Meeting Notes **DRAFT**

Delaware Center for the Inland Bays
Scientific and Technical Advisory Committee
October 12, 2022, 9:00 a.m. to noon - Hybrid Meeting
In-person: DNREC Lewes Field Office, 901 Pilottown Rd, Lewes, DE 19958
OR
Zoom: https://udel.zoom.us/j/91577822831; Passcode = science
Phone: 1-646-876-9923; Meeting ID: 915 7782 2831

Attendees:

22 in person (P); 19 Zoom (Z) = 41

STAC Members Attending:
- **P Scott Andres DGS, ret.**
- **Z Michael Bott, DNREC**
- **Z Kristen Covaleski, Inter-Fluve**
- **P Aaron Givens, DDA**
- **Z Zina Hense, DNREC**
- **Z Andrew Homsey, UD**
- **Z Douglas Janiec, Sovereign, STAC Vice Chair**
- **Z Kelly Somers, USEPA**
- **P Jennifer Volk, UD Coop Ext, STAC Chair**
- **Z Sunita Shah Walter, UD**
- **P Ed Whereat, DESG**
- **P Andrew Wozniak, UD**
- **P Chris Brosch, DDA**
- **P Judy Denver, USGS em**
- **P Mark Nardi, USGS**
- **Z Jennifer Wells, DNR**
- **Z Holly Walker**
- **Z Robin Glaser, DNS**
- **Z Ashely Barnett, DNREC**
- **Z Ashley Tabiban**

CIB Staff Attending:
- **Z Anna Fagan**
- **P Zachary Garmoe**
- **P Andrew McGowan**
- **P Nivette Pérez-Pérez**
- **P Meghan Noe Fellows, STAC Liaison**

Others Attending:
- **Z Lori Mae Brown**
- **P A.G. Robbins, Citizen Monitoring Program**
- **P Alison Rogerson, DNREC**
- **Z Marianne Walch**
- **P Richard Watson, CIB Volunteer**
- **P Summer Crosby**
- **P Nicole Gutkoerski, UD**
- **P Tianyin Ouyang UD**
- **P Ashley Norton, DNREC**
- **P Susie Ball, CIB**
- **P Mark Casey, DCS**
- **Z Alex Sorka, USGS (Speaker)**
- **Z Olivia Alred, DNREC**
- **Z Matt Parker (Speaker)**
- **Z Stephen Williams**
- **P Yun Li (Speaker)**

The meeting was called to order by Jenn Volk at 9:06 a.m. with roll call and introductions.

Announcements

1. Meghan Noe Fellows, introduction
2. Center Staffing Updates
   - all vacant positions have been filled (exception of the Executive Director)

   Ongoing Searches:
   - Executive Director - Kittleman & Associates, LLC conducting search
     - in person interviews with top two candidates conducted; a consensus on the top candidate was reached; next steps are being pursued

    - new person will start in the new year
3. Update on the BIL funding
    a. Center staff have prepared and board approved draft workplan to be submitted to EPA prior to October 24
    b. $500,000 for the HD/WQ model
    c. Full workplan to be shared with STAC
    d. Jenn Volk discusses option for coordination with other organizations getting funding.
    e. Jenn Volk discusses next steps in restarting HD/WQ model project; reach out to receive further update

Old Business

State of the Bays Report Update - *Marianne Walch, CIB*

The State of the Bays Report writing and trying to finalize. It is on schedule for release after the first of the year.

New Business

No New Business

Presentations:

Agenda changed order to accommodate speakers' needs.

Results and Discussion of the Continuous Water Quality Monitoring Network in the Delaware Inland Bays, *Andrew McGowan, CIB, and Scott Andres, UD Project WiCCED*

The Center for the Inland Bays, in partnership with Project WiCCED, has been continuously monitoring water quality at numerous tributary and open bay water sites. Dissolved Oxygen results from 2021 and the summer of 2022 will be presented. Additionally, the Center hopes to expand the network in FY23, and seeks input on future locations that are beneficial to the STAC.

Link to the presentation

Introduction

The Center for the Inland Bays, in partnership with Project WiCCED, has been continuously monitoring water quality at numerous tributary and open bay water sites. Dissolved Oxygen results from 2021 and the summer of 2022 were presented. Additionally, the Center hopes to expand the network in FY23, and seeks input on future locations that are beneficial to the STAC.

Summary

As described in this presentation, this type of system is what coupled hydrodynamic - water quality simulators were developed for.

Future Considerations on Methodologies

1. Authors were satisfied with how 305(b) methods reflect biological metrics. In future years,

"medium" impaired sites will be compared sites described here.

2. Future evaluations should consider incorporating some type of temporal restrictions on 305(b) methods e.g., 1st percentile of all data. Monitoring period from April through October, upper confidence interval value changes when data are collected year-round from a station, compared to summer only.

3. Future work should establish biologically and geochemically important thresholds. What values of hypoxia duration, magnitude (below what value), frequency too large cause adverse impacts on organisms and other water quality indicators?

4. Authors are seeking input on idea for future projects and references from other systems

Considerations for Future Locations – The Authors Suggested the Following:

1. Increase number of stations from 6 to 9 in 2023

2. Include stations at Love Creek and Whites Creek

3. Not certain of location for 9th station – Authors are seeking input

4. Authors are requesting input from STAC on possible improvements to program including laboratories.

Developing Oyster Nutrient Trading in Maryland: Will it ever payoff?, *Dr. Matt Parker, University of Maryland Extension*

This presentation will show the process used to develop a BMP for oyster aquaculture ecosystem services and give an update to what is currently happening with payments to farmers.

LInk to the presentation

This presentation described the process used to develop a BMP for oyster aquaculture ecosystem services and provided an update to what is currently happening with payments to farmers.

The Oyster BMP for Chesapeake Bay was established as follows:

1. Oyster Recovery Partnership recommends Expert Panel formation to EPA (April 2015).
2. First panel meeting –Sept 2015
3. Projected Panel End Date (Aug 2016) - But things took (much) longer than expected.
4. Panel Charges
    - Identify and define oyster practices for BMP consideration
    - Develop a pollutant removal crediting decision framework for oyster BMPs

- Propose nitrogen and phosphorus removal effectiveness estimates for oyster practices determined to have sufficient science support

The Panel Activities included:

1. Seating sixteen panel members;

2. Perform a literature review for available science
3. Examine all information including reports and unpublished data and extract necessary information
4. Evaluate information for appropriateness, and
5. Provide Independent Expert Panel Analysis of data.

Panel Recommendations were then approved

1. First report was submitted in September 2016 and approved in December 2016

2. The report included recommendations for N and P removal via aquaculture oyster tissue
3. The report was delivered by estimated deadline, but 86 “scenarios” were left to consider.

Since December 2016

1. Panel has been evaluating the other scenarios

    - N & P in shell
    - Denitrification rates
    - Sedimentation
    - Public Fishery
    - Restoration activities

2. Oyster Recovery Partnership is currently writing second report for Expert Panel review. 2nd report will focus on denitrification.

Shellfish Trades to Date include:

1. Voluntary market

    Baltimore Convention Center purchased 4 Nitrogen credits in May 2020 for $1600

2. Regulatory Market

    Anne Arundel County purchased 107 lbs Nitrogen and 12 lbs Phosphorus in June 2020 for $4,950 to offset runoff from impervious surface.

Potential Purchases by the Maryland Dept of Environment include: Clean Water Commerce Account For Environmental Outcomes (Deadline was Sept 9, 2022) and MDE provides $7 million per year to purchase N credits from agriculture for 10-20 years

Water Quality Trends on the Eastern Shore, *Alex Soroka, USGS*

> Alex will share analyses and results of monitoring efforts in the Chesapeake Bay portion of the Delmarva at USGS load and trend stations.

Link to the presentation

This presentation provided a description of analyses and results of monitoring efforts in the Chesapeake Bay portion of the Delmarva at USGS load and trend stations.

The objective of this research was to gain a better understanding of water quality trends on the Eastern shore and identify some factors affecting those trends such as:

1. Load and trend foundation
2. Comparison of the Eastern Shore to the Chesapeake Bay watershed
3. Recent and long-term trends in sediment, phosphorus and Nitrogen
4. Possible management impact/factors affecting trends

Recent (2019) sampling in Delaware shallow aquifer reveals no significant change in nitrate concentrations since 2014 in wells with agricultural type water, mixed or urban-type water.

In summary:

1. Despite long term decline, stations show increasing sediment and phosphorus loads from 2009 to 2018
2. Nitrogen loads are increasing except for the Tuckahoe
3. Management strategies are challenged by past, current inputs and the landscape

Water Quality Modeling: Lessons, Success, and New Development - *Dr. Yun Li, UD*

> In this talk, Li (Assistant Professor, UD, School of Marine Science and Policy) will review the water quality modeling in the Chesapeake Bay and other river tributaries, showcase the model applications for the assessment of water quality and ecosystem, and discuss the recent developments in modeling tool by her lab at UD.

Link to the presentation

In this presentation, Dr. Li provided a review of the water quality modeling in the Chesapeake Bay and other river tributaries, including the model applications for the assessment of water quality and ecosystem. She also discussed the recent developments in modeling tools at the University of Delaware. Her presentation was quite detailed; it is recommended that the actual presentation be reviewed for details.

In Summary, it has been found that Nutrients and winds are responsible for changes in hypoxia seasonality. A

Coupled ROMS-RCA model can provide the following:

1. resolve synoptic variability that is not captured by observations;
2. isolate climate- and human-induced effects on DO;
3. understand and predict ecosystem shift; and
4. inform nutrient management and fishery habitat assessment.

Round Robin Updates - updates from Center staff and ALL STAC members on current or upcoming projects or initiatives

No comments (ran out of time)

Link from the Chat:

Marianne Walch, CIB emeritus

1. RE: Nutrient Crediting `Link to the expert panel report: https://d18lev1ok5leia.cloudfront.net/chesapeakebay/documents/Oyster_BMP_1st_Report_Final_Approved_2016-12-19.pdf`

Open – Discussion regarding preferred meeting dates and times in the coming year; general consensus around Friday mornings

Upcoming activities at James Farm for Halloween. <activity is now past>

Adjourn Meeting adjourned at noon

Next Meeting: To be scheduled in annual work planning.