



40th STAC Meeting Minutes

Monday, June 20, 2016

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

Partnership for the Delaware Estuary - Wilmington, DE

STAC Attendees

Gregory Breese, USFWS
Lance Butler, PWD
Dave Bushek, Rutgers HSRL
Laura Craig, American Rivers
Thomas Fisklin, DRBC
Dorina Frizzera, NJDEP
Heather Jensen, ACOE*
Josef Kardos, PWD
Desmond Kahn, DNREC *retired*
Moses Katkowski, TNC
Susan Kilham, Drexel, STAC Chair
Danielle Kreeger, PDE
Hoss Liaghat, PADEP*
Kristin Regan, EPA R3*
Alison Rogerson, DNREC

Kelly Somers, EPA R3
Kenneth Strait, PSEG
Elizabeth Watson, Drexel

Non-STAC Attendees

Sarah Bouboulis, PDE
LeeAnn Haaf, PDE
Doug Janiec, PDE Board
John Kennel, DNREC
Megan Mackey, EPA Region 3
Joshua Moody, PDE
Kari St. Laurent, DNERR
John Yagecic, DRBC

***via Adobe Connect**

1. Call to Order & Introductions

- 9:30 am: Sue Kilham (STAC Chair) called the meeting to order.
- Attendees were asked to introduce themselves.
- The meeting agenda was reviewed.
- D. Kreeger reminded participants about the current STAC elections (*in progress*).
 - S. Kilham and D. Kreeger will send out an email for voting.
 - D. Kreeger introduced Dr. Kari St. Laurent, the new DNERR Research Coordinator, who is a nominee for STAC membership and was invited to attend. Dr. St. Laurent said a few words about her interests.
- The previous meeting minutes, which were circulated in advance for review, were accepted contingent on a few type corrections.

2. CCMP Revision Update – Sarah Bouboulis

- Contractor Support. PDE's application for funding to help with the CCMP revision to the William Penn Foundation was accepted, at \$200,000. Most of these funds will be used to support contractors, but some is being earmarked to help with monitoring coordination, TREB updates, among other needs.

- DK: Jen Adkins is working on the RFP to solicit contractual support for help with meeting facilitation, workshop coordination, etc. If anyone has any recommendations on firms to share the RFP with, please forward them to Jen or Danielle.
- Public Meetings. We're working with the states and EIC to plan the summer public meetings. These meetings are being designed to solicit early public input on CCMP priorities. Public interests will then be integrated with input from the expert surveys, and then used to guide the first set of technical workshops in late fall.
 - The dates for the public meetings are as follows: DE – 28 July; PA – 11 Aug; NJ – not yet decided
 - DK: STAC members will be asked to participate in the technical workshops, and so it is not expected that STAC members participate in these public meetings – but welcome to do so.
 - The states are taking the lead on organizing and advertising the public meetings, such as via emails and flyers. PDE will share these items at events and via PDE's website.
- CCMP Expert Survey results
 - Results: 172 individuals responded (so far). The actual responses are available for viewing on Sharepoint.
 - The top topics garnering the most input were Climate, Nutrients, Wetlands, and Public Understanding.
 - Core partners were more interested in toxics and public understanding; non-core partners were most interested in things like wetlands.
 - As a first exploratory tool to visualize common themes, we prepared word clouds. See Sharepoint presentation for topic specific word clouds.
 - Next steps: refine how the disparate types of input get integrated, and then begin drafting plans.
- DK comment: Sarah B. will be transitioning to a different position at PDE, but this week interviews will take place for her replacement. Please continue to email Sarah on CCMP topics until otherwise instructed. *[note: Emily Baumbach was hired in July as the new PDE science planning specialist, and beginning in August Emily will replace Sarah as key NEP task contact, including STAC support]*

3. TREB Updates – Danielle Kreeger

- As we have been discussing for the past year, the 2012 TREB will be selectively updated, focusing on indicators that are expected to align best with top (draft) Measurable Goals and new CCMP elements.
- Four contractors have been selected to serve as main data compilers and writers. These folks will also coordinate with others who have volunteered to help with various chapters/indicators. The contractors are University of Delaware (Jerry Kaufman) for Land Use and Wetlands (Chapters 1 and 5), Penn State (Ray Najjar) for Climate Change, Delaware River Basin Commission (Ken Najjar, Tom Fikslin) for Water Resources, and Desmond Kahn for Living Resources (Chapter 6 + fish passage).
- Each contractor has been provided with a list of other STAC members and partners who have offered to assist with specific indicators. Once initial datasets are compiled, contractors will organize calls with chapter writing teams to get help interpreting results and drafting narratives, following the same format as in 2012.
 - DK polled the room to see who else had input or wanted to participate.
 - First task will be to have draft datasets by end December 2016.

- Second task will be to work with writing teams during winter to interpret data (wish list: presentations at Summit).
- Third task will be draft text for report and prepare final visuals by end of February.
- These drafts will then be peer reviewed by the STAC and MACC by end of March.
- Goal is to have the final version of TREB supplement by end of April, in time to be useful for polishing CCMP revision.

4. Summit Updates – Danielle Kreeger

- The Call for Abstracts is out, and the deadline will be July 29th. The theme is “Reflecting on the past, planning for the future”
 - With CCMP revisions and PDE’s 20th anniversary, focus will be on accomplishments of the past (first CCMP) and next steps (new CCMP).
 - The Summit will be held in Cape May, January 22-25, 2017.
 - PDE always works with partners to contemplate moving the location around. But no venue meets criteria; e.g. a retreat location outside easy commute; accommodate ~300 people, reasonably priced, multiple AV rooms for break outs, and preferably in our estuary. Suggestion on other locations that meet these criteria are always welcome!
- Sessions Ideas and Moderators (so far):
 - Water Quantity + Quality (Fikslin + Kardos);
 - Living resources (Breese + Rowe);
 - Monitoring and assessment (Yagecic + TBD);
 - Wetlands + other Habitats (Rogerson + Somers);
 - Restoration + Conservation (Janiec + Katkowski);
 - Physical processes (TBD);
 - Hot topics (Kilham + Kauffman);
 - Special sessions: post-Sandy projects and lessons (Jensen + Frizzera?); Go Big or Go Home (Janiec + Craig?); CCMP revision (Adkins + TBD); Trash Free Waters (St. Laurent + TBD)
 - Floaters/extras: Bushek, Kreeger, Moody
 - The session themes and moderators will likely need to be modified once we see what abstracts are actually contributed – these are just starting points.
 - Once the abstract deadline passes, Sarah and Danielle will compile the abstracts, review the first/second choice session wishes, and then make adjustments to session themes and lengths based on what gets submitted. So expect some emails as we refine the moderator duties/requests.
 - Dave Bushek: I’m trying to piece together a special session or panel on the aquaculture + red knot issue.
 - DK: yes, we expect that we will be able to accommodate additional special session ideas and panels, at least in the third track breakout room. We never have fully utilized that third room for the duration of the Summit.
 - A thin-layer placement session (wetland restoration tactic) has also been discussed, for instance.
- Summit moderators are always a pair, from different sectors or geographical areas. Duties included picking abstracts, setting the presentation order, introducing presenters, and sometimes also helping to summarize key messages for post-conference proceedings.

5. Monitoring Summit 2018 – Danielle Kreeger

- As we often have discussed (e.g. STAC-MACC meetings), EPA expects NEP's to take a leadership role in coordinating monitoring. PDE helps to coordinate monitoring in three ways:
 - "Bottom-Up" Organic Coordination. Annual STAC-MACC meetings facilitate sharing and gap-filling. Monitoring "plans" take the form of issue-specific collaborations, responding to emerging needs or opportunities.
 - Niche Filling Programs. For certain monitoring niches not being led by other entities (e.g. wetlands, mussels), PDE directly coordinates, leads or participates in gap-filling.
 - "Top-Down Coordination". Periodically (e.g. every 5-10 years), PDE and partners collaborate on a more comprehensive inventory of monitoring needs, developing guidance documents. The 2008 Delaware Estuary Watershed to Ocean Observing System (DEWOOS) report is the most recent example.
- Every NEP is expected to periodically prepare and implement a "monitoring plan." This is a lofty goal if the monitoring is to be comprehensive of all natural resources and spanning the whole estuary study area and its diverse issues.
- A short, 4-page monitoring plan will be included in the new CCMP (led by the MACC).
- To build on this (add meat to the bones), we are considering working with key partners to convene a Monitoring Conference following CCMP completion, as was initially discussed at the March STAC-MACC meeting.
 - This conference may not necessarily be NEP driven since it will likely be a cooperative endeavor among DRBC, William Penn, Academy of Natural Sciences, and PDE.
 - Topic areas: Integrating monitoring system plans; existing monitoring; next generation monitoring (functional processes – primary productivity?); prioritization of future needs; how to fully analyze/disseminate data; new technologies (big data)
- STAC Discussion: Unanimous support that monitoring conference/summit is necessary to figure out how to sustain and coordinate monitoring. It might be helpful to generate a white paper as a form of conference proceedings.
- Next steps – develop a working plan this fall
 - Meet with ANSDU to discuss their interests and needs.
 - Look into potential funding from William Penn?
 - Consider advance "advertising" or mentions at the January Summit.
 - Set up a Steering committee to plan the conference and call for volunteers.
 - Would include DRBC (Fisklin, Yagecic); PWD (Kardos); PDE, possibly ANSD
 - Timeline would sync best of happens during winter in between Science Summits; e.g. January-February 2018

6. Oyster Updates and Shellfishery Needs – Dave Bushek

- PDE has included targets for fish, shellfish, and oysters in the Measurable Goals, and these will be featured in the new CCMP.
 - For example, there is a 10-year goal for oysters to invest \$1 mil per year for oyster shell planting; and to maintain or increase oyster bed acreage by 25% relative to 2012.
- But there are various competing interests that might thwart these goals: e.g. fishing, farming, habitat trade-offs with other species, etc.
 - To get more oysters in the bay, need to identify and navigate overlapping interests.
 - The good news is that we have had annual workshop between NJ and DE oyster

- managers, the Stock Assessment Workshops, since 1953.
 - Hot topics are outreach, fishery management, habitat management, and oyster aquaculture (new endangered species conflicts – red knot).
- The 18th annual NJ Del Bay Oyster Stock assessment to set tighter quotas.
 - Over the last decade, we have had stable harvest quotas (~76k in NJ), which is only <4% of the total population (for both NJ and DE – smaller populations along DE). The point is that this suggests that oyster populations have been stable; albeit the oyster population is still below suggested natural abundances.
 - This has led to branding as a “sustainable fishery.”
 - Oyster beds are also habitat, and so to sustain healthy fisheries, there will be a continued need for carefully management to replace oysters that are harvested.
 - To help with this, the industry has a self-imposed, per-bushel tax for harvesting, to ensure that funds are available to plant shell the following year. They generally take 80k bushels of live oysters, and then plant 150k bushels of shell (oyster, clam, etc).
 - Goals can be met if we alleviate the funding constraints and expand this practice. Of note, the bushel tax can be used as match too.
 - Current programs though are aimed at replacing the shell removed via harvests, rather than trying to supplement the overall deficit in the shell budget, which is needed to actually get a growing oyster population (e.g. through enhanced recruitment on additionally planted shell)
 - Discussion: What is the effect of salinity?
 - DB: it has been shown through previous reports that since the 1950s, productive oyster beds have shifted up-bay with changing salinity gradients – ask DK for the climate report which contains the analysis by John Kraeuter.
 - Flow management: T Fisklin – we have seen no change in flow rates from 2003-2013
 - DK noted that future salinity rise could be more substantial than in the past, based on the various ways that the tidal system will increase in volume (e.g. from widening waterways).
 - CPUE – catch per unit effort. This past year, oystermen caught their quota quickly, and so they requested higher quotas as market abundance was high. But this request was denied because those larger oysters enhance habitat, encouraging better recruitment.
- Oysters and erosion – we’re seeing increasing interest in restoration projects with oysters that are closer to shore, such as the various smaller projects by PDE/Rutgers, TNC, ALS, etc.
 - We’re also starting to see evidence of intertidal reefs near the shorelines.
 - Potentially, if these shoreline restoration projects grow, they may help mediate (overall) oyster population changes with climate change/SLR.
- Project PORTS (promoting oyster restoration through schools) continues to be successful, and is another type of shoreline project focusing on oysters.
- Intensive oyster aquaculture
 - NJ interests: currently small, but large potential and many challenges such as regulations, user conflicts, and endangered species (red knots)
 - The listing of the red knot and subsequent attention has pitted two environmental groups in conflict: oyster aquaculturists vs bird conservationists.
 - Oyster aquaculture has been conducted in the region of interest since at

least (probably earlier) than the 1930s. But production declined in the 1950's with disease, although many of the areas in the spotlight still have leases. The red knot listing put pressure on the oyster aquaculture industry to limit production activity during certain time frames and locations. The State of NJ is now attempting to expand/move aquaculture lease parcels away from intertidal areas heavily used by red knots and horseshoe crabs.

- Study general objective: provide baseline understanding of how intertidal oyster culture is affecting red knots.
 - Census survey results were modeled, and showed various interactions, e.g. tide+wind+segment (base) + tending+plane+human activities.
 - The biggest positive effect when birds were present were rising tides (pushing crab eggs to the swash zone/wrack line); negative use was found as the tide falls and as the egg resource gets depleted and as oystermen typically arrive to work during low tides.
- Conclusion
 - Fishery management is careful and coordinated between NJ and DE.
 - Habitat enhancement is one important additional way to achieve goals– such as via shell planting options; shell recycling; living shorelines.
 - Outreach – PORTS + living shorelines continues to reach many people and should be sustained.
 - Aquaculture development and conflict resolution is still needed. DE is stalling due its aquaculture development in part because of similar user conflicts (focus currently Inland Bays); NJ red knot research (above) continues with Sea Grant support.
 - NOAA S-K funding to help develop deep-water oyster aquaculture methods to revitalize production on old leases.
 - Planning a technical workshop on status of HSC + Shorebirds in Del Bay including interactions with oyster aquaculture.
 - A STAC brief would be helpful, especially if it goes beyond single species conflict discussions and interests – takes a holistic approach to whole system.
- Discussion: Dave Bushek agreed to take the lead on a STAC Brief if the STAC will help, such as by thinking about other factors that might affect species/use interactions such as between oyster aquaculture and red knots (and HSC).
 - DK: So what would be the focus/title of the brief? We will need to ask the EIC for their blessing in developing this as a topic.
 - DB: What factors are affecting the red knot? What are our local activities that contribute to red knot conservation? What can we take action on?
 - DK: Should the brief focus more on the aquaculture angle or bird biology?
 - DB: potentially a moving target on what topic to focus on. For example, this user conflict could also be extended from aquaculture to living shorelines.
 - SK: is anyone measuring the potential beneficial effects of living shorelines and other green infrastructure on red knots or HSC?
 - DB: those involved in these project may be monitoring these things
 - DK: we have had some questions come up for living shorelines, such as whether the mere presence of structures in the water might repel shore birds? But many of these projects are being designed to boost sand for HSC, which might be a positive for the birds.

- DB: paper (Burger et al?) suggests some structures may affect behavior for some shore bird species, but that paper did not find significance with red knots.
 - Greg Breese: Red knots can be disrupted by visual changes, but the effect of these things and behavior may be more motivated by food availability than anything.
- GB: seems like the ask is whether the STAC can serve in a peer review role to see what aspects would affect red knots?
 - DK: Typically, STAC Briefs pick a topic, and then they summarize the science - what we know, what we do not know. Similar to a review, and helpful for managers to know “what the science says”. Often at the end, we pose additional questions that might need to be addressed to help resolve any issues. STAC Briefs are always framed objectively.
 - DB: the STAC Brief could help managers bay-wide.
 - The situation is reminiscent of single species conservation plans that ignore (to the detriment) interactions with other species. It is usually more helpful to take an ecosystem approach.
- DK: STAC should seek blessing of EIC to continue – can be a topic in next monthly EIC conference call in July.
- DB: the biological opinion is thorough, but the two groups that are directly involved are pulling different interpretations of it; further, certain biological aspects are not necessarily being considered.
 - DK: Include restoration and living shorelines in addition to aquaculture?
 - M. Katkowski: suggested to not necessarily include living shorelines for this iteration, but include them as we learn more.
 - DB: structures of particular importance as “time of year” restrictions were mentioned in the biological opinion; may not be a current issue with smaller scales, but growth may have to be limited.
- GB: is frame supposed to be in regards to the conflict, or is it that oysters are important? Not clear what the focus should be, to maintain objectivity.
- Jerry Kauffman: brief would hit on a hot issue
- SK: STAC members should send any other comments, questions and suggestions to Dave Bushek, and Dave will prepare an outline of the Brief to better lay out the focus. Then DK can ask the EIC for their blessing to proceed, once the focus is defined a bit better.

7. Measureable Goals Revision – Sue Kilham

- As part of the CCMP revision, we’ll be revisiting our (short-term) measurable goals to better align them with the new CCMP timeline (5/10 years).
 - Although EPA has always asked for our goals to be measureable, with numerical targets and dates, there is concern among the EIC and also EPA that we should not present any discrete measures to the public at this time.
- DK: The original goal for today was to go back through the earlier short term goals and decide which need revising because their timeline was out of sync (or there were other problems with some). But now that these goals will be discussed as part of the CCMP process, there is no urgency to refine the goals at this time – we’ll simply get some quick thoughts on which are most in need of revising.

- *[Note: Some initial discussion was offered regarding water goals, but time was running short – the following are discussion notes before we decided to table the discussion for later.]*
 - Toxics: keep currently listed short term goals through 2027 –amendments and other revising will likely be necessary.
 - Consider additional goals for beneficially reusing sediments.
 - TF: we should think about other toxics of concern that we might want to also include along with PCBs, such as pesticides.
 - Des Kahn: language for these goals should be better aligned with what baselines we have.
 - Nutrients: keep currently listed short term goals through 2027.
 - JK: we should discuss this more, such as establish ammonia toxicity criteria and maybe move ammonia to toxics section.
 - Add direction in goal as to who leads the goal and who might support it.
- SK: Let's all simply acknowledge that these short-term goals do still need more work, and that the CCMP process presents an opportunity to think more carefully. Ultimately, we'll want both goals and associated actions.
 - The long-term measurable goals are not being rewritten. But many of the earlier short-term goals might be reframed better as CCMP actions.
 - The appropriate way to think about the difference between a goal and an action is the timeframe.
 - Short term goals (10 years) = incremental steps to achieve long term goals (25+ years).
 - CCMP actions = the stepwise things that need to happen to reach the short-term goals. Then, the CCMP will be revised for the subsequent 10 years, and will include new step-wise actions.

8. Workgroup updates

- Regional sediment management (by Kurt Cheng) – Looking for suggestions on how to better understand sediment dynamics (not just the budget).
 - J. Peccholi is keeping a sediment database for toxicity and suitability for beneficial reuse.
 - DK: The RSM workgroup folks are looking to present an update to the STAC asap.
- Water Quality Advisory Committee (by TF) – the next meeting will be on July 28; guidance has been distributed by the membership and function of advisory committees
 - All 6 members' terms on the WQAC are up, so a call will be made in fall for their replacements.
 - Lower Delaware: No measureable change in assessments in concentrations for nutrients, some reductions noted
 - Cl, and conductance (road salting).
 - Bacteria issues also noted near Trenton.
 - These results will be reported fully at the WQAC meeting.
- Toxics Advisory Committee (by TF) – the next meeting will be on Thursday (23 June) at John Heinz NWR.
 - Human health and ammonia criteria will be discussed, and the recent toxics report will also be discussed at WQAC.
 - SK: can the WQAC and Toxic group review and make recommendations to help us revise toxics measurable goals? Should other toxics of concern be addressed in the measurable goals/CCMP? TF: yes, the toxics group could figure out more

appropriate language for the goals/actions.

- Delaware Fish and Wildlife Coop (by Des Kahn): they are working on an American shad stock assessment for the Delaware River. The first assessment was in 2011. Data from this might be able to be added into the TREB. NOAA has proposed critical habitat for the Atlantic Sturgeon in the NY Bight & from Trenton to the head of the Delaware Bay.
- Oyster stock assessment: reporter earlier by D. Bushek.
- DE Living Shoreline Committee (by AR): moving forward on subcommittees (workshops, outreach); working on a monitoring framework and guidelines for permitting, etc. The next meeting will likely be in September.
- Wetland workgroup (by DK) - did not meet because most members attended and networked at the Delaware Wetland Conference. But looking to meet at some point in the next year.
- Upcoming meetings and other announcements:
 - TF: DRBC looking to hire a modeler (check their website).
 - HJ: ACOE – main channel deepening dredging on upper reaches of Delaware River could start this fall (contractor depending); East Point Lighthouse shoreline restoration project to happen, by partnering with ALS; mouth of the Maurice River projects to look at shorelines and flood management continue to be considered; work with Conserve NJ is ongoing; Harrison Landfill project ongoing to restore tidal freshwater wetlands; working on the estuary salinity model with DRBC.
 - DB: The International Conference on Shellfish Restoration will be held in in Charleston in November; abstracts due end of this month.
 - DK: PDE's Dinner (Estuary Celebration) will be on Thursday October 6th, same location in Deptford, NJ; The AERS meeting will be held near Baltimore on Nov 17-19. RAE in New Orleans from Dec 10-15.

Next STAC Meeting – joint with EIC ~September

- Provide EIC with list of date options
- 21-30th of September? Last week of September

2:36 PM - Sue Kilham Adjourned meeting

