

**NOAA Science Advisory Board
Teleconference Meeting
July 5, 2017
3:00-5:00 PM 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, Managing Director for Public Policy, The Nature Conservancy (Chair); Dr. Susan Avery, President Emeritus, Woods Hole Oceanographic Institution; Dr. Michael Donahue, Vice President, AECOM Corporation; Mr. Walter Faulconer, President, Faulconer Consulting Group; Dr. Eugenia Kalnay, Professor, University of Maryland; Ms. Jean May- Brett, STEM Partnership Coordinator, Louisiana Department of Education (ret.); Dr. Denise Reed, Vice President for Strategic Research Initiatives, Water Institute of the Gulf; and Mr. Robert S. Winokur, Consultant (ret. NOAA, Navy)

Working Group representatives in attendance:

Mr. Paul Knight, Co-Chair, Climate Working Group; Dr. Christopher Lenhardt, Chair, Data Archive and Access Requirements Working Group; Dr. John Snow, representative, Environmental Information Services Working Group; Dr. David Fluharty, and Dr. Michael Castellini, Co-Chairs, Ecosystem Sciences and Management Working Group.

NOAA senior management and Line Office representatives in attendance:

Dr. Steven Volz, Performing the Duties of Assistant Secretary for Environmental Observation and Prediction and Assistant Administrator, NOAA National Environmental Satellite and Data Information Service (NESDIS); Dr. Paul Doremus, Performing the Duties of Assistant Secretary for Conservation and Management and Deputy Assistant Administrator for Operations, NOAA National Marine Fisheries Service (NMFS); Dr. Gary C. Matlock, Deputy Assistant Administrator for Science, NOAA Office of Oceanic and Atmospheric Research (OAR); Dr. Russell Callender, Assistant Administrator; NOAA National Ocean Service (NOS); Dr. Louis Uccellini, Assistant Administrator, NOAA National Weather Service (NWS); Dr. Cisco Werner, Chief Scientist, NMFS; and RADM David Score, Director, NOAA Office of Marine and Aircraft Operations (OMAO)

Staff for the Science Advisory Board in attendance:

Dr. Cynthia Decker, Executive Director and Designated Federal Officer, Ms. Mary Anne Whitcomb and Mr. Michael Harvey, Knauss Fellow for the Office of Program Planning and Evaluation, serving as temporary staff.

Call to Order and SAB Consent Calendar

Lynn Scarlett, Chair of the SAB, called the meeting to order. The consent calendar item was the April 2017 meeting minutes. A motion was made to approve the consent calendar by Bob Winokur; the motion was seconded Eugenia Kalnay and approved unanimously.

NOAA Update

Paul Doremus, Performing the Duties of Assistant Secretary for Conservation and Management
Stephen Volz, Performing the Duties of Assistant Secretary for Environmental Observation and Prediction

Summary

Paul Doremus noted that Ben Friedman updated the SAB at the April 2017 meeting on priorities of the new Administration and NOAA is on course with the items discussed at that meeting. There continues to be interest in the trade deficit and discussion with industry including discussions on aquaculture. NOAA is also responding to executive orders focused on government reform and issues related to staff expectations and how this is to come together in the FY 2019 timeframe. The next step will be development of the FY 2019 budget on the normal cycle of a February 2018 release, agency strategic plans, and workforce plans. NOAA is working with the Department of Commerce and the Office of Management and Budget (OMB) on potential organizational changes. There have been separate statements by the Administration on the intent that the effort to reduce the size of the workforce be driven by the structure and scale of the budget documents. NOAA is planning staff size based on the FY 18 proposed and FY 19 anticipated President's budgets. On the transition front, while there is no NOAA administrator yet, Mr. Christopher Oliver has been appointed as Assistant Administrator of the National Marine Fisheries Service. At the last meeting it was reported that there were two staff advisor appointments but one of these, George Kelly, is no longer with the team and has moved back to private sector.

There are other staff changes as well: Dr. Cisco Werner is now permanently the NMFS Chief Scientist; Mr. Kevin Werner is the new director of the NMFS Northwest Fisheries Science Center. Mr. Chris Cartwright is now the NOAA Budget Director; the former Budget Director, Mr. Gary Reisner, is now Deputy Assistant Administrator for budget in OMAO. RADM David Score will retire in early September and NOAA is looking for next OMAO director. Two Senior Technical (ST) appointments were made in OAR – Dr. Roger Pulwarty and Dr. Stan Benjamin.

Stephen Volz continued the update, adding that in NESDIS the Deputy Assistant Administrator for Systems, Tom Burns, resigned and this job will be advertised. Mary Wolgamuth assumed the job of Director, National Centers for Environmental Information in May; she came from the

Navy. NWS National Hurricane Center Director Rick Knabb departed with Ed Rappaport serving as Acting. When the full budget was released in May, the NOAA Assistant Administrators briefed the budgets for their individual line offices to Congressional offices; this was an orchestrated conversation, identifying the rationale to support the President's budget. For the FY 18 budget NOAA has been in a response mode and is eager to see markups and to have conversations on where risk is best mitigated. It is a particularly busy time because NOAA is understaffed with permanent political leadership.

Discussion

Lynn Scarlett asked, in terms of government reform, if there is there anything NOAA can say on the science dimensions- are there any particular areas of focus? Paul Doremus said there is nothing to update as there has been no separate discussion of science functions. The plan is to work on a fully integrated NOAA. The changes in the NOAA science budget can be expected to be carried forward in FY 19 and there may be more.

Louis Uccellini added on April 18 the US Weather and Forecasting Improvement Act passed with implications to weather activities. Weather is defined in the Act as including seasonal weather. The law includes transition in OAR to a more focused effort on weather. NWS will be talking to OMB in a few weeks on how this authorization will be used in terms of appropriation. Dr. Uccellini believed the SAB should pay attention to this law due to the discussion of the Environmental Information Services Working Group and other issues in it. The Space Weather bill has been passed by the Senate and the House is considering it. There is an increasing emphasis in Congress on weather.

Presentation of Recommendations for Short-Term Topics for SAB Advice

Robert Winokur, Member, NOAA SAB

Summary

Bob Winokur said at the April meeting there was a discussion of moving forward on short-term work topics for the SAB. Four members, "the Gang of Four," which included Stephen Polasky, Bob Winokur, Eugenia Kalnay and Denise Reed, volunteered to develop recommendations for short-term topics for consideration by the Board. Stephen Polasky led the effort but was not available for this teleconference. In the development of topics, the group looked at information provided to SAB including topics outlined by Ben Friedman at the April meeting as well as strategic papers and briefings by invited speakers.

They distilled this information into three topics:

1. The value of information - This topic includes issues such as quantification and documentation of the value of information gathered by NOAA; [which, for the quality

and economic value of weather forecasts, could be accurately quantified by comparing the quality of forecasts from the Reanalysis 1 (made with 1994 technology) with those made with current systems, both currently available]; better understanding of how information is used; and better communication of the value of NOAA information.

2. The benefits of large-scale ecosystem restoration and
3. Enhancing and harmonizing the delivery of environmental services across NOAA.

These topics are not mutually exclusive and all depend on NOAA information across a spectrum of activities important to the American public and industry. All of them involve the value of information and value of communicating information.

The value of information topic has more details because it is the one the group agreed on from the beginning of its discussion. Mr. Winokur noted the three topics are not listed in order of priority.

The value of information topic includes risk or damage from environmental disaster. Is there a monetary value to be assessed and how are the information used? Everything can't be measured in a monetary way. What are the ways that the communication of information can be improved—what information has the most value? There are a number of questions raised about this topic.

The Value of Large Scale Ecosystem Restoration is relevant, in particular, to the Ecosystem Sciences and Management Working Group (ESMWG). NOAA has been involved in these activities for many years; this relates to information as well as questions of the value of large-scale restoration; the question is whether this is money well spent.

Enhancing and harmonizing the delivery of environmental services relates to information and could be a topic for the Environmental Information Services Working Group (EISWG). How is NOAA providing information as a whole and not by Line Office? This topic focuses on integration across NOAA.

Denise Reed added that the Gang of Four said they did not cover the kinds of things the SAB would do to address these three topics as they were waiting for feedback from the SAB.

Discussion of Recommendations for Short-Term Topics for SAB Advice

Lynn Scarlett, The Nature Conservancy and Chair, NOAA SAB

Paul Doremus, Performing the Duties of Assistant Secretary for Conservation and Management

Stephen Volz, Performing the Duties of Assistant Secretary for Environmental Observation and Prediction

Summary

Lynn Scarlett said the topics are straightforward - the question is how the SAB takes these up. Should the group bring outside people in and kick-start information building? Lynn Scarlett

reminded everyone that when a new NOAA Administrator is appointed, he or she may have a clear view of what is needed from the SAB. At that time, the SAB can adapt and be responsive. Because the process to get a NOAA Administrator could take some time, the SAB will continue with ongoing topics.

This is a decisional item and Lynn asked for feedback and a decision on a way forward.

Mike Donahue thanked the Gang of Four for their work and said the challenge for the SAB in transition is to answer the question: what do we say that NOAA needs to know and what does NOAA say they need to know? He wants to be sure that these items are what NOAA considers as priority. Lynn Scarlett said these topics flow from prior discussions with NOAA and have been identified by the agency as important. Paul Doremus agreed that these items are relevant. The value of information in the type of policy environment where questions are asked about government function has a great value. In an agency with many functions that are not well understood, being able to characterize them well is very important in answering what government can do and why it is doing it. To characterize for NOAA the value-chain and benefits that can be monetized would be helpful. It answers questions about public provision of services and increasing or decreasing scope of government providers versus other providers. There is also the issue of private versus public provision of these services - NOAA hears these questions in many public discussions. Can government services be recouped or can they be provided by the private sector? What happens when one changes the current model, e.g., a shift to fee for information or privatize services?

Lynn Scarlett said these issues are extremely complicated; there have been many efforts to answer questions about monetizing information, shifting to user fees or privatization. There is not a clear pathway and not all information or services are suitable for fees or privatization.

Stephen Volz said one lesson from transition to the private sector that is not understood by everyone is there is value in repeating lessons and these lessons are best communicated by someone other than NOAA. Paul Doremus said one thing that could be valuable, at a minimum, is characterizing what questions should be asked and what lessons have NOAA learned from prior examples.

Monica Grasso said she is chair of the NOAA Social Science Committee. The group had a retreat on developing priorities and these topics align with their priorities. The committee is looking at economic valuation and value of NOAA products and services, risk communication, and the feedback loop from data users and users of services on how the agency can improve the information.

Lynn Scarlett said there needs to be thought on how to proceed by the SAB - is it through a working group, a series of presentations or another mechanism? Lynn Scarlett will work with the group on some suggested approaches for SAB review and agreement.

John Snow, representative of the EISWG, said there are elements of the information theme the EISWG would be interested in pursuing. Lynn asked for any particular thoughts on what would be suitable for EISWG and to send it to her. John Snow said he would want to discuss with EISWG and get back to her in the near future.

David Fluharty and Mike Castellini, Co-Chairs of the Ecosystem Sciences and Management Working Group (ESMWG), said the working group is in the process of developing a Terms of Reference for a large marine ecosystem project along the lines being discussed and will send information to Lynn Scarlett. David Fluharty reminded the SAB that they approved the Ecosystem Services Valuation report and there is a lot to consider in the report with respect to the topic on the value of information.

Eugenia Kalnay said she originally suggested an approach on finding the value of technology which could be done using reanalysis of where NOAA was in 1990 on forecasts and where it is now. The comments on commercialization are very good and she thinks now that reanalysis may not work. Lynn Scarlett said the question on commercialization needs to be asked; the SAB should think about how to assemble relevant case examples and question-framing that would be useful.

Susan Avery said she hears an integrating theme on value of information and ecosystem integration in the discussion. People don't understand what is required to develop that information and to make it available for use. This is a good opportunity to lay out the process on development of that information. On the weather side the NWS can do the development; a lot of other information products are spread across the organization and the SAB may not know how this is done.

Lynn Scarlett said there are a lot of considerations not just in the execution but wants to clarify what the SAB would be examining. Maybe a subgroup should dive a little deeper and relation of quantifiable information and a separate questions on whether a product or service can be commercialized or a whether a fee should be levied. Lynn asked the SAB whether they accept the three topics with the caveat that there will be more discussion with the SAB on how the work will be done. SAB members concurred with the three topics. Lynn Scarlett will work with Cynthia Decker on next steps to be presented at August 31 SAB meeting.

Action 1: John Snow will discuss SAB short-term topics with EISWG and get back to Lynn Scarlett on possible input. Similarly David Fluharty and Mike Castellini will provide information on related planned work from the ESMWG on the large ecosystem project.

Action 2: Lynn Scarlett and Cynthia Decker will discuss next steps on short-term topics and will report back at the August teleconference meeting.

Final SAB Review of the High Performance Computing Working Group (HPCWG) Terms of Reference

Frank Indiviglio, NOAA Office of the Chief Information Officer and Geophysical Fluid Dynamics Laboratory

Summary

The goal of the presentation was to review the updates to the HPCWG Terms of Reference (TOR) and to get SAB approval of them.

At the April 2017 SAB meeting issues were raised on the purpose and scope section of the TOR. The purpose and scope section has been updated to state the entire spectrum of HPC topics to be covered including I/O and Compute and that NOAA is requesting the HPCWG it be a standing working group.

The scope of challenges was updated to reflect NOAA- identified challenges to be provided to the group and it was clarified that the roadmap is NOAA's roadmap. A change was made to allow additional meetings of the group during the initial year and meeting frequency updated to reflect a quarterly virtual meeting schedule of the proposed subcommittee.

The desired outcome is approval of the revised Terms of Reference.

Discussion

Susan Avery thanked Frank Indiviglio for his responsiveness in incorporating all comments into the presentation and reframing the Terms of Reference. She asked if the full spectrum included data and models. Frank Indiviglio agreed these were included.

A motion to approve the Terms of Reference was made by Susan Avery, seconded by Bob Winokur and passed unanimously.

Lynn Scarlett thanked Frank Indiviglio for his presentation. The next step in establishment of the High Performance Computing Working Group is for Frank to work with Everett Joseph and Eugenia Kalnay to identify candidates for membership of the group for approval.

Action 3: The High Performance Computing Working Group Terms of Reference were approved. Frank Indiviglio will work with Everett Joseph and Eugenia Kalnay to identify candidates for membership of the group for approval.

Public Comment

There were no public comments.

Adjourn

The meeting was adjourned at 4:15 pm.

Actions

John Snow will discuss SAB short-term topics with EISWG and get back to Lynn Scarlett on possible input. Similarly David Fluharty and Mike Castellini will provide information on related planned work from the ESMWG on the large ecosystem project.

Lynn Scarlett and Cynthia Decker will discuss next steps on short- term topics and will report back at the August teleconference meeting.

The High Performance Computing Working Group Terms of Reference were approved. Frank Indiviglio will work with Everett Joseph and Eugenia Kalnay to identify candidates for membership of the group for approval.