



Science and Technical Advisory Committee

Partnership for the Delaware Estuary:
A National Estuary Program

www.DelawareEstuary.org

32th STAC Meeting

Wednesday, April 16, 2014

10:00-2:30 pm

Partnership for the Delaware Estuary- Wilmington, DE

1. Call to Order & Introductions

Sue Kilham calls the meeting to order at 10:00 am.

Gregory Breese (USFWS)
David Bushek (Rutgers)
Lance Butler (PWD)
Thomas Fikslin (DRBC)
Jeff Fischer (USGS)
Dorina Frizzera (NJDEP)
Moses Katkowski (TNC)
Susan Kilham (Drexel)

Danielle Kreeger (PDE)
Adrian Leary (ACOE)
Kenneth A. Strait (PSEG)
David Wolanski (DNREC)
Sari Rothrock (PDE)
Megan Mackey (EPA R3)
Chris Kriegner (Obrien Gere)
Laura Whalen

2. STAC Updates

Sue passed around the draft minutes from the last meeting (joint STAC-MAC meeting) for edits. The minutes had been emailed for preview. The minutes were approved.

#5 on the agenda has been removed. The group moves to #3.

3. STAC-MAC Workshop Re-Cap

Danielle Kreeger updated the group. In 2007, we were selected as one of the three groups in the country to work together to assess what our current monitoring infrastructure is, and if we were going to set up a more extensive ecological monitoring system, what would it look like? This led to DEWOOS, articulated in our 2008 report (led by DRBC) to the MWQMN. At the workshop, we reviewed all of the collaborations and all of the partnerships past and present which would be used to assess current monitoring needs.

EPA looks for a periodic report where PDE helps coordinate monitoring and match against needs. The purpose of the workshop was to revisit where we're at with those actions and needs, and how can we make the next State of the Estuary report better. How do we prioritize very limited resources to address those actions and needs? This year, we underwent our EPA CCMP implementation review. We do this every five years. Do we want to periodically revisit DEWOOS? A healthy discussion followed about the need for monitoring coordination, who leads, and how this is usually manifested in actual monitoring activities. In general, the group agreed that current monitoring is mainly coordinated by the Monitoring Advisory Committee, augmented with issue-specific technical workgroups such as the wetland

assessment workgroup. Most actual new monitoring over past 5 years had been very organic in response to emerging needs and partnering opportunities rather than in response to a top-down directive by the Estuary Program or any committee. The group felt that a DEWOOS reprise might be helpful at some point since it tends to lead to new ideas and proposals (e.g. for MACWA), but it is not yet time. A recognition of the organic coordination and extensive partnering underway and a commitment to continued info sharing via committees was seen as best and most efficient way to facilitate continued gap filling for monitoring.

In the afternoon, we looked at TREB actions and needs. We focused on water quantity/quality needs and also ecological needs in two breakout groups. Those groups prioritized top needs, and notes are available. The take-home message was that the STAC-MAC joint meeting was a very effective way to discuss emerging monitoring needs and to look for collaborations and opportunities to address those needs. Both groups agreed to make this an annual, winter joint meeting, contingent on approval from any external management groups such as the EIC.

John Yagecic: the MAC is going to be reauthorized soon and we're interested in reissuing membership. PDE was not originally on the Water Quality Monitoring Advisory committee, but has been added formally to the MAC which is managed by the WQAC.

Danielle Kreeger: There were 7 components on our DEWOOS annual report. If we felt there was a need to revisit one of the components, we could continue/create a subgroup as needed. The DEWOOS framework can always be modified.

John Yagecic: Most of the MAC meetings in the past had mostly presentations from DRBC, but, in the future, we can have presentations from other groups to find out what they're doing.

Comments from STAC:

- If we wanted to update DEWOOS, maybe do it in 2017, have it completed by 2018.
- Our charter calls for four meetings a year, but there is nothing to stop us from having extra meetings. Monitoring is always a big topic for us. Focusing on monitoring for one STAC meeting makes sense.
- Dorina: WQX. NJ DEP has a water quality data exchange (WQDE). The information put into WQDE would go into WQX, then into Storet. Some of the research done in Barnegat Bay is compatible with MACWA research. There's an opportunity to share that data. The NJDEP Office of Science is creating a community—already started developing framework.
- These annual STAC-MAC meetings will be open to others (TNC expressed interest in attending).
- Lance says that PWD was very interested in the notes from the STAC-MAC meeting. Interested in knowing contact info for primary person in Delaware Estuary who is the expert on specific issues? DK- we have that—the Who's Who of science and management in the Delaware Estuary. Originally developed in response to Athos Oil Spill. Lance said that he'll update it because he needs to anyway.

4. STAC Elections

Dave Bushek, William Eldridge, Jerry Kaufmann, Doug Miller, Des Kahn are up for reelection. Dave, Des Kahn, and William have indicated their interest. Doug Miller will not be accepting reelection. Tracy Quirk will not be staying on. If Jerry agrees, we will have four incumbents on spring ballot.

Our cap is 21 members. We have lost people to retirement, so we were at 19 members. Since Doug and Tracy are not on the ballot, we'll have more open seats. We have room to add new people. **Please send any new nominations to Sue or Danielle by the end of April.** Any wetland physical processes, coastal processes people would be great.

Tom and Lance suggested a few new people, and they agreed to reach out to them.

Danielle passed on three nominations: Laura Craig with American Rivers (fish person, active in dam removal), Doug Janiec with Cardno Entrix (active in living shorelines), Allison Rogerson with DNREC wetlands.

Dorina suggested having STAC meetings around the estuary so that it would make it easier for other folks to get to. STAC-MAC meeting could be at DRBC (bigger group is too large for this room).

Could be a great opportunity for NJ Sea Grant to get involved. NJ Sea Grant has new extension person for climate. Dorina will reach out to NJ Sea Grant directors. Tom agreed to reach out to Delaware Sea Grant. Danielle will explore.

Danielle asked Chris Kriegner if he's interested in going on the ballot. He will send his CV to Sue.

5. GIS-based Watershed Resources Registry

In Maryland, they developed a watershed resources registry. It's a very geospatial, mapping-oriented registry. Danielle showed their website to the group. www.watershedresourcesregistry.com. It does not overlap with the PDE's registry. Ralph was unable to attend today because he's teaching a workshop.

Danielle summarized features of the PDE project registry.

6. 2015 Science & Environmental Summit

Sessions:

Two-track summit. Science/Outreach-Policy. Limited to 11 session slots. Typically have "regular" sessions and "special" sessions. Talks are 15 minutes each. Last time we had about fifty posters.

Tentative session lineup and solicitation of STAC members as moderators:

- Water Quality and Quantity
Moderators: Tom Fikslin
- Living Resources
Moderators: Willy Eldridge and Lance Butler
- Monitoring and Assessment
Moderators: Jeff Fischer and John Yagecic
- Wetlands and Other Habitats
Moderators: Ken Strait

- Restoration and Conservation
Moderators: Josh Moody and Moses Katkowski
- Ecological Linkages
Moderators: Greg Breese and Adrian Leary
- Physical and Chemical Processes
Moderators: *Bob Chant? (Dave will reach out), and David Velinsky?*
- Hot Topics
Moderators: Danielle Kreeger and Sue Kilham

Consider doing a five minute retrospective prior to the speakers in each session. Moderators responsible for it. Moderators have liberty to set Q&A and panels as they see fit, but knowing that we always need to turn good prospective talks away converted to posters. So maximize 15-minute speaking slots as much as possible. Moderator instructions will be sent in early September along with abstract options for their sessions.

Suggested special sessions

- Hurricane Sandy in the Delaware Estuary
Moderators: Dorina Frizzera and ?? (Ben Horton from Corps?)
 - Dorina- thinks timing is great for this. DOI \$ will have been announced in mid-May, so we'll have an idea of what type of research will be going on.
 - Adrian and Dorina will look into potential speaker from USACE re: wetlands considered in same category as dunes.
- Shellfish Culture Now and Tomorrow
Charting a course for Delaware Estuary Aquaculture
Moderators: Munroe & Calvo
- Novel Ecosystem Services
 - Dorina- RAE just released a report on blue carbon.

Moderators: Danielle Kreeger?, Dorina Frizzera

Speaker suggestions?

Typically, when we put out a call for papers, the moderators can choose to have a subtitle with a particular theme. Once you see who has submitted, you can tweak the subtitle of the session. Moderators choose who has a poster and who has a talk.

Suggestion to ensure that science presentations are somehow connected to the Delaware Estuary.

Reminder that this is the tenth anniversary of the Science Conference (and twentieth anniversary of the estuary program). Suggestion to ask Bob Tudor (perhaps as dinner speaker). Tom will reach out.

Abstract deadline is August. Actual sessions and moderator teams to be developed over summer.

7. LUNCH

- 8. Growing Pains in Developing Shellfish Aquaculture in NJ**- Presentation by Dave Bushek, co-author Lisa Calvo
- Two sides to oysters- fishing side and cultural side
 - When do you take ownership? If you're fishing, you own when it's in your boat and culturally you own it when seeds are planted, but regulations don't deal with that
 - Upper Bay has natural seed beds, used to be harvested and then planted on leased planting grounds in middle of the bay. NJ and DE are way behind the rest of the East Coast as far as aquaculture because of regulatory impediments. Chesapeake Bay is starting to rebound because of the oyster planting, less regulations, and bigger recovery from Hurricanes Irene and Sandy.
 - 33,000 acres of leased ground but only 5% used mostly because of predation and disease
 - Two red dots on map in leased planting grounds- northern dot is in deep water and southern dot is in intertidal area
 - Sub-tidal cage culture- does one growing season and gets them as large as possible and sells before winter
 - Intertidal culture- high maintenance farm, all native species
 - Rutgers has been breeding disease resistance oysters since 1962, 3 facilities in NJ
 - Two Rutgers doctors developed triploid oyster- avoid disease because grows faster
 - Do not have disease resistance to Dermo so grow them as fast as possible and get them to market size before chance for disease
 - NJ Shellfish Aquaculture Census 2012- the census surveyed eleven farms
 - 1.492 million market oysters sold, average \$.51 per oyster (.2-.3 for fisheries and .5 for aquaculture)
 - The Oyster Renaissance- ex. Philly Farm and Food Fest where thousands lined up to taste raw oysters, East Coast Oyster Marketing List published- now just 2 oysters from DE Bay but there used to be a lot more and it was divided by what cove they came from and knew the differences
 - Delaware Bay needs to be better at marketing and come up with better names for oysters from different areas of the bay
 - Chart showing increasing aquaculture growth in VA in the past several years- DE would be at low end of that chart but shows the potential for aquaculture growth in this region
 - Red knots were a concern for harvesting oysters, but US FWS came and saw that there is not a concern because red knots and farmers are using the reefs at a different time of tide cycle
 - People eat live oysters so they are eating live bacteria when eating raw oysters so need pristine water for growing oysters- two bacteria that can be found in oysters that cause human disease. One is *Vibrio vulnificus* - 50% survival of those who go to hospital, but there is a very small chance of getting sick (less than shark attacks)
 - Shellfish gardening – Baykeeper started doing this at docks to increase oyster populations. However, public health regulations say that it's better to take out all shellfish than to monitor beds to make sure no one is harvesting, so Baykeeper had to remove oysters and can only do gardening at the naval base where someone cannot steal the oysters, sell them, and then someone could potentially get sick and shut down the whole industry
 - NOAA Nowcast- shows temperature, forecast, and will be used in the DE Bay for water quality and will model for Vibrio, etc.
 - Haskin over-winters oysters at a marina but this story got in local paper and law enforcement said Haskin had to move the oysters immediately, so had 30-97% mortality because moved in Feb. before the last freeze. The 30-97% mortality occurred in tetraploid oyster most needed for

research and production of triploid seed for industry. Recovering that stock is a minimum two year process assuming everything goes well.

- 5% of leased land in DE Bay can be harvested- quota program keeps percentage at 2%
- Another factor is climate change and how it will affect productive oyster beds in the future, seem to be shifting up bay, and disease is moving up bay as well

- Will the STAC consider doing a formal brief on shellfish impediments showing history and scientific? Open for discussion to see interest in doing that:
 - Can you separate societal values from science
 - Two sides to the argument because disease will shut down industry- Dave clarified that is not entirely true because sickness has to be tied to a body of water and that body of water will be shut off from market. Also, \$790 million is reported as market value of the industry but that is all shellfish including clams and scallops, etc.
 - Scallop license costs \$3 million for example, and blue crabs are probably the biggest market in DE Bay
 - Need to set the record straight about ribbed mussels vs oysters
 - Permitting- currently you need permits from Army Corps, NJ DEP Landuse, NJ Tide Lands Division, so would be good to reduce permit needs. Tide Lands is the biggest hurdle and fees from 3 different departments

- Does STAC feel like it's worthy to discuss with EIC in the fall?
 - Greg- thinks it's important but needs more discussion
 - DK- brief would show how policy would hinder certain activities for research, post-sandy climate change projects, etc.
 - Dorina- living shoreline in 2008 led to report on regulations because of permit problems and report led to regulation changes, so PDE is right organization to get this discussion moving ahead further
 - The goal of the brief would be to identify opportunities that are being lost because of how regulations currently stand and the conflicts between current policies

9. Measureable Goals

- They're done
- Approved by the steering committee
- Next steps for 2014-2015:
 - i. Might be a public roll out of goals in the fall near steering committee meeting
 - ii. STAC's job is to discuss how to implement goals
 - iii. Priscilla Cole has NEP funding to work with STAC to think about an action plan or strategy for each of the goals
- Subgroups: Habitats, Waters, Communities
 - i. Priscilla is going to work with these same subgroups to think about what an implementation strategy would be for each of these goals
 - ii. Other people can join if weren't part of subgroups before-
 1. Jeff Fischer 'volunteered' for water subgroup with Tom
 2. Priscilla will set up a conference call for each subgroup

10. Workgroup Updates

- Regional Sediment Management Workgroup- no news

- Water quality- focus on nutrients, last meeting motion was passed for DRBC to assess various DO needs for various species. Might be able to say 'Propagation of this particular species'
 - i. Two year point source monitoring of 72 discharges is nearing completion, summarizing that info
 - ii. Water samples will be collected by DRBC in the bay at 15 stations for nutrients and productivity measurements. The latter will be conducted by the University of Maryland Horn Point Lab.
- Toxics- working on PCB Stage 2TMDLs, documented 46% reduction in PCB loads from point source discharges from 2005 to 2011, setting up triggers to trigger additional monitoring or renewed action. Finishing up early May/June.
- Restoration Workgroup- no news, met in December, ACES is meeting in the next couple weeks and will be discussing the science and restoration trust, NEP funding cut so not much activity so hopefully ACES will have a good discussion about the science trust and funding projects from the project registry and other science activities
- MACWA- met on March 19th and continues to grow- NYC parks to VA involved now, funding continues to be the big issue because monitoring is usually underfunded, DK is working on 3 new proposals but need ideas for non-federal match
- Living shorelines- DE living shoreline committee and sub-committees led by Bart Wilson, Danielle is co-Chair
 - i. PDE developed monitoring framework for living shorelines and presented it at a workshop in Bombay Hook and now will implement for science-themed projects PDE is leading
- Fish and Wildlife Cooperative- no news, sturgeon carcass was found north of Easton
- Fish consumption task force can be deleted because haven't met since 2002, DE and NJ collaborate

11. Upcoming Events/Meetings

- i. Earth Day Celebration on behalf of Ruth Patrick- April 22nd, many great speakers
 - ii. Science Conference- last week of January- 25th-29th
 - iii. Next STAC meeting – to be held in early September joint with EIC. DK will check to make sure about abstract deadline for science conference and try to time meeting to be in line with updates reporting
- Meeting adjourned at 2:00pm

List of Acronyms:

ACES	Alliance for Comprehensive Ecosystem Solutions
ACOE RSM	Army Corp of Engineers Regional Sediment Management
AERS	Atlantic Estuarine Research Society
ANEP	Association of National Estuary Programs
ANJEC	Association of New Jersey Environmental Commissions
ANS/ANSP	Academy of Natural Sciences
AWRA	American Water Resource Association
BMP	Best Management Practices
CBCWP	Christina Basin Clean Water Partnership
CBTF	Christina Basin Task Force
CCMP	Comprehensive Conservation and Management Plan
CDRW	Coalition for the Delaware River Watershed
CERF	Coastal and Estuarine Research Foundation
CESP	Corporate and Community Environmental Stewardship Program
CIB	Center for the Inland Bays
CWA	Clean Water Act
CWAC	Clean Water Advisory Council
DAEE	Delaware Association for Environmental Education
DeIDOT	Delaware Department of Transportation
DELEP	Delaware Estuary Program
DELSI	Delaware Estuary Living Shoreline Initiative
DNREC	Delaware Department of Natural Resources
DPA	Delaware Press Association
DRBC	Delaware River and Basin Commission
DRPA	Delaware River Port Authority
DVRPC	Delaware Valley Regional Planning Commission
EIC	Estuary Implementation Committee
ELS	Environmental Laboratory Section
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FMCS	Freshwater Mollusk Conservation Society
FMRP	Freshwater Mussel Recovery Program
FT	Full-time
FWWIC	Fairmount Water Works Interpretive Center
IT	Information Technology
JCNERR	Jacques Cousteau National Estuarine Research Reserve
MAC	Monitoring Advisory Committee
MACWA	Mid-Atlantic Coastal Wetlands Assessment
MARACOOS	Mid-Atlantic Regional Association Coastal Ocean Observing System
MOU	Memorandum of Understanding
NEP	National Estuary Program
NEPORT	National Estuary Program On-Line Reporting Tool
NFWF	National Fish and Wildlife Foundation
NGO	Non-government organization

NJDEP	New Jersey Department of Environmental Protection
NOAA	National Oceanic & Atmospheric Administration
NSA	National Shellfisheries Association
NVSC	National Vegetation Classification System
PACZM	Pennsylvania Coastal Zone Management Program
PADEP	Pennsylvania Department of Environmental Protection
PADEP DWSRF	PADEP Drinking Water State Revolving Fund
PDE	Partnership for the Delaware Estuary
PEC	Pennsylvania Environmental Council
PT	Part-time
PWD	Philadelphia Water Department
RAE	Restore Americas Estuaries
SAN	Schuylkill Action Network
SAN ESC	Schuylkill Action Network Executive Steering Committee
SJBC	South Jersey Bayshore Coalition
SP	Strategic Plan
SRRF	Schuylkill River Restoration Fund
SSIM	Site Specific Intensive Monitoring
STAC	Science Technical Advisory Committee
SWS	Society of Wetland Scientists
TAC	Technical Advisory Committee
TMDL	Total Maximum Daily Load
TNC	The Nature Conservancy
TREB	Technical Report for the Estuary and Basin
USACE	U. S. Army Corps of Engineers
USFS	U. S. Forest Service
USFWS	U.S. Fish and Wildlife Service
WAS	World Aquaculture Society
WQAC	Water Quality Advisory Committee
WREN	Water Resource Education Network