

U.S. Environmental Protection Agency
Science Advisory Board
Integrated Nitrogen Committee
Public Teleconference Meeting January 17, 2008
Minutes

Committee: Integrated Nitrogen Committee

Date and Time: January 17, 2008 from 2-4 Eastern Time as announced in the Federal Register on November 20, 2007 (Volume 72, Number 223, Page 65340)

Location: By Telephone Only

Purpose: On this conference call, the working groups summarized the progress they made on their assignments, identified what else was needed to complete the work, and engaged in other Committee business as needed

Materials Available: Materials made available for the INC's previous meetings and public teleconferences are identified in the relevant minutes. In addition to the minutes for the December 13 teleconference and the agenda for this teleconference, the Committee received a revised draft of Section 3.2 was sent out just after the December 13 teleconference by the Producers Working Group.

Attendees: Drs. Aneja, Boyer, Cowling, Dickerson, Doering, Galloway, Kohn, Mosier, Paerl, Stacey, and Theis were present on the call. Drs. Herz, Hey, Lighty, Mitsch, Moomaw, and Shaw were unable to participate in this call.

Actions and Decisions:

1. Both the Producers Working Group and Environmental Systems Working Group are awaiting input from Boyer, particularly the table of national input.
2. The Producers Working Group also needs material from Herz and Kohn.
3. The Environmental System Working Group also needs material from Mitsch who agreed to let Mosier know whether there are additional complete datasets that could be used instead of or in addition to the sixteen northeast watersheds.
4. The Environmental System Working Group expects to share its next draft of section 3.3 with the full INC the week of January 21.
5. Dr. Boyer will circulate her analysis by state and for the US to the INC the week of January 21. Her analysis by watershed will be ready in mid-February.
6. Dr. Boyer's analysis will report in metric tons.

7. Dr. Moomaw will provide the Impacts & Metrics Working Group with text on the economic evaluation of the cost of nitrogen.
8. Dr. Dickerson will provide the Impacts & Metrics Working Group with text on the CAA text by the week of January 21.
9. Dr. Cowling will send Dr. Mosier some references on the qualitative aspects. Dr. Mosier will use this and input from Dr. Boyer to prepare some text on impacts to terrestrial ecosystems for the Impacts & Metrics Working Group..
10. In formulating the agenda for the April 9-11 meeting, the INC will include speakers who can provide additional input on the role of government policies and programs on reactive nitrogen, whether intended or not. This input will be used in Chapter 4.
11. Dr. Boyer will provide the Risk Reduction Working Group with observations and recommendations on information and data needs based on her experiences putting together the nitrogen budget. This will go in the research needs area of chapter 4.
12. Working groups will share their products in progress with the full INC.

Details of the Meeting: After the DFO called the role and opened the meeting, she ran the first part of it, which was very procedural at the direction of Dr. Galloway, the chair, who had lost his voice but was present on the call; Dr. Theis (like Dr. Galloway a member of the chartered Science Advisory Board) ran the latter half, which was more substantive. The DFO welcomed those present, reviewed the agenda, and asked if there were any additions to the agenda. There were none.

The DFO reviewed the assignments and schedule, reminding the Committee of its scheduled April 9-11 meeting. To make the best use of that meeting, the INC needs to complete sections 3.2, 3.3, 3.4 and chapter 4 by March 1. The interim goal is that each of the four working groups will have completed the sections for which it is responsible (written, reviewed, and revised within the working group) distributed to the full INC by February 1 for discussion at the next INC teleconference on February 13. The working groups, leads/co-leads and assigned sections are:

| | | |
|-------------------------|-------------|----------------------|
| Producers WG | Section 3.2 | Aneja and Cassman |
| Environmental System WG | Section 3.3 | Dickerson and Mosier |
| Impacts & Metrics WG | Section 3.4 | Moomaw & Theis |
| Risk Reduction WG | Chapter 4 | Theis |

Under the Federal Advisory Committee Act, small groups of members (less than half the full committee) may meet to plan or develop work products in preparation for a full Committee meeting at which those products will be considered. During this critical period for report preparation, the working groups – as well as the full INC – have been holding monthly teleconferences.

The working group leads gave brief presentations about their progress on writing assignments, highlighting areas where contributions were needed.

The **Producers Working Group** held a preparatory teleconference January 10 to determine what was needed to complete Section 3.2. PWG expects to have a draft to circulate within the PWG by the 21st and to the full INC by February 1. PWG did not request any assistance from the full INC.

The **Environmental System Working Group** held a preparatory teleconference January 9 after which Arvin Mosier revised the draft of Section 3.3 and sent it to the ESWG for comment. He expects to provide it to the full INC for review by January 21.

Dr. Boyer is preparing a nitrogen budget that is an important input to both the PWG and ESWG products. She spoke about where the work stood, focusing on emissions data, Atmospheric deposition, fertilizer data, and some ancillary issues like vehicles. In response to her question to the INC about units, she was advised to report in metric tons only.

The **Impacts and Metrics working Group**, which met by teleconference on January 14, is preparing Section 3.4. There are two holes in it. Dr. Moomaw is preparing text on economic evaluation of the cost of nitrogen and Dr Dickerson is writing a piece on the Clean Air Act. (Dr. Dickerson agreed to provide the CAA text by the 21st.)

Section 3.4 does not yet provide a balanced presentation by media. Most of the examples come from the water area. Dr. Dickerson's section will address air, but no one has been assigned to address impacts on terrestrial ecosystems. The new text on terrestrial impacts needs to be descriptive and, to the extent possible, quantitative. Dr. Cowling will send Dr. Mosier some references on the qualitative aspects and Dr. Mosier will then prepare some text for the I&MWG using the input data from Boyer and Cowling.

Dr. Boyer will circulate her analysis by state and for the US to the INC. She will send data to the members and generate tables as needed. Drs. Aneja and Mosier welcome her input the sooner the better. Dr. Boyer said that the analysis by watershed won't be ready until mid-February.

The **Risk Reduction Working Group** has prepared a draft of chapter 4 which needs more work. The RRWG discussed this January 14 and tasked members with making improvements.

One area needing additional input is the role of government policies and programs on reactive nitrogen, whether intended or not. Dr. Theis thinks that this is an area the full INC should be involved with. INC hopes to have one or two people address this at the April meeting.

Dr. Boyer will address information and data needs based on her experiences putting together the nitrogen budget. This will go in the research needs area of chapter 4.

After briefly discussing the Status of Other Report Assignments, the INC decided that, due to the need to focus on the preparation of Sections 3.2, 3.3, 3.4 and Chapter 4, discussion of this topic will be deferred to another teleconference.

In addressing the Report Preparation Process, the INC briefly discussed circulating the draft working group text to the full INC before the individual working groups were finished with them. After considering the pros and cons, the INC asked that the working groups circulate their drafts while they are still in progress.

When an opportunity was provided for Public Comment; no one from the public chose to comment and did not take it. Similarly, the public was provided with an opportunity to ask questions and did not take it.

From this point forward, Dr. Theis chaired the meeting. He raised several issues for discussion.

1. He observed that while INC has talked about the benefits of an integrated nitrogen strategy, it has not discussed what one would look like.

2. INC has not considered an integrated nitrogen strategy in the context of other biogeochemical cycles. The most obvious one is carbon. Does the Committee have thoughts about this topic? Would INC like to cut off its work before addressing this question? Or would it like to address some of the problems at the next level up? That is, how wide a net would we like to cast?

Dr. Cowling responded that the first task of an integrated nitrogen strategy is to inventory total stocks of nitrogen (oxidized, reduced and organic). He reminded the INC that EPA's air programs now only address oxidized forms of nitrogen. In his view, the reduced forms should be addressed as well. He referenced the resolution INC developed at the October 29-31, 2007 meeting and communicated to the relevant CASAC subcommittee. Failure to address reduced forms of nitrogen is to ignore the nitrogen cascade. If INC can get through the integration of air emissions and aquatic discharges for all three forms of nitrogen, it will have made a major step forward.

Dr. Theis thinks that is the minimum INC should do.

3. Dr. Theis then raised another issue. Assuming EPA takes the INC's advice and implements something close to what INC suggests for nitrogen, what expectation does INC have? Is it to reduce the amount of reactive nitrogen cycling in the environment? To bring reactive nitrogen levels down to pre-industrial levels? To assess human and ecosystem health? This was a reviewer of the SAB's recent Hypoxia Advisory Panel's report. He observed that many of the HAP recommendations are

targeted at reducing applied fertilizer and include switching crops. He would not like INC to do more harm than good with its strategy.

Dr. Doering noted that some recommendations don't have much chance of working – turning areas of traditional row crop agriculture into grassland, for example. Dr. Cassman has been working on some of the in-between things that could work. A question is whether there is enough political capital to make this happen.

Dr. Boyer thinks the INC has made the case that the problem is here to stay and recognizes that the fixes are not easy. There are many different things INC can promote in terms of reducing input, increasing productivity to use less fertilizer, and mitigating input. She thinks INC can write on issues like agricultural production efficiency, mitigation in coastal systems, and greater federal involvement in air quality. She thinks that INC can make the case for adaptive management – doing everything, not just one thing.

Dr. Theis asked whether this could be summarized as reversing the direction on nitrogen? Dr. Boyer said not completely because some uses, given increases in population, will not be reduced. Source reduction is not the only possibility.

Dr. Dickerson said that the take home message for EPA is that the current criteria pollutant NO₂ is not telling the story. We need to regulate the family of reactive nitrogen pollutants.

Drs. Boyer and Cowling discussed oxidized and reduced forms of nitrogen. Some of Dr. Boyer's deposition analysis may be useful to Dr. Cowling. Dr. Cowling will send some text to DFO on deposition of nitrogen to distribute to INC. Dr. Cowling said every single INC member could make a statement – or provide written comment -- as a member of the public at the CASAC review of the SO_x and NO_x document. The first opportunity would be in early April. The second external review draft will be available in the fall by which time the INC's report may be ready.

Dr. Theis asked if there were other comments on the breadth of the INC's report. There were none.

The INC asked Dr. Erisman to give a brief update on the European Nitrogen Assessment. Their first workshop will be in May and will lead to a European Nitrogen Assessment in 2110. This effort is financed by the European Science Foundation but is directed at nitrogen policy both at the European and global scales. He will send (or re-send) their outline. When he visited in October, he offered to review the drafts from a European perspective. His colleagues will also be happy to comment on the INC's assessment. INC members seem pleased with this opportunity.

The DFO adjourned the meeting at 3:40 p.m.

Respectfully Submitted:

/s/

Ms. Kathleen E. White
Designated Federal Official

Certified as True:

/s/

Dr. James N. Galloway, Chair
SAB Integrated Nitrogen Committee