SCIENTIFIC & TECHNICAL ADVISORY COMMITTEE

Notes

DATE & TIME: *August 11, 2023 -- 9:00 a.m. to 12:00 p.m.*

VIRTUAL MEETING: Zoom: https://udel.zoom.us/j/94861776056; Passcode = science

Phone: 1-646-876-9923; Meeting ID: 948 6177 6056

Attendance: 44
STAC (19)
CIB (9)
Guests (16)
(Attendance list at the end)

AGENDA ITEMS

Call to order, Welcome, Introductions - *Jenn Volk, Chair*

Announcements - Meghan Noe Fellows, CIB

Center Staffing Updates

Taylor Hoffman – Science and Restoration Intern

Zach Garmoe and Andrew McGowan – have left CIB so recruiting for these two positions, please share. Position descriptions can be accessed using the following link https://www.inlandbays.org/about/employment/.

Old Business

Environmental Monitoring Plan Update, Meghan Noe Fellows, Center for the Inland Bays

- Discussion of interest in forming a standing sub-committee to address priority recommendations and remove unneeded metrics, making the EMP a living document that can drive the SOB 2026. Reach out to either Jenn or Meghan if interested in this continuous effort.

RFP for Hydrodynamic Model Development, Meghan Noe Fellows, CIB

- RFP development and process for final review

- Work was on track for this fall, but staffing issues, have caused delays. Ad hoc committee is working and there is still funding.

Update from the Wastewater Planning Subcommittee, Bryanna Lisiewski, CIB

Nutrient Budget work focusing on nitro 2011- 2021 for each location. Reports missing, but have been coming in; almost all pdf so need to convert to Excel. Scott Andres has preliminary formulas set up for the calculations. Moving forward.

Update from the Nearshore Impacts of Offshore Wind Subcommittee, Mark Nardi, USGS

Understanding impacts of cable routing from offshore to grid connection and prepare ready responses for use during the permit processes. CIB, academia, etc. Mark thanked Meghan for keeping the committee on task. Subcommittee meetings are open to the public. Committee members met with US Wind and will meet with Orsted to better understand the processes. Identified areas of concern to date include – electromagnetic effects, water temperature, overland routing issues, sediment modeling and possible remobilization of contaminants currently in the soil if moved

around. Ashley Norton noted that public comment for the notice of intent for BOEM's Central Atlantic Wind Areas is currently open: https://www.federalregister.gov/documents/2023/08/01/2023-16313/notice-of-intent-to-prepare-an-environmental-assessment-for-commercial-wind-lease-issuance-and-site

New Business

New Member Presentations

Dr. Leslie Baggett - AKRF a leading environmental, planning and engineering consulting firm

She reviewed her education and experiences. Working on Offshore Wind effects on benthic resources. Also working on Tribeca Habitat Enhancement Monitoring, Hudson River Park Trust, implementation of EFH Mitigation Plan for New Jersey Wind Port, developing SAV mitigation plan for the Port of Albany expansion project, final report for Governor Mario M Cuomo Bridge benthic monitoring program and a year 2 report for New York's FiDi Biological and Habitat Sampling program.

Dr. Mollie Yacono – Research Coordinator & Environmental Scientist V, Climate, Coastal Energy, Delaware National Estuarine Research Reserve, Delaware Coastal Management Program with DNREC's Delaware Coastal Programs section

Coastal nitrogen cycling is an area of interest, especially role of non-native marsh grass (Phragmites australis) on coastal nitrogen cycling. Other projects include, nitrogen assimilation along the coastal urban landscape and STEM (K-12). Works with National Estuarine Research Reserves (31 identified in US). Applied research: current project in the area: Green Bulkhead – Little Assawoman Bay; upcoming project is Benthic Macroinvertebrates – working with DNREC Wetland and Waterways section. Marina regulations require a benthic community assessment from location of future marina or published data from a representative project site. Purpose of this project is to update the representative data available to better inform marina regulatory decisions.

Welcome to both new STAC members whose expertise and interests will enrich the committee's efforts.

The Delaware Targeting and Planning Tool (DTAP), Brittany Sturgis, DNREC

Brittany described the Delaware Targeting and Planning Tool and how it can potentially be used to support restoration efforts in the Inland Bays Watershed. An important goal is to accelerate water quality improvements to address that most of the state has impaired waterways over TMDLS. Water quality improvements can be accelerated by understanding background/baseline loads, modelling impacts of current Best Management Plan (BMP) and evaluating impacts of potential and future BMPs to get closer to TMDLS.

Using the Chesapeake Assessment Scenario tool (CAST) which is a web-based nitrogen, phosphorus and sedimaent load estimator tool where users specify a geographical area, and then select BMPs to develop plans to meet goals. The work has been on how to customize to meet DE's needs.

The Delaware Targeting and Planning Tool (DTAP) is a Delaware specific tool that can help model background loads and identify BMPs to achieve water quality standards. It can model edge of stream nitrogen, phosorphous, sediment and bacteria outside of the Chesapeake portion of DE. This is a modeling and monitoring tool to understand trends and assess if heading in the right direction. It is not a regulatory tool. Monitoring tool and understanding trending and if heading in the right direction.

There are several major differences between DTAP and CAST – evaluating impacts to local streams (TMDLs) vs. bay wide, modeling statewide and a various scales, model nitrogen, phosorphous, sediment AND bacteria, and simplified, condense list of BMPs. Olivia Devereux's CIB STAC presentation 2/16/2022 provided details on the modeling. There is a DTAP BMP guide currently being developed to help users select the correct BMP.

Other ways to utilize DTAP include – quantify cumulative impacts of BMP implementation, look at trends towards meeting TMDLs (WIPs, PCSs, etc.), pollutant hot spot analyses, and analyze land use change. The opportunities are endless.

Next steps are continuing the testing of Phase 1 to look for and work out any bugs and beginning Phase 2 to create an optimization tool that identifies optimal BMPs to improve water quality in a cost-effective manner; development has just begun and current contract extends to 2025.

Comments:

- Christophe Tulou, said that CIB is willing to be a partner on testing this modeling tool as it is rolled out.
- Deb Jaisi – asked a question about what type of phosphorous and the response was it is total phosphorus.
- Jenn Volk - testing is still important. Reaching out to partners to see if tool is meeting needs.
- Aaron Givens put in the chat that a few people at DDA that would be interested in being able to test and use the DTAP model. Brittany responded to contact her if interested . (Brittany.sturgis@delaware.gov)
- Meghan Noe Fellows mentioned that there is a DNREC resource for tracking forest/ forest adjacent BMPS: https://dnrec.alpha.delaware.gov/tedi/

Coastal Resilience Panel - Panelists Christophe Tulou (CIB), Ashley Norton (DNREC Coastal Programs Section), Danielle Swallow (UD Sea Grant), Rahm Mohan (Anchor) STAC member; private industry, and Will Helt Nature Conservancy (TNC) shared their insights and perspectives regarding collectively managing for resilience under changing conditions and how the Center should consider prioritizing living resource and shoreline restoration projects in Delaware's Inland Bays.

Panelists □ Questions	Christophe Tulou CIB)	Ashley Norton (Program Manager; Delaware Coastal Management Program	Danielle Swallow (Delaware Sea Grant)	Ram Mohan (Anchor QEA, LLC -private industry), local resident	Will Helt The Nature Conservancy (TNC)
How do you define resilience or what does resilience look like to you?	The ability to take a punch and stand up and function afterwards. For CIB that looks like living shorelines, restored salt marshes, longer term – room to roam; natural system to continue to exist unencumbered by artificial boundaries created by development around our shorelines	Community Resiliency - empowering and helping communities to build capacity to respond and bounce back. Larger framework of working with state and federal regulations and resources – helping to get resources to the communities. Resiliency is also equitable distribution of resources	Coping with change and disruptions; trying to minimize length and severity of disruptions	Many ways to assess resiliency and many tools; looking at co-benefits. Engineering with Nature (EWN) is one of the newest ways to evaluate benefits and see what works best with nature	Maintain and adapt productive ecosystems and communities. Helping bounce back through the lens of individuals, communities, infrastructure, and our natural coastal ecosystems
How do we collectively manage for resilience under changing environmental	First step is to predict and understand our vulnerabilities to the multiple impacts of climate change	Focus on the collectively. Important state networks already to prevent duplication.	Can't uncouple resiliency from natural, social, physical, economic; need to think in comprehensive	Use EWN to give nature a better chance of self-healing. Define and assess threats and what is	Ecological perspective one broader approach is preserving the stage vs the actors. Site

conditions?	directing our attention, policies at all levels of government and resources at all levels of government. Begin with places most vulnerable, economic and social risks. All hands-on deck challenge; scientific and technical questions and very much behavioral question and layer on political and economic effects. Understand the problem and then investing in the behavioral side to resolve the problem together. Need to plan for effects and insults of climate change and need holistic approach since DE not so large/complex and we are smart enough.	Examples: RASCAL; Delmarva groups. Not many long-term plans that everyone can plug into. Planning needs to take into account economics, science and political will.	way and playing attention to the future conditions. Adaptive in our approaches. Move forward understanding risk thresholds better – physical and social. How many day per month of flooding too much; identifying tipping points. Windows of actions. Lots of social science techniques needed to find out about risk thresholds. Need to talk with people.	acceptable in terms of loss. How do we plan well and put back systems/land masses, etc. Consider developing "master plans" to look on a system-scale and to determine where nature needs help and what can we provide to affect positive change. A modification of USACE and ERDC's Natural Infrastructure Opportunities Tool (NIOT) can be used in DE. Use system wide/holistic approaches.	resilience rather than ecosystem resilience. Which geological or geophysical conditions were real drivers for productivity and biodiversity and how to preserve those areas. Preserve this stage; Attributes that help adaptation to changes.
How can resilient wetlands help	DE at risk of losing all tidal and non-tidal		Nature is our best defense against nature.	National guidance on Thin Layer	

maintain and/or prolong the health and resilience of coastal communities?	wetlands		Functioning and fully intact natural flood plain is a wonderful resource. There are so many co-benefits, but need to be healthy and not degraded; need to communicate this more widely	Placement of Dredged Material to restore and protect wetlands will be published soon. Minimal interventionalist techniques would allow wetlands to self-heal. Number 1 tool in the toolbox. Outreach and Education is important at all levels.	
What actions can we take to build the political will to add resilient wetlands?	Living shorelines are amenity and community resources. Economics is key element to make case with robust science to make political case. The behavioral side needs further efforts. The value of the water property will drop to zero and the insurance industry may not invest anymore, so need to acquire and plan for investing to allow natural system to evolve and	Education opportunities for neighborhoods; HOAs important. Many examples of pilot projects	"State managed wetlands" need to be rebranded as community infrastructure. The avoidance of property loss is important conversation.		Quantify co-benefits of the wetlands which will even balloon the benefits which will drive further investments

	migrate.				
What policy, incentives, or language could be put in County or town ordinances or HOA charters to encourage nature-based solutions?	Challenge to change/educate and accept trees and wild lands rather than manicured lawns. Nature based solutions are gaining in awareness and support	Regulatory vs participatory disconnect. Fill for development vs fill for restoration change in view needed. Wetlands maps for regulations are based on the 1980's. Restrictions in the laws to making changes	Need codification for personal ownership of the wetlands. HOA are independent and management of nature-based infrastructure is not a skill. HOA often inherit the situation. ¾ of Sussex County is in unincorporated Sussex and this is a challenge	Need clearer policies on what can and cannot be done. Relook at communities and what exists and what should be done in terms of stormwater management. Focus on overall benefits to community rather than distractions over microscopic aspects or personal preferences There are barriers to beneficial use of dredge materials. Gridlock exists at many levels with protecting resources resulting in confusion over the intent of project and associated long-term benefits. Both national and state agencies need to proactively promote habitat	

				restoration projects. Need to codify co-benefits	
What financial and educational resources are needed?	Need resources to be creative. Creative loss in current situation. The will is a challenge as well as capacity. Encouraged by new law. Another impediment is cost for DNREC to do the job; gradual but persistent decline in funding.	Good experience in doing background work. Not so much in the actual work. However, the actual updates will be helped by the most recent climate legislation and Climate Action Plan. State capacity is very stretched. Notices everyday, but capacity to apply and implement is not always there. Need for strategic planning. Going to have hard future choices DNREC is working on updating vision	State would benefit from articulating vision for climate resiliency and adaptation. Seems like more "knee-jerking", but holistic and strategic planning which all are working from isn't the case; common vision needed.		
How to codify without enforcement?	Comprehensive land use plan and enforcement at the state level needed. Home rule is very				

	strong and many failures of comprehensive planning. Work on this issue coming				
What actions can we take to remove barriers to community acceptance?					
If you were given 50 million dollars, no strings attached, how would you invest it towards improving coastal resilience in the IBs?	Establish a resilience fund is a good idea	Comprehensive flooding data base needed Social science, including economics; think about economic injustice as part of economic analysis. Understanding values	Establishing a resilience fund for unincorporated areas (HOAs, e.g. and the county)	Mosaic of things to restore developed as a master plan, and a specific plan to implement elements over time. Visioning efforts – how to make it more natural, restore, etc.	Staffing up is a priority – state, local and nonprofits. More bodies on the ground to get the work done

Open

- Anna Fagan - Decked Out – Thu Sep 21 – Hyatt's Place https://www.inlandbays.org/events/decked-out-2023/
- Christophe Tulou - Vacancy on the Board with Susie Ball's Passing; recommendations welcome.
- Mollie Yacano (DNREC - Coastal Programs) Delaware National Estuarine Research Reserve (DNERR) hosting Estuary Expo (https://dnrec.alpha.delaware.gov/coastal-programs/estuary-expo/) on Sept. 18 and 19 at St. Jones Conference Center 818 Kitts Hummock Rd. Dover, DE 19901. Registration is now open
- Danielle Short - *Coast Day* – October 1 11am-3p, in Lewes, Pilottown Road. https://www.udel.edu/ceoe/community/coastday/

Next Meeting: October 20, 9:00am to 12:00pm, Hybrid - Dover or Lewes?

No one expressed an interest in either physical location. Best attended meeting was this meeting. Meghan Noe Fellows suggested STAC consider two virtual and two in-person for 2024.

Adjourned at 12:02pm.

Attendance *August 11, 2023 -- 9:00 a.m. to 12:00 p.m.*

STAC Committee Members (19)
Andres, Scott
Baggett, Leslie
Bott, Michael
Coveleski, Kristen
Givens, Aaron
Hense, Zina
Jaisi, Deb
Janiec, Douglas
McKenna, Tom
Mohan, Ram
Nardi, Mark
Norton, Ashley
Shepherd, Roger
Simmers, Claire
Somers, Kelly
Volk, Jennifer
Watson, Richard
Whereat, Edward
Yacono, Mollie

CIB (9)
Collins, Bob
Fagan, Anna
Fritz, Gabriella
Lisiewski, Bryanna
Noe Fellows, Meghan
Hoffman, Taylor
Perez-Perez, Nivette
Schmidt, Michelle
Tulou, Christophe

Guests (16)
Barnett, Ashley
Brown, Lori, DE DNREC
Callahan, Julie
Chamberlin, Rick – Sussex citizen
Coverdale, Ben DNREC Nonpoint Source Program
Davis, Dave Dewey Beach Climate Change Committee Chair
Dulany, Lissa Sussex citizen
Helt, Will (panelist) – The Nature Conservancy
Mark, Hogan, DE DNREC
Mencer, Amanda Sussex citizen
Palm-Forster, Leah
Robbins, A. G. Citizen's Monitoring Programs
Swallow, Danielle (panelist) UD Sea Grant
Sturgis, Danielle (Presenter) DNREC Watershed Stewardship
Walker, Holly DNREC Conservation Programs Section - Chesapeake Implementation Program
Williams, Stephen DNREC Division of Watershed Stewardship, Watershed Assessment & Management Section