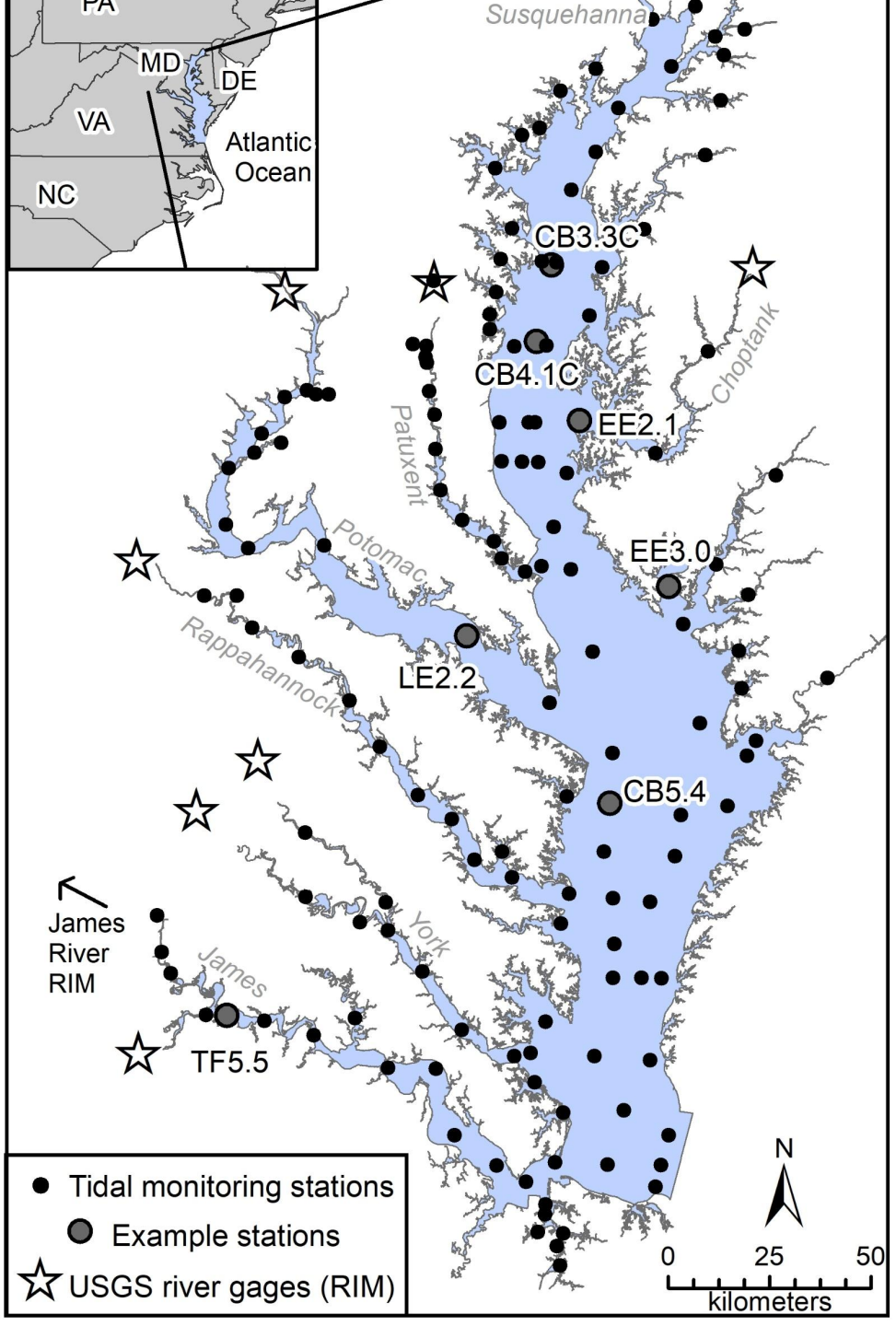


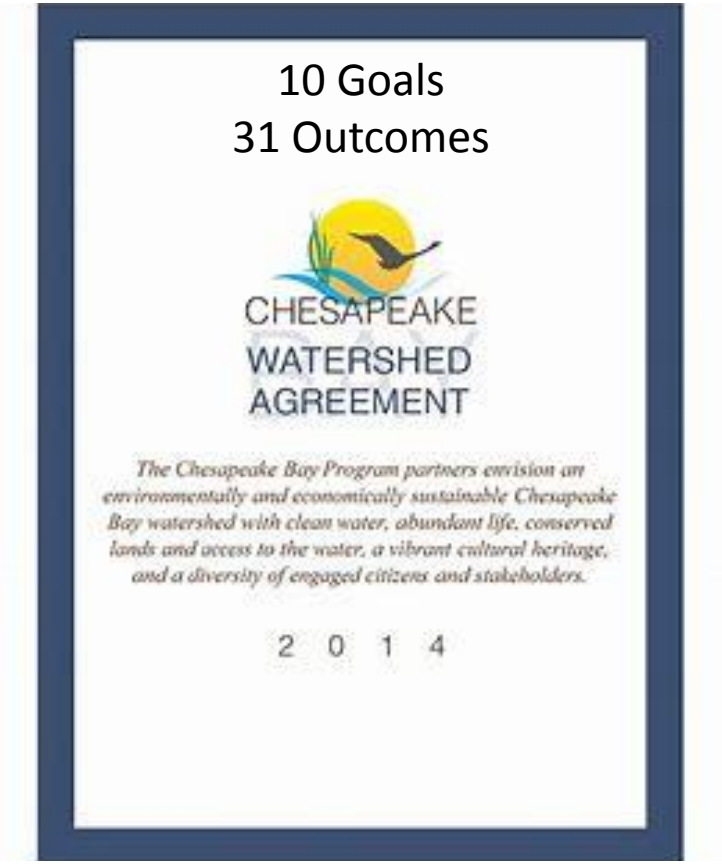
Formation of the Hypoxia Collaborative:

Establishing the team charge, progress to date

Peter Tango USGS@CBPO
Jay Lazaar NOAA
Bruce Vogt NOAA
CRC Staffers: Justin Shapiro and Breck Sullivan

Sustainable Fisheries GIT Meeting
6/23/2021

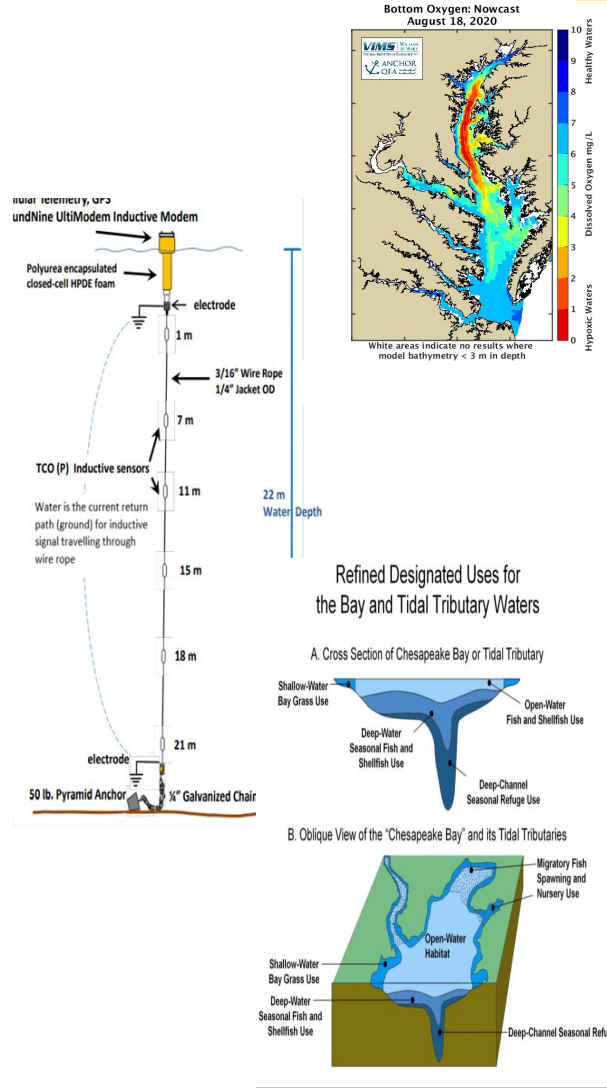
Why is this team needed?



- 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

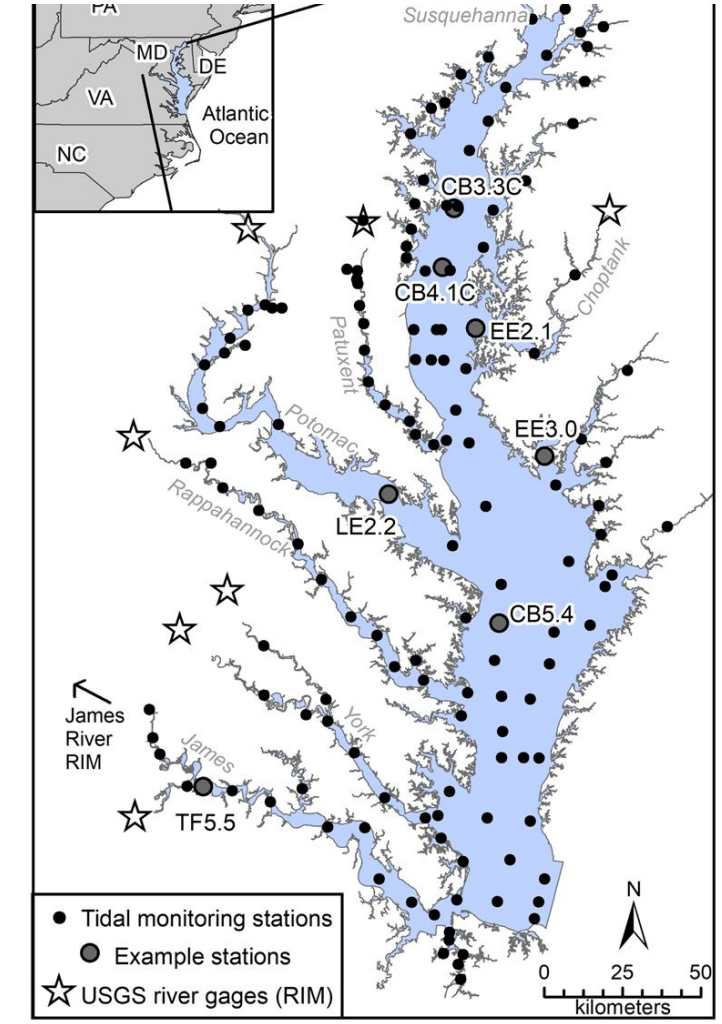
What would the Hypoxia Collaborative do?

- 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)



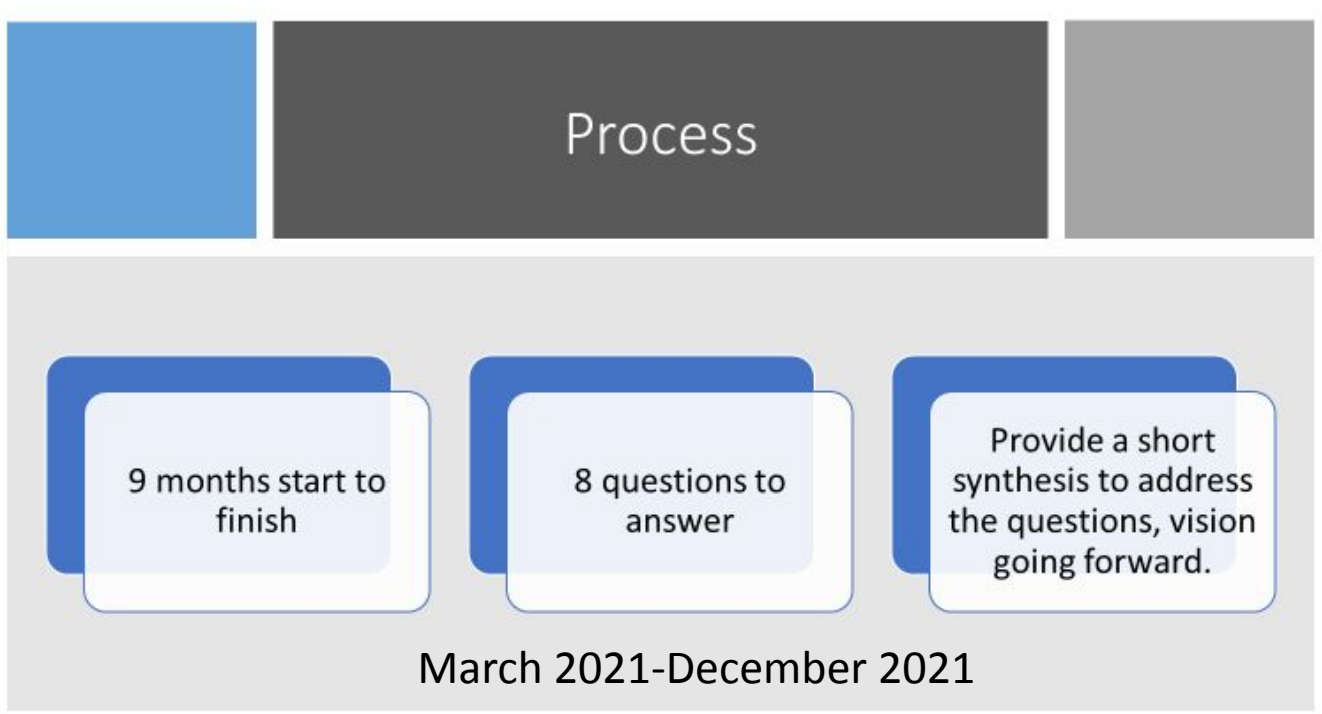
Establishing the team charge - nearterm

- **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

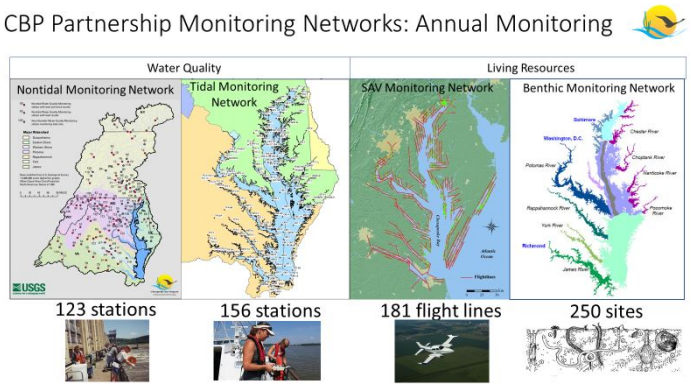
- **Long-term:**
  - Putting a QAQC plan in place for data collection/management/delivery
  - Address data management
    - Who manages the data and where does it live
  - Develop data integration with existing networks
    - Consideration of end-products and end-users
  - Apply data integration for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

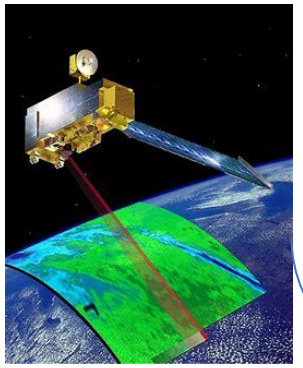
Monitoring and Assessment Programs: How do we go from Good to Great?

Fit: We need to leverage successful research innovations.

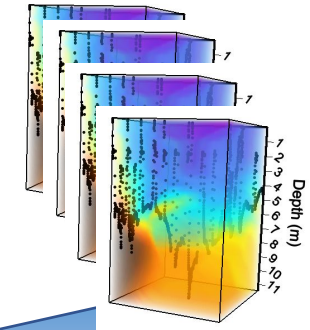
Adopt, integrate and adapt to address capacity shortfalls.

Traditional networks





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



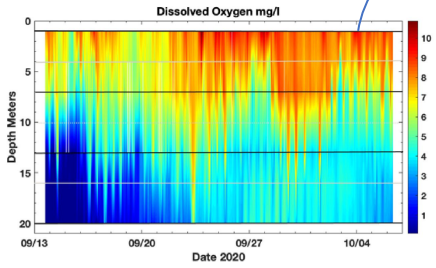
4. Improve assessment tools (4D water quality estimator)

Expanded capacity

Monitoring and assessment capacity building beyond traditional monitoring

Expanded capacity

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)

Full

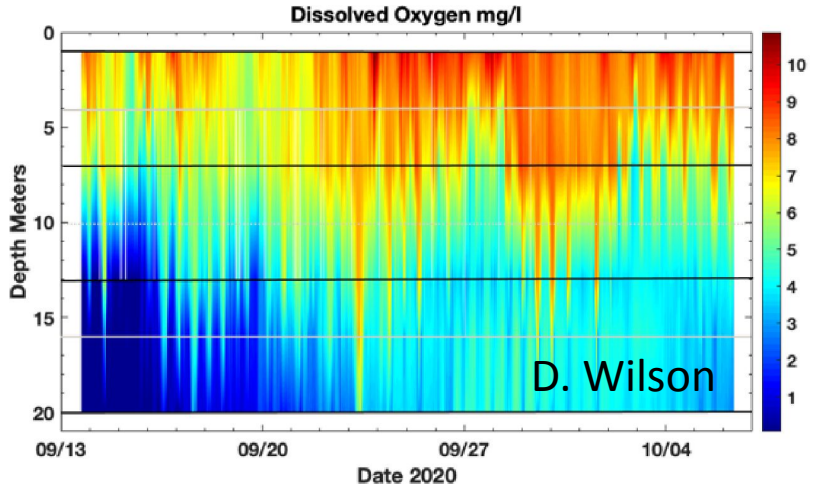
Water Quality Standards Attainment Assessment for Chesapeake Bay

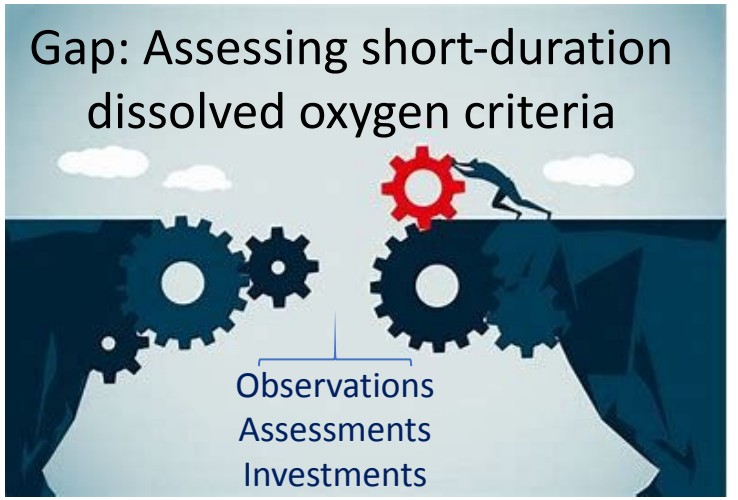
+

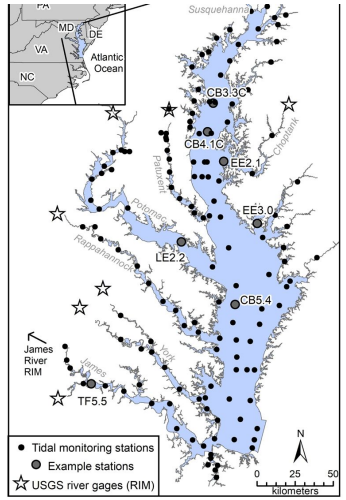
CrossGIT Benefits

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:

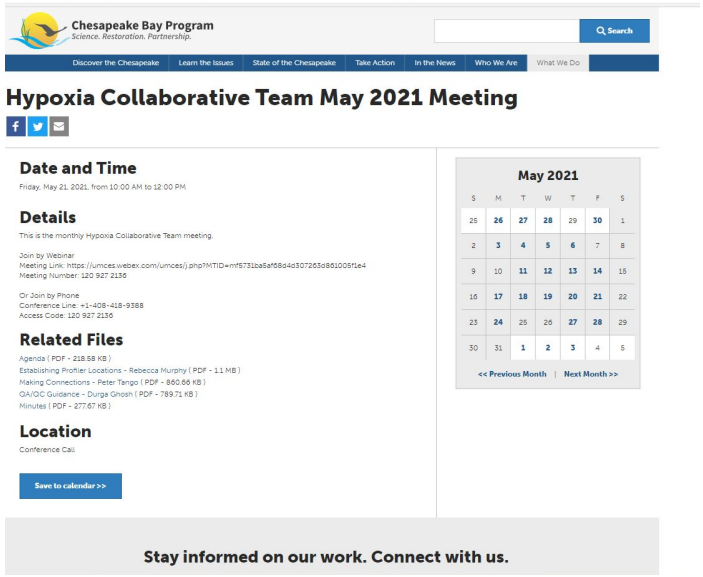
- Consulting with the CBP community on next steps in network build-out.
- December 2021 – recommendations on network development for PSC monitoring review

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



2021 Monthly newsletter updates

Thank you Breck, Justin, and Web-team!

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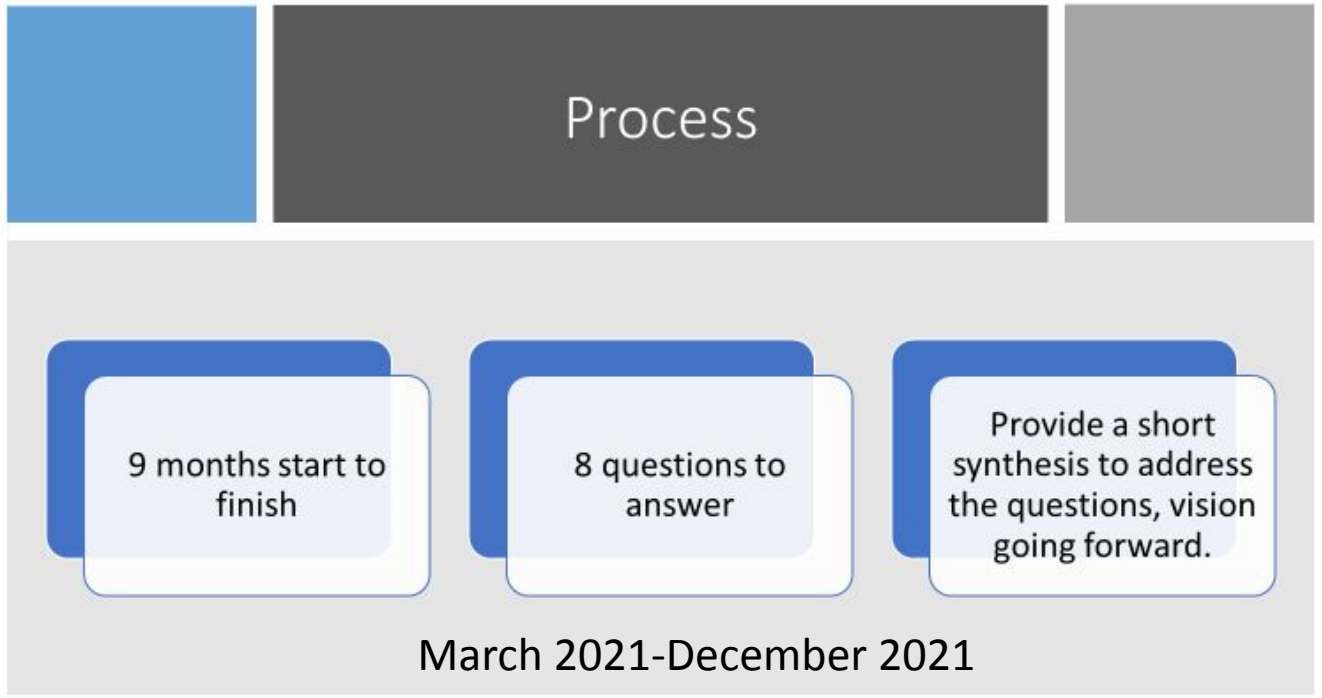

Actionable recommendations on sustaining and growing our monitoring networks will be developed and delivered.

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