Scientific, Technical Assessment and Reporting (STAR)
Meeting
Theme: Improving Chesapeake Bay Program (CBP)
Monitoring Networks

Thursday, August 26, 2021
10:00 AM – 12:00 PM

Join by Webinar
Meeting Number: 120 066 1798
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Meeting Materials:
https://www.chesapeakebay.net/what/event/scientific_technical_assessment_and_reporting_star_team_meeting_august_2021

This meeting will be recorded for internal use to assure the accuracy of meeting notes.

Action Items

- ✓ Marisa Baldine will reach out to Scott Phillips, Mark Bennett, and Julie to discuss what science components to highlight in a blog about the Climate Directive.
- ✓ GITs/workgroups can reach out to Breck Sullivan to update their monitoring science needs and state their priority need.

AGENDA

10:00 **Welcome, Introductions & Announcements – Bill Dennison** (UMCES) and **Scott Phillips** (USGS)- STAR Co-Chairs, **Peter Tango** (USGS) Co-Coordinator

Upcoming Conferences, Meetings, Workshops, & Webinars-

- CERF - November 1-4 and 8-11 2021.
- American Fisheries Society - November 6 - 10, 2021.
- A Community on Ecosystem Services – December 13 – 16, 2021. Bonita Springs, FL.

10:10 **Communications Update – Marisa Baldine** (CRC)
She announced some of the C-StREAM interns will be contributing their work for blogs in the next coming months. Bill Dennison said the Chesapeake Research Consortium Round Tables on intern presentations were really interesting and are available here. Two interns for the Climate Resiliency Workgroup (CRWG) presented in depth presentations during the last CRWG meeting, and minutes are available here.

The Blog about the DEIJ Implementation Plan can be accessed here. They are excepting comments until September 27th. She encourages members sending it out to their networks.
https://www.chesapeakebay.net/news/blog/the_chesapeake_bay_program_releases_its_diversity_equity_inclusion_and_just

Renee Thompson commented there are over 20 pages of tasks and actions outlined in the draft DEIJ Implementation Plan some of which are directly related to how CBP, the Diversity Workgroup, Comm team, and workgroups and GITs will / should implement the plan. The DEIJ implementation plan directly impacts our work going forward, so please read it and give comments. Think about what these implementation tasks will look like for each team, are they feasible, what can improve them, are the correct partners listed?

The Communications Team plans to release a blog during the holidays with Chesapeake Bay book recommendations from CBP employees. If anyone would like to suggest a book for updated suggested reading, please email mbaldine@chesapeakebay.net with name, job title, book title and favorite quote or a short (1-3) sentence explanation about why they love the book.

Marisa Baldine stated they include press releases and blogs in our daily newsletter (Chesapeake Bay News) and reports in our weekly newsletter (The Bay Brief). Always feel free to send reports, press releases and blogs to her at mbaldine@chesapeakebay.net.

The Executive Council (EC) meeting is on October 1st at the Bronc Environmental Center. Due to COVID, it will be a virtual meeting except for EC members and their staff. The focus is on the Climate Directive. Scott Phillips suggested the Communications Team write a blog on the science components for the Climate Directive. Marisa Baldine said she can reach out to him, Mark Bennett, and Julie to see what they would like to highlight in the blog.

Tom Parham announced the July hypoxia numbers. For early July, it was the 7th best, and for late July, it was 8th best.
https://news.maryland.gov/dnr/2021/08/24/chesapeake-bay-hypoxia-report-july-2021/

Scott Phillips announced USGS every year updates the River Input trends and loads. They are finalizing it, and it should be released in September. It is for loads through 2020. They are also finishing up a story map that ties together five papers on toxic contaminants and endocrine disrupters. It will be ready in September too.

Bill Dennison shared paper Raleigh Hood is an author on titled, "The Chesapeake Bay program modeling system: Overview and recommendations for future development" Hood et al., Ecological Modelling Vol. 456. Sept 2021.

10:20 **Progress on gathering monitoring information for enhancing CBP networks - Peter Tango**

Peter will provide an update on information being gathered for the PSC to improve the CBP monitoring networks (Tidal, Non-tidal, SAV, Benthic, Citizen Monitoring). The update will focus on (1) improvements to address the Standards Attainment and Monitoring Outcome, and (2) potential opportunities to improve monitoring for other CBP outcomes.

Peter Tango shared the spring assessment of status and vulnerabilities of existing networks is complete. The team is making progress on gathering information on innovations, financials, and sustaining networks. They will so move to evaluating limitations and financials for adopting innovations.

Peter shared the information gathered for each of the existing CBP monitoring networks. For the Tidal Water Quality Monitoring Network, high frequency dissolved oxygen (DO) monitoring design is one of the larger issues and needs more time to get the foundations in line. They want to wait for the test project to be completed first. Peter also needs one-on-one time with agencies to get more detail on the financial side of the tidal network.

Nontidal Monitoring Network is sustaining what is outlined in the grants for the near-term, but there are some unplanned losses of stations. They will need to address the challenges because in the long-term they will not be able to sustain the network.

Through multiple workgroup discussions, the spring sampling for the benthic monitoring network does not have support. The states are well positioned in grants to continue their summer sampling in the near-term.

Submerged Aquatic Vegetation monitoring network is exploring satellite assessment. More information on this topic will be shared at the Advanced Monitoring Scientific and Technical Advisory Committee (STAC) Workshop in December.

The community science monitoring doesn't have any requests. There grant was recently refunded for six years. They do collect data that may be helpful for other monitoring needs of CBP outcomes.

Peter provided a list of monitoring needs that go beyond the water quality networks. The list is from gathering information from various workgroup meetings and requests from CBP outcome leads. Peter asks for representatives of other CBP outcomes to review the list and state if anything is missing from it.

Questions and Comments:

Bill Dennison stated in the CESR report they note there is a gap in the transition zone, the shallow waters. He asked if Peter has discussed the need for a better shallow water monitoring program. Peter stated the shallow water monitoring program doesn't give the perfect protocol for shallow water assessment, but it has provided a lot of insight. The CBP modelers are building the shallow water information in their Phase 7 model. It would be helpful to know what more they need for the shallow water monitoring.

Peter Tango commented one of the challenges of gathering the needs are they are there, but the detail needed to put a program or cost together is not provided. Scott agreed. He also stated that the leadership team is not looking for the same amount of detail for the other CBP outcome monitoring needs as they are for the existing monitoring networks. They are looking for a CBP outcome's prioritized monitoring need to present to the PSC.

Kathy Boomer suggested developing monitoring that directly informs or ties to a management action. Shape monitoring to help mitigate a problem. Scott Phillips agrees with Kathy's comment. They want the monitoring needs to be closely tied to CBP outcomes and environmental changes related to associated management actions.

10:50 **Discussion of information needed for enhanced monitoring for other CBP outcomes – Peter Tango, Breck Sullivan** (CRC) **& Scott Phillips**
Based on Peter's overview, we will engage the GITs on other CBP outcomes that could be part of the enhanced monitoring recommendations**.**

1. Breck consolidated monitoring gaps identified through the CBP Science Needs Database. She will provide a short overview of how it addresses question #4 in the PSC review and how other CBP outcomes may provide input. (What gaps need to be filled to improve the CBP monitoring networks to address management information and decision-support needs?).

   Homework Assignment:
   - Review needs in Science Needs Database
   - Update science needs with any monitoring gaps missing
   - Update language of current monitoring needs to include utility and urgency of need
   - Consider any synergies between monitoring needs and existing monitoring data
   - Contact Breck Sullivan (bsullivan@chesapeakebay.net) with updates and comments

The science needs compiled are characterized into needs for the existing monitoring networks, Cross-GIT science needs connected to the existing monitoring networks, and science needs that go beyond the water quality network. These needs include efforts to collect data but also analysis and synthesis. The science needs for the existing science needs were represented mainly by the Water Quality Standards Attainment and Monitoring Outcome (WQSAM) along with the SAV and Stream Health Outcomes. The Cross-GIT monitoring science needs may be supported by existing monitoring data or future data from the water quality networks. For the PSC deliverables, the team is also interested in the monitoring needs of other CBP outcomes. Some of these needs were located in the database, but not all the needs identified through current workgroup discussions are captured in it. We need the representatives of the other CBP outcomes to identify what are their monitoring needs and prioritize which one should be highlighted for the PSC.

Questions and Comments:
Bill Dennison asked why the science needs discussed are not in the database. Breck Sullivan stated most outcomes update their science needs every two years during the Strategy Review System (SRS) process. During these two years new projects and questions may come up and are not directed to be put into the database. The science needs may be updated at any point, but the main touch point is every two years. Kristin Saunders shared when the Strategic Science and Research Framework was created, it was meant to capture long and short term. Many folks may be focused on it only when they go through their SRS quarterly review. We just need folks to double back to the database, because the CBP uses it for all types of resourcing.

2. The next step is a GIT (or WG) would have to develop a 2-page summary of potential enhanced monitoring for the outcome and should include six items. The information being requested for the monitoring strategy includes:
    - Need for a network (relation to CBP goals and outcomes)
    - Network objectives
    - Monitoring design considerations (media, frequency, sample number, method – field and analytical, locations – targeted, random), will be informed by objectives.
    - Existing monitoring that can be utilized (what is being done, partners involved, current resources, and what could be leveraged (if possible))
    - Remaining gaps
    - Options to address the gaps. (This would be general, not a detailed network design but could have funding estimates).

    The 2-page summary should also address items in the Science Needs Database. Scott will provide an example of the draft Discussion Paper the Toxics Contaminant Workgroup has developed.

Scott Phillips provided an example from the Toxic's Contaminant Workgroup on answering the above questions. There is no formal monitoring for contaminants through the CBP. They have needed to rely on state programs and other federal and academic institutions. Some guiding principles they used to help discuss designing new monitoring include prioritizing the contaminants to be addressed, making the monitoring objective specific, and taking advantage of ongoing monitoring as a foundation for a network because there will be limited CBP funding. They prioritized PCBs and Emerging Contaminants based on workgroup voting. Their next meeting will focus design considerations. These points should be broad such as establishing the media. They will continue to answer the above questions to create the 2-page summary for the PSC.

Questions and Comments:
Lee McDonnell stated many local TMDLs that were completed for PCBs rely on natural attenuation as the remediation mechanism. Monitoring efforts should be divided/categorized between local PCB TMDLs with active remediation and those that rely on natural attenuation. Peter Tango commented that would be a good narrowing of where to do what monitoring.

Bill Dennsion mentioned cost was not included in the presentation. Scott Phillips said that is a challenge because to come up with a reasonable coast, the monitoring design needs to be well thought out. They decided to keep the design considerations broad because they do not expect to get funding from the CBP or through this PSC effort. Scott agrees they should state that PCB monitoring is expensive in the PSC summary and provide some relative costs.

Kathy Boomer asked if they have considered prioritizing the monitoring needs by the scope of risk or threat to the Bay community. Scott Phillips said the threat angle was that PCBs contribute to fish consumption advisories. Kathy Boomer said they communicated the threat but did not do it in a way to prioritize the threat. Scott said it would be challenging to weigh one threat versus another. Kathy Boomer also suggested forming a monitoring network that informs management.

Bill Dennison asked what is the connection between microplastics and toxins. Scott Phillips said there is limited research to answer it. It is more of a research question than a monitoring question.

Discussion:

- Each Goal Team will identify the outcomes they would like considered for the PSC effort.
- Each Goal Team will discuss which of the items in the science needs database could be addressed.
- Each Goal Team (or WG) will identify if they plan to contribute a 2-page summary.
- Based on the discussion, the GITs and STAR will have a better understanding of the number of outcomes and their needs that could be considered in the PSC request to enhance monitoring.

Kristin Saunders asked if there is anything coming up in the STAC CESR report that should be added to this list? Peter Tango commented they are presenting a similar update to STAC in September. The team is moving toward evaluation now of potential new innovations to improve spatial and temporal representation of different parameters. Peter understands the CESR work has some complementary insights on options for innovations, so they are looking forward to having these two worlds brought together more completely.

Renee Thompson commented the Healthy Watershed Goal Implementation Team (GIT) suggested investigating the potential to harness community-based monitoring. It would be ideal to coordinate monitoring in stream with landscape monitoring to aid in making connections between what they are seeing on the landscape and how that is related to stream conditions. What the states need is resources. She reviewed her notes and email from their contractor for the MD Healthy Watershed Assessment. These are the metrics either in development for MD or part of the whole Chesapeake Healthy Watershed Assessment that rely on monitoring or modeled monitoring results:

- Flow alteration score (USGS gage data and modeling)

- 6 candidate geomorphic metrics (combination of remote sensing data and modeling analysis):
    - Streambank lateral erosion
    - Streambank change (m2)
    - Streambank sediment flux – incorporates bank height, lateral erosion, and bulk density
    - Streambed D50
    - Streambed fine sediment cover
    - Streambed fine sediment + sand cover
- MBSS Stronghold Watersheds (developed from MBSS monitoring data) Conductivity (developed from field data and modeling)
- Recent Forest loss (Hansen data, from remote sensing imagery – a different type of monitoring)

Justin Shapiro commented for the Fish GIT their partner interest in phtyo/zooplankton monitoring. Bruce Vogt said they have heard a need for more forage information, chl, turbidity and HABs.

Kathy Boomer suggested focusing on how flow has changed in the waterways. Flooding is a major concern to the Local Government Advisory Committee. It is not just documenting those changes but assessing how to manage the changes.

Kristin Saunders asked if there has there been any thought to holistic monitoring in specific sites where we know concentrated efforts for conservation or restoration are planned to at least see in those priority places we expect implementation to surge, whether or not the interventions are having the intended effect (for multiple outcomes)? Scott Phillips said NRCS wants to enhance monitoring in places of high implementation of conservation practices to better document water-quality benefits. Denice Wardrop states spatial targeting is a big issue across the boards, both in action and monitoring.

GITs/workgroups can reach out to Breck Sullivan to update their monitoring science needs and state their priority need.

12:00 Adjourn

Next Meeting Dates: September 30th, 2021 (Healthy Watersheds Cohort Science Needs Meeting)
Note: STAR meeting was moved from the 4th Thursday of the month to the 5th Thursday to accommodate the September Management Board meeting.

Participants: Breck Sullivan, Scott Phillips, Peter Tango, Bill Dennison, Marisa Baldine, Katheryn Barnhart, Megan Ossmann, Gary Shenk, Mark Nardi, Chris Guy, Kathy Boomer, Karl Blankenship, Katlyn Fuentes, Liz Chudoba, Mark Bennett, Stephen Faulkner, Amy Williams, Caroline Johnson, Julie Reichert-Nguyen, Justin Shapiro, John Wolf, Kristin Saunders, Tom Parham, Carl Friedrichs, Denice Wardrop, Ken Hyer, Garrett Stewart, Renee Thompson, Lee McDonnell, Emily Bialowas, Dave Parrish, Doug Austin, Carin Bisland, Bruce Vogt