



Science and Technical Advisory Committee
Partnership for the Delaware Estuary:
A National Estuary Program
www.DelawareEstuary.org

Meeting Minutes of the STAC
Partnership for the Delaware Estuary - Wilmington, DE
January 16, 2008

Note: acronym definitions are provided at the end of these minutes

STAC Members Attending:

Allison Allen - NOAA
Dr. Gary Buchanan - NJDEP
Paula Conolly – PWD (alternate for Butler)
Alan Everett - PADEP
Dr. Thomas Fikslin – DRBC
Dr. Dewayne Fox - Del. State Univ.
Dr. Jack Gallagher – Univ. of DE
Dr. Bob Hoke – DuPont
Amy Jacobs – DNREC
Dr. Desmond Kahn - DNREC
Dr. Danielle Kreeger – PDE

Dr. Dave Russell – EPA Region 3
Dan Soeder – USGS
Dr. Chris Sommerfield – Univ. of DE
Dr. David Velinsky, Academy of Nat. Sci.

Also Attending:

Jen Adkins - PDE
Mike Haberland, NJDEP
Amie Howell – EPA Region 3
John Kennel - DNREC
Martha Maxwell-Doyle – PDE
Eric Vowinkel - USGS

I. Welcome & Introductions (Dan Soeder, STAC Chair)

1. Dan reviewed the agenda, which was rearranged to accommodate a need to discuss the channel deepening topic before some members needed to leave.
2. Dan and Danielle introduced new STAC members. Alan Everett has replaced Ken Anderson as the PADEP standing representative. Paula Connolly from Philadelphia Water Department attended as an official alternate for Lance Butler who had a conflict.

II. PDE Updates - Executive Director's Report (Jen Adkins)

1. Jen reviewed staff and board changes, most notably her appointment as the permanent replacement for Kathy Klein as Executive Director. She discussed activities by the PDE Board, including membership changes.
2. The 2008 budget for PDE was approved, which reflected the reduced NEP grant budget (\$418,000, down from approximately \$500,000 previously). Martha noted however, that the NEP lobbyist in Washington had been successful in building support to have NEP funding restored for FY 2009, potentially at a level above \$500,000. Martha also reported that a new Memorandum of Understanding has been adopted and signed by the states with regard to the

operation of PDE.

3. Dan asked whether there might be STAC funding in the FY 09 budget if it gets restored, and Jen noted that this was likely. Martha added that this is the basis for the continued request for STAC elevated funding priorities and project ideas on an annual basis, as requested by the EIC at the October meeting.

4. Jen reported that PDE was undergoing an internal realignment of operating centers around four primary functions: science, government relations, education/outreach, and development.

5. Jen reflected on the progress at the fall joint EIC-STAC meeting held in October, noting its many successes and support by the EIC for STAC productivity and its continued relevance.

6. Jen reviewed the agenda and reminded the STAC that one of its continuing charges is to assist with preparation of the State of the Estuary Report and planning for the 2009 science conference and environmental summit. Another topic of current interest is the discussion of the basin-level Flexible Flow Management Plan.

III. PDE Science Updates (Danielle Kreeger)

1. Danielle referred everyone to the "Science Updates" handout and the various other documents that were sent to the STAC by email for review in advance of the meeting.

2. Danielle noted that the number of STAC tasks has been increasing, and the formation of STAC-affiliated workgroups will increasingly be used as a means to keep forward momentum channeling enthusiasm and expertise where it can best be applied. Workgroups should draw on expertise from outside the STAC as needed, but STAC members should be prominent or lead these groups. To date, we have formed two ad hoc workgroups: a DE Estuary Benthic Inventory WG and DE Estuary Wetland WG. A Regional Restoration Workgroup is planned and a Data workgroup has been proposed for the future.

3. Dan noted that much of the detailed, technical work should begin to be handled in these workgroup meetings, and the bulk of time at full STAC meetings should be used for broader topics of interest to all STAC members and their represented sectors. Danielle added that where possible, STAC meetings should include time for brief seminars to foster collegiality.

IV. Presentations and Discussion: Channel Deepening (Dan Soeder)

1. Dr. Christopher Sommerfield gave the first of two seminar presentations, focusing on the potential effects of dredging on the Delaware Estuary ecosystem. The title was "Consequences of dredging in estuaries." Chris indicated that a PDF file of his Powerpoint slide show could be provided, and this is available from PDE upon request. Chris classified and then discussed various potential effects as being predictable and immediate, direct but difficult to predict, or indirect and very difficult to predict. He discussed evidence for past areas of deposition and erosion in relation to channel depth at different times. Questions and comments can be directed to Dr. Sommerfield at CS@UDel.edu.

2. Allison Allen gave the second presentation, titled "Delaware River and Bay: Changes in Tidal Characteristics." A PDF file of this presentation is also available from PDE upon request. Allison reviewed the long term and shorter term records for sea level and rate of sea level rise at sites in our region. She also discussed the timing of when the tides reach different points in the system, and how this may have changed historically in relation to deepening events. , e.g., the time of tide at Philadelphia is roughly 20-45 minutes earlier today than in 1920. The

tidal range has increased by about 0.3 meters from 1920-1970 before leveling off over the past 3 decades. In summary, she noted that the range is not only increasing, but the tides are entering the system more quickly. Past channel deepening may have been a factor in leading to these changes.

3. Dan and Danielle asked whether the STAC was interested in responding to the EIC challenge from the October meeting, by crafting a list of any current questions that may, to our knowledge, not have been addressed in past studies of the effects of dredging. Most studies that have examined the environmental effects of channel deepening have focused on the fate and effects of dredged sediments which may contain contaminants, possible effects of turbidity, salinity effects, and so forth. But considering the emergence of new information from other systems (e.g., interrelationships between tidal marsh condition and regional sediment budgets), PDE and the EIC invited the STAC to assess the state of knowledge and prepare a succinct list of unresolved questions, with a summary of past studies.

4. Desmond Kahn and Dan Soeder summarized the discussion as focusing on two possible areas of concern: hydrodynamics and sediment transport and budgets. Desmond noted that land subsidence is also occurring and the sediment supply for marshes and sea level rise impacts should be considered along with such factors. Dewayne Fox added the effects on the benthic community are also not well understood – if sediment conditions change then the infauna will change and the fish that are associated with those infauna and epifauna.

5. Amy Jacobs reminded the STAC that Kevin Donnelly requested that if the STAC wanted to frame these questions as potentially unresolved science needs, they should be elevated along with an annotated summary of past studies illustrating the data gap in a broader context to show that the questions have not actually been addressed to the STAC's knowledge.

6. Danielle and Desmond recommended that PDE continue to elevate such matters, following up on the request from Kevin Donnelly at the EIC fall meeting. Kevin had commented that this was exactly the type of function that he (and DNREC) valued from the STAC – to get advice on science and technical matters that might have some bearing on management decision-making.

7. Dan called for volunteers for a small subcommittee to formulate questions and put together any supporting documentation. Dr. Sommerfield stated that he felt he was already elevating matters by giving repeated presentations on his own work, and he did not feel that the STAC efforts would merit any further involvement from him. Dr. Kahn, noting that he is not an expert in this area, stated that he disagreed and felt it was very important to capture this dialogue and summarize the discussion and questions for the states. Desmond volunteered to work with others on the STAC to summarize the discussion as a 1-page summary for the EIC. Allison Allen volunteered to work with Desmond (along with Dan and Danielle) to prepare the summary.

Action Item: Dan and Danielle would provide a starting point for development of a 1-page summary sheet of any STAC questions regarding proposed channel deepening. Desmond will work with Allison to add supporting notes and materials to this and provide the summary to PDE for delivery to the EIC. The EIC and PDE will then decide what to do with the product.

Note: *Subsequent to the STAC meeting, Dan and Danielle compiled the notes and formulated the following DRAFT list of questions to be further examined by the channel deepening subcommittee (led by Desmond Kahn). PDE planned to revisit this topic at the April meeting and make a final decision as to whether the STAC supports elevation of these or other channel deepening questions.*

- a) Might channel deepening (from 40 to 45 feet) alter (+ or -) sediment supply for tidal marshes in either the upper, middle or lower estuary?
- b) Would further channel deepening alter projected salinity balance, possibly pushing the salt line further up or down the axis (at surface and on flats mainly)?
- c) Have channel deepening models considered interactions with sea level rise, forecast changes in precipitation patterns, or possible changes in freshwater inflow allocations for the estuary?

V. 2009 Science & Environmental Summit Planning (Danielle Kreeger)

1. Danielle reviewed the current model for the 2009 conference, which will again consist of a blended science conference and environmental summit. Current PDE ideas are to blend the different groups even more than in 2007, with joint morning presentations each day, following by concurrent sessions.
2. The venue will again be the Grand Hotel in Cape May, January 11-14th, 2009. The theme this time will be "Planning for the Future Health of the Delaware Estuary."
3. The retreat-like atmosphere has been widely regarded as a successful format to facilitate cross-fertilization among all the various environmental sectors, fostering watershed-based community and information exchange. The most notable ideas for changes include having a better projection system, perhaps with two screens (due to the low ceiling in the ballroom), as well as a Sunday evening open reception to draw people down in advance and give them an icebreaker. The meeting will end perhaps a little earlier on Wednesday, again finishing with a hot topics session to keep people around until the end but enabling them to catch the ferry to Lewes in the late afternoon.
4. The STAC was challenged to begin thinking of speakers, especially a keynote. John Teal was our lead speaker in 2005 and Scott Nixon in 2007. In both cases, the STAC was instrumental in lining up these speakers and we again need this help. PDE also would like suggestions for special sessions to augment the regular sessions (e.g. water quality, living resources, habitat and wetlands, physical processes).
5. Dan suggested that many of these current STAC discussion topics (dredging, flow management, etc) will make good fodder for the hot topics session.

Action Item: The STAC was challenged with thinking of session themes, speakers, moderators, and especially any keynote speakers that would be good for addressing the theme, perhaps something related to climate change which is also the subject of the May workshop PDE is convening with the Academy. Moderator pairs should consist of two or three individuals representing different sectors, keeping with the model of fostering interaction among representatives from different sectors who normally never get to meet.

VI. 2008 State of the Estuary Report (Amie Howell, EPA)

1. Amie summarized the current status of the State of the Estuary (SOE) Report, which is one of the primary products expected from each NEP. She reviewed past challenges with preparing such reports in a multi-state basin, and the difficulties with the Delaware Estuary Program in meeting this need in a timely and scientifically credible fashion. There are three reasons why we need to move quickly to complete the report now: 1) we are behind schedule since these reports should be prepared every 3-5 years and our last one was in 2002, 2) much of the funding for production and printing needs to be spent out by June 30th, and 3) a 3-year implementation review of PDE will happen in early 2009 and the SOE Report was a major requirement articulated in the

action items from the last review of the program.

2. Amie, Danielle and Martha summarized the reasons why this report is so difficult to prepare, relating to the difficulty in building consensus in selecting indicator metrics (everyone has his or her own view), technical difficulty of acquiring and merging data from different states and regions, and coordination challenges resulting from the decision to do the report in concert with the DRBC-led State of the Basin (SOB) Report.

3. Danielle shared a draft outline, list of indicators, and proposed a process and timeline for completion of the report with the STAC's involvement. PDE is still working with DRBC to prepare a comprehensive SOB report, with the estuary chapter being the basis for a separate SOE Report that PDE will issue as the printed edition of Estuary News in early summer 2008. So although the STAC will be invited to comment on and assist with SOB tasks, PDE will mainly depend on the STAC to contribute to and review the science content of the SOE pull-out piece that will be used for the SOE Report shared with EPA as our programmatic outcome. If the SOB report continues to be delayed, PDE has decided to press on with the SOE Report separately, but the goal is to have these finished at about the same time.

4. Danielle reported that the SOE report would take some lessons from the 2007 State of the Sound Report for the Puget Sound NEP. Indicators will be grouped according to five sections: watershed trends, habitat, living resources, water quality and quantity, and climate. Danielle solicited STAC volunteers to serve as expert panels for each of these five sections. Names were assigned to the various expert panels, including some attendees who are not STAC members.

5. These expert panels will be furnished with a working draft of each section, showing example data and text to use as a starting point. But STAC members will be expected to make material contributions to these sections, particularly for indicators that hit closest to home. PDE will rely on the STAC to help write the report, provide data if we are not current or are missing something important, supply pictures, etc.

Action Item: When ready, PDE will send STAC expert panels drafts to work on, and STAC members will be expected to respond in a timely fashion, expected in late March through April. PDE will furnish templates and instructions.

Update Note: PDE created a webpage to upload current drafts of SOE Report materials, grouped in Excel files using a template format to provide guidance regarding content and length needed. Instructions and templates were provided to the STAC by April 1. A two-step process was articulated for STAC assistance: material contributions by expert panels during the first two weeks in April, followed by further review of science content for all elements by all STAC members in the second half of April. May will mainly be used to polish and edit text and work on design, and June will be spent in production with printed reports finished by the end of June.

VII Discussion: Data Management & Web Clearinghouse (Dan Soeder)

1. Dan introduced the subject of data as a focal discussion topic for the STAC in the future. This included data management, comparability, quality, access, website clearinghouses, etc. There are many efforts underway to generate data, merge datasets, develop one-stop-shops for information, and delivery of real-time data streaming. There is not ample time today to address these topics, but Eric Vowinkel from USGS was invited to the meeting to give a presentation on data projects and interests in the area. The subject of data management will need to be addressed more in the future.

2. Eric Vowinkel provided handouts and discussed current plans for the National Water Quality

Monitoring Network and the Delaware Estuary Watershed to Ocean Observing System, as it relates to IOOS and MACOORA as well. Several STAC members such as Danielle and Jonathan Sharp have also been involved in these multi-institution projects, which include data hub components. Eric reviewed the funding being directed through MACOORA in support of an expansion of the Delaware Estuary Observing System by University of Delaware, and its current status.

3. Danielle added that the PDE Information Gateway, which PDE has been developing with USGS funding (Maurie Kelly, Penn State), is likely to be linked up with these other efforts, potentially serving as a repository for reports and a map gallery. PSU is looking into adding a geospatial platform for the Gateway. But the PDE Gateway is unlikely to provide real time data streaming, which would be one of the goals of the DEWOOS portal, and so discussions will be needed regarding ways to merge these different web clearinghouses together to be complementary rather than redundant.

4. Website development and data clearinghouses are just one element of the universe of data topics, as noted above. Future meetings will take up this topic again. The STAC might form a data subcommittee, or a workgroup, for example, since there is a subset of the membership that is very interested in these matters.

VIII Presentation and Discussion: Ecological Flows (Danielle Kreeger)

1. Danielle commented that PDE had been made aware of the Delaware River flow management plan only recently and had decided to draft a letter for the public comment, based on our past involvement in ecological flow meetings. PDE called for this discussion topic since comments are due this week. Danielle circulated a draft of the PDE comments, including some questions regarding ecological impacts that we feel are not apparently addressed in the current information available. Danielle related some past involvement in the ecological flow meetings, particularly pertaining to the potential effects on salinity in the estuary which could affect oysters and freshwater tidal plants and animals. But she said she had not been engaged in any such meetings since 2006.

2. Tom Fikslin gave a presentation titled "Maintenance of estuary ecological flows under the new Delaware River Flow Management Plan" and provided a handout summarizing the main features. Tom explained that New York City water withdrawals are driving the process and plan development.

3. The STAC discussed the plan and commented on the limited effort to address and protect potential drinking water and ecological effects in the lower portion of the watershed, particularly salt-intolerant fauna and flora. For example, there is a proposed rule to *protect* endangered mussels and coldwater trout fisheries in the upper basin, but estuarine resources would simply be *studied*. PDE would draw from this discussion in formulating its public comments.

4. There was also some uncertainty about the seasonal timing of withdrawals and how they might be affected with climate change and other estuarine alterations such as channel deepening. Have salinity models considered the potential interactions of climate change, precipitation pattern changes (including extremes), channel deepening, superimposed on proposed flow management changes?

5. Danielle asked Tom whether there was any opportunity to insert stronger "protection" language into the FFMP with regard to the estuarine resources. She also asked if the STAC or PDE would be afforded any other means to participate in the discussions or technical analysis

of flow management? To date, Danielle commented that she was not included officially in the Subcommittee on Ecological Flows, and the Estuary Program had a strong interest in be part of the dialogue.

6. Paula Connelly noted that drinking water issues are also of concern to PWD. Dan suggested that PDE focus its comments on estuarine resources and PWD focus on drinking water issues, but both should emphasize all these matters.

IX. PDE/Academy of Natural Sciences Climate Change Workshop (David Velinsky)

1. David reviewed the plans for the two-part event on May 6th: a day-time technical workshop designed to identify regional environmental challenges related to climate change, followed by an evening Town Square for the public with high level speakers.

2. Danielle referred to the two-page summary sent to the STAC by email and noted that a hold-the-date flyer will be issued soon. Ideas for speakers were solicited, and STAC members were encouraged to register and attend. A PDE webpage will be created, so stay tuned to that. An EPA "Climate Ready" initiative might help provide funding and the Academy was looking into other funds to help cover speaker fees, etc. There is no budget yet.

X. Review of Action Items, Future Meeting Plans and Other Business (Dan Soeder)

1. Danielle noted that the DuPont Delaware River Study will be moving to a new phase of work, and they are planning to hold a data workshop in the spring. The nature of this will likely focus on a gap analysis discussion focusing on what data is needed to facilitate a better understanding of their activities in the whole-environment context. Danielle reviewed the goals as worded in an email received. Stay tuned for more information. The entire STAC will be invited. Tom and Dan suggested that the Data Workshop should be held near the spring STAC meeting. Danielle offered to work with DuPont to schedule the meeting either the day before or after the April STAC meeting in case folks who travel wish to stay overnight. *Note: this meeting was later scheduled for April 24th, the day after the spring STAC meeting.*

2. Dan asked about STAC elections, which Danielle clarified usually happen around April. Danielle said that prior to the April meeting she would ask elected members whose terms are expiring (Fox, Gallagher, Hameedi, Kahn, Kraeuter, Sharp, Sommerfield) whether they wish to still serve, and solicit new nominations. At that time, we will formulate a ballot and hold a vote either by email or at the April meeting. Terms for newly elected members would begin at the summer meeting and last for 2 years. Danielle noted that Dewayne Fox and Desmond Kahn were added to the STAC late and so they have not had full terms, which should be considered in elections. The charter should be consulted regarding membership expectations.

3. Danielle reminded the STAC of the EIC charges from the fall meeting, such as elevating science priorities every two years (e.g. a white paper refreshing) and listing project or funding priorities annually. Running out of time, the STAC agreed to tackle this need (developing a regular process) at the spring meeting.

4. Dan called for a vote to accept the minutes from January. No changes were recorded. Tom Fikslin moved to accept the minutes. Gary Buchanan seconded. The balance of those still presented voted unanimously to accept the minutes.

XI. Benthic community monitoring in 2008 (RARE DEBI effort)

1. Running out of time, the remaining members of the STAC briefly discussed the progress in forming a DEBI workgroup to launch the program using the RARE grants being managed by PDE. Danielle and Amie provided a brief synopsis of the grants and activities to date. Dave Russell from the STAC had agreed to Chair the workgroup, and PDE would furnish meeting and workgroup support.

2. The STAC will be provided with periodic updates on this workgroup, and anyone who knows of additional experts who would like to either participate materially or be kept in the loop should sent contact information and names to either Danielle or Dave.

XII. Closing Business

1. The next meeting of the STAC will be on April 23rd. This will be followed by a regular summer meeting and then a joint meeting with the EIC again in the fall.

XIII. Adjourn. Dan Soeder adjourned the meeting at 4:15 pm

Acronym List and Definitions

ACES: Alliance for Comprehensive Ecosystem Solutions
CCMP: Comprehensive Conservation Management Plan
CMES: College of Marine and Earth Sciences (University of Delaware)
DEBI: Delaware Estuary Benthic Inventory
DEWOOS: Delaware Estuary Watershed to Ocean Observing System
DEWWG: Delaware Estuary Wetland Work Group
DNREC: Department of Natural Resources and Environmental Control (Delaware)
DRBC: Delaware River Basin Commission
EPA: Environmental Protection Agency (US)
EIC; Estuary Implementation Committee
NEP: National Estuary Program
NJDEP: New Jersey Department of the Environment
NOAA: National Oceanic and Atmospheric Administration
NPS: National Park Service
NVCS: Natural Vegetation Classification System
NWQMN: National Water Quality Monitoring Network
PADEP: Pennsylvania Department of the Environment
PA CZM: Pennsylvania Coastal Zone Management program
PDE: Partnership for the Delaware Estuary
PSEG: Public Service Electric & Gas (New Jersey)
PWD: Philadelphia Water Department
RARE: Regional Applied Research Effort
RRI: Regional Restoration Initiative
RRWG: Regional Restoration Work Group
SOE: State of the Estuary
STAC: Scientific and Technical Advisory Committee
USFWS: U.S. Fish and Wildlife Service
USGS: U.S. Geological Survey