program Outputs, Timeline, and Budget

- Adrienne J. Sutton
Primary players in NOAA who established the coordinated NOAA Implementation Plan

- Richard A. Feely (OAR/PMEL)
- Rik Wanninkhof (OAR/AOML)
- John Stein (NMFS/NWFSC)
- Mike F. Sigler (NMFS/AFSC)
- Elizabeth Jewett (NOS/CSCOR)
- Felipe Arzayus (OAR/OOER)
- Dwight K. Gledhill (OAR/AOML)
IWG-OA Membership

• Ned Cyr, NOAA (Chair)
• Libby Jewett, NOAA
• Richard Feely, NOAA
• Chris Sabine, NOAA
• Kenric Osgood, NOAA
• Phil Taylor, NSF (Vice-Chair)
• Don Rice, NSF
• Fred Lipschultz, NASA (Vice-chair)
• Bill Fisher, EPA
• Courtney St. John, Navy
• Mary Boatman, MMS
• Lisa Robbins, USGS
• Bret Wolfe, USFWS
• Robert Domaingue, DOS
• Sherry Sykes, DOS
• Steve Gittings, NOAA
• Susan Laessic, EPA