

**U.S. Environmental Protection Agency
Science Advisory Board
Nutrient Criteria Review Panel**

Public Teleconference Call
February 7, 2011
2:00 – 5:00 pm Eastern Time

Minutes of the Meeting

Attendees:

Nutrient Criteria Panel Members: Judy Meyer (Chair), Walter Boyton, Deborah Bronk, Piers Chapman, Robert Diaz, Anne Giblin, Kenneth Heck, Mark Noll, Peter Ortner, Hans Paerl, Kenneth Reckhow, James Sanders, David Schneider, Andrew Sharpley, Andrew Solow, Alan Steinman, and Jay Zieman (for full roster, see Attachment A).

SAB Staff Office: Stephanie Sanzone (Designated Federal Officer)

EPA Staff: Elizabeth Behl, Dana Thomas, Tiffany Crawford, EPA Office of Water

Other Attendees: Names of those who requested the teleconference call-in number are provided in Attachment B.

Purpose: to discuss the draft (dated January 25, 2011) SAB report, *Review of Methods and Approaches for Deriving Numeric Criteria for Nitrogen/Phosphorus Pollution in Florida's Estuaries, Coastal Waters, and Southern Inland Flowing Waters*

Meeting Materials:

All materials discussed at the meeting are available on the SAB Web site, <http://www.epa.gov/sab>, at the [February 7, 2011 Nutrient Criteria Review Panel Meeting](#) page.

Summary of Discussions:

The meeting was announced in the Federal Register¹ and proceeded according to the meeting agenda², as revised. **Stephanie Sanzone**, Designated Federal Officer for the Panel, convened the meeting and noted that the Science Advisory Board Nutrient Criteria Review Panel (NCRP) operates in accordance with the Federal Advisory Committee Act. This means that meetings are announced and open to the public, meeting minutes are prepared, and all materials prepared for or by the Panel are available to the public. She noted that discussions on the call would reference 2 draft documents that had been made available on the SAB web site: the panel discussion draft (dated January 25)³ and a draft list of summary points for the Executive Summary (dated February 1)⁴.

Ms. Sanzone noted that the Panel had received a number of public comments⁵, which had been posted to the SAB Web site, and that five individuals had registered in advance to provide oral comments at the meeting⁶. Each speaker would be given three minutes to make comments, in

the order that the request was received. Ms. Sanzone also noted that the South Florida Water Management District had notified her of their intent to produce an audio recording of the teleconference call.

Dr. Meyer, Chair of the Panel, gave a brief overview of the strategy for the meeting. She requested that panel members identify areas in the draft report that are unclear, or where there is disagreement, and asked that members not “word-smith” on the call. Section leads were requested to submit missing references noted in the draft, to read the public comments, and suggest revisions to the draft as warranted.

The following is a summary of the issues discussed and conclusions reached during the meeting.

A. Public Comments

Ms. Jennifer Hecker, Conservancy of Southwest Florida, reminded the Panel of her previously submitted comment letter⁷, and emphasized that: estuary-specific criteria are unnecessary; DPV are essential to ensure protection of downstream waters before impairment is observed; Federal regulations require that water quality criteria be set as concentrations; and definition of “balanced communities” is needed.

Mr. Daryll Joyner, FDEP, referred to his written comments⁸, and summarized the themes of the comments, including a request that the Panel provide more detailed recommendations on critical issues raised in the draft report.

Mr. Tom DeBusk, DB Environmental, referred to his written comments⁹, and emphasized that South Florida inland flowing waters are primarily canals (with only about 10% of those waters being natural streams), where instream protection values and the concept of reference condition are not meaningful. He noted that macroinvertebrate communities in canals are influenced by poor habitat quality (e.g., absence of a littoral zone), and wide swings in hydrology.

Ms. Linda Young, Clean Water Network of Florida, was unable to participate in the teleconference call because of technical difficulties, but Dr. Meyer requested that Panel members be sure to read her written comments¹⁰.

Dr. Garth Redfield, South Florida Water Management District, noted that the Panel had done a good job at highlighting the difficult issues associated with criteria for canals, including the multiple objectives of the canal system to address water quality, quantity, time and distribution. He noted the need for a clear definition of what is to be protected in the canals, and questioned the adequacy of data to support establishment of canal criteria.

B. EPA Comments

Dr. Betsy Behl, EPA Office of Water, thanked the panel for taking time to conduct the review, and noted that EPA would work with Florida to understand their meaning of “balanced communities” under the State’s narrative criterion. In response to a comment in the draft panel report, Dr. Behl noted that EPA had provided a background document to the Panel on stressor-response approaches to setting nutrient criteria¹¹. She noted several instances in the Panel’s report where EPA was asked to consider various additional factors (e.g., climate change), and

she requested that the Panel provide additional guidance on how to take these factors into account for criteria, and possible sources of data to support that effort. She clarified that the EPA document discusses equal allocation of nutrient loads for DPV as an example, not a statement that this allocation scheme would necessarily be selected. She noted further that EPA is required to consider downstream protection when establishing upstream criteria. In response to the Panel's concern about the short time frame for proposing criteria, Dr. Behl noted that EPA is well on its way to developing the necessary models. In response to a request from the Chair, Dr. Behl agreed to submit her comments in writing¹².

C. Panel Discussion of the Draft Report

The Panel then turned to discussion of the draft panel report, taking responses to each charge question in turn. During the discussion, Panel members agreed to the following modifications of the draft report:

Charge Question 1: Conceptual Approach

- clarify that positive statements about the general approach do not imply that the conceptual model is complete (omit “strong basis”)
- the Panel will look at FDEP definition of “balanced” and decide whether or not to comment on it
- mention the need to incorporate seasonal differences in the conceptual thinking (including temperature, and wet/dry seasons)
- expand the paragraph on uncertainty to be applicable to approaches other than stressor-response (and add a bullet on uncertainty to Exec Summary)
- briefly discuss a possible fourth approach to establishing criteria using statistical analysis of factors associated with waters that Florida scientists have determined meet/do not meet their designated uses under the narrative criterion.

Charge Question 2: Florida Estuaries

- expand/clarify discussion of epiphyte endpoint: epiphyte abundance does correlate with nutrients, but with rather high variability; high levels of epiphytes indicative of high nutrients, but the reverse not necessarily true; reality is much more complicated than implied by the EPA conceptual diagram
- add a specific recommendation about use of an epiphyte measurement endpoint, with caveats
- strengthen discussion of the integrative value of seagrass extent endpoint, and add to Executive Summary

Charge Question 3: Florida Coastal Waters

- clarify that the approach of using anomalies is to complement, not replace, use of Chl_{RS-a}-derived estimates of Chl concentration in coastal waters

- clarify the discussion of “boundary calculation” as an attempt to relate (first-order approximation) observed Chl-*a* to concentrations of N and P in coastal waters, to strengthen the basis for stressor-response relationships
- clarify that Chl-*a* endpoint is still the only feasible one for these waters; i.e., the panel has no better measure to recommend

Charge Question 4: South Florida Inland Flowing Waters

- clarify that IPV are not meaningful for canals, but consider canals as water conduits that transport nutrients downstream (i.e., important to consider in terms of meeting estuarine designated uses)
- clarify that canals do support biota (e.g., endangered alligators), but those biota are not predominantly influenced by nutrients
- clarify the reference to a Canal Stressor Index
- clarify the differences in canals vs. natural streams in the region (i.e., most of the comments are specific to canals, but what about streams in South Florida?)

Charge Question 5: South Florida Marine Waters

- additional discussion of the fact that the proposed ocean segments don’t map onto degrees of inter-connectedness resulting from ocean circulation
- briefly note that the Briceño paper doesn’t take oceanography into account
- discuss z cumulative sum (zsum) approach in Briceño paper submitted as public comment¹³
- clarify p. 28, lines 10-15, on defining “least-disturbed” coastal waters

Charge Question 6: Downstream Protection Values

- acknowledge that TMDL are done after impairment, whereas criteria are to prevent impairment
- note that a preferable approach would be to develop downstream criteria first, rather than after upstream criteria have been finalized
- caution about the impacts of direct drainage (e.g., from septic) and atmospheric deposition on total load, on whether estuarine uses will be met
- move some of the detailed discussion on P processing to an appendix
- request clarification from EPA on options being considered for load allocation

Letter to the Administrator: Major Conclusions

- comments on the conceptual model
- delineation of the 4 categories of waters is sensible
- a strong statement on the need to define “balanced communities”
- use more than one approach to setting criteria, where possible

- commend the dual-nutrient approach
- concern over time constraints
- concern about some of the proposed measure (e.g., DO as the sole measurement of faunal community condition)
- seagrasses are an important endpoint
- Chl_{RS} is the feasible option, but there are serious issues with application, limited to certain zones, etc
- concern about the approach proposed for canals

D. Next Steps

Dr. Meyer requested that lead writers for each section of the panel report prepare revisions in response to today’s call, and submit them to the DFO by February 14, 2011. She also requested that all panelists revisit the list of bullets for the Executive Summary to make sure key points were included. She noted that she would work with the DFO to prepare a revised draft, which will be provided to the panel for concurrence within a week of receiving the panel inputs. Dr. Meyer proposed a schedule, wherein panel revisions would be submitted to the DFO by February 14, a revised draft would be send to the panel by February 22, and concurrence or comments would be due to the DFO by March 1. The DFO noted that once the Panel concurs, the draft will be transmitted to the chartered SAB for discussion and disposition at a public meeting.

The meeting was adjourned at 5:00 p.m.

Respectfully Submitted:

Certified as Accurate:

/s/

/s/

Stephanie Sanzone,
Designated Federal Officer
EPA SAB Staff Office

Dr. Judith Meyer, Chair
SAB Nutrient Criteria Review Panel

NOTE AND DISCLAIMER: The minutes of this public meeting reflect diverse ideas and suggestions offered by Panel members during the course of deliberations at the meeting. Such ideas, suggestions and deliberations do not necessarily reflect consensus advice from the Panel. The reader is cautioned not to rely on the minutes to represent final, approved, consensus advice and recommendations offered to the Agency. Such advice and recommendations may be found in the final advisories, commentaries, letters or reports prepared and transmitted to the EPA Administrator following the public meetings.

Attachment A

**U.S. Environmental Protection Agency
Science Advisory Board
Nutrient Criteria Review Panel**

February 7, 2011

CHAIR

Dr. Judith L. Meyer, Professor Emeritus, Odum School of Ecology, University of Georgia, Lopez Island, WA

PANEL MEMBERS

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

Dr. Deborah Bronk, Professor, Physical Science Dept, The College of William and Mary, Virginia Institute of Marine Science, Gloucester Point, VA

Dr. Piers Chapman, Head of Department, Oceanography, Texas A&M University, College Station, TX

Dr. Robert Diaz, Professor, Department of Biological Sciences, Virginia Institute of Marine Science, College of William and Mary, Gloucester Pt., VA

Dr. Anne Giblin, Senior Scientist, The Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA

Dr. Kenneth L. Heck, Jr, Chair, University Programs/Senior Marine Scientist III/Professor, Dauphin Island Sea Lab, Dauphin Island, AL

Dr. Mark Noll, Associate Professor, Earth Sciences & Special Assistant to the Provost, Academic Affairs, The College at Brockport, State University of New York, Brockport, NY

Dr. Peter Ortner, Research Professor, Marine Biology and Fisheries, Rosenstiel School of Marine and Atmospheric Science, University of Miami, Miami, FL

Dr. Hans Paerl, Professor of Marine and Environmental Sciences, Institute of Marine Sciences, University of North Carolina - Chapel Hill, Morehead City, NC

Dr. Kenneth Reckhow, Chief Scientist, Global Climate Change and Environmental Sciences, RTI International, Research Triangle Park, NC

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

Dr. David C. Schneider, Professor, Ocean Sciences Centre, Memorial University, St. John's, NL, Canada

Dr. Andrew N. Sharpley, Research Soil Scientist, Department of Crop, Soil and Environmental Sciences, University of Arkansas, Fayetteville, AR

Dr. Andrew Solow, Associate Scientist, and Center Director, Woods Hole Oceanographic Institution, Woods Hole, MA

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

Dr. Joseph C. Zieman, Professor, Environmental Sciences, College and Graduate School for Arts and Sciences, University of Virginia, Charlottesville, VA

SCIENCE ADVISORY BOARD STAFF

Ms. Stephanie Sanzone, Designated Federal Officer, U.S. Environmental Protection Agency, Science Advisory Board (1400R), 1200 Pennsylvania Avenue, NW, Washington, DC, Phone: 202-564-2067, Fax: 202-565-2098, (sanzone.stephanie@epa.gov)

Attachment B

Nutrient Criteria Review Panel Meeting, December 7, 2011: Other Attendees (Persons who requested the teleconference call-in number.)

Holly Abeels
UF/IFAS Brevard County Extension

Mark Alderson
Sarasota Bay National Estuary Program

Frederick L. Aschauer, Jr.
Rose, Sundstrom & Bentley, LLP

Veronica Beech
NOAA

Jason M. Bessey
Stormwater Program Coordinator

Rajendra P. Bhattarai,
Austin Water Utility, City of Austin

Sandy Bihn
Western Lake Erie Waterkeeper Association

David Bolam, P.E.
Clay County Utility Authority

Connie Brower
NC Department of Environment and Natural
Resources

Jeffrey Brown
Oertel, Fernandez, Cole & Bryant, P.A.

Lynette Malecki Brown, Ph.D.
Breedlove, Dennis & Associates, Inc.

Tom Burke
City of Dunedin, FL

Kim Caviness
Mississippi Department of Environmental
Quality

Virginia Chamlee
The Florida Independent

Ed Cordova
JEA, Environmental Services

Cris Costello
Sierra Club

Patrice Couch
St. Andrew Bay Resource Management
Association Inc.

Jocelyn Croci
Florida Department of Transportation

Robert Daoust
ARCADIS U.S., Inc

Todd Davison
NOAA

Bruce DeGrove
DeGrove Consulting & Training, Inc.

Linda Dorn
Sacramento Regional County Sanitation
District

Jim Dorsch
Denver Metro Wastewater Reclamation
District

Brady Dryer
Commonwealth Engineers, Inc.

David D. Dunlap
Koch Companies Public Sector, LLC

Amy E. Eason
AECOM Technical Services, Inc.

Christianne Ferraro
FDEP Central District

Byron Flagg

Donna Fries
Miami-Dade Water & Sewer Department

Annie M. Godfrey
US EPA, Region IV

J Whit Green
St. Johns River Water Management District

Tim Guilfoile,
Sierra Club Water Sentinels

(Bill) William T. Hall
Hall & Associates

Colton Harmon
Central Contra Costa Sanitary District

Mac Hatcher
Department of Land Development Services

Jonathan W. Holley
Harris County Flood Control District

Chris Hornback
National Association of Clean Water
Agencies

Nona C. Jones
Gainesville Regional Utilities Office of
Community Relations

Kristine Papin Jones
Florida Department of Environmental
Protection

Matt Kastner
The Fertilizer Institute

Kerry Kates
Florida Fruit & Vegetable Association

Kris A. Kaufman
Southwest Florida Water Management
District

Stanley M. Kroh
Tampa Electric Company

Robert A. Malinoski
Gunster, Yoakley and Stewart, P.A.

Melinda McCoy
EPA Region 6 (6WQ-EW)

Jan McLean
Tampa, Florida 33602

Lisa Meday
Seminole Tribe of Florida

Curtis Morgan
The Miami Herald

Troy Pierce
US EPA Gulf of Mexico Program Office

Don Pryor
Brown University

Linda Roeder
BNA

Matt Rota
Gulf Restoration Network

John M. Ryan
Sarasota County Water Resources

Robert Sackellares
Sr Consultant - Water

Robert H Semmes
Applied Technology and Management, Inc.

Ray Smith
Pollution Control & Prevention Department

Richard Steinberg
Kinder-Morgan Liquid Terminals

David L. Tarbox
Senior Professional Geologist/Partner

Chet Thompson
Buckeye Florida, L.P.

Meg Thompson
The National Group, LLP
for Conservancy of Southwest Florida

Lauren W. Underwood
Computer Sciences Corporation

Joline van Tilburg
Parsons Brinckerhoff

Ron Vaughan,
ExxonMobil Downstream & Chemical
SH&E - Water Advisor

Charles Wilkinson,
City of Jacksonville

Gary E. Williams
Southwest Florida Water Management
District

Lisa M. Wilson-Davis
City of Boca Raton

Linda Young
Clean Water Network of Florida

Paul Zajicek
Florida Dept. of Agriculture and Consumer
Services

Materials Cited

The following meeting materials are available on the SAB Web site, <http://www.epa.gov/sab>, at the [February 7, 2011 Nutrient Criteria Review Panel Meeting](#) page.

¹ Federal Register Notice Announcing the Meeting (76 FR 3133)

² Meeting Agenda, Nutrient Criteria Review Panel, February 7, 2011

³ Review of Approaches for Deriving Numeric Nutrient Criteria for Florida's Estuaries, Coastal Waters, and Inland Flowing Waters (01/25/11 draft)

⁴ Nutrient Criteria Review Panel Summary Points for the Executive Summary (Feb. 1, 2011 draft for discussion)

⁵ Public Comments Received:

- Comments by David Tomasko, PBS&J-Atkins.
- Comments by Winston Borkowski on behalf of CF Industries, Inc.
- Comments from Daryll Joyner on behalf of Florida Department of Environmental Protection
- Comments from Frank Marshall, Cetacean Logic Foundation, Inc.
- Comments from Jennifer Hecker and Linda Young on behalf of Conservancy of Southwest Florida and Clean Water Network of Florida, 2-16-11.
- Comments from Jennifer Hecker on behalf of Conservancy of Southwest Florida.
- Comments from Joel Steward, St. John's Water Management District, FL, 2-16-11.
- Comments from Kevin Carter on behalf of the South Florida Water Management District.
- Comments from Linda Young on behalf of Clean Water Network of Florida.
- Comments from Matt Rota on behalf of Gulf Restoration Network.
- Comments from Paul Carlson, Florida Fish and Wildlife Research Institute.
- Comments from Thomas DeBusk on behalf of the Everglades Agricultural Area Environmental Protection District.

⁶ List of Registered Speakers for Feb. 7, 2011 Teleconference of the NCRP

⁷ Comments from Jennifer Hecker on behalf of Conservancy of Southwest Florida

⁸ Comments from Daryll Joyner on behalf of Florida Department of Environmental Protection, February 1, 2011

⁹ Comments from Thomas DeBusk on behalf of the Everglades Agricultural Area Environmental Protection District, February 1, 2011

¹⁰ Comments from Linda Young on behalf of Clean Water Network of Florida

¹¹ U.S. Environmental Protection Agency (EPA). 2010. Using Stressor-Response Relationships to Derive Numeric Nutrient Criteria (November 2010). EPA Office of Water, EPA-820-S-10-001

¹² EPA Request for Clarifications to the Nutrient Criteria Review Panel draft (Jan. 25, 2011) report

¹³ Proposed Methodology for the Assessment of Protective Numeric Nutrient Criteria for South Florida Estuaries and Coastal Waters. Comments from Briceño et al. submitted for the December 13-14, 2010 Meeting of the Nutrient Criteria Review Panel.