



Science and Technical Advisory Committee

Thursday, February 9th, 2010 9:30am to 3:00pm
Delaware River Basin Commission, West Trenton, NJ

Planning Meeting 2 of 2 – Technical Report for the State of the Delaware Estuary and River Basin

STAC Attendees:

Lance H Butler – PWD
David Burke/Alan Everett – PADEP
Jeff Gebert – USACE
Desmond Kahn – DNREC
Sue Kilham (Chair) – Drexel
Doug Miller – Univ of Delaware
Jerre Mohler – USFWS
Renee Searfoss – EPA Region 3

Additional Attendees:

Gerald Bright – PWD
Dorina Frizzera- NJDEP
Simeon Hahn- NOAA
John Kennel – DNREC
Ken Najjar-DRBC
Ray Najjar-Penn State U.
Angela Padeletti- PDE
Irene Purdy- EPA
Laura Whalen-PDE
John Yagecic -DRBC

Minutes (action items are shown in bold italics)

- 1) **Call to Order & Introductions** **9:30-9:40**
 - a. Agenda Change: Climate Change moved up in the agenda to before Sediments

- 2) **STAC Updates** **9:40-10:15**
 - a. Science Conference speaker invites
 - i. Suggested: Margret Davidson – NOAA, David Kennedy – NOAA
 1. Dorina has contacts
 - b. March 1st Proposal for Nitrogen Ecosystem Services - ESRP
 - i. PDE can't take this on, but other STAC might be interested in writing proposal
 - c. Climate Change – USFWS: Proposals due (\$300,000-500,000)
 - i. Interest in the Delaware watershed
 - ii. Could be an extension of the CRE Pilot? – more quantitative, more case studies
 - iii. Multi-species impact, FW mussels, horseshoe crabs & redknots, diadromous fish
 1. Ideas: FW mussels could help define nutrient criteria for the Delaware
 2. “Ecosystem based response to Climate Change in the Delaware basin”
 - a. Riparian, FW mussels, Water Quality?

- b. Characterize the array of climate impacts and mussels on water quality, incorporate ROMS model for oysters?

3) **TDERB Section 4 - Sediment – Jeff Gebert**

10:15-10:30

- a. Indicators– Changes to the Indicators, budgets are recorded on the indicator table edits
- b. Budget: Basic, 2010 vs 2011 – Don't really need any PDE \$ because of all the current USACE activity
- c. Notes: lots of things going on in USACE, regional sediment management has come to the forefront, DE Est Regional Sed Workgroup, Chris Sommerfield being funded indirectly

4) **TDERB Section 5 – Aquatic Habitats**

10:30-12:00

a. **5a - Subtidal – Doug Miller**

- i. Selected: DEBI Sampling Data can be used to calculate Benthic index but unsure if funds will allow for this, lots of effort needed
- ii. Next Gen: Danielle's suggestions: Total subtidal area, total reef area ; Simeon's suggestion - Spawning habitat for Atlantic sturgeon
 - 1. Subtidal and reef areas can be calculated but might be a jump to a health indicator
 - 2. Sturgeon could be a "creature feature" box (maybe also for Living Resources?)
- iii. Timeline & Participants- Data is just coming in from benthic mapping, will take until the end of the year to look at the data
- iv. Budget: Basic, 2010 vs 2011 – requesting 1 summer student, optional – 2nd student (\$6K -\$8K per student); ***Benthic workgroup will have to discuss leveraging funds for GIS work, etc.***

b. **5b - Intertidal – Danielle Kreeger**

- i. Selected: Tidal wetlands acreage, buffer acreage, shoreline structures
- ii. Data to use: New NWI if available, NVCS for backup, LandUse/LandCover as a plan 'C', Delaware NWI is still in draft, still hoping to get new NWI from states
- iii. Tidal wetland buffer acreage – Last SOE Report: crop LULC data to 1km buffer; LIDAR will make this more sophisticated if available
 - 1. NJ currently correcting LU to ground truth for proper coding, running against LIDAR and other models, DE – LIDAR can be prepped for us,
- iv. Shoreline structure – hard structures v. natural shoreline in intertidal zone
- v. Options: Tidal Wetland Indicator, hydrological impairments, total intertidal area
- vi. RAM data, levee data, Mosquito ditching, inventory on tide gates, PSEG data, Tom McKenna? – DGS has info on intertidal inundation
- vii. Next Gen: infrastructure at risk (follow up from American Littoral Society)
- viii. Team: Kreeger, Cole, Padeletti, Homsey, Wetland workgroup, Strait
- ix. Budget: Intern or student, Restore America's Rivers may have grants for this work ; ***put in \$ for ½ summer intern?***

c. **5c - Non-Tidal – Bob Tudor**

- i. Primary: Freshwater Wetland Acres, Riparian Corridor Condition, Fish Passage, Hydrologic Impairment, Buffer Integrity
- ii. Data Source: Multi Resolution Land Cover (MRLC)
- iii. Options: Buffer Integrity
- iv. Team: Tudor, DRBC, Kauffman, Butler, Conolly
- v. Budget: Component of DRBC match to FY 10 and 11, EPA Grant Match

Lunch

12:00-12:30

5) TDERB Section 7 – Climate Change – Ray Najjar

12:30-1:00

- a. Indicators: Primary (Salinity, SLR, Temp, Storm Intensity/Freq)
 - i. Storm Intensity/Freq – PWD has data, 1800's – current, storm rain fall & rate/hr
 - ii. Lance Butler will send this data to the Climate Team
 - iii. Dorina – suggested contacting NJ Climatologist for Atlantic side, David Robinson
- b. Secondary: (CO2, impact on channel deepening on SLR)
- c. Next Gen: Inundation risk, tide gate and levee vulnerability in Delaware
- d. Participants: Kilham, Kreeger, Velinsky, Najjar, Collier, Frizzera, Gebert
- e. Budget: Basic, 2010 vs 2011: \$5K – Najjar, \$10K – Options budget to develop model for deepening on SLR and storm intensity indicator
 - i. Can the \$10K be broken up into the 2 elements of this indicator development?
 - 1. Sue and Ray will discuss for the EIC proposal**
 - ii. Jeff Gebert – will have a model in a month? to look at channel deepening on SLR
 - 1. Grey literature report from USACE
 - 2. Ray has a NSF grant to study climate impacts on physical processes in the Delaware
- f. Presentation Notes: Temp inter-annual variability, precip variability, climate extremes, temp changes, precip extremes, heat waves, sea level rising faster in this area than global models, geo-strophic ocean currents causing regional SLR variability
 - i. Are there any biological response indicators to include? System fxn indicator?

6) TDERB Section 8 – System Function Issues

1:00-1:45

- a. Indicators: Jonathan Sharp is unable to lead this group. This is a new indicator group intended to look at phys/chem/bio linkages. We would like to delegate out sections to the other groups and pull them back together in the end to make this Section 8. Suggestion that this could be the section of the report where cross linkages between the other sections are expanded upon.
 - i. Sediment Loading, Dredging, Deficit – Sediments
 - ii. Water Withdrawals, Shell Budgets – Water Quantity & Hydrology
 - iii. Carbon Sequestration – Water and Landscapes
 - iv. Impingement & Entrainment – (Could be a feature box)
 - 1. Salem, Eddystone, and more data available on fish kills from intakes
 - 2. Tidal withdrawals from all 3 states, PSEG data

3. New USGS report on water use in the Delaware Basin “water smart”
- b. Next Gen: Catch all for buffering: Water quality, pH, flood buffer
 - i. Take an inventory of buffers and their ranges?
- c. Timeline & Participants – **Kahn & Strait???** **Kilham?**
- d. Budget: Basic, 2010 vs 2011

7) TDERB Section 9 – Restoration – Laura Whalen **1:45-2:15**

- a. Indicators: Primary (Acres Restored, mitigated, protected, enhanced) (Habitat creation/restoration)
 - i. NEPORT – take info from this annual report, NRDA
- b. Feature Box: Restoration Needs – Unfunded registry projects compared to restoration in other estuaries, acres, project types (We have info back to 2005); ecosystem services captured to value the restoration projects
 - i. Dollars invested per impaired river mile
- c. Timeline & Participants – Whalen, Racette, Berg, Wallis, Dvarskus, Poeske, Hahn?
- d. Budget: Basic, 2010 vs 2011: Intern for PDE \$6K; Options \$3K for winter intern

8) TDERB Budget and Timeline Discussion **2:15-2:45**

- a. Summarized overall budget needs and options for 2010 & 2011
- b. FY10 NEP STAC funds (\$20K)
 - i. Water Quality is a priority
 - ii. NWI Data is a priority
 - iii. 5a – could probably use DEBI/RARE
 - iv. Ray Najjar students
 - v. USGS – do they need \$10K for Sections II and III? Maybe give \$5K for this fiscal year and \$5K to FY11
 - vi. Kauffman needs money for the student
 - vii. \$27,500 in FY10 request to the EIC, hope they can come up with the extra \$7500
- c. FY11 NEP funds request \$27,450~
- d. Timeline and future meetings
 - i. **Next STAC Meeting - have metrics for the indicators planned**
 - ii. This report is on indicators, but in the future we want to get back to goals for the estuary
 1. Feature box on how the Delaware compares to other estuaries in terms of condition and funding for restoration

9) STAC Business **2:45-3:00**

- a. Approve 1/7/09 Minutes –
 - i. some typos and notes on Living Resources were suggested
 - ii. Minutes approved
- b. Next Meeting – Late Spring, mid-summer, late-fall

- i. Each of the sections should have a poster of progress at the Science Conference in January*

Adjourn

3:00