

**Summary Minutes of the
U.S. Environmental Protection Agency (EPA)
Science Advisory Board (SAB)
Hypoxia Advisory Panel (HAP) – Subgroup on Causes of Hypoxia
Teleconference, April 2, 2007**

Panel Members: See subgroup roster – Appendix A

Date and Time: Monday, April 2, 2007, 9:00 a.m. – 12:00 noon Eastern Standard Time

Location: By telephone only

Purpose: The purpose of this teleconference was to continue drafting the subgroup's report.

Attendees:

Subgroup Leader:	Dr. James Sanders
Subgroup Members:	Dr. Thomas Bianchi Dr. Walter Boynton Dr. Daniel Conley Dr. Robert Howarth Dr. Hans Paerl Dr. Donelson Wright
HAP Members:	Dr. Virginia Dale, Chair
EPA SAB Staff:	Thomas Armitage, Designated Federal Officer Anthony Maciorowski
Others Present:	Wayne Anderson, Minnesota Pollution Control Agency Larry Antosch, Ohio Farm Bureau Federation Dennis McKenna, Illinois Department of Agriculture

Meeting Summary

The discussion followed the issues and timing as presented in the meeting agenda (Appendix B).

Convene Teleconference

Dr. Thomas Armitage, Designated Federal Officer (DFO) convened the subgroup teleconference at 9:00 a.m. He stated that teleconference was being held in accordance with Federal Advisory Committee Act (FACA) procedures. He stated that summary minutes of the teleconference meeting would be prepared and certified by the subgroup leader. Dr. Armitage then asked the Hypoxia Advisory Panel (HAP) members and others on the call to identify themselves.

Purpose of the Call and Review of the Agenda

Dr. Jim Sanders, subgroup leader, thanked the members for joining the call. He then reviewed the purpose of the call and agenda. He stated that the purpose of the call was to discuss the latest draft of the HAP subgroup 1 report. He stated that at the last Panel meeting members had discussed the organic matter section of the report. Dr. Sanders stated that this section had been rewritten by Dr. Bianchi, then revised again to address member comments. Other sections of the report had also been revised. Changes had been incorporated into the physics, regime shift, and the historical discussion sections. Dr. Sanders also noted that recommendations had been provided as bullets at the end of each section. He stated that members should look carefully at the recommendations. Dr. Paerl stated that he had changed parts of the recommendations in his section and would provide the revised text. A member asked how the entire report (including subgroup 2 and 3 sections) would be assembled and edited. Dr. Armitage stated that after the subgroup drafts were complete the Designated Federal Officers (DFOs) would assemble the report and send it to the Panel for review. He stated that the DFOs would work with the Chair and subgroup leaders on edits.

Discussion of Draft Report

Discussion of the organic matter section of the report:

Dr. Sanders described the redraft of the organic matter section. Members stated that the section emphasized both the importance of organic matter resulting from in-situ primary production stimulated by nutrient loads as well as new work on sources of organic matter. Much of this new work was summarized in a table. He stated that important points were presented as bullets. Dr. Howarth commented that the redraft was a good step forward. He stated that the revised section addressed organic matter in the appropriate context and gave credence to new work. Dr. Bianchi agreed with this statement and expressed support for the draft. Dr. Conley also agreed with these comments but he noted that some revisions could be made in the section. He stated that the section may contain too much “justification” for nutrients. He also stated that the bullets could be presented in paragraph form. Other members noted that they liked the bullet format because it conveyed information on the large amount of work that had been done to understand the importance of organic matter from various sources. They noted that if this information were presented in paragraph form, the draft report would be lengthened considerably. The group discussed whether the text appropriately conveyed the understanding of the

importance of nitrogen and phosphorus as drivers of primary productivity and hypoxia. A member noted that since the CENR assessment, more work had been completed to understand the importance of organic matter from various sources than on many other topics. He expressed the opinion that the table and bullets were the best way to present this information. Dr. Conley stated that he would review the section and provide some suggested changes.

Discussion of the regime shift section

The group discussed the revised regime shift section. Dr. Sanders stated that information summarizing studies of the effects of hypoxia on Gulf of Mexico fisheries had been included in the section. Dr. Conley stated that in his revision of the section he had included some discussion of evidence of regime shifts caused by hypoxic conditions in various places around the world (i.e., Danish waters and in the Chesapeake Bay). He stated that it was important to make the point that such evidence was less clear in the Gulf of Mexico. He stated that the Gulf may be moving toward a regime shift and the section had been carefully written to make this point. A member stated that he liked the rewritten section and that points were carefully qualified. Dr. Sanders noted that Dr. Opaluch had provided the fisheries material in the section and had reviewed the revised draft. A subgroup member noted that he was initially uncomfortable with the statement that it may take decades for system recovery after regime shift. The member noted however, that text at the end of the section made appropriate reference to the open shelf system of the Gulf of Mexico and rapid recovery that could occur in such a system.

Discussion of the physics section

The subgroup briefly discussed the revised physics section. Dr. Wright noted that some of the material that had been removed from the first draft had again been included in the latest draft. Dr. Sanders described his revision of figure 2 (depicting zones of the hypoxic region). He stated that members had provided feedback indicating that this figure should be included in the text. He noted that the figure was still a work in progress. A member stated that it would be useful to depict in the figure the change in direction of winds that occurs with season. The group discussed various ways to incorporate this into the figure. A member suggested that a panel could be provided to show the change in wind direction. Dr. Bianchi stated that he did not see a need to make the figure much more complex because a great amount of detail was not provided in the text. Other members agreed that more complexity did not have to be added to the figure, but some still expressed the opinion that two panels showing winds to the east and west would be helpful. Dr. Sanders stated that he agreed more with the simple, single panel that depicts the region during the time of hypoxia, but that he would work on a new sketch of figure 2.

Discussion of the forecast modeling section

The subgroup discussed the forecast modeling section. Dr. Sanders noted that several fairly long paragraphs had been included in the recommendations. He suggested that the recommendations be rewritten. Dr. Howarth stated that he would try to work on rewriting the recommendations in the following two weeks. Dr. Paerl stated that the section should identify the need to include nitrogen and phosphorus interactions in models. Other members agreed with this.

Discussion of revisions needed

The group briefly discussed the recommendations in the report. Dr. Sanders asked the group to review the entire report, paying particular attention to the recommendations, and send revisions to him by April 16.

Public Comments

The Designated Federal Officer stated that there had been no requests to make comments.

Next Steps

Dr. Sanders summarized the discussion and subgroup follow-up assignments

1. The group agreed that the latest draft of the organic matter section provided a well balanced discussion of the topic. Important new work in this area was framed in the appropriate context. Some edits were needed. The role of nutrients in hypoxia had been addressed in other parts of the report, so less justification of nutrients could be included in the organic matter section. There was discussion of rewriting the bullets in paragraph form, although some thought that the presentation of bullets was the best way to convey this information.

Follow-up: Dr. Conley will work on providing some edits in this section.

2. The group discussed the latest draft of the regime shift section and agreed with the revisions.
3. The group agreed with the changes in the physical context section. There was agreement that the conceptual diagram taken from Rowe and Chapman (Figure 2) should be included in the report. The group thought that the figure should be simple, but it was suggested that two panels be included to represent winds from east and west.

Follow-up: Dr. Sanders will prepare a new version of the figure and send it to the group for review and comment.

4. The group agreed with changes in the revised forecast models section. However, members thought that the recommendations should be reviewed and rewritten. It should

also be made clear that the Scavia model does not consider interactions between N and P, and that this is an important limitation.

Follow-up: All members will review the recommendations in this section and submit changes and clarifications.

5. The group discussed overall changes in the report, including the addition of background material and recommendations. Members thought that some material should be added before each of the recommendations to explain how the recommendation followed a conclusion or finding in the report. One or more points of fact should precede each recommendation.

Follow-up: Members will review all of the recommendations in the report and provide edits to augment, change or clarify the recommendations and explain how they follow from conclusions and/or findings in the report.

6. Edits to the subgroup 1 report were needed by April 16. A complete draft of the Panel report will be sent to the whole Panel in early May.

Follow-up: Members will review the subgroup 1 draft (paying particular attention to the recommendations) and send revised text to Drs. Armitage and Sanders by Monday, April 16.

Respectfully Submitted:

/Signed/

Dr. Thomas Armitage
Designated Federal Officer

Certified as True:

/Signed/

Dr. James Sanders, Leader
Hypoxia Advisory Panel – Subgroup
Causes of Hypoxia

APPENDICES

Appendix A: Roster of Subgroup 1

Appendix B: Meeting Agenda

Appendix A – Subgroup Roster

U.S. Environmental Protection Agency Science Advisory Board Hypoxia Advisory Panel Subgroup on Causes of Hypoxia

LEADER

Dr. James Sanders, Director, Skidaway Institute of Oceanography, Savannah, GA

MEMBERS

Dr. Thomas Bianchi, Professor, Oceanography, Geosciences, Texas A&M University, College Station, TX, USA

Dr. Alan Blumberg, Director, Department of Civil, Environmental, and Ocean Engineering, Stevens Institute of Technology, Hoboken, NJ

Dr. Walter Boynton, Professor, Chesapeake Biological Laboratory, Center for Environmental Science, University of Maryland, Solomons, MD

Dr. Otis Brown, Dean, Rosenstiel School of Marine and Atmospheric Science, Miami, FL

Dr. Daniel Joseph Conley, Professor, National Environmental Research Institute, Department of Marine Ecology, Roskilde, Denmark

Dr. Denis Gilbert, Research scientist, Ocean and Environment Science Branch, Maurice-Lamontagne Institute, Dept. of Fisheries and Oceans Canada, Mont-Joli, Quebec, Canada

Dr. Robert W. Howarth, David R. Atkinson Professor, Dept. of Ecology and Evolutionary Biology, Cornell University, Ithaca, NY

Dr. Hans Paerl, Professor of Marine and Environmental Sciences, Institute of Marine Sciences, Univ. of North Carolina, Chapel Hill, Morhead City, NC, USA

Dr. Donelson Wright, Chancellor Professor Emeritus, School of Marine Science, Virginia Institute of Marine Science, College of William and Mary, Gloucester Point, VA

SCIENCE ADVISORY BOARD STAFF

Dr. Thomas Armitage, Designated Federal Officer, U.S. Environmental Protection Agency, Washington, D.C

Appendix B – Teleconference Agenda

SCIENCE ADVISORY BOARD
Hypoxia Advisory Panel – Subgroup on Causes of Hypoxia
Public Teleconference
April 2, 2007, 9:00 a.m. – 12:00 noon (Eastern Daylight Time)

Agenda

Purpose: The purpose of this teleconference of Hypoxia Advisory Panel Subgroup #1 is to continue drafting the report.

9:00 a.m.	Convene meeting	Dr. Thomas Armitage Designated Federal Officer
9:10 a.m.	Purpose of the call	Dr. James Sanders, Subgroup Leader
9:15 - 11:30 a.m.	Subgroup discussion	Dr. Sanders and Subgroup
11:30 - 11:45 a.m.	Public comments	
11:45 a.m. - 12:00 p.m.	Review next steps	Dr. Sanders and Subgroup
12:00 noon	Adjourn	