

**NOAA Science Advisory Board (SAB)
Teleconference
24 May 2018
11AM-12PM Eastern Daylight Time**

Presentations for this meeting have been posted on the Science Advisory Board (SAB) website:
<http://www.sab.noaa.gov/SABMeetings.aspx>

SAB members in attendance:

Ms. P. Lynn Scarlett, Co-Chief External Affairs Officer, The Nature Conservancy (Chair); Dr. Susan Avery, President Emeritus, Woods Hole Oceanographic Institution; Dr. Michael Donahue, Vice President and Director, Water Resources and Environmental Sciences, AECOM Corporation; Dr. Robert Grossman, Fredrick H. Rawson Professor and Jim and Karen Frank Director of the Center for Data Intensive Science, University of Chicago; Dr. Everette Joseph, Director, Atmospheric Science Research Center, University at Albany, State University of New York (SUNY); Dr. Eugenia Kalnay, Distinguished University Professor, Department of Atmospheric and Oceanic Science, University of Maryland; Mr. W. Christopher Lenhardt, Domain Scientist, Renaissance Computing Institute, University of North Carolina at Chapel Hill; Ms. Jean May- Brett, STEM Partnership Coordinator, Louisiana Department of Education (ret.); Dr. Robert Rheault, Executive Director, East Coast Shellfish Growers Association; and Dr. Martin Storksdieck, Director, Center for Research on Lifelong STEM Learning and Professor, College of Education and School of Public Policy, Oregon State University;

NOAA senior management and Line Office representatives in attendance:

RDML (ret. USN) Timothy Gallaudet, PhD, Assistant Secretary of Commerce for Oceans and Atmosphere and Acting NOAA Administrator; Mark Paese Deputy Assistant Administrator, National Environmental Satellite, Data, and Information Service (NESDIS); Paula Davidson, National Weather Service(NWS); Craig McLean, Acting Chief Scientist and Assistant Administrator, Office of Oceanic and Atmospheric Research (OAR); Marie Bundy, National Ocean Service (NOS); and Frank Schwing, National Marine Fisheries Service. (NMFS)

Staff for the Science Advisory Board in attendance:

Dr. Cynthia Decker, Executive Director and Designated Federal Officer; Ms. Elizabeth Akede; and Ms. Mary Anne Whitcomb.

Call to Order and Approval of SAB Work Plan

Lynn Scarlett, The Nature Conservancy and Chair, NOAA SAB
RDML Timothy Gallaudet (USN, ret), Acting Under Secretary of Commerce for Oceans and Atmosphere/NOAA Administrator

Lynn Scarlett called the meeting to order and thanked SAB members for their efforts to date on the Work Plan and RDML Gallaudet for giving guidance to ensure the plan is aligned with NOAA priorities. There are two decisional items for this meeting: one is approval of the biennial Work Plan; which enables the SAB to develop meeting agendas for subsequent SAB meetings and to advance the goals of the Work Plan through SAB meetings. The second is related to the discussion of Work Plan topic assignments.

RDML Gallaudet thanked the group for incorporating recommendations and said it is a solid work plan. There are just a few things that require minor adjustments but the plan is almost completed. Throughout the plan he would like to see each topic address the potential for public-private partnerships. If there is agreement, it should be included in the introduction section of the plan. Second, having not worked with SAB, he wanted to be sure that in each topic area what NOAA is doing is fully examined and any recommendation provided is not for NOAA to simply continue what it is already doing. That would be assumed. Instead, the recommendations should focus on what can be changed/improved. As an example, the unmanned systems program is doing a lot now; what should be done differently going forward is the question to be addressed.

As to the Work Plan itself, there are two recommended modifications to the two topic areas. The first recommendation is under Priority 2 of the Work Plan, the Blue Economy, for a topic to be added to look at stock assessment monitoring technology. This new topic should weave in findings on unmanned and autonomous systems (topic 3 of the Work Plan) and machine learning (topic 4 of the Work Plan), electronic monitoring, and eDNA, into stock assessments. The second recommendation is a change to topic 7: Science to Support the Blue Economy: Healthy Ecosystems and Future Economic Resilience. Specifically, the SAB should develop recommendations on the organization and functions for coastal science and research and applications to operations across the different NOAA line offices, with emphasis on issues such as water quality and harmful algal bloom. This change to topic 7 results from recent findings that multiple National Centers for Coastal Ocean Science (NCCOS) and National Marine Fisheries Service (NMFS) labs and other programs within NOAA appear to be working on the same or similar research topics. As an example, the NOS lab in Oxford, MD and the NMFS lab in Milford, CT are both looking at aquaculture pathogens. Similarly, work with harmful algal blooms is taking place across NOS, NMFS and NWS

Discussion

Robert Rheault noted that the stock assessment monitoring topic was considered by the SAB originally but then rejected.

Lynn Scarlett asked whether the proposed change to topic 7 is a substitution for the current topic 7. Michael Donahue stated that he and Denise Reed worked on the original topic 7 and noted that in previous reports, the SAB was requested to focus on science not management issues. Craig McLean noted that while it would be helpful to recognize redundancies and complementarities, NOAA should not put the burden on the SAB to recommend specific organizational changes. It would be useful to understand each organization and its jurisdiction in the agency. Lynn Scarlett said there is a difference between looking at where there may be science redundancies, overlap, or duplication and gaps versus offering structural recommendations. The SAB does not have the knowledge institutionally on how to best organize and manage NOAA work; however, the SAB can look at the existing places of science generation and the degree to which there is duplication or gaps. The SAB could then report to NOAA, with NOAA then can deciding the best management or operational response.

RDML Gallaudet said that the effort would be appropriate; an outside body, such as the SAB, would help NOAA get better answers. Robert Rheault said it was a year ago that NOAA reviewed all the aquaculture science across science centers, and it was a mammoth undertaking. RDML Gallaudet said he leaves it to the SAB on how best to define the task and come back to NOAA on what is possible. Lynn Scarlett suggested a re-summarizing of work already done and perhaps hone and define a set of science topics for this organizational review. RDML Gallaudet encouraged the SAB to stay away from duplication of past work but instead to build upon past reports. Craig McLean expressed sensitivity to time commitment and offered support at the staff level of the NOAA Research Council to organize collections and presentation

information for the SAB. Lynn Scarlett said that implementation will be discussed more in the second agenda item of this meeting - the logistics of getting this done - that has been left open.

She thanked the SAB subcommittees who were more specific on timeframes for their topics in the Work Plan.

Lynn Scarlett summarized the discussion and actions from the meeting.

Language to be added

NOAA proposed that the SAB add language to the Work Plan to include as a common theme under each topic an examination of public-private partnerships and its role in addressing topics under consideration. Second, in each topic area, an account of what NOAA is already doing will be included and recommendations will focus on areas of change for NOAA. To the Process section of the Work Plan, the SAB will add two sentences on these items. Susan Avery thanked RDML Gallaudet for his input. On the plan to add the theme of public-private partnerships to the Work Plan, she asked why not also include non-governmental organizations (NGOs) and international partnerships as well? RDML Gallaudet indicated the SAB could broadly interpret the term “private” to include NGOs, academic, and international institutions, in addition to the for-profit sector. There was agreement to making the modification.

New Topic on Technology for Stock Assessments

The SAB also agreed to consider innovative technologies for stock assessments as a new topic under Priority 2. RDML Gallaudet suggested that the results of unmanned and autonomous systems, machine learning, electronic monitoring, and eDNA be applied to identify what is the optimal balance of those technologies in improving stock assessments and surveys. Lynn Scarlett said the SAB could put a placeholder for this topic in the Work Plan for now and ask someone for a write-up of specific language to be considered at the July SAB meeting. The SAB members agreed with this idea.

Replacement of Topic 7: Science to Support the Blue Economy: Healthy Ecosystems and Future Economic Resilience

Lynn Scarlett asked for clarification. Is the aim to drop the current topic 7 and shift the focus of topic 7 to the review of science on harmful algal blooms, water quality and the other topics NOAA is suggesting? Or is the aim to incorporate within the current topic 7 an element examining the current provision of science and identifying where there is duplication, overlap or gaps? RDML Gallaudet said the SAB should replace the current topic 7 entirely at this stage with the topic he suggested. Once the SAB has accomplished this, it could address the tasks originally proposed for Topic 7.

Lynn Scarlett asked for comments on the concept that the current topic 7 be eliminated at this stage per request from RDML Gallaudet and shift to a focus of review of coastal science, including the topics of harmful algal blooms, water quality and the others. This effort would examine the current provision of science and identify where there is duplication, overlap or gaps.

Michael Donahue said that the Ecosystem Sciences and Management Working Group (ESMWG) recently had a meeting that focused on topic 7; this proposal by RDML Gallaudet is a wholesale change that would require new language and he would like to share this information with Denise Reed and the ESMWG to get their thoughts. Susan Avery and Michael Donahue noted the value of the original topic 7 and raised concerns about its elimination from the Work Plan. They noted that what NOAA is proposing, instead, seems to take a step back from addressing both ecosystem and economic resilience of coastal

communities to simply assessing a narrow portion of NOAA's science programs in the coastal zone. They suggested more topics be considered and wanted to be sure NOAA is not excluding key topics such as sea level rise. Jean May-Brett used the example of sea level rise issues in Louisiana to appeal for the need to include the original science topics mentioned under topic 7 of the Work Plan. The response from NOAA representatives was that the agency thinks the assessment of the science is a necessary first step but that the topics suggested are only examples, that the SAB should feel free to consider other topics when identifying redundancies and overlap, and that, once this initial assessment is done, the original Topic 7 regarding resilient coastal economies and ecosystems could be addressed.

Lynn Scarlett said the issue under discussion is not what realms of science *per se* are part of an optimization examination, but, rather, whether topic 7 would look at issues of duplication, gaps, and organization coordination and/or look at the topic of coastal resilience and ecosystems. RDML Gallaudet mentioned harmful algal blooms, water quality and general coastal science as bodies of science work for which there may be some duplication, need for more coordination, etc., which was not intended to suggest other topics such as sea level rise, would not be part of the look at optimization. Lynn Scarlett suggested the SAB first look at how NOAA delivers the science across the spectrum and explore whether and where there is duplication or more potential for coordination. After doing this, the SAB may look at the relevance of such science to the blue economy and look at coastal resilience science.

Brittany Croll will send the specific language on the work plan topics from RDML Gallaudet to the SAB Office for distribution.

Lynn Scarlett said her opinion is that it would be beneficial for NOAA to have a sense of all of coastal science and to what degree there is duplication across NOAA and how work could be enhanced by reducing duplication and improving coordination. The second phase for the SAB would be to take that information and explore its relevance to understanding the blue economy and coastal resilience. She suggested this change in Topic 7 also be inserted as a placeholder in the current Work Plan to be debated and decided upon at the July SAB meeting.

Lynn Scarlett asked for approval of the Work Plan subject to change in language in the Process section and subject to coming back to the SAB with new topic language on stock assessments and topic 7. The SAB will debate and approve these in July. Jean May-Brett made a motion to accept this proposal; Robert Rhealt seconded; and the motion passed unanimously.

The Work Plan was approved with the caveats mentioned and will be sent back to the SAB and work on the other two topics.

Lynn Scarlett said there was not enough time remaining to discuss implementation of the Work Plan topics at this meeting; she will work with Cynthia Decker to make progress in this area before the July 2018 in-person meeting.

SAB staff will revise the Work Plan to include changes in the process from this discussion based on language by NOAA. The SAB Office will also help organize groups to work on language for two topics.