



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

Minutes
Thursday, June 15, 2006
Partnership for the Delaware Estuary - Wilmington, DE

Members or Alternates Attending:

Ken Anderson – PADEP
Greg Breese – USFWS
Dr. Gary Buchanan – NJDEP
Lance Butler – PWD
Dr. Tom Fikslin – DRBC
Dr. Jack Gallagher - University of Delaware
Simeon Hahn – NOAA
Amy Jacobs – DNREC
Dr. Sue Kilham – Drexel University
Dr. John Kraueter – Rutgers University

Dr. Danielle Kreeger – PDE
Larry Miller – USFWS
Dr. Dave Russell – EPA Region 3
Dr. Jonathan Sharp – University of Delaware
Dan Soeder USGS

Also Attending:

Kathy Klein – PDE Executive Director
Martha Maxwell-Doyle – PDE Deputy Dir.
John Kennel – DNREC

I. Welcome & Introductions (Kathy Klein)

Kathy Klein officially opened the meeting at 10:10 a.m. and welcomed all in attendance. Introductions were then made.

1. Ms. Klein provided a 5 minute orientation regarding the Partnership's 2004 reorganization wherein the Delaware Estuary Program and PDE were merged into one entity.
2. One outcome of this was the creation of a lead science position and a renewed commitment to providing science and technical coordination services for the region.
3. This commitment has been demonstrated recently by our lead on the Delaware Estuary Science Conference (2005), White Paper (2006), and reformation of the STAC (today).

II. Past STAC Activities (Jonathan Sharp)

Dr. Sharp provided new STAC members with some past and present perspectives on the STAC.

1. The STAC was formed by design in 1989 with 30–50 active members as one of several standing committees. The STAC included broad representation among agencies and academic institutions with a broad range of expertise.
2. The original STAC was dissolved upon the signing of the CCMP, as were several other standing committees such as the Citizen's Advisory Committee.

3. The STAC produced a number of products including the Scientific Characterization and Living Resources Guide, as well as a data management plan and numerous technical reports.

4. Dr. Sharp provided the group with an overview of past and current traits and issues in the Basin and more specifically the Estuary portion. For example, we have major PCB issues, habitat loss issues, oyster and horseshoe crab issues, and continuing fisheries needs.

5. The upper watershed has been effectively managed by DRBC and other groups. Management in the lower part of the system has not been as effectively coordinated despite massive industrial inputs, urban impacts and a dynamic ecology with flushing in and out of extensive marshes filtering the system.

6. Dr. Sharp said he was delighted we are re-forming the STAC, but he challenged the group to consider the following questions:

- Do we need a STAC?
- Are there perceived and/or real problems?
- Is there a mandate for scientific and technical advice?

7. The Delaware Estuary system is very complex compared to other NEP's with multiple states and EPA regions, and so:

- What are the real problems to be addressed from a management perspective?
- Can we achieve regional cooperative management?
- Can we evaluate cumulative impacts from multiple stresses rather than just regulating individual pollutants?

III. Recent Science Activities by PDE and Affiliates (Danielle Kreeger)

Dr. Kreeger gave a Powerpoint presentation summarizing the progression of steps that the Partnership has taken over the past year and a half.

1. Working with our partner entities, we have undertaken an extensive science intake process. This intake began with the 2005 Science Conference that assessed what is going on in the science and management community and to press all participants to help gauge science and technical needs.

2. Several major messages emerged initially from the SC; e.g., "The Delaware Estuary is not the Chesapeake"; "We need to develop a core identity and conceptual framework that defines our system", "We need a better understanding of linkages among different physical, chemical and biological components of the system", "We need to improve data coordination and access," and "We know too little about benthic processes and community dynamics".

3. With help from conference participants and session moderators, the "White Paper on the Status and Needs of Science in the Delaware Estuary" was developed and released in January of this year. The White Paper synthesized all information received to date to compile an integrated needs assessment listing the top ten technical needs and top 6 operational needs expressed by consensus of the larger science and management community.

4. The White Paper also offered a blueprint for the future with specific recommendations for addressing these needs, and the formation of this STAC was one of these.

5. Dr. Kreeger then described two examples of the White Paper's technical needs (tidal wetlands, ecological flows) and two operational needs (conceptual framework, strengthened monitoring).

6. Specific examples were shown for how we have been working with partners to initiate new efforts to address some of these needs already. For example, a multi-faceted proposal to strengthen the monitoring infrastructure in the Delaware Estuary has been developed with DRBC as the lead, named DEWOOS (The Delaware Estuary Watershed to Ocean Observing System.)

IV. Current and Future Science Activities (Danielle Kreeger)

Dr. Kreeger noted that in addition to writing proposals with partner entities, the Partnership is currently laying the groundwork for several new science initiatives.

1. Referring to a flow chart showing the sequence of science initiatives over the past year and into the future, Dr. Kreeger described a current science action to develop a conceptual framework describing the distinguishing traits of the Delaware Estuary. This will be used to inform growth of future monitoring programs and focus efforts to develop environmental indicators and goals. The STAC will be asked to participate in this exercise and help review Partnership products where the CF is used as an organizational and educational tool (e.g. State of the Estuary Reports).

2. Dr. Kreeger also showed a matrix table developed to describe the geospatial and vertical components of the Delaware Estuary ecosystem. Few other entities are challenged with thinking as broadly about physical, chemical and biological components of the ecosystem throughout the entire NEP area which cross-cuts jurisdictions and regulatory boundaries. Considering the broad and complex nature of the NEP study area, the purpose of this matrix is to force us to think comprehensively and give some consideration to all regions and system parts. We will use the matrix as a tool that is overlaid on monitoring, indicators, management, restoration, education and outreach, etc to determine how many matrix cells are considered.

3. Another current science activity is the Partnership's recent website overhaul with new features such as an interactive discussion board, meetings and events pages, and a technical reports inventory with downloadable documents. Current plans are to develop a web-based data clearinghouse much like the Chesapeake's "Eyes on the Bay" program. Our goal is to make the Partnership's website the leading place to turn for both general information for the public as well as science and technical information.

4. A discussion ensued in support for this concept. Drs. Sharp and Kraeuter cautioned that the information node will be more likely to succeed if it relies on links to other sites for the larger technical datasets. Dr. Kreeger agreed and showed an example for how this might be modeled after the Chesapeake website, for instance by linking to the website of PA Fish and Boat for information about fish species in the Delaware Estuary. Dr. Kreeger called on other STAC members to be ready to help populate the new information node with links and publicly available reports and datasets.

5. The formation of the STAC was noted on the science activities flow chart. Backed by the Estuary Implementation Committee (EIC), the new STAC is getting off the ground with a

solid initial turnout - Dr. Kreeger noted that 15 of the 18 initial members are present today.

6. Ms. Klein and Dr. Kreeger then summarized plans to establish the Delaware Estuary Science and Restoration Trust, a new funding program which would be devoted primarily to addressing the science and management needs addressed in the White Paper, by the STAC, and in any subsequent needs assessments such as future science conferences. As currently envisioned, the Trust will be funded by diverse sources and will have various earmarked activity areas, including a research grants program and a restoration fund. Multiple partnering agencies would serve as Trustees to help manage and prioritize Trust activities, whereas the STAC may be asked to assist with scientific peer review (e.g., proposals).

7. Lastly, Dr. Kreeger reported that the 2005 Science Conference was so well received that current plans are to reconvene the conference every two years, approximately in the intervening time between ERF meetings (also held every two years). The 2007 Delaware Estuary Science Conference is planned for January 24-27, and a flyer was inserted into the meeting packet. The next ERF meeting is planned for November 2007. A discussion of conference planning is scheduled for the afternoon. The STAC will be asked to serve as the steering committee to plan the program for the 2007 conference.

V. STAC Operation, Charter, and Expectations (Danielle Kreeger)

Dr. Kreeger provided members with an overview of STAC operations, charter and expectations. This led to a fruitful discussion about the STAC purpose and range of activities.

1. In follow-up to the questions posed earlier by Dr. Sharp, Danielle first discussed the Partnership's perspective on the need for a STAC and its critical role. She noted that with the backing of the EIC, the Partnership plans to take a more proactive position than the Estuary Program did in the past on science and technical matters, particularly regarding matters that are not currently being addressed comprehensively by existing standing committees and partner entities. It is fundamentally necessary that our programmatic initiatives and products are based on the best available scientific information and judgment. Therefore, the Partnership (and EIC) clearly needs the STAC to be able to help address the science and management needs articulated from the larger scientific community.

2. Dr. Kreeger pointed out, however, that it might not be realistic to expect a clear mandate to come from the states calling for the STAC to be formed and tackle specific needs. Instead, she suggested that the White Paper represented a mandate from the science community, and the Partnership has the momentum at present to take a proactive position to work to advance a science agenda on behalf of the science community, contingent on continuing approval and support of the EIC, which is in turn authorized by the overall NEP Steering Committee.

3. PDE recognizes that Science is a critical component of NEP functions, as specified in our CCMP. This science component has been largely missing over the last 10 years. Our first steps to correct this were the 2005 Science Conference and creation of the Science Director position. The EIC and states supported these actions, and they support re-formation of the STAC. The STAC Charter and initial membership have also been authorized by the EIC. This should be taken as solid evidence that the States do want the STAC's advice and peer review.

4. The topic of peer review elicited a discussion regarding the actual mission and range of activities of the STAC. Mr. Breese asked whether the STAC would be pressed to provide wide-ranging peer review for the larger science community, and he suggested that it should be kept tightly focused and not go off in a thousand different directions.
5. Dr. Kilham disagreed, suggesting that a NEP and its STAC should take a total ecosystem focus, integrating across our whole estuary and allowing us to consider the system in a more comprehensive way.
6. Dr. Fikslin asked for us to define our use of the term "peer review." The reason is to avoid global peer review that may be redundant with independent peer review being undertaken already by existing bodies and entities. He added that funding issues were a major reason why the earlier STAC and overall Estuary Program did not live up to expectations, not because of peer review needs or shortcomings.
7. Mr. Breese suggested that many in the scientific community, particularly those in living resource areas, felt that the program was a failure.
8. Dr. Kreeger said that the Partnership considers the peer review requested by the STAC to fall into two different categories: NEP project specific peer review (at all times) and more global peer review (upon request by the EIC or by other entities such as other standing committees). In the latter vein, the NEP is expected to follow the examples from other NEP's and the Chesapeake where the program helps to integrate and act as a central science clearinghouse linking of science and management from an "Estuary-wide Perspective." The STAC is an advisory body to the EIC and ultimately to the Steering Committee. The STAC provide recommendations to the EIC.
9. Dr. Kreeger also discussed the links between the STAC and other standing committees and groups within the Delaware Estuary. The STAC is expected to not be redundant with any existing committee. It will not add additional peer review to reports or products issued by other groups, unless specifically called upon to do so by those groups or by the EIC. Rather, the STAC should help fill gaps and serve as a central linking agent among multiple groups. This is one reason why the EIC mandated that the STAC be partly comprised of standing representatives from these groups and agencies.
10. Ms. Klein noted that in addition to providing peer review, having the STAC is also critically important for the Partnership by providing credibility, which in turn will increasingly enable us to go after and develop new funding streams to support the science that we say is necessary.
11. Ms. Doyle added that the credibility is particularly important when the Partnership goes to Washington and is able to refer to the STAC as calling for specific actions.
12. Mr. Hahn suggested that many of the specific peer review needs will be already covered by other standing committees and not the STAC.
13. Dr. Kreeger agreed and reiterated that when needs are not met by outside committees the STAC may form subcommittees (a subset of STAC members) or technical workgroups (a subset of STAC members plus outside experts) to provide appropriate expertise and peer review.

14. Dr. Sharp and Mr. Soeder pointed out that the advisory role of the STAC and overall program credibility will come with time and must take a system-wide view, and the EIC must want the STAC to take the integrated approach like that in the Chesapeake.

15. Dr. Kraeuter noted that the earlier STAC had specific estuary-wide products that they were tasked with reviewing.

16. Dr. Kreeger agreed, noting that we again will task the STAC with specific PDE products to react to, such as an upcoming State of the Estuary report as part of a DRBC-led State of the Basin Effort, other environmental indicators efforts.

17. Ms. Doyle provided an overview of current indicators efforts by the Partnership and collaborating entities.

18. Dr. Kreeger then reviewed the language in the STAC Charter regarding the authorization and purpose of the STAC, which specifies that the STAC is to focus on NEP products and activities while facilitating other interactions and acting in a broader capacity at the behest of the EIC.

19. Ms. Doyle clarified who that the Steering Committee consists of leading representatives from NJDEP, PADEP, DNREC, DRBC, PWD and the regional administrators from EPA R2 and R3. The EIC consists of additional representatives from these same organizations, as well as a growing body of people from other federal agencies.

20. Dr. Gallagher added that the STAC gives the Partnership and participating entities an added strength by providing a scientific perspective and advice to managers to promote real "science-based management." A discussion ensued regarding the continuing challenge to integrate science and management. The STAC felt that the EIC needs to be challenged to convey what their management needs are so that the STAC has clear tasks and direction. How do we establish a mechanism to better integrate science into management and management into science?

21. Dr. Kilham expressed optimism that we will become increasingly effective at integrating science and management because the Partnership is developing a real presence in the area and we (the STAC) can bring this expertise.

22. Dr. Kreeger asked whether there were any other comments regarding the STAC Charter or suggestions for expanding membership. Dr. Sharp recommended Dr. Duane Fox from Delaware State University, who has complimentary expertise in fisheries. Mr. Butler suggested that Dr. Winfield Fairchild (West Chester University) and Dr. Rich Horowitz (Academy of Natural Sciences) may also be good additions. Dr. Kraeuter added that an industry representative (e.g., DuPont or PSEG) would be helpful too.

23. Dr. Kreeger noted these suggestions would be taken under consideration by the Partnership and EIC. Dr. Kreeger also noted that the initial terms for approximately half the elected STAC members will be 1 year and the others will be for 2 years, to be determined soon by a random process.

VI. STAC Chairperson Description and Nomination (Martha Maxwell Doyle)

1. Ms. Doyle described the one year term and duties of the STAC Chairperson. Whereas, both the Partnership Science Advisor (Dr. Kreeger) and STAC Chairperson both represent the STAC, the Chair is expected to run the meetings. PDE staff will handle meeting logistics and scheduling. Martha noted that we now are taking nominations.
2. Dr. Kreeger reported that she had received an advance nomination for Drs. Sharp and Gallagher from another STAC member; however, Dr. Sharp had already volunteered he did not want to accept a nomination if one was given for him. On this note, Dr. Gallagher indicated that he too was unable to serve as Chairperson.
3. Dr. Kreeger suggested that all STAC members provide one or two anonymous nominations on slips of paper so that we can identify additional candidates. Dr. Sharp suggested we forego this and simply ask who is willing and able to serve as Chair.
4. Mr. Soeder was nominated by Dr. Kilham and seconded by Mr. Breese.
5. Dr. Fikslin indicated that he was concerned that chairing the STAC may be present a problem for those from agencies or other committees because of mixed perceptions.
6. After polling each of the other members for anyone willing to serve, no volunteers came forward. Dr. Kreeger then moved for an oral vote to be taken. The vote was taken with all in favor of the nomination and no abstentions. The nomination will take effect upon EIC approval [received on 6/23/06], and the Chair will preside over the next meeting.

VII. Working Lunch – Conference Planning Discussion

1. Dr. Kreeger briefly recapped the two-part, 2005 Delaware Estuary Science Conference, Proceedings document, and resulting White Paper. She then provided an update of the plans to date for the 2007 Delaware Estuary Science Conference, scheduled for January in Cape May. Regular sessions, special thematic session, and roundtable discussions have been suggested, as described in the advance notice flyer handed out.
2. Discussion ensued regarding the 2007 conference format, session themes and possible speakers. Dr. Kreeger and Ms. Klein explained that an Environmental Summit with other non-profits and NGO's will be held concurrently.
3. The STAC agreed that the first conference was sufficiently broad with regular session themes to catch most who might want to participate. Although some topics were undercovered, the STAC agreed we should continue to have general themes that catch everyone, but also add special sessions that address current areas of interest.
4. In addition to the session themes listed on the flyer, other presentation sessions were suggested:
 - Contemporary/emerging Issues; e.g., endocrine disrupters, LGN, VX etc.
 - Restoration and Enhancement Session
 - Athos Oil Spill follow-up and NRDA update since the last meeting
 - Management Session – charge the EIC (Ms. Doyle and Ms. Klein) to work on that
 - Sea Level Rise, Wetland buffers
 - Monitoring Session, update on DEWOOS/MACOORA actions

5. Suggestions for possible speakers (plenary, keynote) included:
 - Mike Koterba – Chesapeake USGS Integrated Monitoring (Mr. Soeder will follow-up)
 - Scott Nixon – former Editor of “Estuaries” and a Sea Grant Director. (Dr. Kraeuter will follow-up)
 - Ms. Jacobs suggested we investigate whether someone from the Smithsonian whole watershed assessment studies; they may have include the Delaware
6. The STAC recommended that a Science Conference Work Group be established. The following STAC members volunteered to serve on the workgroup: Tom Fikslin, Dan Soeder, Lance Butler, Simeon Hahn, Gary Buchanan, Danielle Kreeger and Jack Gallagher.
7. Additional suggestions were:
 - Posters should be elevated to a primary level of presentation, left up for the entire meeting, and given their own session on the 5th floor of the Grand Hotel
 - All abstracts could be submitted as poster and then have the STAC select what will become presentations.
 - The STAC felt strongly about not having concurrent sessions.
 - Establish a Science and Technical list serve and send out a “save the date” for abstracts. Use the PDE Science Resource Directory to start.

VII. Conceptual Framework and Indicators Discussion

1. Dr. Kreeger summarized current interest in developing a comprehensive, ecologically-based conceptual framework as a visual medium to represent the signature resources, drivers and linkages in the NEP study area. This will be used to guide decisions about the most relevant environmental indicators for our system and to frame future indicator reporting efforts (e.g. in the same way that the Chesapeake has focused on nutrient problems and use of SAV as an indicator).
2. A set of Powerpoint slides was shown to depict how we might structure various diagrams for different subregions, such as the Schuylkill basin (entirely non-tidal), upper estuary, middle estuary, and Delaware Bay. Dr. Kreeger noted that these slides were developed simply to illustrate the task and the contents are to be considered as a preliminary starting point.
3. Dr. Fikslin said that the upper Delaware River should be considered in our comprehensive framework since what happens upstream affects the estuary downstream.
4. A discussion ensued about why the NEP study area was established without including the non-tidal Delaware River. The STAC agreed that the conceptual framework should be visualized as including the entire basin, but the range covered in NEP products should focus on the NEP study area. The current DRBC-led State of the Basin report will include a State of the Estuary section, and we have not yet determined whether the conceptual framework will be used here or in a separate PDE product (e.g. our fall or winter newsletter).
5. Mr. Breese noted that this conceptual framework appears more suited to education and outreach and not well suited as a technical task for the STAC.
6. Dr. Kraeuter noted also that there is likely to be disagreement about what the signature traits are.

7. Dr. Kreeger agreed that the cartoon will be used in part as organizational tool and for education, but that it is based on technical underpinnings such as the ecological matrix included in the White Paper. The CF will be developed in part by considering the main components within different cells of that matrix. In turn, the matrix and CF will be overlaid onto various science and technical operations, such as assessments and indicators, monitoring design, and restoration.

8. The STAC felt that they would be better positioned to react to a CF and matrix that the Partnership develops. The STAC also recommended that the Partnership should clarify the task that it is asking the STAC to perform (i.e. to develop something new versus review something PDE develops).

9. Dr. Kreeger agreed to send the STAC e-copies of today's Powerpoint presentation and an Excel version of the Matrix. The Powerpoint file includes her preliminary straw version for the conceptual framework and accompanying cartoons.

VIII. Possible Subcommittee or Technical Workgroup Needs

1. Dr. Kreeger noted that the STAC has been given the authority to create on an as-needed basis subcommittees and workgroups to address needs that are not currently being met. For example, a Delaware Estuary wetland workgroup might be helpful to identify monitoring needs, align monitoring and restoration practices, and bridge data gaps among the many different subregions and wetland types. Various groups have noted that PDE and the STAC might set up a restoration and enhancement workgroup to integrate various restoration project databases and provide peer review for prioritizing restoration activities.

2. Mr. Breese suggested that the STAC may not want to do this unless a clear scientific need is identified and appropriate experts are consulted.

3. Dr. Kreeger indicated that outside experts would always be sought for workgroups, but as STAC affiliated groups they would be chaired by a STAC member. Dr. Kreeger clarified the difference between a subcommittee (all STAC members, e.g., a conference planning subcommittee was formed today) and workgroup (led by a STAC member, but primarily comprised of outside experts.)

4. The STAC agreed to consider proposals for future workgroups on a case by case basis.

IX. Incentive Based Approach for Restoration (Simeon Hahn)

1. Mr. Hahn gave a presentation on new concepts in restoration. NOAA and DuPont have been considering ways to accelerate the pace of restoration. Working with various trustees from NRDA activities, Mr. Hahn has been working to consider ways to make restoration more efficient and effective. One concept is the "Restoration Up-Front" approach, whereby a group might get credit for proactively taking some action. There are many sites throughout the NEP study area that are likely to warrant some type of compensatory action in the future, and innovative restoration approaches may be required to undertake meaningful projects for various reasons. There are many hurdles, such as size and scaling issues, cost, availability of properties to be restored, etc. Issues such as spills typically require both cleanup activities, restoration and repair activities, and if warranted possibly also penalties. Restoration credits may be useful also by facilitating collaborating and gaining greater

economy of scale as projects become larger.

2. The STAC asked various questions about how the STAC might help with these efforts. Dr. Kreeger suggested that the STAC might be asked to periodically provide overall comment, but that the most likely involvement would be through a restoration workgroup under the STAC. This workgroup would include STAC members and it would report to the STAC as well as the EIC.

X. Closing Business

1. Ms. Klein will forward the nomination of Dan Soeder as STAC Chair to the EIC within the next week and get back to the STAC before July 1st.

2. Mr. Soeder asked about scheduling the next meeting. The STAC agreed that a quarterly meeting schedule would be appropriate. Mr. Soeder said he would start email exchanges about scheduling the next meeting in September, which should again be held at the PDE office in Wilmington.

3. Dr. Kreeger noted in the future she would take the lead on meeting scheduling and logistical support (e.g. recording minutes), and the Chair (Mr. Soeder) would be the lead for setting meeting agendas and leading the meetings.

Adjourn The STAC formally adjourned at 3:05 p.m.