

Formation of the Hypoxia Collaborative: Establishing the team charge, progress to date

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Sustainable Fisheries GIT Meeting

6/23/2021

Why is this team needed?

10 Goals
31 Outcomes



The Chesapeake Bay Program partners envision an environmentally and economically sustainable Chesapeake Bay watershed with clean water, abundant life, conserved lands and access to the water, a vibrant cultural heritage, and a diversity of engaged citizens and stakeholders.

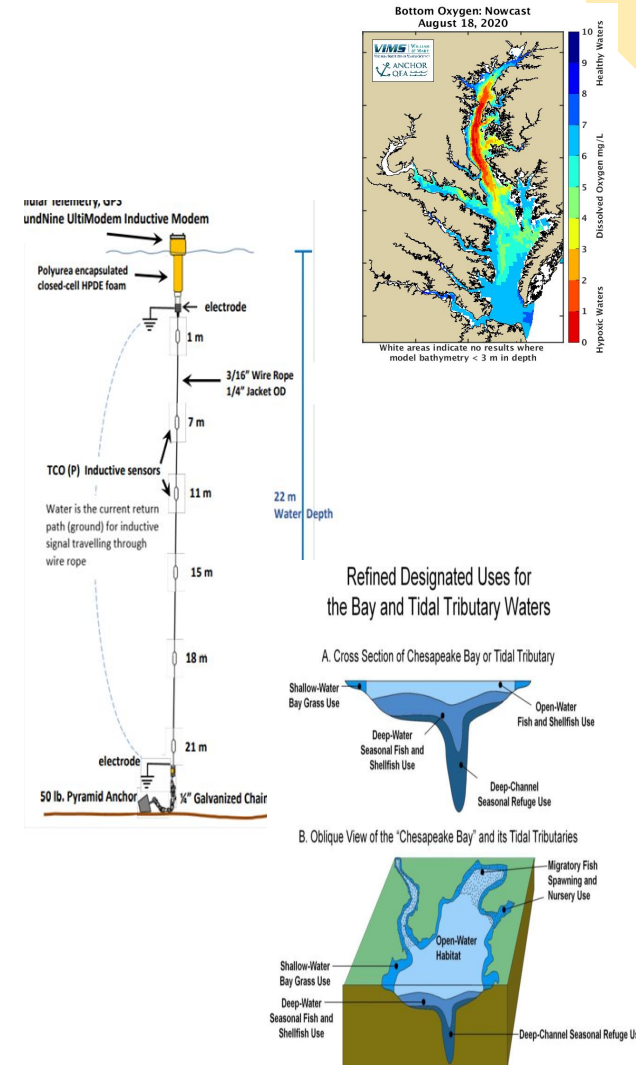
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- 2020: The CBP Modeling Workgroup was briefed and asked for a proposal to improve monitoring of hypoxic volume and extent
- Provide direct support for the Monitoring and Assessment Outcome: “Maintain and build capacity” addressing capacity gaps
- Cross CBP team collaborations facilitate successful proposals
- Multiple partners will be required for implementation of a new dimension of our monitoring networks

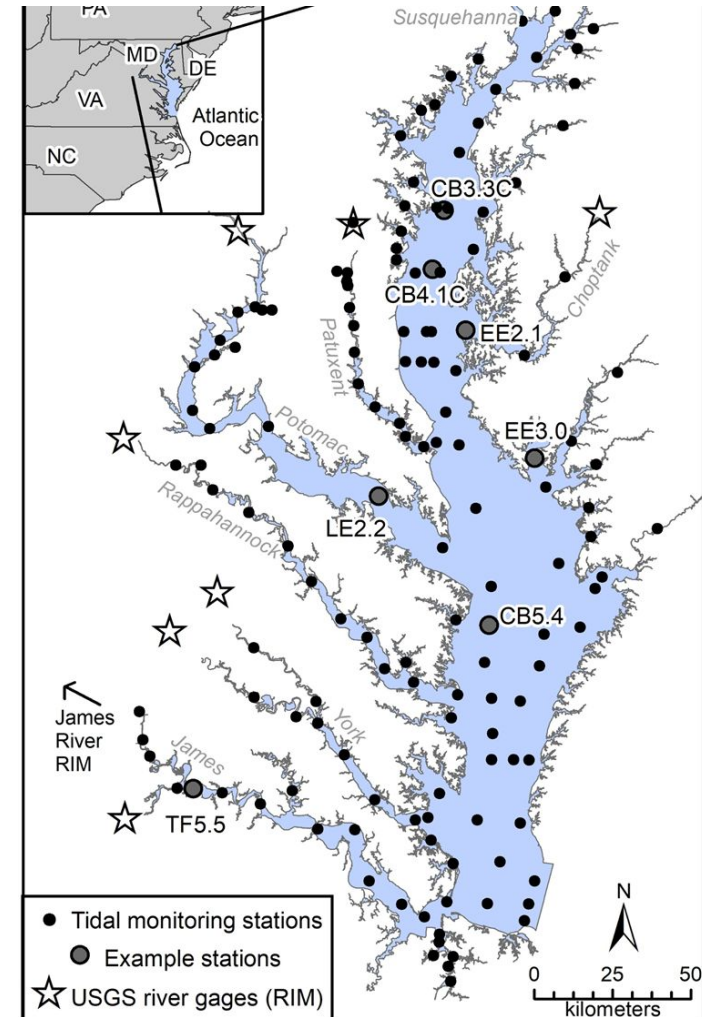
What would the Hypoxia Collaborative do?

- Develop a “**research to operation**” proposal for CBP leadership decision, guidance, adoption and implementation of hypoxia assessment
 - Design continuous hypoxia monitoring observing platform and infrastructure
 - Identify sampling design related to address information needs to address management objectives.
 - Number of sites and locations for deployment
 - Develop operation and maintenance cost, schedule and partner roles
 - Design an analytical framework and model integration plan
 - Prioritize near term data products and management applications
 - Examples (Criteria assessment, Living Resource Habitat condition)



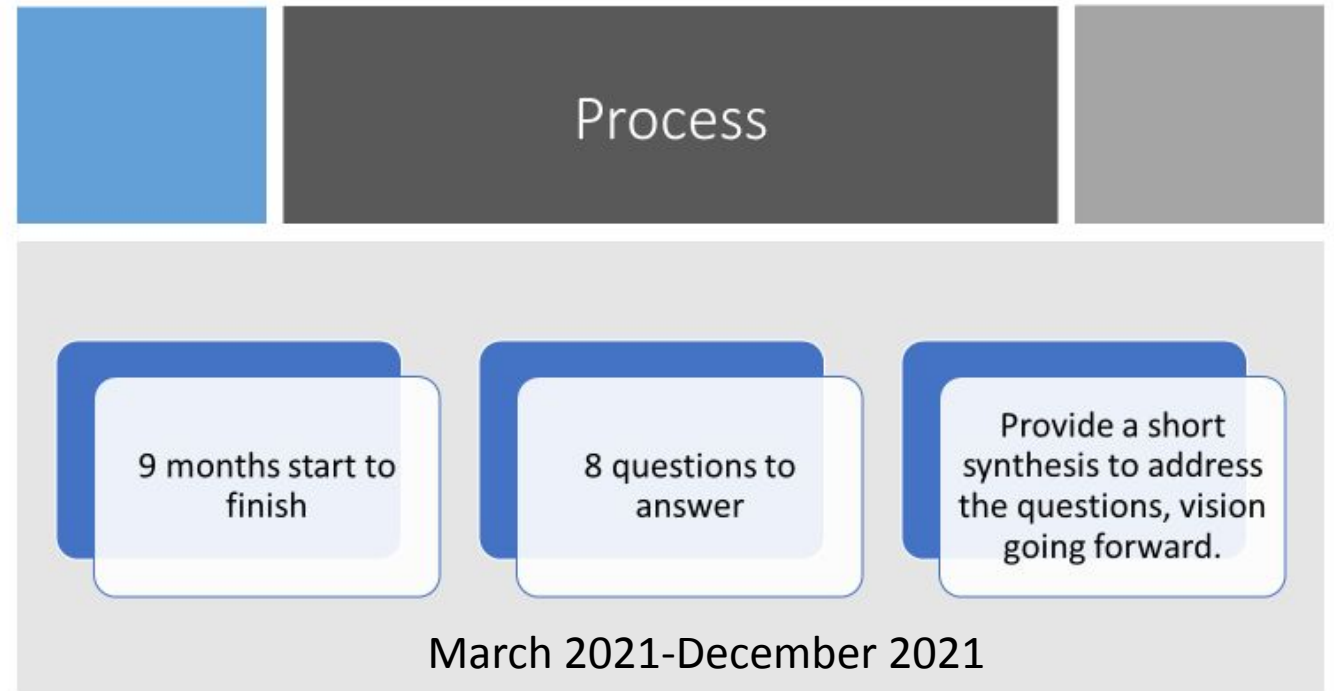
Establishing the team charge - nearterm

- **Short-term (9-month window) linked with PSC monitoring program review timeline:**
 - The team will address important questions surrounding infrastructure design and sampling design.
 - Inventory of existing monitoring infrastructure
 - Number and location of stations for existing infrastructure
 - Agency roles
 - Cost estimate (What has been invested, and what is still needed)



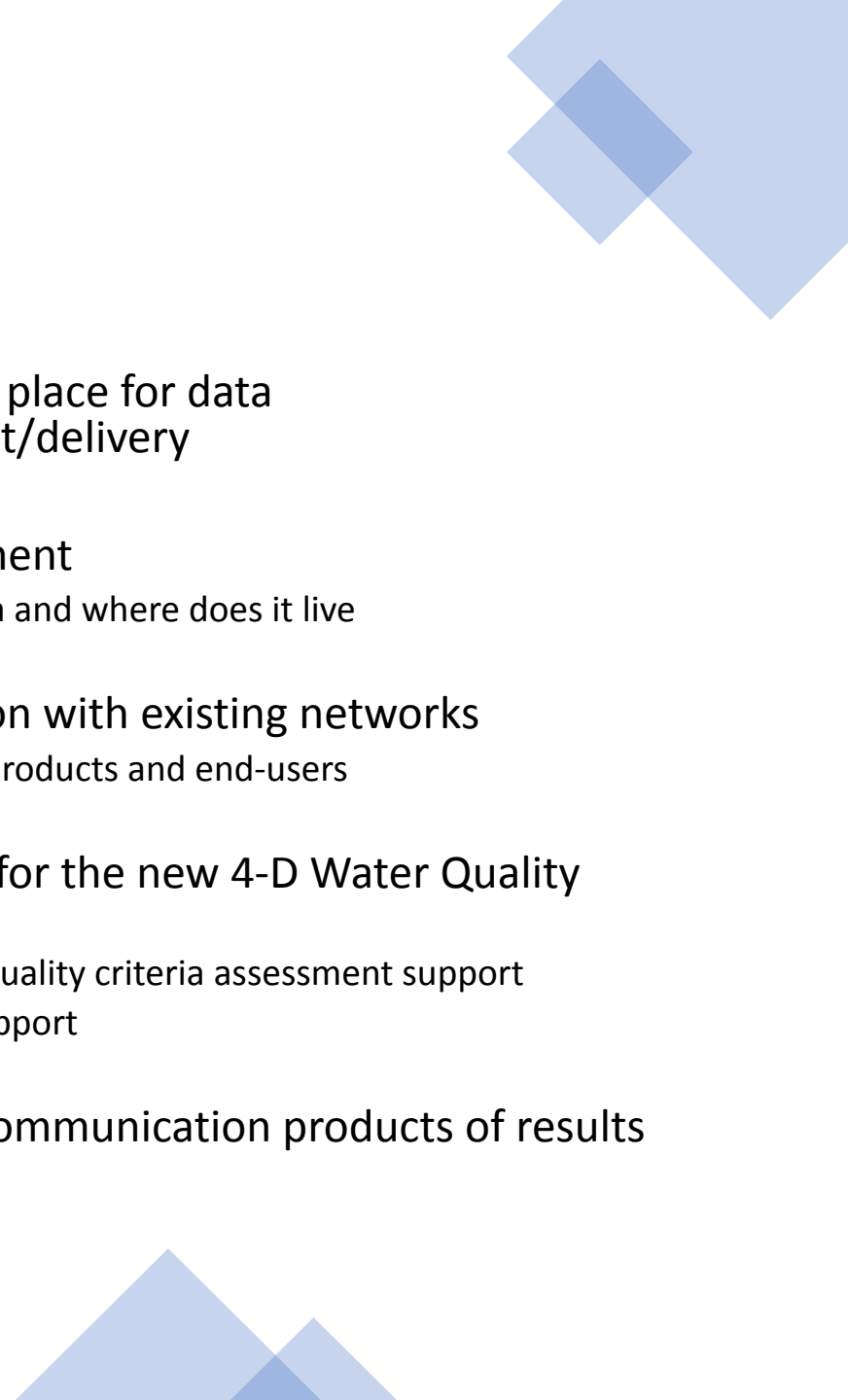
9-month window. Work dovetails with PSC request on monitoring program review:

- In response to the March 2 status report on the water quality monitoring network and its funding, **the PSC requested information be provided on what is needed to improve the CBP monitoring networks**, including:
 - (1) an overview of current status and threats to the networks, and
 - (2) what is needed to address the monitoring networks capacity shortfalls.





Establishing the team charge

- **Long-term:**
 - Putting a QAQC plan in place for data collection/management/delivery
 - Address data management
 - Who manages the data and where does it live
 - Develop data integration with existing networks
 - Consideration of end-products and end-users
 - Apply data integration for the new 4-D Water Quality Estimator
 - Short-duration water quality criteria assessment support
 - Habitat assessment support
 - Develop analysis and communication products of results
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Monitoring and Assessment Programs: How do we go from Good to Great?



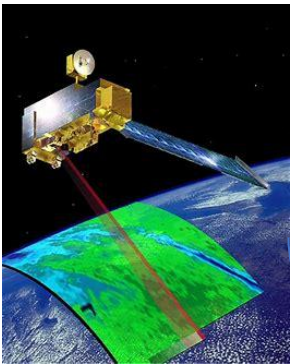
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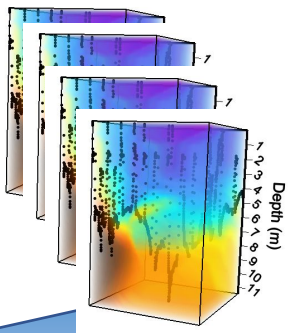
Good

Fit: We need to leverage successful research innovations.

Adopt, integrate and adapt to address capacity shortfalls.



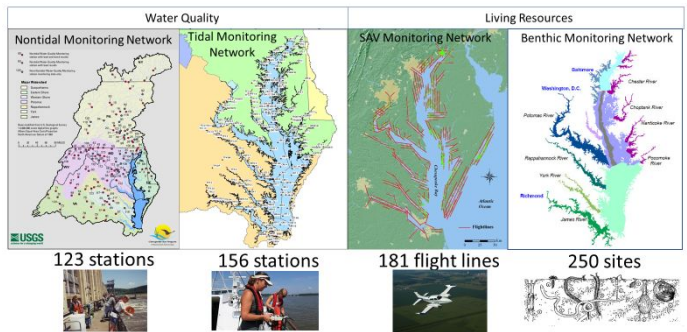
2. Adapt to baywide satellite-based data (SAV, Kd, CHLA)



4. Improve assessment tools (4D water quality estimator)

Traditional networks

CBP Partnership Monitoring Networks: Annual Monitoring

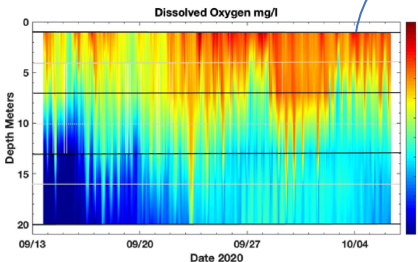


Monitoring and assessment capacity building beyond traditional monitoring

1. Apply Citizen-based observations (MOU 2018)



3. Innovate and adopt new WQ and living resource monitoring at needed data scales (CBT 2020 work, Bever et al. sampling design insights)

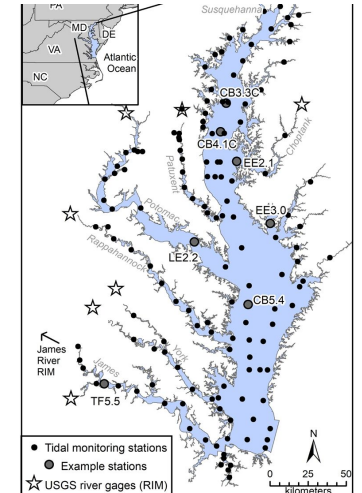
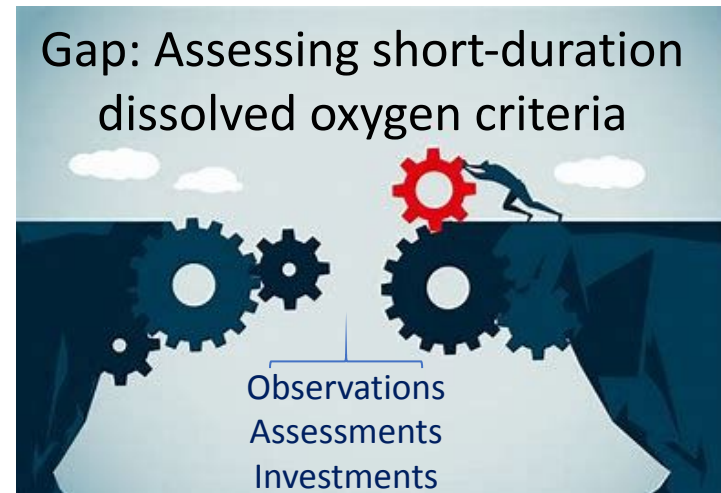
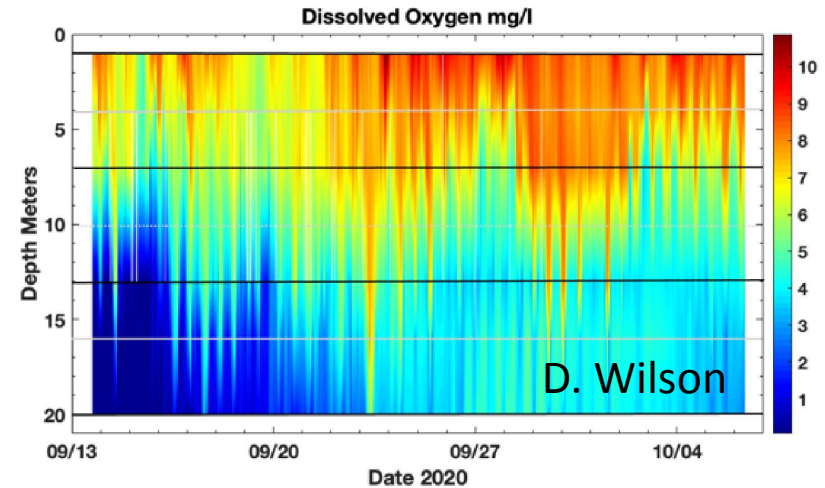


Expanded capacity

Full Water Quality Standards Attainment Assessment for Chesapeake Bay + CrossGIT Benefits

To date with the Hypoxia Collaborative

- CBP STAR support
- GIT funded study (2019-2020) supported by CBT/completed
 - Inform group on robust, cost effective profile system performance, options
- Monthly meetings initiated in 2021
 - Inventory discussions
 - Data interpretation explored (Murphy)
 - 2 NOAA systems for 2021
 - Locations for 2 profilers in 2021
 - Initial sensors – Temp, Sal, D.O.
 - Sensor distribution on profilers recommended



Upcoming work

Near term:

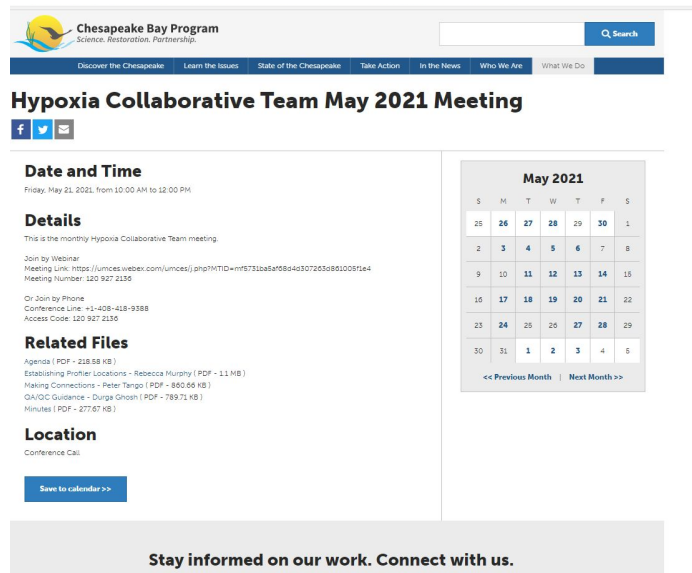
- Consulting with the CBP community on next steps in network build-out.
- December 2021 – recommendations on network development for PSC monitoring review

Near and long-term:

- Evaluate case study lessons for 4-D water quality estimator development to inform analysis uncertainty and network development beyond the initial deployments
- Evaluate model comparisons with monitoring data for calibration and verification
- Support for partner proposals for additional monitoring and modeling efforts from high frequency open water habitat assessments
- Support for analyses that inform the improved fisheries habitat assessments beyond the National Assessment.
- New science with new data analyses for habitats with scarce history of high temporal density data

Thank you! 😊 Stay involved and informed.

Website presence



The screenshot shows the Chesapeake Bay Program website. The header includes the logo and navigation links: Discover the Chesapeake, Learn the Issues, State of the Chesapeake, Take Action, In the News, Who We Are, and What We Do. The main heading is "Hypoxia Collaborative Team May 2021 Meeting". Below this are social media icons for Facebook, Twitter, and Email. The "Date and Time" section states: Friday, May 21, 2021, from 10:00 AM to 12:00 PM. The "Details" section includes a link to join by webinar, a meeting link, a meeting number, and contact information for joining by phone. The "Related Files" section lists several documents: Agenda (PDF - 218.88 KB), Establishing Priorities Locations - Rebecca Murphy (PDF - 1.1 MB), Making Connections - Peter Tango (PDF - 860.66 KB), QA/QC Guidance - Durga Ghosh (PDF - 789.71 KB), and Minutes (PDF - 277.67 KB). The "Location" section lists "Conference Call". A "Save to calendar >>" button is at the bottom. A footer banner reads: "Stay informed on our work. Connect with us."

2021 Monthly newsletter updates



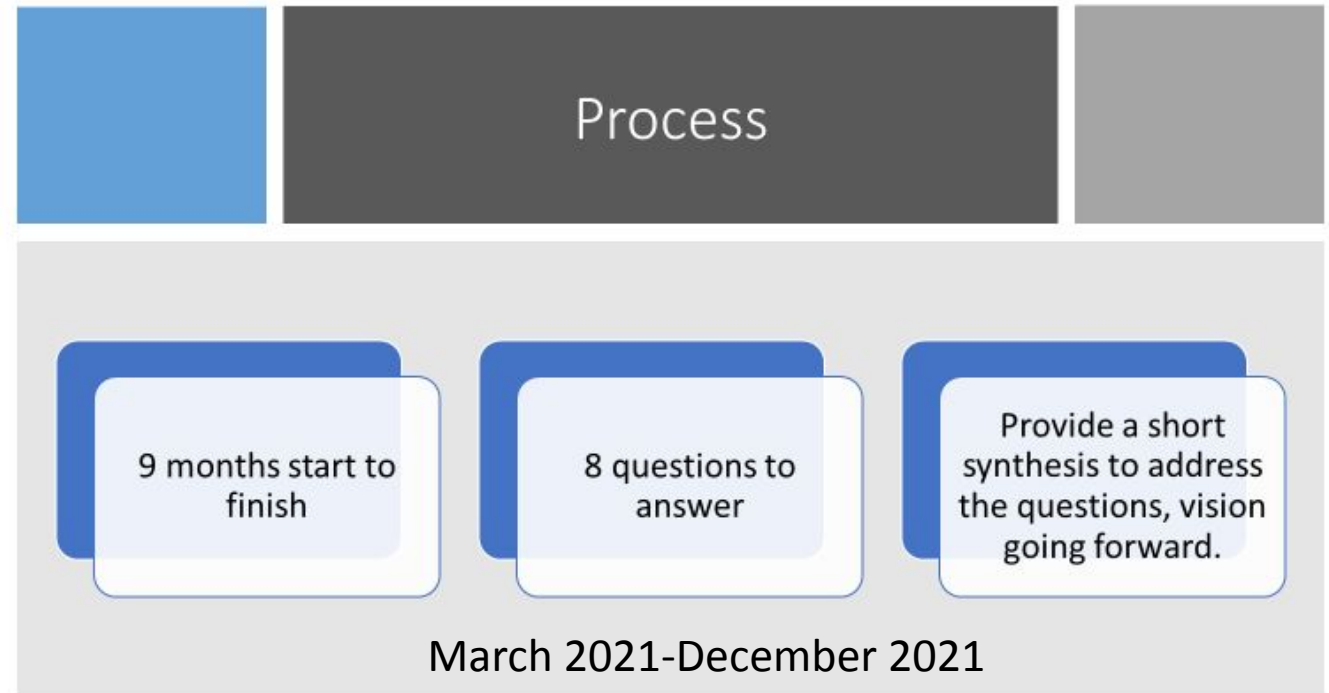
The screenshot shows the 2021 Monthly newsletter titled "Improving Chesapeake Bay Program Monitoring Networks". The subtitle is "PSC Monitoring Review: June 2021". The newsletter features three images: a person on a boat collecting water samples, a close-up of water samples in vials, and a person holding a sample of submerged aquatic vegetation. The "Overview" section states: "An overview was provided to the Principal Staff Committee (PSC) at their March 2, 2021 meeting about the status of, and potential reductions to, the current Chesapeake Bay Program (CBP) monitoring networks. The CBP monitoring programs presented included the nontidal nutrient and sediment network, tidal water-quality monitoring network, submerged aquatic vegetation (SAV), tidal benthic monitoring network, and Citizen Science monitoring. In response to the status report, the PSC requested..."

Thank you Breck, Justin, and Web-team!

9-month window. Work dovetails with PSC request on monitoring program review:

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Actionable recommendations on sustaining and growing our monitoring networks will be developed and delivered.

We do not expect to have all the answers to monitoring's greatest questions in 9 months.