

NATIONAL CLIMATE ASSESSMENT DEVELOPMENT AND ADVISORY COMMITTEE
NOAA EARTH SYSTEM RESEARCH LABORATORY
DAVID SKAGGS RESEARCH CENTER
325 BROADWAY
BOULDER, CO 80305-3337
NOVEMBER 16-17, 2011

WEDNESDAY, NOVEMBER 16, 2011

WELCOME

Jerry Melillo, Marine Biological Laboratory and NCADAC Chair

Dr. Jerry Melillo welcomed the participants and reminded everyone of the new meeting structure that was agreed upon at the last NCADAC meeting. Following a day of working group sessions (Nov. 15th), the full NCADAC met for one day of updates (Nov. 16th) and one day of decisions (Nov. 17th). He commented on the productive working group sessions from the previous day as well as the outstanding progress made since the last full-NCADAC meeting (August 2011). He noted that the selection of convening lead authors (CLAs) and the nomination of lead authors (LAs) had progressed well; regional and sectoral teams had done significant work on their technical inputs; the response to the previously-released request for information (RFI) was excellent; and the working groups were making excellent progress.

Dr. Melillo requested and received approval of the meeting agenda.

Dr. Melillo requested and received approval from the NCADAC for Kathy Jacobs (Office of Science and Technology Policy and National Climate Assessment (NCA) Director) and Anne Waple (NOAA Program Manager for Technical Support Unit to the NCA) to participate freely in the discussion without necessity of invitation.

Action: The NCADAC members approved the agenda as presented.

Action: The NCADAC members approved participation of Kathy Jacobs and Anne Waple in meeting discussions.

WELCOME FROM ESRL

Donald Mock, Executive Director for the NOAA Boulder Laboratories

Donald Mock offered a brief welcome to the NCADAC meeting participants as well as a bit of history of NOAA's Earth System Research Laboratory.

OPENING COMMENTS FROM NCADAC DESIGNATED FEDERAL OFFICIAL

Cynthia Decker, NOAA and NCADAC Designated Federal Official

Dr. Decker reminded everyone of the public comment period scheduled for 2:30 p.m. MST and noted that no one had signed up to speak during that time. She said that members of the public were still welcome to sign up for the comment period, but noted that if no one signed up, the time could be used for other tasks or early adjournment.

APPROVAL OF MINUTES FROM NCADAC MEETING OF AUGUST 2011

Jerry Melillo, Marine Biological Laboratory and NCADAC Chair

Dr. Melillo requested approval of the meeting minutes from the August 2011 NCADAC meeting. He specifically asked that everyone carefully look over the participant list in the minutes to ensure its accuracy. No immediate errors were noted and the minutes from the August 16-18, 2011 meeting were approved as written. Melillo noted that comments on the format of the minutes were still welcomed.

Action: The NCADAC approved the minutes from the August 16-18, 2011 meeting with no modifications.

INFORMATIONAL UPDATES AND PROPOSALS FROM NCADAC WORKING GROUPS (WGS)

Each of the NCADAC working groups (WGs) provided progress updates on their activities and offered up their proposals to the full NCADAC for consideration.

WORKING GROUP #3 – SCENARIOS AND REGIONAL SUMMARIES

Richard Moss, Joint Global Change Research Institute, Pacific Northwest National Laboratory, and University of Maryland, and NCADAC Executive Secretariat Member

A full update for this Working Group would be given on the second day of the meeting.

WORKING GROUP #6 – INFORMATION QUALITY ASSURANCE

T.C. Richmond, GordonDerr, LLP and NCADAC Vice-Chair

Sharon Hays, Computer Sciences Corporation and NCADAC Executive Secretariat Member

Summary

The Working Group was revising a draft general principles based on input from the session on November 15 and would put them forth for approval on the following day. The general principles are intended for chapter authors,

reviewers, the NCADAC, and government agencies. The guidance is intended for authors' consideration of the Information Quality Act as they identify sources and develop the content for their chapters. The Working Group addresses both peer-reviewed and published materials as well as non-peer-reviewed materials in the 'General Principles' document; the NCA could include all types of inputs and the Guiding Principles will consider various types of inputs accordingly. The Working Group requested confirmation of from the NCADAC that traditional knowledge would be used in the NCA. Frequently asked questions have been made available to technical input teams on USGCRP's website.

Discussion

There was much interest in further guidance regarding the inclusion of non-peer-reviewed materials in the NCA. The Working Group will release further guidance on the issue in the next phase of their plan. The WG is currently working on some logic flow for how to incorporate various types of input. There was some concern that the term "utility" – as used in item 5a of the 'General Principles' document – was somewhat subjective depending on the intended audience; some felt that "relevance" may be a better term. There was also interest in specifically adding the public as an audience to whom the NCA would be relevant / useful. There was confusion regarding some of the specific terminology used in the document. The Working Group noted that the specific terms that were causing confusion were taken directly from NOAA's Information Quality Guidelines, which mirror much of the language in the Information Quality Act itself. However, the Working Group further recognized that the document must be readily interpretable if it is to be used by its intended audience. While no decision was made during the discussion, it was noted that the Working Group had been, and would continue, working closely with NOAA lawyers to ensure the Information Quality Guidelines were accurately portrayed while also trying to clarify their meanings.

WORKING GROUP #7 – ENGAGEMENT, COMMUNICATION, AND EVALUATION

Susanne Moser, Susanne Moser Research & Consulting and NCADAC Executive Secretariat Member
Ed Maibach, George Mason University and NCADAC Member
Emily Cloyd, U.S. Global Change Research Program

Summary

The Working Group reported that it has had about ten meetings, some with relatively low participation, but significant productivity. Nonetheless, the WG highlighted a number of accomplishments: a revised strategy for engagement, communication, and evaluation (ECE), logic models, improvements to the NCA website, building an enhanced network of partners (NCAnet), input to the guidance document for regional / sectoral teams, and guidance to partner organizations in NCAnet. The Working Group has accomplished considerable engagement with the NCA given a small budget and few personnel to support their efforts. About 12% of the expressions of interest (EOIs) submitted through the request for information (RFI) process referred specifically to ECE topics. The Working Group hopes to connect with community leaders and continue to build and sustain engagement with the NCA process. The WG has several upcoming outreach opportunities planned; including listening sessions at large scientific and professional society meetings. The Working Group offered to help other working groups and technical input teams to plan and/or take part in engagement efforts.

Discussion

The Working Group was asked what forms of engagement activities they have considered other than world café¹ events. The WG responded that it is forming a network of networks to facilitate input into and communication from the assessment; numerous presentations and briefings have been given; there is a periodic newsletter; the Working Group is considering use of participatory scenarios and is interested in talking with technical input teams about a wide variety of interactive formats and engagement opportunities. NCADAC members were overall complimentary of the Working Groups' work and agreed with the aim for a demand-driven NCA that would be shaped over time by user input.

WORKING GROUP #8 – REGIONAL COORDINATION

Gary Yohe, Wesleyan University and NCADAC Vice-Chair

Summary

The Working Group compared and contrasted approaches being taken by the various technical input teams. Some regions anticipate comprehensive assessments that may develop into long, published reports (e.g., Southwest and Southeast), while others are trying to build on past assessments to highlight the new information for the region (e.g., Northeast and Northwest). The Northeast region is very interested in having strong engagement via a host of open meetings to be funded by NASA. Hawaii is organizing its input around regional issues of interest. The coastal zone and marine inputs are underway and will be making significant progress in the coming weeks. The Regional Coordination Working Group is trying to foster connections to the sectors. One step they have taken is to put together a matrix for identifying people within each region who are connected in some way to each sector.

Discussion

There was no discussion with this Working Group as they did not have any proposals for decision by the NCADAC.

WORKING GROUP #9 – SECTORAL COORDINATION

Jim Buizer, University of Arizona and NCADAC Executive Secretariat Member

Summary

The Working Group provided a progress report including the completion of several meetings and workshops held by sectoral technical input teams and positive reactions from all CLAs and most LAs. As noted by the Regional Coordination Working Group, the Sectoral Coordination Working Group is working with sectoral experts from each of the regions and participating in monthly joint calls. In conjunction with the Regional Coordination Working Group, they are working on an amended "aspirational chapter template." The Working Group invited Dr. Timothy "Bull" Bennett to comment on what the tribal technical input team has been doing to

¹ World Café refers to a public participation method in which participants rotate through a series of café-style tables, addressing different topics at each table, and sharing ideas in an informal setting allowing for open conversation and exchange of ideas.

connect sectors and regions. Bennett replied that they have been building a network across regions and sectors. They have held six regional workshops, and in December, 28 tribes will convene in Oklahoma. A tribe in Hawaii will convene a workshop for Pacific Islanders.

Discussion

The Working Group was asked what they envision for the content of the mitigation section of the chapters. One option was that for a specific key vulnerability, the text would contain a proof of concept for describing the value of mitigation into the future. There was some discussion regarding whether or not it would be useful to share the early stages of the aspirational chapter outline, considering that it will likely undergo considerable changes. The Working Group felt it may be useful to share with CLAs and/or Working Group chairs as long as everyone understands that no consensus has been reached yet.

WORKING GROUP #10 – SCIENCE OF CLIMATE CHANGE

Don Wuebbles, University of Illinois and NCADAC Executive Secretariat Member

Summary

The Working Group announced Dr. John Walsh of the University of Alaska-Fairbanks as the new co-chair and convening lead author (CLA) alongside Don Wuebbles. Tom Karl will no longer serve as co-chair or CLA for this Working Group. The Working Group provided an update on a series of climate extremes workshops that it is convening. The first two have already taken place, two more are to come, and the fifth workshop (on the topic of attribution) has been canceled in light of a meeting to be held by the World Climate Research Programme that will address the same topic. Efforts to find lead authors for a report chapter, a more detailed appendix, and a special report on frequently asked questions (FAQs) are underway and the Working Group has begun to create outlines for each piece. WG #10 requested approval from the NCADAC of the FAQ report.

Discussion

The Working Group was asked how it handles multi-decadal trends in certain variables when looking at a limited number of periods. Dr. Wuebbles stated that the discussion has come up several times during meetings, but no clear answer has emerged yet. One participant commented that a forthcoming National Research Council report on sea level rise will provide important input to the climate science chapter. A question was raised regarding results from Phase 5 of the Coupled Model Intercomparison Project (CMIP5): will CMIP5 results be integrated into analysis for the NCA or are the results coming in too late? The Working Group stated its intention to integrate results as they become available, but the group is unsure of the extent to which this will be possible given the timing of CMIP5 as compared to that of the NCA.

WORKING GROUP #12 – ADAPTATION AND MITIGATION

Arthur Lee, Chevron Corporation and NCADAC Member

Joel Smith, Stratus Consulting and NCADAC Member

Summary

This Working Group reported that there had been much discussion regarding *what* should be covered for the adaptation/mitigation portion of the NCA as well as *how* it should be covered. Based on their discussions, the members are certain that the NCA should address both adaptation and mitigation, but it remains unclear how mitigation should be covered. Discussion from the previous day's WG session suggested broadening its scope to include context of scenarios of future climate change, examples of current mitigation activities, and measures of greenhouse gas emissions relative to 1990 and 2000. The WG does not plan to delve into a discussion of technologies or comparison of alternative approaches.

The Working Group reported that much of the information on the topics of adaptation and mitigation will need to come from sources that have not undergone a traditional peer-review process, since progress reports on emission reductions and adaptation activities in the US are not always published in journals or other traditional peer-reviewed sources. The members plan to continue coordinating with sectors and regions to identify adaptation and mitigation activities, analyze adaptation and mitigation, and to utilize relevant information from workshops. They feel that having case studies is important because they are appealing and useful to the public and users of assessment reports. Finally, the WG stated the need for a longer-term process to address concerns such as how mitigation will be covered and to continue to collect stories and case studies.

Discussion

The topic of mitigation was the focus of much of the discussion following this Working Group's summary. Some NCADAC members felt that mitigation is fundamentally a policy issue and thus outside the scope of the NCA. Others felt that it is a technology and policy issue for which the NCA (with its current membership) does not have the capacity to address. It was noted that the NCA could address mitigation and emission trends without delving into evaluation of any policy aspect of the issue. NCADAC Members noted that much work has been done on both topics that is neither policy-prescriptive nor technology-laden. It was also stated that the number of mitigation initiatives in the nation far outnumber those related to adaptation, and that it would be a public disservice to shy away from the topic altogether. While a general consensus did not emerge regarding *whether* mitigation should be addressed, it was clear that the Working Group strongly agreed that the NCA must remain policy-neutral on all topics – mitigation and adaptation included.

Action: The Executive Secretariat agreed to meet and discuss the topic prior to the start of the next day's meeting, and to propose a way forward for decision by the full NCADAC on the following day.

WORKING GROUP #13 – INDICATORS DEVELOPMENT AND EVALUATION

Tony Janetos, Joint Global Change Research Program, University of Maryland, and NCADAC Member

Summary

Dr. Janetos discussed the vision and design criteria for the system of indicators (physical, ecological, and societal) planned for the NCA. The indicators are intended to communicate key aspects of the physical climate, climate impacts, vulnerabilities, and preparedness for the purpose of informing both decision makers and the public with scientifically valid information that is useful for decision making. This Working Group is not focused solely on output for the 2013 assessment report, but also on the long-term sustainable process. They

acknowledge that adjustments will be necessary in order to adapt to changing conditions and understanding. Thus, the indicators will need to be reviewed and updated periodically. Dr. Janetos stated that the Working Group would be asking for approval to move forward with planning based on the vision document, but not asking for approval of the document itself. The full document is available on NOAA's NCADAC website at http://www.nesdis.noaa.gov/NCADAC/November_16_meeting_documents.html.

Discussion

There were no questions or discussion of this topic by the NCADAC.

WORKING GROUP #14 – INTERNATIONAL

Andrew Rosenberg, Conservation International and NCADAC Executive Secretariat Member

Summary

This Working Group recommended that there not be a separate international chapter in the 2013 report. Instead, the WG suggests dedicated introductory text that places global aspects of climate change in context and highlights unique issues that are relevant to the U.S., along with appropriate integration of international topics across regions and sectors. As part of the sustained assessment, the WG suggested a post-2013, dedicated report on international and global issues.

Discussion

Members of the NCADAC generally seemed pleased with the proposed integration of international topics. Discussion largely focused around ways to make necessary connections to regionally- and sectorally-relevant communities. The WG noted that it could help match sector teams and chapter author teams to appropriate points of contact via a resource matrix and that many members of the NCADAC already have international connections and/or expertise. The Working Group was asked if it is addressing the topic of mitigation to the extent possible. The WG answered 'yes' to this question.

WORKING GROUP #15 – SUSTAINED ASSESSMENT PROCESS

John Hall, U.S. Department of Defense and NCADAC Ex Officio Member

Maria Blair, American Cancer Society and NCADAC Member

Summary

This Working Group presented its outline of the main components of a sustained assessment: achieve scientific integration; foster partnerships and engagement; build ongoing capacity; inform responses; enhance information access; establish indicators; evaluate progress; and ensure adequate capacity and resources. The WG presented a vision and deliverables, including specific deadlines for each step. The Working Group concluded by sharing its strategy for developing a workplan for the sustained Assessment process; again including specific deadlines for completion of milestones. The Working Group's main vision is to create capacity and constituency for the NCA and to move beyond a quadrennial report for the federal government. They also called attention to the need for better integration between the natural and social sciences. They requested that

the NCADAC review and approve the Working Group's scope and approach (outlined in a white paper available at http://www.nesdis.noaa.gov/NCADAC/November_16_meeting_documents.html).

Discussion

A suggestion was made to engage young scientists and students to help sustain a long-term assessment process. There was a strong positive response to the Working Group's suggestion for better integration of social and natural sciences. It was noted that much of the NCA staff come from a social science background and have significant expertise and ability to help foster this integration. Some NCADAC members found the approach taken for the writing of the 2009 Assessment to be useful: that is, several Synthesis and Assessment Products (SAPs) produced and later summarized into a single report. It was noted that laying out a research and report agenda in this fashion can help people envision how quadrennial reports will summarize work that has taken place since the previous Assessment. However, there was general agreement that ideas for creating a sustainable assessment process will come from nearly all the Working Groups and author teams as they get further into the process; WG15 welcomes those ideas.

ANNOUNCEMENT OF CHAPTER CONVENING LEAD AUTHOR TEAMS

Jerry Melillo, Marine Biological Laboratory and NCADAC Chair

Dr. Melillo announced that the list of convening lead authors (CLAs) for most chapters is now available. He noted that with more than 200 nominated authors (CLAs and LAs) the timeline has seen a slight delay; not all authors have been confirmed. He proposed having contributing authors as well (i.e., calling in subject experts as needed on given topics). Comments from the NCADAC members reflected generally positive opinions of the names submitted as convening lead authors and lead authors. (The list of CLAs announced at the meeting is available at http://www.nesdis.noaa.gov/NCADAC/November_16_meeting_documents.html).

DISCUSSION OF PLANS FOR CONVENING LEAD AUTHORS MEETING

Jerry Melillo, Marine Biological Laboratory and NCADAC Chair

Melillo noted that there would be a CLA meeting held in Tucson, Arizona in January 2012; all NCADAC members are invited. The meeting will be used to inform CLAs of expectations and to provide training to them on the Assessment process and guidelines.

DISCUSSION OF AMENDED REPORT PRODUCTION TIMELINE

Anne Waple, NOAA Program Manager for Technical Support Unit to the NCA

Dr. Waple noted that late in 2013 remains the target date for completion of the NCA report; she also highlighted relevant changes made in October by the Executive Secretariat:

- Specific time for the Executive Office of the President to review has been added and is simultaneous with the layout of the report
- NRC and public reviews are simultaneous, and significant time has been reserved for agency review
- Executive Secretariat will bring forth a proposal to add one more layer of review: a review editor for each chapter.
- Due date for initial chapters – June 1, 2012
- Deadline for receipt of new information for consideration for inclusion in the draft report – July 31, 2012
- Deadline for adding information only in response to review comments – April 30, 2013

DISCUSSION OF AUTHOR AND REVIEW EDITOR ROLES

Jerry Melillo, Marine Biological Laboratory and NCADAC Chair

Dr. Melillo framed the discussion regarding potential roles for review editors (REs). The debate was on whether the REs should be 1) subject matter experts reviewing content, or 2) compliance editors checking to see that responses to comments have been adequately addressed. Initial comments from NCADAC members were mixed. Some felt that the latter role is more important to avoid appearances of the same people being involved in all steps (e.g., technical input author, chapter author, and member of the NCADAC that is responsible for producing the final document). Others felt that the REs could do both a content review and a compliance review. The NCADAC agreed to discuss the proposal and vote tomorrow, considering at least three possible options – 1) content reviewer 2) compliance reviewer, or 3) both.

PRESENTATION OF RISK-BASED FRAMING, UNCERTAINTY GUIDELINES, AND EXPERT ELICITATION FRAMEWORK

Richard Moss, Joint Global Change Research Institute, Pacific Northwest National Laboratory, and University of Maryland, and NCADAC Executive Secretariat Member

Summary

Dr. Moss described seven steps for characterizing the level of confidence in key conclusions for the 2013 NCA report:

1. Issue identification – frame a manageable number (3-4) of key questions or issues that address the most important information needs of stakeholders
2. Evaluate the available information, considering the type, amount, quality, and consistency of evidence
3. Formulate well-posed conclusions that can be confirmed or falsified
4. Identify key uncertainties and briefly describe observations and research needed to improve the information
5. Assess confidence by considering (i) the quality of the evidence and (ii) the level of agreement among experts with relevant knowledge and experience

6. Especially for findings that identify potential high consequence outcomes, estimate the likelihood of occurrence
7. Prepare a summary “traceable account”

Dr. Moss also discussed additional resources under development: add experts in decision analysis and risk communication to key chapters, undertake expert elicitation for about six key issues, and conduct an evaluation of the approach.

Discussion

There was some concern from NCADAC members that the confidence meter may be confused with a thermometer. It was suggested that a graphics artist be consulted to revise the image. There was concern regarding the timing of the release of the proposed checklist. Technical input teams have made significant progress with their work already. Dr. Moss responded that the intended audience for the proposed checklist is the chapter author teams. In general, NCADAC members seemed to like the confidence meter, but felt that it may not be descriptive enough for stakeholders. There was a suggestion to choose some application exemplars that could be used to provide a more meaningful context for stakeholders. There was considerable concern regarding the ability to make probabilistic statements. Dr. Moss explained that assigning probabilities would not always be possible. In those cases, a subjective decision regarding uncertainty must be made. That is when traceable accounts become imperative; they help readers understand why certain conclusions were reached.

SUMMARY OF DAY’S OUTCOMES

Jerry Melillo, Marine Biological Laboratory and NCADAC Chair

- Suggestions for modifications to the format of the meeting minutes were welcomed.
- Several working groups proposed documents for approval on the second day of the meeting. Those documents were made available on a temporary website. Melillo asked NCADAC members to review the documents and be prepared to vote the next day.
- A joint regional and sectoral chapter outline template is in development and will be shared with the working groups in the next few weeks.
- Current guidance states that contributing authors will not be named. The Executive Secretariat was asked to reconsider this point.
- The mitigation and adaptation approach would be considered by the Executive Secretariat prior to the start of the next day’s meeting. They would bring back a proposed path forward on which the NCADAC would be asked to vote.
- Selection of the CLAs are nearly complete (with one exception), and nomination of LAs are still in process, with the expectation that they will be chosen by December 1, 2011, to the extent possible.

PUBLIC COMMENTS

There were no public comments.

ADJOURN

The meeting was adjourned for the day at 2:30 p.m. MST.

WELCOME AND AGENDA

Jerry Melillo, Marine Biological Laboratory and NCADAC Chair

Dr. Melillo welcomed the NCADAC back for the second and final day of the meeting. He explained that the order of discussion would be numerical based on Working Groups with items up for decision. He asked for a show of hands from NCADAC members to see how many plan to attend the CLA meeting to be held in Tucson, Arizona in January 2012. About 6-8 NCADAC Members who are not CLAs plan to attend.

APPROVAL OF PROPOSALS FROM NCADAC WORKING GROUPS

Jerry Melillo, Marine Biological Laboratory and NCADAC Chair

T.C. Richmond, GordonDerr, LLP and NCADAC Vice-Chair

Gary Yohe, Wesleyan University and NCADAC Vice-Chair

WORKING GROUP #6 – INFORMATION QUALITY ASSURANCE

Proposal: The Working Group requested approval of the approach described in the “general principles used in the development of guidance for assuring information quality in the National Climate Assessment” document, with authorization to make very minor changes prior to the next NCADAC meeting. The document still referenced the three criteria of NOAA’s Information Quality Guidelines, but removed the direct references and added footnotes, making the document more user-friendly.

Discussion: NCADAC Members generally liked the changes to the document. One NCADAC Member suggested broadening the language in the definition of “utility” (item 5a) to be more inclusive of audience types.

Action: A motion to approve was made and seconded. The motion was approved unanimously. The Working Group will send out a revised version of the document to the full NCADAC.

WORKING GROUP #10 – CLIMATE CHANGE SCIENCE

Proposal: The Working Group requested approval of the development of a climate science frequently asked questions document to be published online. The focus would be on basic science questions as well as why people should care about climate science. The idea is to clear up misconceptions about climate science.

Discussion: A question was posed regarding whether adaptation would be included and the Working Group responded that it will. It was noted that responses to questions should be framed in a positive sense, and should

address questions without delving into the misconceptions themselves. It was suggested that there should be a process for generating questions, such as an open call.

Action: A motion to approve was made. The motion was seconded. The motion was approved unanimously.

WORKING GROUP #13 – INDICATORS DEVELOPMENT AND EVALUATION

Proposal: The Working Group requested approval of the approach to developing indicators described in the “NCA Indicator Vision” document. It asked for approval of the general message, not the details.

Discussion: Concern was expressed over the use of leading indicators, which would be used to project changes in important parameters that could result from possible climate changes. It was reiterated that the NCA must not become prescriptive in any way.

Action: A motion was made for the Working Group to move forward in their current direction. The motion was seconded. The motion was approved unanimously.

WORKING GROUP #15 – SUSTAINED ASSESSMENT PROCESS

Proposal: The Working Group requested approval of the sustained assessment scope and approach as described in its four-page white paper.

Discussion: A suggestion was made to emphasize public and private partnerships. There was general agreement that, while the details may change, the Working Group is headed in the right direction.

Action: A motion for approval was made and seconded. The motion was approved unanimously.

EXECUTIVE SECRETARIAT AND WORKING GROUP #12 – ADAPTATION AND MITIGATION

Proposal: The Executive Secretariat made the following proposal for NCADAC approval based on discussions held in the morning prior to the NCADAC meeting:

- Establish a new “decision support” chapter to frame the connection between science and decision making processes – including models and tools
- The adaptation chapter will include some description of the intersection with mitigation, but is no longer a combined “adaptation and mitigation” chapter
- The mitigation chapter will include some description about the intersection with adaptation, but will focus primarily on emissions and carbon management and information for decision-makers
- Connections will be drawn among these chapters

Next steps are to refine the scope of the three chapters and identify CLAs and LAs for the two new chapters.

Discussion: There was much discussion among NCADAC members regarding the proposed chapter structure. There was concern that this would be repetitive of the work put forth in the four-volume series *America’s Climate Choices (ACC)*. Others noted that it is possible the audience of the NCA may not be familiar with the ACC

reports. The chapters would be a synthesis exercise, not original research, and could cite the ACC reports. Concern was expressed that there did not seem to be a place for inclusion of geo-engineering. The Working Group was reminded to stay focused on the mandates of the Global Change Research Act of 1990, which does not obligate the Working Group to address all topics. However, the NCADAC's charter expressly states that the Working Group will address the topic of mitigation. There was general support for the idea of a decision support chapter. Many NCADAC members saw this as an opportunity to embed social science in the NCA and to provide context for decision-making in the face of uncertainty.

Action: A motion was made and seconded to approve the structure of the three chapters. The motion was passed with one NCADAC member in opposition.

APPROVAL OF UNCERTAINTY GUIDELINES

Jerry Melillo, Marine Biological Laboratory and NCADAC Chair
T.C. Richmond, GordonDerr, LLP and NCADAC Vice-Chair
Gary Yohe, Wesleyan University and NCADAC Vice-Chair

Proposal: The NCADAC was asked to adopt the uncertainty guidelines for use by author teams preparing the NCA 2013 report. The guidelines will also be made available to those providing technical inputs to the NCA for their reference and voluntary use. In approving the guidance, the NCADAC was asked to acknowledge that some details of the guidelines may change, for example, the icon used to convey confidence, pending further investigation.

Discussion: A member asked if quantitative assessments of uncertainty could be revised over time as more is learned and if the confidence language could be revisited if it does not work well for the teams. The Chair responded 'yes' to this question.

Action: A motion was made and seconded to adopt the uncertainty guidelines. The motion passed unanimously.

APPROVAL OF CHAPTER AUTHOR AND REVIEW EDITOR ROLES

Jerry Melillo, Marine Biological Laboratory and NCADAC Chair
T.C. Richmond, GordonDerr, LLP and NCADAC Vice-Chair
Gary Yohe, Wesleyan University and NCADAC Vice-Chair

Proposal: Approval was requested of a review editor role, to be amended per discussion. A few options for the review editor role were presented:

1. Sentinel Review – expert review of draft chapters before they go out for official review
2. Compliance Review – determines whether the chapter authors adequately addressed comments from the public/NRC/agencies

3. A combination of the above roles

Discussion: This topic generated much discussion. Concern was expressed regarding the Sentinel Reviewer role; a danger of this role is the possible introduction of bias due to having a single reviewer. There was also concern of a lack of objectivity if there isn't such a reviewer since some lead authors are involved in the development of technical input and are also on the NCADAC – there is a tendency for Working Groups to agree with themselves. It was commented that Sentinel Reviewers should be subject matter experts with the role of commenting and providing feedback, not having the authority to approve or disapprove of content. There was some concern over the feasibility of getting enough people to serve as reviewers; one person per chapter is still 30 people. There was general agreement that conducting an expert review prior to the more comprehensive expert review (to be conducted by the National Research Council) is unnecessary and cumbersome.

Action: Voting was done in parts, addressing each proposal separately.

1. Sentinel Review – expert review before chapter goes out for official review
 - Majority opposed – NOT PASSED
2. Compliance Review – reviewers determine whether comments have been adequately addressed
 - Unanimous support – PASSED
3. Combination Role
 - Majority opposed – NOT PASSED
4. Should compliance review editors be invited to the author meeting in Arizona in January 2012? - NO
 - Opposed bringing editors to that meeting, but would like to have training for them via webinar
 - Executive Secretariat should prepare a document that provides the exact roles of the editors
5. Will responses to the guidance be assessed by these editors too?
 - Majority opposed – NOT PASSED
 - This will be the responsibility of the CLAs, the Executive Secretariat, and the NCADAC

APPROVAL OF AMENDED REPORT PRODUCTION TIMELINE

Jerry Melillo, Marine Biological Laboratory and NCADAC Chair

T.C. Richmond, GordonDerr, LLP and NCADAC Vice-Chair

Gary Yohe, Wesleyan University and NCADAC Vice-Chair

Proposal: Approval of the report production timeline as edited by the Executive Secretariat was requested. Minor changes were made in October by the Executive Secretariat, and additional changes were made on this day following some discussion:

- “EOP review in order to adopt the report” was changed to “Executive Office of the President comments”
- “CLAs and NCADAC revise draft” step was expanded to include the review editor process
- Final step was revised to say “NCADAC to consider revisions and approve report”

Discussion: Concern was expressed and clarification needed regarding the step in which the Executive Office of the President (EOP) reviews and decides whether or not to adopt the report; many NCADAC members were not clear about what this entailed. It was explained that as per the Legislative Review Memorandum Process², a government document must first be cleared by all federal agencies before reaching Congress. Additionally, there is a new executive order in place that precludes federal agencies from changing the content of a report produced by a federal advisory committee. If any agency decides not to approve of the final document, the NCADAC can decide whether or not it will consent to the change they request. If not adopted by EOP³, the NCADAC may choose to submit the report without the EOP concurrence.

Action: A motion was made and seconded to approve the timeline through July 1, 2013 since there were no concerns about the timeline prior to that date. The motion passed unanimously. NCA staff members will seek clarity on the exact process for obtaining congressional approval of the final report. They will provide a detailed written description of the process to the NCADAC so they can deliberate approval of the rest of the timeline.

APPROVAL OF “GUIDANCE ON 8 PRIORITY TOPICS” DOCUMENT

Jerry Melillo, Marine Biological Laboratory and NCADAC Chair
T.C. Richmond, GordonDerr, LLP and NCADAC Vice-Chair
Gary Yohe, Wesleyan University and NCADAC Vice-Chair

Proposal: Approval was requested for the scope and approach described in the draft guidance on 8 priority topics for the NCA. The purpose of the document is to provide a summary of guidance for technical input teams and chapter authors.

Discussion: A suggestion was made to amend the document to include a placeholder for decision-support analysis, because the authors will need to be aware that the topic is forthcoming. There was general agreement on this point.

Action: A motion was made and seconded to approve the document in principle. The NCADAC was also asked to allow NCA staff to make edits as required and to advertise the document on the NCA website as a resource for technical input teams. The motion passed unanimously.

UPDATE ON THE GLOBAL CHANGE INFORMATION SYSTEM

Anne Waple, NOAA Program Manager for Technical Support Unit to the NCA

² This process is described in detail in the Office of Management and Budget’s Circular No. A-19, entitled ‘Legislative Coordination and Clearance’. The Circular can be found at http://www.whitehouse.gov/omb/circulars_a019/.

³ Approval by the National Science and Technology Council (NSTC) and the Office of Management and Budget (OMB) constitutes approval by the Executive Office of the President (EOP).

Summary

Dr. Waple reminded the NCADAC that the purpose of the Global Change Information System (GCIS) is to provide a single source of authoritative information for climate and global change. GCIS is intended to provide this integrated system with the NCA as its initial focus, assisting the NCA in providing transparent, accessible, and timely climate information. Waple described the modified governance approach developed within the last few months. A broad-scale architecture is in development with a request out to USGCRP agencies asking who would lead the overall GCIS work stream. In the near term, NCA-specific deliverables will be managed by Dr. Waple. Over time, the two work streams (overall architecture and NCA-specific) will merge. Dr. Waple identified issues with metadata as one of the biggest challenges facing the development of the overall architecture of GCIS. Looking to build on existing efforts, GCIS seeks to maintain high-quality data that is easily accessible. GCIS progress specific to the NCA includes the development of a working project plan and near-term implementation of an external hosting vehicle. Upcoming efforts include the deployment of a prototype website based on the 2009 Assessment, the design of a new GCIS website, and several tasks supporting a sustained Assessment process.

Discussion

NCADAC Members felt it was important to develop an engagement strategy (with consultation, as appropriate, with the Engagement, Communication and Evaluation Working Group) to inform people that a system such as GCIS exists. It was noted that the Climate Change Adaptation Task Force⁴ has been calling for the 2009 Assessment report to be more accessible, so the GCIS may be key to outreach efforts. It was noted that systems are already in place within federal agencies for accepting technical inputs online and tracking comments; these systems should be leveraged by GCIS and NCA. It was clarified that the GCIS is a vision of the USGCRP and is completely separate from existing portals within federal agencies. The intent with GCIS is to connect portals and other agency work in a central location. Overall, NCADAC Members were very pleased with the progress made to date and the general direction of GCIS.

SCENARIOS DEVELOPMENT AND ACCESS – WORKING GROUP #3

Richard Moss, Joint Global Change Research Institute, Pacific Northwest National Laboratory, and University of Maryland, and NCADAC Executive Secretariat Member

Summary

Dr. Moss provided a summary of the scenarios under development for the NCA. Four types of scenarios are in development : climate, sea level, land cover and land use, and socioeconomic factors. Scenarios are intended to provide context for a range of potential future conditions for calibration of existing literature and other purposes. Quantitative scenarios are intended for modeling purposes. Climate change outlooks have been

⁴ Co-chaired by the Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), and including members from more than 20 federal agencies, the Climate Change Adaptation Task Force was convened in 2009 to develop recommendations to help the federal government strengthen policies and programs to better prepare the Nation to adapt to the impacts of climate change. More information can be found at <http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation>.

completed at the national and regional levels and provide descriptions of the state of knowledge of conditions and trends. Regional outlooks were tailored to fit the needs of stakeholder within a given region. Dr. Moss defined four sea-level change scenarios, showing how global mean sea level may increase by the year 2100: high (2.0 meters), intermediate 1 (1.4 meters), intermediate 2 (0.7 meters), and low (0.2 meters). The sub-group addressing land cover and land use suggested using the National Land Cover Database 2006 as a baseline characterization of land cover. Additionally, it recommends using ICLUS (Integrated Climate and Land Use) scenarios that use IPCC SRES B1 and A2⁵ logic and incorporate socioeconomic data. ICLUS projections are developed and supported by the U.S. Environmental Protection Agency. Additional resources from the U.S. Department of Agriculture and the U.S. Geological Survey were also noted. Dr. Moss noted that data for development of socioeconomic scenarios are available through the U.S. Census Bureau. Dr. Moss discussed participatory scenarios which integrate science-based scenarios with stakeholder engagement. This Working Group plans to continue meeting and will examine implementation plans including dissemination of scenario material. The WG thinks that using scenarios creatively with decision-makers is critical.

Discussion

There was some concern that the deadline for completing sea-level change scenarios was not soon enough, but Dr. Moss and his Working Group members are confident that they will be prepared in time. Concern was expressed over whether there was potential for conflicting stories to emerge between the regional and national levels. Dr. Moss assured the NCADAC members that regional input will only enhance accuracy at the national level. Some discussion focused on the feasibility of providing probabilistic assessments of sea-level rise. The Working Group did not feel it could associate probabilities with various sea-level change scenarios.

EVALUATION IN SUPPORT OF AN ADAPTIVE NCA PROCESS – WORKING GROUP 7 – ENGAGEMENT, COMMUNICATION, AND EVALUATION

*Susanne Moser, Susanne Moser Research & Consulting and NCADAC Executive Secretariat Member
Ed Maibach, George Mason University and NCADAC Member*

Summary

After acknowledging the hesitation regarding evaluation that was expressed at the last NCADAC meeting (August 2011), the Working Group suggested reframing evaluation as “efforts undertaken to enable internal learning in support of an ongoing, responsive, and effective assessment process”. The scope of evaluation would encompass the NCA process, outputs, and outcomes (not just the NCADAC). Evaluation would support the long-term success of the NCA by helping meet legally required objectives and strategic goals, maintaining institutional memory, and improving the process over time. Further, evaluation would help the NCA function as a learning organization; one in which the changing membership – as a result of its experience and reflection – will be equipped to be responsive to changes in science, decision-maker needs, and across the nation, as climate change and responses progress. The Working Group has begun development of an overarching NCA logic model and of strategies for achieving assessment goals and indicators of success. It has begun discussing scope,

⁵ B1 and A2 refer to IPCC SRES scenarios. More information regarding these scenarios can be found at http://www.grida.no/publications/other/ipcc_sr/.

audience, and mechanisms for tracking progress. The WG gave several examples of possible tracking mechanisms and their benefits.

Discussion

A member asked whether there were examples from other assessment efforts in which the proposed ‘internal learning’ type of evaluation was used; and, if so, how well did they work? Dr. Moser answered that this had been done in the past, including a formal report by the National Research Council (NRC) that evaluated the effectiveness of previous assessments. Dr. Moser also noted that there may be agency interest in funding an external evaluation mechanism of portions of the NCA, such as the effectiveness of the uncertainty guidance or of NCA engagement efforts.

UNFINISHED AND/OR NEW BUSINESS

Jerry Melillo, Marine Biological Laboratory and NCADAC Chair

T.C. Richmond, GordonDerr, LLP and NCADAC Vice-Chair

Gary Yohe, Wesleyan University and NCADAC Vice-Chair

- Date for the next full-NCADAC meeting to be decided
- Awaiting a resolution from NOAA lawyers regarding external funding and guidance to NCADAC members
- Executive Secretariat to write a concise description of the review editor role and responsibilities
- Lead authors to be identified by December 1, 2011 (except for Decision Support and Mitigation chapters)
- A *Federal Register* Notice announcing all authors to be published in January
- Need to consider future plans for author team meetings and developing additional guidance to the CLAs (including chapter templates)
- NCA staff will clarify the final steps involved in the production of the NCA report and delivery to Congress and the President
- Several working group documents still in development

SUMMARY OF MEETING, OUTCOMES, AND NEXT STEPS

Jerry Melillo, Marine Biological Laboratory and NCADAC Chair

Items approved during the meeting:

- Information quality principles
- Climate science frequently asked questions
- Scope and approach to developing indicators
- Scope and approach to sustaining the Assessment
- Decision Support, Adaptation, and Mitigation chapters

- Uncertainty guidelines
- Compliance review role for review editor
- Report production timeline through July 1, 2013. Clarification on agency and EOP will be forthcoming from USGCRP and NOAA.
- Scope and approach described in priority topics guidance (to include decision support)

ADJOURN

The meeting was adjourned at 3 p.m. MST.

APPENDIX A

ATTENDEES

Non-Federal Members in attendance

Name	Affiliation
Daniel Abbasi	GameChange Capital, LLC
E. Virginia Armbrust	University of Washington
Timothy Bennett	Kiksapa Consulting, LLC
Rosina Bierbaum	University of Michigan
Maria Blair	American Cancer Society
James Buizer	University of Arizona
Lynne Carter	Louisiana State University
F. Stuart Chapin	University of Alaska
Janet Dell	CH2MHill
Guido Franco	California Energy Commission
Aris Georgakakos	Georgia Institute of Technology
David Gustafson	Monsanto Company
Sharon Hays	Computer Sciences Corporation
Mark Howden	Australian Commonwealth Scientific and Industrial Research Organisation

Anthony Janetos	Joint Global Change Research Inst., University of Maryland
Arthur Lee	Chevron Corporation
Rezaul Mahmood	Eastern Kentucky University (by phone)
Edward Maibach	George Mason University
Michael McGeehin	RTI International
Jerry Melillo	Marine Biological Laboratory
Susanne Moser	Susanne Moser Research & Consulting; Stanford University
Richard Moss	University of Maryland
Philip Mote	Oregon State University
Jayantha Obeysekera	South Florida Water Management District
Lindene Patton	Zurich Financial Services
John Posey	East-West Gateway Council of Governments
Terese Richmond	GordonDerr, LLP
Andrew Rosenberg	Conservation International
Henry Schwartz	HGS Consultants, LLC
Joel Smith	Stratus Consulting
Donald Wuebbles	University of Illinois

Gary Yohe	Wesleyan University
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Ex Officio Members in attendance

Name	Affiliation
Virginia Burkett	Department of the Interior
John Hall	Department of Defense
Bill Hohenstein	U.S. Department of Agriculture
Susan Julius	U.S. Environmental Protection Agency
Thomas Karl	NSTC Subcommittee on Global Change Research
Chester Koblinsky	National Oceanic and Atmospheric Administration
Linda Lawson	U.S. Department of Transportation

OSTP, USGCRP, and NOAA staff in attendance

Name	Affiliation
Ralph Cantral	U.S. Global Change Research Program
Emily Cloyd	U.S. Global Change Research Program
Cynthia Decker	Department of Commerce, NOAA
Doreen DiCarlo	Department of Commerce, NOAA

Bill Emanuel	U.S. Global Change Research Program
Bryce Golden-Chen	U.S. Global Change Research Program
Paula Hennon	Department of Commerce, NOAA
Stephanie Herring	Department of Commerce, NOAA
Katharine Jacobs	White House Office of Science and Technology Policy
Melissa Kenney	Department of Commerce, NOAA
Ken Kunkel	Department of Commerce, NOAA
Fred Lipschultz	U.S. Global Change Research Program
Sheila O'Brien	U.S. Global Change Research Program
Anne Waple	Department of Commerce, NOAA

Others in attendance

Name	Affiliation
Brenda Ekwurzel	Union of Concerned Scientists
Jody Erikson	Keystone Center
Susan Hassol	Climate Communication
Denali Hussin	Climate Communication
Doug Kluck	Department of Commerce, NOAA

Daniel Kreeger	Association of Climate Change Officers
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Linda Mearns	NCAR
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