



## Science and Technical Advisory Committee

Partnership for the Delaware Estuary: A National Estuary Program  
[www.DelawareEstuary.org](http://www.DelawareEstuary.org)

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### STAC Meeting Minutes (Meeting No. 42)

Thursday, January 12, 2017

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

Partnership for the Delaware Estuary - Wilmington, DE

Conference Phone #401-283-2275 and the pin is 77662

Adobe Connect: <http://epawebconferencing.acms.com/stac01122017/>

#### STAC Attendees

Alison Rogerson – DNREC

Danielle Kreeger – PDE

\*Dave Wolanski - DNREC

Desmond Kahn (Fishery Investigations)

Lori Lester - NJDEP

Elizabeth Watson - Drexel

Gerald Kauffman – UDel

\*Heather Jensen - ACOE

\*Hoss Liaghat - PADEP

Jeff Fischer – USGS

Josef Kardos – PWD

Kelly Somers – EPA R3

Ken Strait – PSEG

\*Kristin Regan – EPA R3

Lance Butler - PWD

Moses Katkowski - The Nature Conservancy

\*Peter Rowe – NJSGC

Thomas Fikslin – DRBC

Kari St. Laurent– DNREC

#### Other Attendees

Andrew Homsey – UDel

John Yagecic – DRBC

Douglas Janiec – Sovereign

LeeAnn Haaf – PDE

Sandra Demberger – PDE

Sarah Bouboulis – PDE

\* *participated by phone and AdobeConnect*

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#### Call to Order & Introductions – D. Kreeger (standing in for Sue Kilham, STAC Chair)

- Meeting was called to order at 9:50.
- Introductions around table and on phone.
- Updates on changes to standing members: The NJDEP representative was changed from Dorina Frizzera to Lori Lester, and Lori introduced herself.
- Updates on spring election plans. The terms for 5 elected positions will expire on June 30<sup>th</sup>, and elections will be held in May. The expiring terms are for Greg Breese, Jeff Fischer, Moses Katkowski, Sue Kilham, and Ken Strait.

#### STAC Business

- **D. Kreeger** noted that draft minutes from the last STAC meeting were sent via email for review, and a hard copy was also sent around for any edits, to be finalized later in the meeting.

- **D. Kreeger** reviewed the agenda, which primarily focused on NEP items, as well as summit and CCMP updates/news.
  - STAC members were encouraged to provide feedback on how the CCMP workshops are going.
- Another major agenda item was progress updates on the Technical Report for the Delaware Estuary & Basin (TREB).
  - End of December- data and writing teams should have been organized.
  - March - complete drafts of narratives.
  - April - begin peer review.
  - May - the draft TREB should be ready for sharing within the CCMP process.
  - Each section should include the following: status updates, trends, future predictions, suggested actions, needs, and a summary take-home message.
- **D. Kreeger** asked if there were any additions to the agenda? **Lance Butler** (PWD) noted that he would like to provide the group with mussel hatchery updates if time allows.

### Science Summit 2017 January 22- 25

- **Sarah Bouboulis** (PDE) - reported that the Summit would be held in two weeks: Sunday, January 22<sup>nd</sup> to Wednesday January 25<sup>th</sup>. Sarah briefly reviewed the program. There are 79 oral presentations and 30 posters planned.
  - Another moderator is needed for the Hot Tops session on Wednesday afternoon. Jerry Kauffman is one moderator, but a second would be nice.
    - **Douglas Janiec** volunteered!
  - There will be a special CCMP segment lead by RK&K on Monday night at 7:30. Details to come. Suggestions are welcome. We are planning to use a phone app to poll audience during the meeting.
- **D. Kreeger** noted that this is be the first time that the Summit will be completely sold out! We have a little over 300 attendees; as a result, registration is closed. The Keynote speaker is Ben Horton, PhD, Rutgers University.
  - Monday night will have a dinner and programmed event, Tuesday dinner is on your own.

### State of the Estuary Report (TREB) Updates:

#### Water - Chapters 2 & 3 – T. Fikslin or J. Yagecic (DRBC)

- **John Yagecic** (DRBC) – Delivered a presentation on the Water Quality section. John summarized datasets for dissolved oxygen, nutrients, contaminants, fish contaminant levels, salinity, pH, temperature, and emerging contaminants. Figures of dissolved oxygen data trends for Reedy Island, Chester, and Ben Franklin (monthly medians; Range: 2011 to 2016) were discussed. Slides will be more legible in the report. The presentation is available.
  - 2016 data will be presented on a poster at the Summit.
  - The discussion of the dissolved oxygen figures included: low summer month trends, improvements since the Clean Water Act, the degree of variability in the recent

years, DO variation with water temperature, and DO variation over the course of the day.

- **Desmond Kahn** commented: DO levels could be at dangerous levels to organisms for a portion of the day, but 24-hour averages may not reveal these threats.
- **Danielle Kreeger** asked whether it is possible to make connections between summer DO levels and temperature changes? Can we project DO levels with warming into the future as our climate warms?
- Discussion then focused on the format for TREB. Danielle Kreeger asked for feedback on two options:
  1. Provide a supplemental update to the 2012 TREB report
  2. Produce a full 2017 TREB, but indicate which indicators were fully updated (e.g., using bold font in the table of contents).
- **Tom Fikslin** noted that the report can be as big as the STAC committee agrees on. However, it is vital to call out the most important and update-to-date components. Additionally he suggested having graphs that show more than just trend lines - he would like to see seasonal syntheses.
- **John Yagecic** continued with the presentation, moving to nutrient indicators. The DRBC's Boat Run monitoring program has provided nutrient data from 2008 to 2016. He plans to include figures of nitrate, ammonia, phosphate, and other nutrients in the report. If there is time, there is the option of constructing trends that predict into the future, but there are challenges associated with that.
- **John Yagecic** next discussed salinity, noting several interesting points.
  - **Danielle Kreeger** mentioned the Rutgers-PSU analysis showing that salinity has increased over the last 50 years. She asked if it is possible to connect that historic information to the current (recent) analyses?
  - **Jerry Kauffman** reminded everyone to remember to be consistent with their units, and TREB uses metric.
- **Action Item- Sarah Bouboulis will ensure that all TREB datasets will be made available to the STAC members on the STAC meeting page.**
- **John Yagecic** next delivered the TREB Water Quantity presentation. Please provide feedback to **Kent Barr** (DRBC). The main indicators here are water withdrawals and volumes over time. Water and population trends indicate that consumption is slightly decreasing while the population is increasing. Thermoelectric power generation was discussed. It was noted that groundwater withdrawals in protected areas appear to be decreasing, whereas withdrawals from surface waters appear to be increasing.
  - **Danielle Kreeger** asked that all authors flag any important changes (from 2012) within each section. If there are any major updates to the take-home messages, it would be helpful to highlight those for EIC consideration.

#### Land Use/Habitats – Chapters 1 & 5 – A. Homsey (UDel) and K. Somers (EPA)

- **Kelly Somers** - The first chapter is split up between Jerry Kaufman, Andrew Homsey, and

LeeAnn Haaf. Chapter 5 will be tidal wetlands.

- **Andrew Homsey** - Population. Population trends were analyzed based on information from the US census. Any new information will be added to figures and narratives of the TREB.
  - Trends have been broken down in two ways: by state and by Delaware Basin region.
  - Discussion over the population changes within the small towns and larger counties.
  - **Danielle Kreeger** - there are many small towns being bought-out by the government since Sandy happened. It may be worth looking at trends in these smaller areas.
  - **Andrew Homsey** - smaller areas of observation result in greater error. Populations in small towns are harder to track. Different states have different programs that track how populations change over time. There are tradeoffs between studying a smaller area that is more detailed but inconsistent versus a larger area that has clear and defined trends.
  - **Jerry Kaufman** - would like to see relationships between population loss, economic conditions, and election results.
  - **John Yagecic** - the main focus of the TREB is to discuss the demands population growth has put on our estuary's resources. He does not think it is necessary to go into too much insignificant detail.
  - **Danielle Kreeger** – best to stay away from politics; this document should focus on science and data.
- **Andrew Homsey** - Land Cover. Hopefully, the CSC will be coming out with a new, up-to-date information. Land cover figures showed interesting trends describing alteration of development, farmland, and forested land.
  - **John Yagecic** - suggested comparing changes in population and development trends.
- **Andrew Homsey** - Wetlands. We developed a framework to break watersheds into several categories. One challenge was the aerial photography. There are significant visual differences between tides and seasons. High tide photographs look very different from low tide photographs.

#### Living Resources – Chapter 6 – Desmond Kahn

- **Desmond Kahn** – his focus was primarily on the Atlantic Sturgeon and Horseshoe Crabs. Data from Delaware Fish and Wildlife was easy to obtain, however, data from NJ was not. NJ does not collect all of the data we require. The TREB will include data from two major surveys done in Delaware. Obviously, we will only be able to use the data that is available.
  - The writers for each section are as follows:
    - Greg Breese- Horseshoe Crabs
    - Ed Hale- Striped Bass
    - Jordan Zimmerman- American Eel
    - Rich Wong- Blue Crab
    - Desmond Kahn- American Shad and Atlantic Sturgeon
    - Mike Grecco- Weakfish
    - Danielle Kreeger- Freshwater Mussels
  - **Lance Butler** – noted that the DRBFC just completed a report on Shad; he is willing

- to help with that writing.
- **Danielle Kreeger** – asked writing teams to share drafts of their sections by the end of February. PDE can assist with conference call lines, if needed.
  - A reminder to all TREB participants: be sure to capture the correct acknowledgements for data (cite primary sources, not just secondary).
- **LeeAnn Haaf** - Presented tidal wetland data, showing areal images with the distribution of *Zizania* (wild rice) from 2006 and 2010. LeeAnn reiterated the difficulty with aerial photography due to tidal and seasonal variation in canopy discernment.
  - **Danielle Kreeger** – added that wild rice tends to come and go among years in correlation with major flooding events. Temporal changes within our marshes are not consistent.
  - Brief discussion about revegetation of marsh surfaces after storm events, the effects storms have on marshes (plant communities in particular), and the interactions between resident Canada geese population in the Chesapeake and wild rice.
  - **Danielle Kreeger** - noted that the larger issue is edge erosion. There is a complicated interplay between edge erosion and sediment supply to help sustain platform elevation (marsh cannibalism) with sea level rise. There is evidence of less sediment coming down the river.
    - Authors were reminded to consider such “stories” as call out boxes in TREB.

#### Climate – Chapter 7 – R. Najjar or A. Ross (PSU)

- Ray Najjar and Andrew Ross (on the phone) - presented updated data on the climate indicators. Using meteorological data from stations across the watershed, data included stream flow, snow cover, ice jams, and wind speed. These were divided into upper and lower sections of the watershed. Andrew repeated the analysis he did for the 2012 TREB, but added 6 additional years of data. Despite the increase in data, trends have largely stayed the same. The exception: a steeper warming trend in more recent years.
  - Precipitation- More precipitation in the fall months
    - **Danielle Kreeger (PDE)**- is there any connection between the lengthened hurricane season and an increase in precipitation? Are hurricanes the reason fall precipitation is increasing? Or are these events not associated? Answer: No evidence
  - Snow Cover- no long term trends, significant variability. Decreasing number of frost days.
  - Wind Speed- follows the global phenomenon called Global Stilling in which wind speeds are slowing down worldwide.
  - Stream Flow- the analysis is similar to that of precipitation, increases in the fall. And over the past 30 years, summer stream flow is also increasing.
  - Ice Jams- There are obvious relationships between temperature and ice jams. Mitigation practices and jams going unreported may be the reason they are declining, however.
    - **Thomas Fikslin** - projects to reduce ice jams have been carried out, but the

data is not a part of your database.

- **Kari St. Laurent** - volunteered to be a part of the climate writing team.
- Discussion of the tidal ranges. As the volume of the Delaware estuary increased in the past from successive channel deepening events, the tidal range increased. Is the tidal range being considered. The climate team is doing a historical analysis of changes and trends with the tidal range. Andrew will be doing a talk about this at the summit.

#### **CCMP Revision – D. Kreeger (PDE)**

- **Danielle Kreeger** – provided an update of the recent and upcoming CCMP workshops, as well as the Climate Vulnerability Assessment workshops to come. The overall CCMP timeline was also reviewed. Workshops occurred in each state and involved the three major topic areas. Next steps include compiling the data from the workshops to create an early working draft of the main actions in the new CCMP.
- **Timeline**
  - CCMP Expert workshops end in Jan 2017
  - EIC Working Session Feb 2017
  - CCMP Climate Vulnerability Workshops late March 2017
  - Steering Committee Meeting April 2017
  - CCMP Revision Draft 1 Complete April 2017
  - Public and Partner Workshops Summer 2017
  - Steering Committee Meeting Oct 2017
  - CCMP Revision Draft 3 Complete Oct 2017
  - Steering committee and EPA approval End 2017
  - CCMP draft available for public comment early 2018
  - CCMP draft revision draft 3 early 2018
  - Documents sent to all agencies/partners by July 2018
- There will be CCMP themed activities and talks at the summit.

#### **Monitoring Meeting 2018 – D. Kreeger (PDE)**

- **Danielle Kreeger** – noted that DRBC and the MACC plans to take the lead on the short monitoring approach section for the CCMP revision. One action that EPA is asking be included is development of a fuller monitoring coordination plan. In response, PDE is including a monitoring workshop as part of our 2018 NEP work plan, but the details remain to be determined. One goal would be to share information on current and planned monitoring programs, leading to an updated “monitoring inventory”. Participants could also be polled on monitoring needs. PDE remains interested in working with core partners at DRBC and perhaps DRWI to convene a meeting that serves their needs as well. Danielle presented an overview of core NEP tasks every 5-10 years, noting the role of monitoring planning.
  - Danielle asked if STAC members would be interested in a monitoring workshop like this?

- Discussion: It is important to coordinate these types of meetings so we can better plan for the future. **Alison Rogerson** asked if we could link this to another meeting such as the summit, since planning and travel can be tough. **Andrew Homsey** suggested having a monitoring segment at the Winter Gathering. **Kari St. Laurent** suggested clarifying goals before doing any discrete planning.
- The group agreed to table this discussion until the spring joint meeting of the STAC and MACC.

#### **Partner/Workgroup Updates – All**

- **Heather Jensen (ACOE)**- currently no major updates for the Regional Sediment Management work Group. The next quarterly meeting will be held in February.
- **John Yagecic (DRBC)**- Water Quality Advisory Committee. The next meeting is scheduled for February 9<sup>th</sup> at DRBC. There will be an update on Estuary eutrophication model efforts.
- **Thomas Fikslin (DRBC)**- The Toxics Advisory Committee is focusing their efforts on ammonia criteria. They are currently in the process of scheduling a meeting for the Toxic Criteria Subcommittee.
- **Lance Butler (PWD)**- The Delaware River Fish and Wildlife Cooperative has completed the shad management plan; however, there are some minor additions. The plan focuses on main tributaries and management plans. It also touches on migratory species. Joe Perillo (PWD) is the lead on this.
- **Alison Rogerson (DNREC)**- The Delaware Living Shorelines Committee has found funding to support the state cost share program. This means there is a greater potential for state supported projects. The Center for the Inland Bays is hoping to construct a demonstration project; they are seeking help. DNREC is waiting to hear back from nationwide living shoreline funding. In March, DNREC is hosting a two-day training workshop to promote outreach and education.
- **Danielle Kreeger (PDE)**- there has not been a recent Wetlands Work Group committee meeting.

#### **Upcoming Events and Notices: Round Table**

- **Danielle Kreeger (for Dave Bushek)**- The horseshoe crab/shore bird/oyster aquaculture conflict has been ongoing.
  - The issue: Oyster aquaculture is taking place on historic oyster leases. From April to June shorebirds feed there, however, there is conflict between the oyster spawning organizations and the Red Knot conservation organizations. Oyster growers need to be able to access cages for cleaning during low tide, but there has been concern that this may disrupt Red Knots. This is a point of tension. Dave is trying to mediate and offer scientific input to provide conflict resolution. The plan is to form a coalition to look at all sides and scientific data.
- **Danielle Kreeger (PDE)**- The Atlantic Estuarine Research Society (AERS) will be having its 70<sup>th</sup> anniversary in 2018. The spring 2018 meeting will be in Delaware! The spring 2017

meeting will be in March at St. Mary's College of Maryland. The biennial Coastal and Estuarine Research Federation conference will be held in November 2017 in Providence, RI.

- **Lance Butler (PWD)**- in 2008 the Fairmont fish ladder was restored despite many redesigns and roadblocks with spring storms. Shad is a bioindicator species for the Schuylkill. Lance welcomes everyone to come see the fish ladder, shad hatchery, etc. He suggested having the next regular STAC meeting at this location.
- **Danielle Kreeger (PDE)**-The Freshwater Mussel recovery Program has many different components. The overall goal is to develop a mussel hatchery. The new Fairmount Water Works mussel hatchery exhibit will be opening in February and will promote public education and outreach regarding the importance of mussels, and to demonstrate their reproduction process. Hopefully, this will serve as a stepping stone to a more substantial Philadelphia based production hatchery for the upper mid-Atlantic region.

#### **STAC Business**

- No edits were offered on the draft STAC-EIC minutes from September, and they were approved as final.
- The next meeting of the STAC will be held in April, joint with the MACC, date TBD.

#### **Adjourn**

**2:30**

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For additional information, please contact **Danielle Kreeger**, Phone: 302-655-4990 x104, email: [DKreeger@DelawareEstuary.org](mailto:DKreeger@DelawareEstuary.org)

#### **Current STAC Members:**

**Sue Kilham** (Chair) – Drexel University  
Gregory Breese – USFWS  
Lance Butler – PWD (alternate 1)  
Dave Bushek – Rutgers HSRL  
Laura Craig – American Rivers  
Tom Fikslin – DRBC  
Jeff Fischer – USGS  
Heather Jensen, ACOE  
Desmond Kahn (Fishery Investigations) –  
Fishery Investigations  
Josef Kardos – PWD (alternate 2)  
Moses Katkowski – The Nature Conservancy

Jerry Kauffman - Univ of Delaware  
Donald Knorr - PADEP  
Danielle Kreeger – PDE  
Lori Lester - NJDEP  
Kristin Regan – EPA Region 3 (alternate 1)  
Alison Rogerson - DNREC  
Peter Rowe – NJ Sea Grant  
Kelly Somers – EPA Region 3 (alternate 2)  
Ken Strait - PSEG  
Kari St. Laurent – DNERR  
Elizabeth Watson - Drexel  
David Wolanski – DNREC