



Science and Technical Advisory Committee

Partnership for the Delaware Estuary: A National Estuary Program

www.DelawareEstuary.org

STAC Meeting Minutes (Meeting No. 45)

Tuesday, February 20, 2018

9:30 A.M. to 2:30 P.M.

Partnership for the Delaware Estuary - Wilmington, DE

Conference Phone #712-770-4010, Pin: 472-509

Adobe Connect: <https://global.gotomeeting.com/join/866018725>

STAC Attendees

Danielle Kreeger, PDE

Dave Bushek, Rutgers

Laura Craig, American Rivers

Greg Breese, USFWS

Ken Strait, PSEG

Elizabeth Watson, Drexel

Kari St. Laurent, DNERR

Kristen Regan, EPA Region 3

Metthea Yepsen, NJDEP

Desmond Kahn, Fishery Investigations

Kelley Somers, EPA Region 3

Jeff Fischer, USGS

John Yagecic, DRBC

Jen Adkins, PDE

Sue Kilham Drexel

*Lance Butler, PWD

*Dorina Frizzera, Getting to Resilience, LLC

*Pete Rowe, NJ Sea Grant

*David Wolanski, DNREC

*Daphnie Munroe, Rutgers HSRL

Other Attendees

*Doug Janiec, Sovereign Consulting

Sandra Demberger, PDE

Emily Baumbach, PDE

Megan Mackey, EPA Region 3

*Participated by phone and GoToMeeting

1) Call to Order & Introductions - 9:30–9:40

- **S. Kilham** was to join later in the afternoon, D. Kreeger served as alternate chair.
- **D. Kreeger** asked if there were any edits to the draft minutes from the previous meeting, the joint STAC-EIC meeting from fall 2017. No edits were offered, and the minutes were accepted as final.

2) STAC Business – 9:40–9:50

- **D. Kreeger** introduced a new STAC member. New Jersey DEP has replaced their standing representative (Lori Lester) with Metthea Yepsen.
- Elections: here are 7 members whose terms are up as of July 1, 2018. Elections will be held in late May and early June.
 - Between now and April 1, please send any nominations to D. Kreeger or S. Kilham.

- The next meeting will be the annual joint meeting with the MACC. A doodle will be set up to pick the date.

3) CCMP Revision – 9:50-10:15

- **E. Baumbach** noted that Stage 2 of stakeholder input just concluded. This included a series of open houses, input from public feedback forms, and diverse stakeholder meetings.
- Key Topics emerged from this stakeholder input: climate change, ecosystems, agriculture, assessment of resources/ecosystem services/environmental actions. No major changes to the working draft were needed, since these topics were already included.
- Public comments were mainly to strengthen strategies aimed at assisting People and communities. Advocacy and advocacy education were routinely recommended. Several open house discussions involved environmental justice issues.
 - As a result, the commitment to diversity and environmental justice was strengthened by adding bullet in the communities section, and there are several associated sub-bullets.
- For several areas in the CCMP, we intend to reference data from the TREB.
- The EIC has been integrally involved, including 10 conference calls and a working session. Many changes have been made. As a result, language is now more public-friendly.
- Next steps include finalizing/completing measures and deliverables (expected later this week). Emily also noted that she is working on a tracking tool to track progress during CCMP implementation.
- A new draft of the CCMP will be sent to the Steering Committee soon.
- There will be a 2-month window in which the STAC and other experts will have the chance again to thoroughly review the CCMP. A technical editor will also be engaged. The STAC should look at the CCMP during this time to ensure that edits from the technical editor did not change the meaning or accuracy of any scientific content. The next review period for the STAC will be from the end of July to end of September.
- After this editing round, a final draft will be presented to the Steering Committee.
- The full CCMP should be done by the Science and Environmental Summit 2019.
- **D. Kreeger** noted that after the CCMP is finished, attention will turn to implementation. What are the STAC's responsibilities and opportunities? PDE will also be doing strategic planning, using the PDE-noted strategies in the CCMP as guidance. The STAC will also be invited to provide input on PDE planning, along with broader CCMP implementation.
- **E. Baumbach** answered a question regarding Environmental justice. Feedback from actual residents in EJ populations was received. An active effort was made to engage these communities during the CCMP process.
- **M. Mackey** commented that the EPA region 2 and 3 are also looking to establish relationships and engage these people.
- **D. Frizzera** noted that the Delaware Bay Shore also has underserved communities. She asked if they were included in the review?
- **E. Baumbach** that some of those populations were engaged.
- **E. Baumbach** asked that anyone interested in seeing a draft of the CCMP should contact her.
 - She also mentioned that the tracking tool will undergo a test run with 2018 NEPORT data. The tracking tool is currently an excel sheet. It is still in the prototype form and is not ready to be shared.

- **D. Kreeger** noted that many NEPs are struggling with tracking. She stated that there is a need for flexibility since many strategies are challenging to quantify.

4) TREB – 10:15-11:00

- **D. Kreeger** summarized the TREB wrap-up. The [TREB is available online](#) for everyone to use.
- She challenged the STAC to think about the Actions and Needs within the TREB. Where do the Draft CCMP strategies align with the TREB actions and needs?
- **D. Kreeger** and **E. Baumbach** presented a draft TREB versus CCMP matrix. The goal is to see which TREB actions/needs directly align with which CCMP strategies. These might be assigned higher priority for STAC/technical workgroups to assist with during CCMP implementation.
- **G. Breese** asked if it might be more beneficial to first identify information gaps?
- **D. Frizzera** supported the matrix layout and suggested it would help prioritize action items. The matrix may help to prioritize research and funding.
- **D. Kahn** asked if there will be a printed TREB for STAC members?
- **D. Kreeger** replied that there are no printing plans. A table top pamphlet is currently in the works. There is no printing budget.
- **J. Adkins**- Agreed that PDE did not budget for printing. However, the TREB will be highlighted in several ways. It is referenced in the CCMP as an appendix. The PDE annual report will also feature the TREB. Jen extended a big thank you to the STAC and everyone who worked on the TREB, noting that it exceeded expectations and must be highlighted. Adkins addressed a question regarding TREB vs CCMP specifics. There are areas in the CCMP where we talk about research needs in a broader way. The TREB is much more specific.
- **K. Strait** asked about TREB/CCMP specifics because the actions and needs in the TREB do not follow government regulations, whereas CCMP has a nexus to regulations.
- **D. Kreeger** noted that the CCMP also defers to regulatory authorities since DELEP has no such authority. She said that the matrix exercise is really meant to help guide what the STAC might be able to help with for CCMP implementation - look at the matrix through the lens of the TREB.
- **D. Bushek** stated that many agencies request ideas for their RFPs. TREB actions and needs (or areas of overlap with the CCMP) could be prioritized in funding RFPs. This input usually happens before the review period.
- **P. Rowe** agreed, noting that end user input can be provided to NJ Sea Grant through the advisory board which comments on RFPs.
- **J. Adkins** stated that there are a variety of places where we might have input on funding, not just the Sea Grant programs. For example, there is a research element in the William Penn funding. Several members of the EIC also have research programs.
- **K. St. Laurent** asked if we could come up with a project list identifying priority research needs.
- **L. Craig** suggested splitting up sections of the TREB/CCMP matrix so that we have people working on the sections they have expertise in. It would be inefficient to have everyone do the same thing.
- **D. Kreeger** noted that PDE will re-work the matrix with Emily, and then plan to send something out when it is ready for more discussion. She thanked everyone for their helpful thoughts, and reminded that this is simply an internal exercise meant to help focus STAC efforts in future years.
 - Please email **Emily or Danielle** if you have specific suggestions over the next few weeks

5) Monitoring Workshop 2018

- **D. Kreeger** reviewed current plans for a Monitoring Workshop to be held in 2018. The main PDE goal, which is part of the Monitoring Approach section of the draft CCMP, will be to inventory current monitoring infrastructure. A secondary goal will be to help identify monitoring priorities and gaps.
- As noted in the draft monitoring approach section of the CCMP, this monitoring assessment would be completed every 5 years as a way of sustaining, enhancing and tracking monitoring across DELEP.
- The focus will be on long-term monitoring programs, but we would also attempt to include ad hoc monitoring, such as from research studies.
- To focus this effort, PDE has funding in it's 2018 workplan to convene a monitoring workshop, to be attended by invited experts. If the workshop also serves the needs of other key partners (e.g. DRBC, Delaware River Watershed Initiative), then the size and scope might be able to be expanded. But for now, we are moving forward with the workshop as it is articulated in the draft CCMP.
 - Workshop will take place in 2018. To date, the following entities have expressed interest in helping or participating: DRBC, Academy of Natural Sciences of Drexel University, and DNREC/DNERR.
 - We expect to plan the workshop during the next 3 months, including more discussion at the STAC/MACC meeting in May.
 - Due to summer field and vacation schedules, the workshop will likely be scheduled for fall.
 - The scope of the inventory will be water, habitat and living resources, with diverse geospatial, species, and habitat components.
- **G. Breese** noted that it may be too daunting to conduct such a lengthy inventory in a workshop. Would it be better to contract this out or have a select group tee up a framework in advance of the workshop.
 - Could have a survey go out beforehand to gather information about current monitoring trends and then have a focused group review the feedback and review needs/priorities
- **K. Somers** also noted that the 2019 Science and Environmental Summit could be used to gather monitoring data.
- **D. Bushek** recommended starting with the 2017 TREB and review where there is monitoring referenced and build from there.
- **J. Adkins** agreed that conducting data collection beforehand is needed, starting with the TREB first.
 - The workshop could then invite individuals with expertise in these monitoring data sets to help refine the inventory, a technical workgroup.
 - Could then use the Science Summit as a second check to ensure that no important data were missed.
- **G. Breese** recommended using the draft matrix with TREB and CCMP comparisons to help structure areas to be addressed during the monitoring workshop
- **J. Yagecic** noted how DRBC wanted to be involved in scoping out ideas for the monitoring workshop and how to strengthen linkages between data collectors and resource managers as well as establishing a better link between water quality data and water resources practitioners
 - Several DRBC staff members will be very interested in attending the event, so it would be valuable to lock in dates as soon as possible and assist with future travel budget planning.
- **K. St. Laurent** asked if this meeting with different groups would be in the same room to share information amongst each other or if different groups would meet on different days across a multi-day meeting?

- **D. Kreeger** suggested holding a 1-day workshop where different sectors come together for the whole day. This model helps facilitate bridge-building among sectors, like at the science summit.
- **J. Yagecic** agreed, noting it is valuable to speak with people that you don't normally work with. This promotes an understanding of data connections.
- **L. Craig** noted how there could also be multiple sessions taking place at one time throughout the first portion of the day and then have the full group come together later in the day near the end of the program.
 - This could also give participants the opportunity to interact across agencies during lunchtime before the final session.
- **D. Bushek** cautioned to not conflate research with monitoring.
- **D. Frizzera** noted how many agencies are already required to monitor certain items, so it could be beneficial to review what tools are currently available and what their best uses are.
- **J. Adkins** explained how the most basic reason the Monitoring Workshop will be taking place is because the Estuary Program is required to have a Monitoring Approach in the revised CCMP.
 - The Estuary Program needs to have a monitoring plan in place to conduct an analysis of what is taking place and how it is impacting monitoring trends.
 - Currently rely on a host of other types of monitoring being conducted by other organizations since the Delaware Estuary is a large region.
 - Outcomes from the Monitoring Workshop will help ensure that we can accurately capture and report out on what is happening in our system, beginning with the data in the TREB.
 - Funding is available through William Penn since they are interested to see how monitoring is taking place in their region. And how does monitoring by academia and nonprofit entities relate to monitoring by state and federal entities?
- **D. Kahn and A. Padeletti** suggested referring to the revised CCMP and its Monitoring Approach section.
 - **D. Kahn** explained how PDE already has the CCMP as the guiding plan, so this should be the tool used to determine future actions related to monitoring.
- **G. Breese** explained how the TREB provides an overview on trends we know about in the Estuary and Basin and was created independently of the CCMP, so the matrix could also help highlight areas where there is no TREB data for CCMP actions.
- **J. Adkins** noted how the TREB provides the underlying basis of the data which the CCMP is based on, so yes, information in the TREB can be used to prioritize CCMP in different areas.
- **D. Kreeger** explained how all NEPs are charged with coordinated monitoring. A monitoring updated inventory will be a useful product in various ways.
 - Recall that the STAC prepared a list of "next gen" indicators to strengthen TREB. Some of these are in the TREB actions and needs, and they could help guide monitoring priorities.
 - After we develop a framework for a monitoring inventory, using TREB info, then we could use a survey approach to put more meat on the bones, prior to the workshop. This would be one way to tee up something for folks to react to and add to at the workshop.
 - Monitoring workshop conducted following the survey results could also be heavily facilitated to refine the list of monitoring items and distill down into a guidance document
- **A. Padeletti** suggested that we might also want to identify not only monitoring needs, but also review any associated data gaps and create a prioritization list (i.e., Top 10 for Monitoring)

- **K. Somers** noted that it will take a while to develop a survey (e.g., qualifiers for geographic scope), create a list of potential respondents, and then review the responses.
 - The survey would ask what organizations are currently collecting, what they view as the future monitoring needs, as well as what future data would help them to analyze/interpret trends of interest to them.
- **J. Yagecic** noted how it will be important to know who will actually want to use the data coming out of this monitoring inventory, what users would want to see out of this, and to make sure we are targeting the correct people.
- **G. Breese** noted that one incentive for people to participate would be to make their data sets available and to get input from other experts (e.g., wetland biologists) to see how their work fits into overall monitoring in the Estuary.
- **L. Craig** explained that the geographic part of the inventory could also help identify gaps, and the outcome might help further other goals of attendees.
- **D. Kreeger** will continue to work with **A. Padeletti** and **E. Baumbach** to plan a process for this Monitoring Assessment effort.
 - PDE will also explore whether there will be a need for contractors to assist, such as for facilitation during the workshop.

6) Lunch Micro Seminars

SAV Mapping Project by EPA (Kelly Somers and Kristen Regan)

- **K. Regan** presented a Powerpoint. She stated that there are no official data yet. This presentation is simply an overview of methods and the overall project. **Regan** and **Somers** are working with the Academy of Natural Sciences on a Regional Applied Research Effort Grant. This project was formed with the intention of filling data gaps, such as those identified as part of the 2008-2009 Delaware Estuary Benthic Inventory, another RARE grant that PDE coordinated.
 - *SAV in the Delaware Estuary.* SAV are known to be an important habitat for wildlife and water quality. It increases oxygen, stabilizes sediments, and attenuates waves.
 - *Project Scope.* Goal is to fill data gaps. The distribution and density of SAV are unknown in the Delaware Estuary. The end goal is to use this information to make better-informed decisions with managers and agencies.
 - *Methodology.* Because Delaware Estuary is so turbid, we could not rely on aerial imagery. We decided to use Biosonics equipment and software which is designed to identify underwater vegetation. This software is being used for post processing and data analysis. The EPA dive team was used for ground truthing.
 - *Hydroacoustics.* A transducer, mounted to the side of the boat, is being used to track vegetation. The data points collected have information on density, location, and canopy height. We use this to classify substrate as well.
 - **Regan** and **Somers** intend to survey both shorelines. To increase efficiency transect (at the 10ft high tide line) parallel to the shoreline have been monitored. This seems to be the optimal zone for where vegetation is growing. In areas of large SAV spans, perpendicular transects were measured to delineate the SAV beds. The dive team goes out once or twice a month to better understand the SAV growing season.

- *Initial Results.* (more like observations at this point) SAV is present, many native species to the Mid-Atlantic, 6-7 species have been identified! South of Cherry Island currently remains a mystery. Some years may be denser than other years.
 - **D. Kreeger** noted that Ernie Skyler of the ANS has been looking at SAV for a very long time.
- *Initial Results cont.* Where the transducer identified vegetation, ground samples were raked up to confirm. Sometimes leaf litter or macroalgae was mistaken for SAV. **Regan** and **Sommers** found more species in the upper estuary, large beds were mixed with a variety of species. We found lots of wild celery. As we moved south we were expecting to see only three species. We found beds growing 5-6 feet tall.
- SAV seems to prefer specific depths. We noticed it is promoting sediment accretion, favors lower energy environments, and there is no discernable shoreline types needed (it'll grow along hardened shorelines as well as mowed shorelines). It appears to not tolerate mixing waters very well.
- *Next Steps.* **Regan** explained that the goal is to finish mapping the whole Estuary. Currently, the Academy is working on post processing 2017 results. We are hoping that Scott Haag will assist by creating a model that will aid in identifying open water survey spots. In the saltier areas, the growing season is earlier.
- **S. Kilham** reiterated the importance of having samples of SAV species identified by the Academy.
- **K. Somers** asked that any thoughts, questions, and discussions be emailed to them. They are open to ideas and improvements. Tributaries are not currently in our survey plan, but if you're interested in having that done please ask. The goal is to establish a longer-term monitoring program. Unfortunately the equipment they are using does not recognize shellfish, but dive teams noted the presence of various benthic animals.

Oyster Stock Assessment Workshop (Dave Bushek)

- **D. Bushek** presented a Powerpoint. He began by stating that they have been monitoring for 65 years.
 - *Distribution of Oyster Resource.* Oysters are mainly in the upper part of the bay and on the NJ side. Delaware resources comprise only about 10% of the total available reef acreage. Intertidal oyster aquaculture is not very widespread. Some people are trying subtidal aquaculture.
 - Oyster population growth and density are impacted by salinity, predation, and other factors.
 - *Natural controls-* These include mortality (mostly due to disease MSX and Dermo) and recruitment (but we can provide habitat to enhance recruitment).
 - *Distribution.* Oysters span 28 miles. The oyster beds in this area have been divided into 6 management regions. The beds are listed from north to south. Mortality increases as you go from up bay to down bay.
 - In 2017, monthly temperature and salinity monitoring took place. Higher salinity promotes disease. A typical seasonal pattern: As river flow increases, salinity decreases, and as a result disease and mortality decrease.
 - *Recommendations.* The oyster industry listens to the advice of researchers. They understand and think about the long-term implications of their harvests. A science

committee reviews monitoring data and makes recommendations regarding harvest quotas. The council will generally go by the SARC, but not always.

- *The direct market fishery is stable and increasing.* Harvest can only be increased if the population increases.
- *Target threshold plots.* These help us maintain population stability. We want to stay above the threshold. We want to see population increase.
- *Stop light diagram.* This diagram is used to translate the scientific data to the oyster farmers. Even though much of the diagram is green in color (indicating good health), there are no major increases in the harvest size. This is disappointing to farmers who are complaining that they are done their days work at noon. Farmers want to be able to work longer hours.
- *Take home.* Overall disease mortality is subsiding, and the oyster populations are stable and even increasing. The system has been primed for oyster habitat expansion and ultimately oyster population expansion. The goal is to return oyster populations to their size back in the 70s.
- The oyster industry funds shell being put back into the bay. We would like to get another major effort supported by the Army corps to plant more oyster shell into the Bay.

Freshwater Mussel Hatchery (Danielle Kreeger)

- **D. Kreeger** suggested skipping her presentation, since the meeting was running behind schedule.

7) Science Summit 2019

- **D. Kreeger** gave an overview of the upcoming 2019 Science and Environmental Summit, set for January 2019.
 - Request for STAC members send other events and associated dates taking place during the end of January so that PDE can work to select the best dates for attendance.
 - There will be 3-5 topical special sessions as well as Hot Topics.
 - Currently working on securing the venue (Grand Hotel, Cape May, NJ).
 - PDE still needs to reach out for potential keynote speakers and a few luminaries, something that the STAC usually assists with.
 - PDE is requesting STAC input on potential themes, special sessions, plenary, and speakers.
- **K. Strait** noted how this Science Summit will be taking place in concurrence with the completion of the Revised CCMP.
- **S. Kilham** recommended reaching out to Frank LoBiondo as a representative. We could invite him to speak in a retrospective way about his experience and what he thinks about future environmental concerns since he is retiring. He has been a champion for the Estuary Program and the work conducted around oysters and the Congressional Estuary Caucus.
 - LoBiondo as a potential Lifetime Achievement Award recipient.
- **J. Yagecic** recommended having a special section on the Atlantic Sturgeon and critical habitat designation.
- **K. Strait** noted from a utilities perspective at PSEG, topics could include how water withdrawals for cooling have decreased but salinity intrusion into groundwater is now a large issue.
 - Recommended having some sessions on green infrastructure as well as road salt.

- **D. Kreeger** noted how the work being conducted with the William Penn clusters could also be a special session.
- **D. Frizzera** explained how some emerging energy topics could include an increase in wind turbines and reinvigoration of nuclear power plans.
- **P. Rowe** recalled how at a previous summit there was a focus on the Athos Oil Spill. Is there an opportunity to have oil spill talks?
 - Sea Grant could also review Oil Spill Response in North Carolina since they have funding to conduct outreach in the Mid-Atlantic region to discuss protocols for oil spills.
 - There is also interest in this from Ann Faulds of PA Sea Grant.
- **D. Kreeger** noted that the Delaware River and Bay Oil Spill Advisory Committee had prepared a detailed report with recommendations about improving prevention, response, recovery and repair. Have any of those recommendations (from 5+ years ago) been implemented? It might be interesting to look back and see how the Estuary is doing in terms of preparedness.
- **D. Bushek** suggested a session on how habitats migrate and evolve, in the face on sea level rise (e.g., marsh edge erosion), beach movement and future behavior, forest to marsh/phragmites conversion, species migrations.
- **E. Watson** suggested Rodrigo Bargas at the University of Delaware could give a talk on Blue Carbon.
- **K. Somers** requested to have a session on underserved communities and public access, noting how the Urban Promise boat-building group helps conduct environmental restoration and citizen science in Camden, NJ.
 - Potential to reach out to Tookany/Tacony-Frankford Watershed Partnership and their current citizen science work.
- **D. Munroe** suggested including an evening session to focus on the 2017 TREB and pair this with the revised CCMP.
 - Could also include a series of mini podcasts to review the different TREB sections.
- **S. Kilham** noted how the word ‘collaboration’ keeps coming up with all of the current efforts underway with the CCMP, TREB, and other research. Could this be the overarching theme?
 - K. Somers noted how this would be a great way to demonstrate how this program is a hub for collaborating within as well as collaborating out with others.
- **D. Frizzera** informed the group how Maya Van Rossum recently published a The Green Amendment, which could be an interest topic to have her come talk about.
 - NY/NJ Baykeeper Debbi Mans was recently appointed as the new deputy commissioner and would be a great female figure to invite to come speak about public access and previous environmental advocacy work
- **Daphne Munroe** (emailed) gave a potential keynote speaker suggestion: Bob Kopp from Rutgers. He is knowledgeable in sea level rise and ecosystem services. He co-authored a book recently and published a couple of papers on the economic consequences of climate change and sea level rise. The economic perspective is an interesting way to tie some of the session ideas that were kicked around today. The downside is he might seem repetitive from last summit's speaker, Ben Horton. Also, not sure how Delaware Basin specific Dr. Kopp's address would be (he is a bit more of a global thinker).

Partner/Workgroup Updates

- **J. Yagecic** reported out on DRBC updates:

- Water Quality Advisory Committee (WQAC) will have two meetings in March.
 - March 1st: Meeting with Eutrophication Model panel to review progress
 - Model will include comprehensive review of aquatic life use, DO needs of sensitive estuary species.
 - Report to be completed in early summer.
- Convened a DO early action workgroup to review options for point dischargers .
- Received a grant from William Penn to conduct engineering evaluation and cost estimate for point dischargers current level to next level of treatment.
 - Tool for decision makers and practitioners.
 - RFP going out at end of February to assist in collecting next round of nutrient effluent data (consistent with model calibration period).
- Can email John if interested in receiving WQAC updates.
- Toxics Advisory Committee working on ammonia toxics criteria.
 - EPA came up with national recommended criteria in 2013.
 - DRBC to adopt criteria to reconcile differences with the states and currently in progress.
 - Ambient criteria by the toxics criteria that is monitored and the end of a mixing zone (function of temperature and pH to provide ammonia value).
- DRBC put forward proposal to ban hydraulic fracturing in the Basin.
 - Due to some misinterpretations, holding public hearings and comment period over the next several months.
- Tom Fikslin retiring on April 1.
- **A. Padeletti** reported that Josh Moody of PDE presented on marsh futures at the last RSM meeting.
 - The group is still working on getting project lists updated.
 - Currently meeting every quarter.
- **A. Padeletti** noted that the next MACWA meeting will most likely take place in the fall.
 - Next meeting to focus on coastal wetlands.
- **D. Kreeger** reported that the Delaware Estuary Living Shoreline Committee met in early January .
 - Continues to be a healthy attended group.
 - Focus of last workgroup was on outreach projects and a new website for living shoreline outreach tactics with story maps.
 - Next meeting will take place on Monday, March 12th from 1:00-4:00pm in Dover.
 - Training for contractors on Wednesday, March 7th.
- **D. Kreeger** also reported that there is a New Jersey Ecological Project Committee looking to meet sometime in May.
 - Nature-based committee with a focus on coastal communities and resilience.
- **M. Mackey** reported that three NEP directors will be coming to the EPAR3 office in Philadelphia on March 26th to meet with the new regional administrators and high level management representatives.
 - Presentations will be given on the 2017 TREB, Maryland Coastal Bays Annual Report Card, and some research results current projects taking place with the Center for Inland Bays.
 - Purpose of this meeting is to present important scientific information on indicators for management and also serve as a knowledge transfer session for employees to have the opportunity to report out on their work in the Estuary.

- **K. St. Laurent** reported that the new DNERR manager was recently announced.
 - DNERR working to fully fund graduate research fellowship and reinstate the program for graduate students to have the opportunity to participate in DNERRs research.
- **D. Bushek** reported out on some of the topics being reviewed by the DE Bayshore Council.
 - The organization is comprised of 15 municipalities from Wilmington down to Cape May.
 - 26 projects taking place in Cumberland County and looking to expand.
 - Army Corps of Engineers looking to stabilize the mouth of the Maurice River.
 - Renee Brecht of PDE is now the secretary of this organization.
- **M. Yepsen** reported out on behalf of NJDEP.
 - Revising the NJ Wetland Program plan.
 - Division of Science is working with the Department of Health and DNREC on fish consumption advisories focusing on PCBs, Mercury, and Pesticide contaminant data.
 - Conducting a study on contaminated soils and surface waters in the Delaware Bay looking at Salem and Gloucester Counties.
 - Current project underway to pull long-term wetland monitoring data into the wetlands reference database.
- **D. Frizzera** reported current work with Barnegat Bay Partnership on their CCMP update and the tremendous effort how they are taking a bit of a different approach compared to PDE.
- **D. Kreeger** provided an update on the freshwater mussel recovery program and current focus on hatchery propagation.
 - Most of our past mussel restoration has focused on “baby steps” such as relocating healthy adults and reintroducing them into historic areas where tests have demonstrated that the water quality and food is suitable for healthy development as well as potential fish hosts.
 - But to upsize the mussel restoration program, we need to finally begin propagating large numbers of juveniles for reseeding efforts – there are just too few natural populations left.
 - First started working on freshwater mussel propagation at Cheyney University in 2008-2010, where (much) was learned about the technology needed to successfully propagate.
 - The Fairmount Water Works exhibit hatchery opened last year, which PDE and PWD use to continue to refine mussel propagation methods. Over the last few years we have also worked with an existing USFWS fish hatchery in VA.
 - Last year, we produced > 70,000 juvenile mussels. These animals grew quickly in floating baskets in ponds located at Longwood Gardens, Winterthur, and many other places.
 - We’re now working to get an agreement with PA to fund construction of a production hatchery, and we mapped out an 8-year start-up project with a 30 year horizon.
 - Separately, a new MOU for the Aquatic Research and Restoration Center is going to be signed between PDE, PWD, Bartram’s Gardens, Drexel ANS, and the Independent Seaport Museum as a nonbinding agreement to work together for freshwater mussel work, and perhaps with other target species such as shad.
- **L. Butler** provided an update on an agreement between PDE and PWD to create a shell management area in Philadelphia similar to the current ones in Wilmington and Camden.
 - This one will hopefully take a much larger scale.
 - Philadelphia Commissioners very excited about this program which fits into the Philadelphia Zero Waste and Litter initiative by recycling oyster shells rather than sending them to landfills.

- **E. Watson** reported a quick update from Drexel ANS noting the new president who has some very exciting ideas about public engagement.

Upcoming Events & Notices

- **D. Kreeger** summarize upcoming events:
 - Water Summit at the Philadelphia Flower Show on Wednesday, March 7th
 - Atlantic Estuary Research Society Conference April 5-7
 - Society is turning 70 years old this year
 - AERS is the oldest estuary society in the world formed in 1948 and has a rich history focused on the Mid-Atlantic region
 - Taking place in Rehoboth Beach, DE at the Atlantic Sands Hotel
 - Expecting ~150 attendees
 - Reception at Dogfish Brewery on Thursday evening 4/5

D. Kreeger will send out a doodle poll for next STAC meeting, which will be the joint STAC/MACC meeting

Adjourn at 2:40 PM