Scientific, Technical Assessment and Reporting (STAR) Meeting

Thursday, August 27, 2020
10:00 AM – 12:30 PM

Meeting Materials:
https://www.chesapeakebay.net/what/event/scientific_technical_assessment_and_reporting_star_team_meeting_august_2020

Minutes

10:00 **Welcome, Introductions & Announcements – Bill Dennison** (UMCES) and **Scott Phillips** (USGS)- STAR Co-Chairs, **Emily Trentacoste** (EPA) and **Peter Tango** (USGS), STAR Co- Coordinator
Bruce mentioned that July temperature was higher than average. In July, 28 out of 31 days, the temperature was higher than 90 F. Hypoxia volume is higher than average. August result will be available early next week and Bruce anticipated the hypoxia volume is better than average.

10:05 **Stream Temperature Data and Potential Uses toward CBP Outcomes – Julie Reichert-Nguyen** (NOAA), **John Clune** (USGS), **Renee Thompson** (USGS), **Nora Jackson** (CRC)
Stream temperature information is important to inform several CBP outcomes. The agenda item will have several inter-related discussions.
-Julie will provide an overview of the Climate Resiliency Workgroup's stream temperature indicator and the possible inclusion of the stream temperature database to update the indicator. (Link to presentation)
-John will present progress of a current USGS project to collect stream temperature data across the watershed and potential applications of the data. (Link to presentation)
-Renee, Nora, and John will provide examples on the application of the stream temperature data for Healthy Watershed outcomes. (Link to presentation)
Expectations for STAR: we will discuss how these data may help inform other goals and outcomes and provide suggestions on the science questions the stream temperature database can inform.
Discussion:

- Liz commented that there are a lot of other citizen monitoring datasets that could be included in this analysis through the CMC that haven't made it to the WQP yet.
    - Emily added that she is working with CMC to explore the ability of citizen science groups to fill data gaps for various CBP indicators - this could be a good example. She recommended Liz, John and Peter Tango to connect on this.
- Bill Dennison asked if there are stream data for brook trout annual temperatures or seasonal (summer) temps? He asked if stream data include

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mainstem rivers. How important is riparian canopy cover in the stream temperature data?
    - Renee Thompson mentioned that Brook trout habitat data source is here. https://nalcc.databasin.org/datasets/7f3aaf6f9c59423391eb5a1526f28beb
- Bruce Vogt suggested connecting with Steve Faulkner and Gina Hunt to see if there are any connections to the freshwater habitat assessment USGS is developing.
- Bill commented that some stream temperature data has a decreasing trend. Julie responded that this is very interesting question and Nora and Renee's analysis can provide additional information on this.
    - Mark Bennet added that his team had looked at data of stream gauge trend and correlation. Factors like land use, shading upstream, reservoir discharge, percent urban area are correlated with decreasing stream temperature.
    - Bill asked if they have looked cloud cover and rainfall.
    - Mark responded that some of the data is hard to get and they are looking at long term trend.
- Scott mentioned that they are working with Brook trout action team to see how to utilize the data.
- Kathy Boomer expressed concerns with the healthy watershed concept because it lacks instructions on how to manage and mitigate the impact on the system, which could lead to broad concern with ag and development without thinking about practices on the ag land. She suggested finer detailed stream maps and look at land use and stream conditions and vegetation cover.
- Bruce asked if there are correlations between stream flow and temp to consider with climate projections indicating higher flow with increased precipitation.
    - Julie mentioned that one way to investigate is to correlate with CRWG precipitation indicator.
- Michael Kolian asked if the team would consider using modeling to fill in gaps, extend reaches like nearest neighbor catchment- similar to NORWEST.

11:05 **Shallow water use series: "Expanding Virginia's oyster industry while minimizing user conflict" – Jim Wesson** and **Roger Mann** (VIMS)

Speakers for this presentation will provide an overview on how they are tackling the issue of use conflicts in the nearshore around shellfish aquaculture. This is one talk in a series exploring nearshore use cases involving aquaculture, oyster restoration, wetlands, living shorelines and SAV.

Expectations for STAR: we will discuss science needs related to these issues.

Discussion:

- Jim and Roger believed that aquaculture can coexist with SAV.
- Bill Dennison asked why the recent dip in harvest in all categories.

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- Jim responded that heavy rainfall in late 2019 and production rate growth rate is decreasing with low salinity.
- Bruce Vogt asked the distinction between replenishment and restoration? Is maximizing ecosystem services (nutrient removal and fish habitat) factored into replenishment or just oyster n/biomass/shell? How might aquaculture operations look different in unproductive areas (for example more floating cages)?
- Jim responded that floating cages is possible.
- Bruce asked if Jim has overlayed depth thresholds for SAV or existing SAV maps with the "offshore Baylor grounds" to if there would continue to be overlap under your proposal.
- Bill D asked if part of the reluctance to change is a generational issue? It seems to him that young folks driving shellfish aquaculture.
- Bruce Vogt asked if it's possible the aquaculture operation (more oysters and stucture) actually help SAV colonization.
- Bill Dennison commented that he had heard from aquaculture folks that they believe their structures are attracting SAV.
- Bruce Vogt asked what ecosystem services have been quantified for the cage operations.
- Bruce asked what implications could the new oyster aquaculture BMP have on industry growth and your analysis? and consider the pending oyster restoration BMP.
- Brooke asked what actual concern is regarding harvesting aquaculture oysters in areas where SAV has returned? What is the potential damage that would occur to the SAV if that area is harvested? Why is it regulated in the first place if it appears there's no actual conflict or impact?
- Jim responded that the regulation will not change until experiments results proves that aquaculture have no impact on SAV. Most clam production within tidal area and barely have any conflict with SAV because of the depth and heat.
- Sean commented that Jeremy Testa and Cassie Curbisz are conducting a BACI designed study to investigate this issue in MD.
- Bruce commented that there have been some studies on ecosystem services and interactions with SAV. Also see ASMFC doc. http://www.asmfc.org/files/Habitat/HMS16_Aquaculture_May2020.pdf
- Brooke commented that Erin Shields at VIMS is doing a similar study in Va. as well.
- Sean commented that there is a concern that the cages will either be placed on top of or over shadow i.e. shade out SAV growth. Ironically, many folks suggest SAV may improve in areas where aquaculture is practiced creating a bit of a catch.
- Bruce asked if there is a role for the Bay Program or STAR in helping with this issue.

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- Kristin commented that the series will help us continue to learn from each other on how to manage shallow water issues comprehensively.

12:05 **Next Steps on GIT funding topics for 2020 and topics important for Climate Resiliency: Scott Phillips** (USGS) and **Julie Reichert-Nguyen** (NOAA)

Scott will provide STAR with an update on the GIT funding progress. Julie will provide STAR with the perspective of the climate resiliency WG for the GIT Funding proposals and explain the connection with climate needs.

Expectations for STAR: gain a better understanding of how RFP topics are addressing climate issues of each Goal Team.

Scott commented that there will be a new scoring procedure and the top priority from each GIT will be automatically funded.

12:20 **Chesapeake U: Denice Wardrop** (CRC)

Undergraduate students are facing daunting challenges due to impacts from COVID-19 on our education system. Many do not have access to the same science and research opportunities they would have, or are choosing to take a gap year during this time. Denice will introduce a potential new initiative to support undergrads by having CRC member institutions work with students on projects that address CBP science needs. One option is to incorporate projects related to CBP science needs into university courses in the upcoming semester.

Expectations for STAR: provide feedback on the initiative and provide recommendations of relevant science needs.

Chesapeake U connects CRC member institution faculty, students, and staff with STAR/GITs to address science and communication needs through an engaged, collaborative effort. Each project is a facilitated effort, involving interdisciplinary faculty expertise and students, co-led by a CBP partner and a CRC partner, to provide a diverse set of innovations to the restoration effort and advance student learning about the scholarship of environmental restoration.

Hack-a-thons could attract a large number of students to a focused project.

Denice mentioned the list of needs:

- An articulation of STAR/GIT needs in 5-7 project ideas
- Requires a matchmaker on either side
- A standard agreement re: product format and delivery
- Identification of metrics for assessment
- Requesting STAR to do a pilot of 1-3 course projects for Fall/Spring semester plus 1 Hack-a-Thon

Discussion:

- Denice asked if STAR be the matchmaker from the science side and she will be the matchmaker from the academic side.
- Bill Dennison commented that he will be teaching a class entitled "Developing an environmental justice index for the Chesapeake watershed report card" as an Issue Study Group for graduate students in the multi-campus Marine Environmental Estuarine Science program. This course is scheduled for Spring 2021 semester.
- Bill Dennison is very interested in this topic and Emily is willing to represent from the Bay Program side.

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- Kristin commented that this is exciting because it is what we always envisioned when we created the strategic science and research framework!
- Bruce asked if we can have a STAR follow up to explore topics more and Peter and Emily agreed to put this on future STAR agenda. Bill Jenkins from Habitat GIT is interested.
- Peter Tango commented that Perhaps we can extend the present "Hack-the-Bay" activities underway this month through coordination with the CMC https://hack-the-bay.devpost.com/

12:30 Adjourn

Meeting Participants:
Julie Reichert-Nguyen
John Clune
Renee Thompson
Nora Jackson
Denice Wardrop
Jim Wesson
Roger Mann
Breck Sullivan
Scott Phillips
Cuiyin Wu
Bill Dennison
Kristin Sanders
Julianna Greenberg
Jen Fulton
Katheryn Barnhart
Brooke Landry
Lee McDonnell
Megan Ossmann
Amy Handen
Bill Jenkins
Doug Austin
Emily Bialowas
Emily Trentacoste
Ken Hyer
Isabella Bertani
Jeremy Hanson
Liz Chudoba
Mike Kolian
John Clune

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Mandy Bromilow
Annabelle Harvey
Caitlyn Johnstone
Greg Barranco
Peter Tango
Mark Nardi
Denice Waldrop
Gopal Bhatt
Gary Shenk
Isabella Bertani
Fred Irani
Cindy Johnson

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