

**Summary Minutes of the
U.S. Environmental Protection Agency (EPA)
Science Advisory Board (SAB)
Panel for the Review of EPA's 2007 Report on the Environment
Teleconference, October 24, 2007**

Panel Members: See Panel Roster – Appendix A

Date and Time: Wednesday, October 24, 2007, 1:00 – 4:00 p.m. Eastern Daylight Time

Location: By telephone only

Purpose: The purpose of this teleconference was to discuss the Panel's draft report (dated 10-12-07).

Attendees: Panel Chair: Dr. Deborah Swackhamer

Panel Members: Dr. Fred Benfield
Dr. Mark Borchardt
Dr. Timothy Buckley
Dr. Aaron Cohen
Dr. David Dzombak
Dr. Dennis Grossman
Dr. Allan Legge
Dr. Deborah Neher
Dr. Alan Steinman
Dr. C. John Suen
Dr. Judith Weis
Dr. Barry Wilson

EPA SAB Staff: Thomas Armitage, Designated Federal Officer
Anthony Maciorowski

EPA Staff: Arden Calvert, EPA/OCFO
Michael Hadrick, EPA
Danelle Lobdell, EPA
Macara Lousberg, EPA
Jay Messer, EPA NCEA/ORD
Ethan McMahon, EPA/OEI
Denice Shaw, EPA NCEA/ORD

Others Present: Linda Aller, Bennett and Williams

Jan Connery, ERG, Inc.
Scott DiBaise, Pinal County, Arizona, Air
Quality
Beth Graves, Environmental Council of the States
Robert Griffin, Little Hocking Water Association
Jenny Johnson, Inside EPA
Chris Lamie, ERG, Inc.
Vince Perelli, New Hampshire Department of
Environmental Services
Dan Watts, New Jersey Institute of Technology

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 teleconference at 1:00 p.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 Chair. Dr. Armitage then called the roll of panel members. He asked public participants on the call to send him an email confirming their participation for the record. He noted that time had been reserved on the teleconference agenda for public comments.

Purpose of the Call and Review of the Agenda

Dr. Deborah Swackhamer, Panel Chair, thanked the members for calling. She reviewed the purpose of the call and agenda. She stated that the purpose of the call was to discuss comments on the 10-12-07 draft advisory report. She stated that the Panel would first discuss comments on sections 5 – 10 of the advisory report and would then hear comments from EPA and the public. This would be followed by discussion of the executive summary and the draft transmittal letter to the Administrator.

Discussion of Comments on Sections 5.0 – 10.0 of the Draft Report

Dr. Swackhamer stated that in addition to the comments to be discussed on the call, members had submitted a number of editorial comments that would be incorporated into the next draft of the advisory report.

Discussion of Overarching Recommendations

Dr. Swackhamer called for discussion of comments on the overarching recommendations in the advisory report. A Panel member noted that the advisory report recommended including a synthesis chapter in the final 2007 Report on the Environment (ROE). He stated that it would be difficult for EPA to develop this synthesis chapter within the proposed time frame for completion of the final 2007 Report. He suggested that the Panel recommend including trend analysis and a synthesis chapter in future Reports on the Environment. Other members agreed that it would be difficult to develop the synthesis chapter within the two to three month period within which EPA planned to complete the final 2007 ROE. Panelists agreed to recommend that this work be completed for future Reports on the Environment.

A panelist noted that EPA could take a step toward developing the synthesis chapter by laying out, in the final 2007 Report, steps that could be taken to integrate different media chapters. Another panelist agreed that the final 2007 Report should conceptualize how the synthesis chapter could be developed. A panelist stated that a synthesis chapter could be included in future reports, but a conceptual framework was needed in the final 2007 report. Another panelist commented that, as recommended in the Panel's draft report, "crosswalks" between the chapters should be identified in the final 2007 Report.

A panelist noted that the draft advisory report included a recommendation to strengthen the scientific underpinnings of the ROE, or alternatively to remove the word "science" from the title. He questioned whether this alternative was appropriate. He noted that the purpose of the document would change if it were not a science report. Other panelists stated that the recommendation was appropriate because retaining the word "science" in the title would be misleading if the scientific underpinnings were not strengthened. A member noted that the science could be removed from the title and then put back into subsequent versions if the scientific underpinnings were strengthened. The Panel agreed to keep the recommendation in the advisory report.

The Panel discussed a recommendation to relax the indicator selection criteria to enable the use of additional indicator data. A member stated that it was important to adhere to indicator selection criteria and avoid arbitrary selection of indicators. A member noted that in its previous review of the 2003 ROE, the SAB had recommended using a more standardized set of criteria for selecting indicators. The Panel discussed an approach to evaluating indicator data sets based on completeness and uncertainty. The Chair noted that, on the basis of the previous SAB Panel's recommendations, EPA had chosen to make the indicator selection criteria very stringent and that valuable data sets had been excluded from the ROE. Another Panel member stated that the Panel's recommendation to revise the indicator selection criteria should not be too prescriptive. He suggested that regional data sets could be classified according to rigor or associated uncertainty. Another panelist stated that indicators should be selected on the basis of the information they could provide to answer questions in the ROE. He stated that EPA had placed too much emphasis on quality of the data rather than selecting the most appropriate indicators to answer the questions. Another panelist noted that the indicator selection criteria used for the ROE had been peer-reviewed. The Chair stated that the Panel's report should contain a recommendation to include a conceptual framework in the ROE. She stated

that this would provide the basis for further developing the questions and selecting appropriate indicators. She stated that the conceptual framework, not data availability, should not drive the selection of indicators. She also noted that less robust data sets could be used in the ROE but qualified. Other panelists agreed.

The panel discussed recommendations concerning the indicator selection criteria, indicator metrics, and benchmarks used in the ROE. A panelist noted that the requirement that data be comparable across time and space was very restrictive. He suggested that this criterion could be relaxed. Another member reiterated that the Panel's advisory report should not be too prescriptive in this area but should recommend a transparent process for selecting indicators. The Chair suggested that the Panel should not recommend specific indicator metrics but call for transparency and consistency. She stated that the advisory report should recommend that the indicator metrics and benchmarks used in the ROE be well-justified. The panel discussed a suggestion to classify indicator data in categories of "high, medium, or low" based on rigor and uncertainty. Several panelists stated that the use of high, medium, or low categories should be suggested only as an example of how classification might be done.

A panelist stated that recommendations in the advisory report should be identified as "near-term" not "short-term." Panel members agreed with this suggestion. A Panel member suggested that the advisory report identify the major recommendations from the previous SAB review that had been incorporated into the ROE 2007, as well as recommendations that were not incorporated. Other Panel members agreed with this suggestion.

Discussion of Air Chapter Recommendations

The Panel discussed the recommendations to improve the air chapter of the ROE. A panelist noted that the advisory report had recommended consideration of additional indoor air quality issues. He stated that this was problematic because no additional indicators were available for indoor air quality. He stated that this recommendation should be more specific. Dr. Buckley offered to work with Dr. Morandi to revise the text for this recommendation.

The panel discussed the recommendation in the advisory report to "project into the future and describe ongoing air programs." The Chair stated that this recommendation should be revised to indicate that EPA should provide information on trend directions.

Discussion of Water Chapter Recommendations

Panelists discussed a number of the water chapter recommendations and members suggested the following specific changes: 1) The advisory report should recommend that EPA look for ways to obtain more pathogen data from states. 2) The words "pharmaceutical and personal care products" should be substituted for "endocrine disrupters." 3) Additional text should be included to state that a high percentage of rural areas do not have water treatment. Other editorial changes were also discussed.

Discussion of Land Chapter Recommendations

The Panel discussed a number of revisions in the land chapter recommendations. It was suggested that: 1) stream water quality tied to land use was a better example indicator for this chapter than low stream flow; 2) the discussion of regionalization of indicators should be tied to the similar discussion in the ecosystem chapter, 3) land cover/land use should be identified as a good example for a conceptual model, and 4) the Puget sound case study should be identified as a good example to illustrate linkages between media.

A panelist stated that the recommendation to include a soil quality indicator in the land chapter should be moved to the beginning of the land chapter discussion in the executive summary. This would emphasize the importance of this recommendation.

Discussion of Human Health Chapter Recommendations

Several of the human health chapter recommendations were discussed. A panelist suggested that the Panel's recommendation concerning the first question in the human health chapter be rephrased to make the tone less tentative. Several members of the air subgroup disagreed and the Panel decided not to change the wording of this recommendation.

A panelist stated that the advisory report should reference to the EPA staff paper on particulate matter.

Discussion of Ecological Condition Chapter Recommendations

A panelist questioned whether a statement indicating that questions in the ecological condition chapter were formulated appropriately conflicted with the recommendation to reorganize the chapter. Other panelists stated that they did not find this to be a conflict. They stated that reorganization of the chapter may require the formulation of new questions, but they found that the existing questions were formulated appropriately. The Panel agreed that a text change was not needed.

The following specific changes in the text of the advisory report were discussed. Panelists stated that: 1) The reference to paleoclimate should refer to human induced versus non-human induced change. 2) Ecosystem services classifications developed by the Millennium Ecosystem Assessment should be referenced in the report. 3) The report should specify which proposed indicators were process measurements, and which were services measurements. 4) A caveat should be included in the report stating that not all data sets can be adjusted to account for different methodologies used over time.

The following additional comments were discussed and the Panel decided that no changes in the advisory report were necessary to address them. 1) A panelist stated that it was not necessary to explicitly call for a category of "linkages to human health" in the ecosystem condition chapter recommendations because this recommendation was

addressed in other parts of the advisory report. 2) After discussion, members decided that it was not necessary to bold the recommendation on page 43, lines 25-27.

Public Comments

Before continuing the discussion of the advisory report, the Chair called for public comments. Public comments were offered by two individuals.

Robert Griffin of the Little Hocking Water Association stated that at the July 10-12 meeting of the Panel he had provided comments on perfluorinated compounds in water. He recommended that this be identified as an emerging issue in Chapter 7 of the ROE and requested that the Panel consider his recommendation.

The Chair thanked Mr. Griffin for his comments and indicated that this issue would be addressed in the Panel's report.

Beth Graves of the Environmental Council of the States commented that states receive grants to support air and water monitoring and pollution prevention activities but limited funds have been available for this work. She noted that on the teleconference there had been discussion of the indicators needed to evaluate human health and environmental condition. She stated that it was also important to identify indicators that should not be tracked.

The Chair thanked Ms. Graves for her comments and stated that the Panel would take this under consideration.

No additional public comments were offered so the Chair called for continued discussion of Panel comments on the advisory report.

Discussion of Other Panel Comments

A panelist stated that EPA should indicate how it planned to use the ROE and its analyses and also how the ROE should be used by the broader public. The Chair stated that this point should be added to the overarching recommendations. A panelist stated that, in the advisory report, recommendations pertaining to the ROE 2007 should be referred to as recommendations for the "final 2007 Report." Panelists agreed with this suggested change in wording.

The panel discussed whether recommendations in the advisory report should be categorized as short, medium, and longer term priorities. Members decided that developing such a categorization would be difficult, and that the current approach of recommending changes in the final 2007 report or future reports was appropriate.

The Panel discussed whether additional points in the text should be captured as bolded recommendations. No specific changes in the advisory report were suggested. A panelist suggested that a bullet be added to the overarching recommendations to state that

indicators should be chosen on the basis of their relationship to big picture fundamental questions, not solely on the basis of data availability or compliance with indicator criteria. Other panelists agreed with this recommendation.

A panelist recommended that the advisory report contain examples of: 1) rationale for selecting an indicator and 2) a conceptual framework diagram. He also suggested that an example process diagram for the synthesis chapter might be useful. Other members stated that a process diagram could be completed in future work to develop the synthesis chapter. The Chair asked the DFO to send Panel members the example conceptual framework diagram that had been developed by Dr. Patten at the July 10-12 meeting of the Panel. She stated that this example would be included in the next draft of the advisory report.

Dr. Grossman stated that the advisory report should also provide an example of how to use ecoregionally derived indicator information for action and decision making at the EPA regional offices. The Chair asked Dr. Grossman to prepare text on this for the next draft of the advisory report.

A panelist stated that guidelines for use of regional indicators had been included in the advisory report. The guidelines were part of the discussion of the ecological condition chapter. He recommended that these guidelines be moved forward into the overarching recommendations discussion. Members agreed with this suggestion.

Discussion of the Advisory Report Appendices

A panelist questioned why specific recommendations in the advisory report had been placed in appendices. The Chair responded that to make the report shorter, specific comments and recommendations, those addressing individual indicators or specific technical issues, had been placed in appendices. The broader recommendations and comments were retained in the main body of the text.

A panelist stated that in the discussion of disturbance indicators (in Appendix A of the advisory report) a sentence should be included to indicate that disturbance processes can be used as indicators of anthropogenic effects on the environment. The panelist noted that maps showing how fire cycles have changed in relation to the health of forests could provide important information. The Chair stated that this statement should be added to the appendix.

EPA Comments

The Chair asked Dr. Denice Shaw of EPA's Office of Research and Development if she wished to offer any comments.

Dr. Shaw thanked the Chair and offered several comments. She noted that the Panel had provided recommendations concerning relaxing the indicator selection criteria. She questioned whether the Panel was recommending relaxing the national indicator selection

criteria. She stated that it was important to use specific indicator selection criteria, and indicated that guidance on how indicator criteria might be revised would be helpful. She noted that in selecting indicators, scaling issues had to be addressed because EPA wanted to use indicators at multiple scales. A panelist responded that the criteria could be relaxed to enable the use of more data to provide better answers to questions as well as trend information. A panelist stated that the conceptual framework should drive selection of the appropriate indicators and questions.

Dr. Shaw stated that EPA had spent time thinking about how a conceptual model might be developed for the report. She questioned whether the conceptual model should link the policy questions or reflect an approach to evaluating environmental condition as a whole. A panelist responded that the model should reflect environmental condition as a whole, not policy, but it should drive the selection of appropriate policy-relevant questions.

Dr. Shaw noted that each question could have its own model. A panelist responded that the Panel was not recommending a separate model for each question, but rather a model that could be used to reflect interaction among various media components.

Dr. Shaw stated that EPA had also been thinking about how to select additional case studies to help answer questions in the Report. She stated that it was important to carefully select case studies in order to avoid criticism that they had been chosen to demonstrate particular results (i.e., “cherry picking”). She stated that recommendations about how to select case studies would be helpful.

The Chair thanked Dr. Shaw for her comments.

Discussion of Next Steps

The Chair stated that she would revise the advisory report to incorporate comments discussed on the call. She would then send the report to panelists for review and concurrence. She noted however that there had not been time on the call to discuss the executive summary and letter to the Administrator. She asked members if they wished to schedule another call before finalizing the report. Members on the call indicated that another teleconference should be scheduled to discuss the executive summary, letter, and any remaining comments on the draft report. The Chair asked the DFO to schedule another call. She stated that the advisory report would be revised to incorporate

comments discussed and it would be sent to the Panel prior to the next call. There were no additional comments so the Chair adjourned the teleconference.

Respectfully Submitted:

Certified as True:

/Signed/

/Signed/

Dr. Thomas Armitage
Designated Federal Officer

Dr. Deborah Swackhamer, Chair
SAB Panel for the Review of EPA's
2007 Report on the Environment

APPENDICES

Appendix A: Panel Roster

Appendix B: Teleconference Agenda

Appendix A – Panel Roster

U.S. Environmental Protection Agency Science Advisory Board Panel for the Review of EPA's 2007 Report on the Environment

CHAIR

Dr. Deborah Swackhamer, Interim Director and Professor, Institute on the Environment, University of Minnesota, Minneapolis, MN

MEMBERS

Dr. Henry Anderson, Chief Medical Officer, Division of Public Health, Wisconsin Division of Public Health, Madison, WI

Dr. Fred Benfield, Professor of Ecology, Department of Biological Sciences, Virginia Tech, Blacksburg, VA

Dr. Mark Borchardt, Director, Public Health Microbiology Laboratory, Marshfield Clinic Research Foundation, Marshfield, WI

Dr. Timothy Buckley, Associate Professor and Chair, Division of Environmental Health Sciences, School of Public Health, The Ohio State University, Columbus, OH

Dr. Aaron Cohen, Principal Scientist, Health Effects Institute, Boston, MA

Dr. David A. Dzombak, Walter J. Blenko Sr. Professor of Environmental Engineering and Associate Dean for Graduate and Faculty Affairs, College of Engineering, Carnegie Mellon University, Pittsburgh, PA

Dr. Dennis Grossman, Principal Associate - Biodiversity Protection and Conservation Planning, Environmental and Natural Resources Department, Abt Associates Inc., Bethesda, MD

Dr. Philip Hopke, Bayard D. Clarkson Distinguished Professor, Department of Chemical Engineering, Clarkson University, Potsdam, NY

Dr. George Lambert, Associate Professor of Pediatrics, Director, Center for Childhood Neurotoxicology, Robert Wood Johnson Medical School-UMDNJ, Belle Mead, NJ

Dr. Allan Legge, President, Biosphere Solutions, Calgary, Alberta, CANADA

Dr. Maria Morandi, Assistant Professor, Division of Environmental and Occupational Health, School of Public Health, University of Texas, Houston, TX

Dr. Deborah Neher, Associate Professor and Chair, Plant and Soil Science, College of Agriculture and Life Sciences, University of Vermont, Burlington, VT

Dr. Duncan Patten, Research Professor, Land Resources and Environmental Sciences Department, Montana State University, Bozeman, MT, USA

Dr. Ramesh Reddy, Graduate Research Professor and Chair, Soil and Water Science Department, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL, USA

Dr. Gary Saylor, Beaman Distinguished Professor, Joint Institute for Biological Sciences, Oak Ridge National Laboratory, University of Tennessee, Knoxville, TN

Dr. Alan Steinman, Director, Annis Water Resources Institute, Grand Valley State University, Muskegon, MI

Dr. C. John Suen, Professor, Earth and Environmental Sciences, College of Science and Mathematics, California State University, Fresno, Fresno, CA, USA

Dr. Robert Twiss, Professor of Environmental Planning Emeritus, University of California-Berkeley, Ross, CA

Dr. Judith S. Weis, Professor, Department of Biological Sciences, Rutgers University, Newark, NJ

Dr. Barry Wilson, Professor, Animal Science and Environmental Toxicology, College of Agriculture and Environmental Science, University of California, Davis, CA

SCIENCE ADVISORY BOARD STAFF

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

Appendix B – Teleconference Agenda

SCIENCE ADVISORY BOARD

Panel for the Review of EPA's 2007 Report on the Environment

Public Teleconference

October 24, 2007, 1:00 p.m. – 4:00 p.m. (Eastern Time)

Agenda

1:00 p.m.	Convene Meeting	Dr. Thomas Armitage Designated Federal Officer EPA Science Advisory Board
1:10 p.m.	Purpose of the Call and Review of the Agenda	Dr. Deborah Swackhamer, Chair
1:15 p.m.	Discussion of draft SAB ROE Panel Report, Sections 5.0 – 10.0 - Overarching Recommendations - Air Chapter Comments - Water Chapter Comments - Land Chapter Comments - Human Health Chapter Comments - Ecological Condition Chapter Comments	Dr. Deborah Swackhamer and Panel
2:45 p.m.	EPA Comments	Dr. Denice Shaw, EPA Office of Research and Development
3:00 p.m.	Public Comments	
3:15 p.m.	Discussion of draft SAB ROE Panel Report, Executive Summary and Letter to the Administrator	Dr. Deborah Swackhamer and Panel
3:50 p.m.	Discussion of Next Steps	Dr. Deborah Swackhamer, Chair
4:00 p.m.	Adjourn	