

Coastal Elevations and Sea Level Rise Advisory Committee

Meeting Minutes: Friday June 8, 2007
The Renaissance Portsmouth Hotel
425 Water St.
Portsmouth, VA

Committee Members:

Present: Margaret Davidson (Chair), Alan Belenz, Mark Crowell, Andrew Garcia, Carl Hershner, Julie Hunkins, Mark Mauriello, Mark Monmonier, William Nechamen, Sam Pearsall, Tony Pratt, Greg Rudolph, Harvey Ryland

Absent: Rebecca Beavers, Gwynne Schultz

Quorum present? Yes

Others Present:

Designated Federal Officer (DFO): Jack Fitzgerald

Synthesis and Assessment Product (SAP) 4.1 Presenting Authors: Jim Titus (EPA), S. Jeffress Williams (USGS), Don Cahoon (USGS), Stephen Gill (NOAA)

Others: Eric Anderson, Rob Thieler, Ben Gutierrez, Skip Stiles, Steve Olson, Ricardo Lopez-Torrijus, Shep Moon, Patrick Lynch, Brian Czech, Tancred Miller, Jay Taylor, Chuck Herrick, Beth Scherer

Proceedings:

The meeting was called to order at 8:30 am by Margaret Davidson, Chair.

Introductory remarks, Margaret Davidson. Davidson opened the meeting by reminding the Coastal Elevations and Sea Level Rise Advisory Committee (CESLAC) members of their role in the development of SAP 4.1.

Jack Fitzgerald acknowledged that CESLAC members had only recently received materials for review, and stated that EPA is working on ways to provide committee members more time to review before meetings. Phone meetings will be explored as a way to facilitate sharing information with CESLAC. The purpose of this meeting should be to discuss information that committee members believe would be helpful for coastal managers in planning for sea level rise

(SLR). At the final meeting the committee can discuss additional scientific research to be addressed in the future.

Harvey Ryland asked what level of discussion the committee should pursue, given that they would try to avoid discussing issues that arise because of the stage of completion of the draft document. Margaret Davidson responded that because some committee members may not have had adequate time to review and reflect upon the document, the current session should focus on the overall clarity of the document and obvious gaps in the content of the study. The purpose of the committee is not to edit the document, as presumably this task will be undertaken by professional technical editors.

Sam Pearsall requested that a hard copies of all draft materials under review be mailed to committee members well before meetings.

It was noted that the abstract of SAP 4.1 provided to the committee allocated 8 pages to the glossary and list of acronyms and suggested that the authors consider expanding this section for policy makers who might be less familiar with relevant concepts and terminology.

Alan Belenz asked for further clarification of the Climate Change Science Program (CCSP) process and where it fits in with the National Assessment. Margaret Davidson responded that while CCSP is not a part of the National Assessment there may be some overlap between the two. There are about 12 CCSP topics. Jack Fitzgerald responded that CESLAC is not part of the National Assessment and that the role of the committee is to report to the EPA Administrator. Alan Belenz asked who will be using the recommendations and next steps formulated by CESLAC. Is the committee allowed to make recommendations such as that the authors have more time to complete their charge? Fitzgerald responded that the schedule for SAP 4.1 is fixed.

Bill Nechamen asserted that while the committee is not charged with editing the draft document, it is important to note editorial issues that might change the meaning of all or part of the document.

Author Presentation of Question 1 of SAP 4.1, Jim Titus. Titus reviewed the milestones for SAP 4.1 presented at the first meeting. Titus presented the PowerPoint included in Attachment A.

Bill Nechamen noted that a topographical dataset for New York counties is available.

Mark Mauriello asked which data sets were being used for New Jersey. Titus responded that the report relies on Rutgers data.

Sam Pearsall asked about the fate of non-tidal wetlands. Discussing the fate of non-tidal wetlands when they are at sea level is necessary because these are an important resource in North Carolina as well as in other places.

Margaret Davidson noted that color codes vary from graph-to-graph within the assessment, and should be made consistent if they represent similar concepts or metrics.

Sam Pearsall asked if an assumption that barrier islands will remain intact is made in the report? He asserted that barrier islands may disappear with an increased tidal range which does not appear to be modeled in the report. Titus responded that North Carolina was not included in the discussion of how the coastline will change.

Carl Hershner noted that linking non-tidal wetlands to a specific elevation can create confusion. Non-tidal wetlands can occur at a range of elevations. Jim Titus responded that the implication was not that non-tidal wetlands occur at specific elevations, but to distinguish between wet and dry land.

Sam Pearsall noted that topographic features can rest upon ephemeral soils and that soil characteristics can have a significant effect on elevations and how they will respond to SLR. Pearsall questioned the assumption that soil characteristics and erosion are static. Margaret Davidson asked about data with regard to soil characteristics. Jim Titus responded that while the study will not assign specific soil characteristics to projections, it is an important issue that needs to be addressed. The authors will broadly discuss potential changes in existing topography as a result of SLR. Pearsall reiterated that variation of soil types may be a significant gap in the report.

Mark Monmonier noted that planners will want to know about the timing of changes implied by the report (e.g., what changes can be expected by 2100). Titus responded that the expertise of the authors is concentrated on the presentation of a range of possible outcomes, but that the question is an important one and will be addressed in narrative elements of the report.

Carl Hershner asserted that Question 1 should only address topography and that the discussion of non-tidal wetlands versus dry land, soil characteristics, and ecology should be saved for question 4, because drawing distinctions between these factors is complicated and unnecessary for this section. Pearsall agreed and cited two NOAA analyses that deal with inundation and ecosystems. Titus asked where information on non-tidal wetlands would go as he finds it useful. Hershner responded that while it is useful information some of the wetlands depicted in the graphic are not at risk and thus the graphic confuses the issue because people don't necessarily understand the technical distinctions between the two.

Margaret Davidson emphasized that it will be important for the report to be presented in a simple logical sequence of text and pictures to help educate the public.

Author Presentation of Question 2 of SAP 4.1, Jeff Williams. Williams presented the PowerPoint included in Attachment B.

Sam Pearsall inquired about the distinction between “threshold” and “marginal” conditions. Margaret Davidson asked whether it related to the ability of islands to recover. Williams responded that normally barrier islands recover after storms, but we aren’t seeing this with barrier islands that were washed out in Hurricane Katrina, there is not enough sand to bleed back, and thus we may be observing that a threshold has been passed.

Carl Hershner noted that the report lacked a discussion of the effect of SLR on areas other than the ocean coast. He noted that there is some historical data available for Virginia and Maryland. Williams responded that the best available data is for the ocean coast.

Pearsall noted that sea level was a meter or so lower when Europeans arrived in North Carolina. Williams responded that the report makes a broad statement based on the global rate of change. Rob Thieler responded that in general the global SLR has been static but that local and regional variation has occurred. He noted that North Carolina in particular has probably experienced SLR because it is located in a subsiding basin and that the elevation of parts of the state’s coastline is subject to changes in gulf stream velocity. Margaret Davidson noted that it would be good for authors to clarify these variations, fluctuations, and what causes them. Davidson also urged authors to include a discussion of national, regional, and other issues of scale. Pearsall agreed that a summary of local variation and geographic distribution would be very useful.

Tony Pratt noted that cross-shore and littoral processes are both very important, as is understanding the dynamics of barrier beaches. Williams responded that the report will include a discussion of assumptions and limitations.

Pearsall asked if the report will include a discussion of the supply of sand and sediment budgets, especially with regard to potential effects of beach nourishment. Williams noted that this is a large issue but that he was not sure the report would ultimately address it, although the authors are hoping to gather insight through information gained from the Army Corps of Engineers. Pearsall asserted that public officials need to understand the implications of beach nourishment for planning purposes. Tony Pratt noted that sand recycling should also be considered. Margaret Davidson and Tony Pratt cited a relevant recent study.

Bill Nechamen asked about the ecological implications of sand sources, noting that the National Marine Fisheries Service has classified many sand source areas as sensitive habitat.

Greg Rudolph noted that while all questions being raised by CESLAC are important, it would be very difficult for the report to address all of them in detail.

Author Presentation of Question 3 of SAP 4.1, Don Cahoon. Cahoon presented the PowerPoint included in Attachment C. The presentation noted the complexity of factors that impact wetland features. There is a lack of tools to accurately model this phenomenon and an expert panel was

used to capture important differences between national, regional, and local projections and driving factors. The presentation emphasized the importance of local and regional drivers.

Carl Hershner disagreed with the expert panel findings. Based on his observations, he does not think that eastern Virginia marshes are keeping pace with SLR. He noted that many of these areas are not keeping pace due to inadequate accretion and suggested that less land would tolerate a + 2 mm annual rise in sea level than indicated in the report.

Pearsall noted that the generalizations in the document about wetlands keeping pace with current trends should not be applied to North Carolina either, specifically Albemarle and Pamlico are not keeping pace. Cahoon noted that North Carolina was not addressed in this study. Titus noted that while North Carolina was not addressed in the study, the authors might be able to include it with enough help from experts from that region. There will be a contributors meeting in North Carolina. Margaret Davidson suggested that committee members from North Carolina might motivate others to attend this meeting. An invitation list will be given to Sam Pearsall, Julie Hunkins, and Margaret Davidson. It was noted that if North Carolina is not included in Question 4, is it useful to include in Question 3. Stephen Gill noted that there are studies are being done that incorporate North Carolina but that findings have not been documented yet.

Mark Monmonier suggested that the wetland conversion graphic needs to be better graded with color to show a gradual transformation, not radical change. Davidson asserted that the issue of graphic consistency applies throughout the document. Monmonier also suggested that the authors include an insert that explains the constructs used in the graphic.

A question was raised about appropriate communication between committee members and authors. Fitzgerald noted that the committee is subject to the Federal Advisory Committee Act (FACA). While incidental conversations between authors and committee members are not necessarily inappropriate, committee business should be addressed only in a formal group setting. Davidson clarified the FACA for members of the general public. Eric Anderson pointed out that committee members should comment on the maps in the meeting so that those comments could become a part of the public record.

Greg Rudolph asserted that North Carolina needs to be included.

Sam Pearsall expressed his desire that CESLAC members be provided with an appropriate means to conduct ongoing dialogue. He suggested an online public forum as a means to communicate outside official meetings. Fitzgerald will discuss the appropriateness of such a process and mechanism with the EPA Office of General Council (OGC).

Hershner suggested that North Carolina needs to be included in this analysis because it is conspicuous in its absence.

Tony Pratt asked whether the discussion of accretion would look at how physical stressors impact biological processes that impact accretion. He asked for a successional map, not just a terminal map. Cahoon was unsure that this could be accomplished, but stated that these factors were likely considered in the expert judgment used to create these maps. He will discuss the possibility of explicitly including these factors, but if they can't be explicitly included it will be noted as a gap in the study.

Carl Hershner reiterated his discomfort with some of the findings of this section that are in direct conflict with local observations and asserted that this needs to be dealt with since the findings have significant policy implications. He asked if it was necessary for a counter report to be published. Titus noted that this issue was raised at the January meeting. He suggested that the peer review look specifically at this issue and noted that the report did not have to agree with the Reed et al. study on which it is based.

Margaret Davidson asked if references would be included in an appendix with primary documents. Jim Titus responded that a separate volume would be published with the primary sources once the peer review is complete.

Hershner inquired about committee members providing peer reviews. Fitzgerald stated that the peer review should remain separate from the committee, but that issues raised by the committee will be documented and addressed by the authors. The committee report will serve to address issues with SAP 4.1

Hershner noted that in this case sub-regional information is key. Davidson asked if this suggestion constituted a motion, Hershner said yes. The motion was articulated as follows:

“The report authors should seek additional regional and local assessments for the wetland risk analysis, especially for the Chesapeake Bay and North Carolina. Land protection probability analysis should be carefully explained and caveated. Conclusions about potential management efficacy should be carefully considered in light of the previous two statements.”

Pearsall noted that if the report is a product of expert opinions, it needs to describe the formalized or nominal group process by which issues were explored and consensus achieved. Cahoon noted that the process for expert elicitation is described at the end of the chapter.

Author Presentation of Question 4 of SAP 4.1, Jim Titus. Titus presented the PowerPoint included in Attachment D.

Hershner suggested that the presentation of non-tidal wetlands is out of place here and that it confuses the presentation.

Davidson suggested that a footnote be used to better elucidate the input derived from city and county planners since there is sometimes a conflict between political feasibility and desired outcomes. Titus stated that the authors wrote what was suggested by city and county planners unless it was flagrantly inconsistent or irrational. The study includes both optimistic and pessimistic views of historic loss of wetlands.

Hershner asserted that the broad conclusion is in error. The conclusions could be mostly a function of inconsistent assessments across counties as evidenced by the fact that inputs match county boundaries. Titus responded that this is an issue among all attempts to aggregate and generalize. Hershner suggested that the report's conclusions don't need to change, but they do need to be better described.

Sam Pearsall questioned how the group of experts arrived at a consensus for section 3.3.7 of the report. Pearsall suggested that the responses from the counties need to be further evaluated, and suggested that interviewees were likely responding to questions with strategically motivated answers because questions were being posed by representatives of a regulatory agency. Greg Rudolph requested that the authors better define subjective constructs such as "likely to be protected." He suggested attaching percentage likelihood to these narrative descriptives. Rob Thieler indicated that this is going to be done in the report. Bill Nechamen suggested that there is a need to heavily caveat the statements of county planners.

Sam Pearsall made the following motion: The utility of this chapter and the overall approach should be further discussed.

Brian Czech of the Fish and Wildlife Service, participating as a member of the public, discouraged the framing of findings in terms of "optimism" and "pessimism" (as stated in Titus' last slide). The public needs to see information framed in terms of realism, as efforts for environmental protection are frequently dismissed as pessimistic.

Author Presentation of Questions 5 and 6 of SAP 4.1, Steve Gill. Gill presented the PowerPoints included in Attachment F.

Jim Titus noted that at the Easton stakeholder meeting, scientists said that section 3.8 of the report needs to address how climate change changes habitat. Currently that section is more focused on species-specific impacts of change. Titus distributed the "Charge to Stakeholders" for SAP 4.1 that was distributed at the meeting in Easton (Attachment E).

Titus noted that questions 7, 9, and 10 are only outlined so far.

Hershner expressed a need to discuss the erosion impact on floodplains as well as on the ocean coast. Mark Crowell stated that the ocean coast is also a floodplain concern.

Nechamen suggested that the study should note where back bays might be put in jeopardy by loss of barrier islands.

Greg Rudolph noted that Section 3.5.5 of the draft report is missing North Carolina. Gill said it will be added.

Harvey Ryland noted that building codes for New York and New Jersey are the only ones referenced in the report, but that building codes from all states are important and should be included. He cited evidence suggesting that stronger building codes can reduce damage up to 75%.

Ryland asserted that the way that flood risk is designated should be changed. People don't buy flood insurance because they don't live in a designated flood plain, but evidence suggests that floods frequently occur in areas that are not designated flood plains. This is important because climate change will likely exacerbate this situation.

Ryland cautioned that the authors should not underestimate the effect of development on flooding, as development can alter the hydrology of an area.

Mark Crowell cited a recent GAO report on climate change and flooding and stated that FEMA is considering conducting an analysis on the impact of climate change on the National Flood Insurance Program as per a recommendation contained in the GAO report. Crowell also provided a briefing on FEMA flood insurance programs. FEMA is reviewing whether coastal flood hazard areas should be modified to reflect the damage potential of the 1.5 foot wave. Andrew Garcia cited the FEMA Map Modernization Program and noted that there is a bill currently on the hill that would modify this program to include consideration of climate change and erosion.

Bill Nechamen noted that in 1990 FEMA had limited topographic data and asserted a need to include available high-quality topographic data as appropriate.

Ryland suggested that states should be encouraged to plan better, zone better, and to avoid construction in flood plains. He cited a report published in the Natural Hazards Review by Ray Burby. Ryland also noted that storm surges will become worse with climate change and that people need to be made aware of the potential damage they can cause.

Gill focused on Table MD-4, p. 60 as an example of the type of information that will be presented in this chapter.

Hershner suggested that the authors begin with a table depicting only topography so as not to clutter the report with subjective depictions such as "protective."

Skip Styles made a statement as a member of the public (Attachment G).

Brian Czech, of the FWS, asked what effect SLR will have on land prices and about salt water intrusion into fresh water aquifers. Titus recognized the relevance and value of such information, but indicated that these topics will not be addressed by the report, which does not deal with salinity in detail.

Sam Pearsall stated that with regard to lands to be protected, the process relies on a sociological content. Pearsall believes that planners will try to frame questions strategically, so it is important to confirm that studies:

1. Are based on true, reliable information.
2. Appropriately characterize findings so as not to bias readers toward a particular policy conclusion.
3. Use the term “protection” in a clear and unambiguous manner.

This section could use simpler questions such as what has already been protected? What is the topography? What must be conserved by law? These questions could be answered with data. All that falls through in this analysis could be deemed unknown.

Mark Monmonier acknowledged that while these are all good points, time constraints won't allow for this. Instead the ambiguity of the work product could be acknowledged.

Hershner noted that this analysis may actually motivate policy action. This allows you to see a series of policy scenarios, but the methodology can be questioned from a number of directions and thus needs to be caveated. He cautioned against blending this analysis with others in the report.

Pearsall stated that he found the information contained here useful as instructive of what people do, but he was concerned information presented here will be seen as regulatory in nature.

Rob Thieler asked if the committee thought that coastal managers should be viewed as experts. He asserted that they should not be, and that they lack a sufficient understanding of the ecological impacts of their actions to enable them to assess their protective capability, and the consequences of protective measures, especially over the long term. He posed the question of how the study should normalize for attitudes about shore protection and how it should address the implications of “protection.”

Titus asserted that the study was driven by land use data that were then vetted by county planners. The study illustrates that different states do things differently.

Jack Fitzgerald noted that the committee will need more time to better inform themselves before these topics are revisited.

Pearsall asked if this section is useful even assuming that the methodology is sound.

Davidson stated that the underlying document can be reviewed and critiqued with regard to how it addresses the basic questions. Interested committee members should respond by July 4.

Hershner asserted that absent a review the committee seems to be in strong agreement that this type of study and methodology must be heavily caveated. Davidson agreed. Pearsall asserted that the committee should comment on the durability of this type of data. Davidson thought Pearsall had provided some good new categories from which to start. Mark Monmonier noted that this study will move the discourse of this topic forward, which is good. Davidson suggested to Titus that the authors look for way to make things clear.

Davidson suggested that the next meeting be convened by phone and that it take place on Friday, July 27, 2007. If this doesn't work an alternative date will be considered.

Jack Fitzgerald informed the committee that a draft of the minutes would be sent early the following week, and that he would review them before and sharing them with the committee who can then correct and elaborate.

The meeting was adjourned at 2:55 pm.

Summary

Themes and Gaps:

Figures need to be clarified throughout the report.

1. To the degree appropriate color coding should be made uniform throughout the report (e.g., purple should mean the same thing in all figures).
2. Color coding should indicate gradation (e.g., going from dark red to light red as opposed to from blue to red in one step).
3. Graphics could be included to help readers visualize topography as it relates to SLR.

4. Metrics for all figures should be clearly defined (e.g., the when shore protection is deemed “likely” this means there is an X% chance that this section of the coast will be protected).

The report should follow a simple logical progression of text and figures that will educate the public; clarity and transparency of methodology should be addressed.

Attention should be paid to North Carolina throughout the report. For example, section 3.5.5 of the draft report is missing North Carolina.

Any qualitative analysis in the report should be heavily caveated, especially sections that rely upon the expert judgment of county planners.

Appropriate regional distinctions need to be made. For example, there was concern expressed that global assumptions about tidal wetlands in the mid-Atlantic lead to findings that are inconsistent with local observations in Virginia and North Carolina.

Straight topography should be presented in the figures in Question 1 (i.e. dry land should not be distinguished from non-tidal wetlands). It is confusing to link non-tidal wetlands to a specific elevation.

Soil characteristics should be taken into account in any discussion of the effects of SLR on the coastline.

Sedimentary budgets and the impacts of beach nourishment should be addressed.

The report does not address non-coastal floodplains that might be affected by SLR.

The discussion of accretion should look at how physical stressors impact biological processes that might also impact accretion.

Building codes from all states (not just New York and New Jersey) are important and should be included.

The effect of development on impervious surfaces and the hydrology of an area, and in turn flooding, should be considered in the report.

It is important to confirm that studies:

1. Are based on true, reliable information.

2. Appropriately characterize findings so as not to bias readers toward a particular policy conclusion.
3. Use the term “protection” in a clear and unambiguous manner.

Authors could consider using simpler questions in sections dealing with Question 4, such as what has already been protected? What is the topography? What must be conserved by law? These questions could be answered with data. All that falls through in this analysis could be deemed unknown.

Process Issues and Action Items:

Authors and committee members need to have continuing dialogue throughout the process.

Action item: Jack Fitzgerald will talk to OGC about developing a Web forum.

Action item: Sam Pearsall, Julie Hunkins, and Margaret Davidson will work to recruit North Carolina experts for the contributors’ meeting.

Motion: The report authors should seek additional regional and local assessments for the wetland risk analysis, especially for the Chesapeake Bay and North Carolina. Land protection probability analysis should be carefully explained and caveated. Conclusions about potential management efficacy should be carefully considered in light of the previous two statements.

Action item: Davidson and Pearsall will review the underlying document on land use and the information collected by county planners and report back to Titus by July 4.

Davidson suggested that the next meeting be convened by phone and that it take place on Friday, July 27, 2007. If this doesn’t work an alternative date will be considered.

Jack Fitzgerald informed the committee that a draft of the minutes would be sent early the following week, and that he would review them before and sharing them with the committee who can then correct and elaborate.