U.S. Environmental Protection Agency
Science Advisory Board

Integrated Nitrogen Committee
Public Teleconference Meeting April 19, 2007

Committee: Integrated Nitrogen Committee

Date and Time: April 19 from 3 -5 Eastern Time as announced in the Federal Register on March 22, 2007, Volume 72, Number 55, Page 13492

Location: By Telephone Only

Purpose: The call provides the Integrated Nitrogen Committee with the opportunity to discuss its needs for information on sources, transport, fate, effects, impacts and metrics relating to reactive nitrogen in the environment; as well as discuss options for meeting those needs through the literature, committee work, and invited speakers for the planned June 20-22 face-to-face meeting.

Materials Available: Materials made available for the INC's January 30-31 meeting are identified in those minutes. The additional materials made available for this call are identified in the list of attachments on the signature page of these minutes.

Attendees: All members except Drs. Herz, Lighty, and Mitsch were present. Drs. Cowling and Dickerson joined the call a little after it started. A roster of the Committee is attached. DFO Kathleen White of the SAB Staff Office was present.

Agency staff present included Jonathan Garber, Richard Haueber, Barry Korb, Jim Latimer, Rick Linthurst Andrew Manale, Rob Wolcott and Randy Waite with Gail Lacy, Lisa Conner, Jeffrey Herrick, Tara Greaver, and Paul F Wagner.

Members of the public attending included: Charles Kovach of the Florida Department of Environmental Protection, Dennis P. McKenna of the Illinois Department of Agriculture's Bureau of Environmental Programs, and Joe Rudek of Environmental Defense in Raleigh.

Summary:
The meeting went according to the agenda, but faster, ending at 4:30 p.m.

The Committee approved the April 15 revised nitrogen cascade, which will be posted at the SAB website (www.epa.gov/sab) after a legend is written by J. Galloway

The following actions were assigned:

ACTION 1: The Producers Working Group recommends hearing from someone from USDA with a" helicopter view". Galloway asked that names be sent to Aneja and Cassman with copy to DFO.

ACTION 2: The Producers Working Group would like to know more about nitrogen and turf grass. Galloway suggested that knowledgeable members send citations to the lead and co-lead of the Producers Working Group.

ACTION 3: The Environmental Systems Working Group members should provide their questions for use by Gary Lear in preparing for a presentation on CASNET and NADP.

ACTION 4: The Environmental System Working Group will further discuss choke points, development of a candidate list, and circulation to other working groups before the June meeting.

ACTION 5: The Impacts & Metrics Working Group will add biodiversity to its table of impact categories and forward the table to the DFO who will distribute to the full Committee. The Working Group will then continue to work on metrics.

ACTION 6: In the fall, INC Member Otto Doering, will provide information on impacts of the biofuels policy, based, in part, on an NRC event this summer on the water quality impacts of the new policy.

ACTION 7 EPA's Linthurst will send a suggestion to the Committee for categorizing the positive and negative impacts of Nr on the environment based on the UN Milleneum Ecosystem Assessment that is also being used in the developing ORD Ecological Research Program to address a broad range of stressor effects.

ACTION 8: The DFO will resend the draft June 20-22 agenda. INC members will identify any additions they would like to see to the agenda items by email.

ACTION 9: The Working Group Leads and Co-Leads agreed to provide their priorities for speakers to the DFO by Wednesday April 25.

The Committee's next conference call is June 8 from 2-4 p.m. Eastern Time.

Further Information on Matters Discussed:

Background: At the January 30-31, 2007 public meeting, the Committee formed working groups to prepare for the planned meeting June 20-22, 2007. The Producers Working Group consists of Aneja, Boyer, Cassman, Doering, Herz, Kohn, Lighty, Shaw. The Environmental Working Group consists of Boyer, Dickerson, Hey, Mitsch, Mosier. The Impacts & Metrics Working Group consists of Cowling, Doering, Moomaw, Paerl, Stacey, Theis. The leads and co-leads for each group are: Aneja and Cassman for producers, Mosier and Dickerson for environmental system; and Moomaw and Theis for impacts and metrics. The Working Groups have had non-public preparatory calls supported by the DFO to prepare for this meeting and the next one.

Meeting: The DFO, Kathleen White, opened the meeting, calling roll, reminded those present that the purpose of the meeting was to provide the Integrated Nitrogen Committee with the opportunity to discuss its needs for information on sources; the presence and movement of reactive nitrogen in the environment; impacts and metrics relating to reactive nitrogen in the environment; as well as discuss options for meeting those needs

The chair, Dr. James Galloway, welcomed the Committee, Agency and Public, then began the meeting with the opportunity to review and comment on the latest (April 15) version of the nitrogen cascade (attached). The Committee approved the revisions.

Working Group Reports: The working group leads and co-leads discussed the Committee's information needs and options to meet them.

Aneja and Cassman spoke for the Producers Working Group. Aneja noted that the Producers Working Group has agreed in principle that anthropogenic sources are variable and considering them requires addressing uncertainty. They would like uncertainty addressed at the June meeting. In terms of identifying potential speakers for the June meeting, Aneja noted that the Producers Working Group identified Robin Dennis or a colleague from EPA and Ray Knighton of USDA.

This working group organized their work by five major U.S. watersheds: East Coast, Ohio River, Missouri River, Lower Mississippi, and West Coast. They were considering adding the Upper Mississippi, probably within the Ohio River Basin. Cassman noted the Upper Mississippi River watershed could be incorporated with the Ohio River because they have similar agricultural domains with regard to crops and cropping systems.

Boyer has agreed to provide a paper on the SPARROW model so they all will understand how nitrogen is estimated and balances calculated. Boyer is developing a nitrogen budget for the INC using both the SPARROW model and a mass balance approach. She expects to have the first analysis in early May and a final one before the June meeting.

The working group would like to invite a presentation from someone at USDA who has a broad understanding of USDA programs in nitrogen fertilizer efficiency, especially leaching, volatilization, denitrification, and run off. The inputs to the agroecosystem (except for atmospheric inputs) are more certain than the outputs from them.

Stacey urged that urban impacts including lawns be addressed. After discussion, the INC agreed it would be good to seek out additional information and potential speakers on turf.

Dickerson and Mosier lead the Environmental System Working Group which addresses nitrogen stocks in the environment, flows through the system, storage in terrestrial and aquatic ecosystems and choke points where nitrogen inputs and outputs can be managed.

The Working Group has agreed to focus on:

1. Relationship of emissions to deposition
2. Choke points
3. Transfer and recycle rates

The working group is continuing to develop its work plan. The Working Group conferences again April 27.

The working group would like to hear from:

1.Robin Dennis or someone from his group.

2. Someone who could address the relationship of emissions and deposition and know CASNET and NADP.

3. Another source where the working group felt it needed some help is the USDA/NRI which is in process.

EPA's Rick Haeuber thought Gary Lear would be appropriate. Cowling suggested Van Bowersox at Illinois State Water Survey who is national coordinator for NADP.

Dickerson had a communication from the head of power plant research in Maryland to the effect that ammonia slip was small. If this needs to be explored further, the INC could invite John Sherwell with the Maryland Department of Natural Resources.

There is still an outstanding area concerning stream and flood plain areas from FEMA. Hey has contacted David Shine in the Chicago office of FEMA who has promised to find someone appropriate at the national level.

Thies and Moomaw lead the Impact & Metrics Working Group. After the March 27 call, Moomaw sought some information on impacts and metrics from EPA. From this they learned that EPA distinguishes between targets and the metrics used to determine that they have met those targets, that it has no unique set of metrics just for nitrogen, and that there is a vast amount of information in STORET which the INC could access if it wishes. Making the distinction between targets and metrics would provide the Committee's recommendations in a framework consistent with EPA's strategic plan.

The working group finds value of looking at Chesapeake Bay because it has the most information in terms of fluxes, reduction strategies and costs.

Theis and Moomaw identified the following areas of impact that could become a framework:

1. Global Warming (Nitrous oxide)
2. Eutrophication (ammonia, nitrate and other nitrogen species)
3. Ecotoxicity (ammonia and organic nitrogen compounds)
4. Human Health (cancer and/or non-cancer, if either)

5. Acidification (NOy and NHx)
6. Lower level smog formation (NOy)
7. Stratospheric ozone

There could be many metrics in each area and more than one kind of metric as well.

Cowling recommended including benefits as well as adverse impacts. Doering mentioned the document he circulated on atmospheric N contributions to agroecosystems.

Galloway gave the public an opportunity to comment if they wished to. Charles Kovich wanted to know if the public could have access to these materials. The DFO responded that with one exception, what went to the full Committee was posted at the SAB website. The exception was copyrighted materials for which citations would be posted.

Rick Linthurst asked if the INC had given thought to using categories the way the Millenium Assessment did. EPA is wrestling with what kind of ecosystem services are being impacted by reactive nitrogen and may use the Millenium Assessment.

At 4:10, Galloway asked whether there were additional Agenda Elements for the June 20-22 meeting. Unfortunately, not all members had the agenda. The DFO will resend the June 20 agenda and identification will occur by email.

The meeting adjourned at 4:30 p.m.

Respectfully Submitted:	Certified as True:
/s/	/s/
Ms. Kathleen E. White	Dr. James N. Galloway, Chair
Designated Federal Official	SAB Integrated Nitrogen Committee

Attachments: Except for the items noted, these attachments will be made available at the SAB website. Copies of all attachments will be found in the FACA file

Federal Register notice
INC roster
Final Agenda for the April 19 Public Teleconference
Draft Agenda for the June 20-22 Public Meeting
Revised Nitrogen Cascade diagram
Chair's email approval of the minutes