



Chesapeake Bay Program

Science. Restoration. Partnership.

PSC Request for Monitoring
Program Review: Developing
recommendations for
addressing capacity shortfalls

- Peter Tango/Scott Phillips
- USGS@CBPO
- Toxic Contaminants WG
- June 9, 2021

An aerial photograph of a river delta, likely the Mississippi River Delta, showing a complex network of distributaries. The land is a vibrant green, indicating dense vegetation, while the water is a deep blue. The delta is situated on the right side of the frame, with the river main stem entering from the top and branching out. The background is a solid black.

Acknowledgements – PSC Review Team Leadership

- Peter Tango USGS
- Breck Sullivan CRC
- Lee McDonnell EPA
- Scott Phillips USGS
- Denice Wardrop CRC

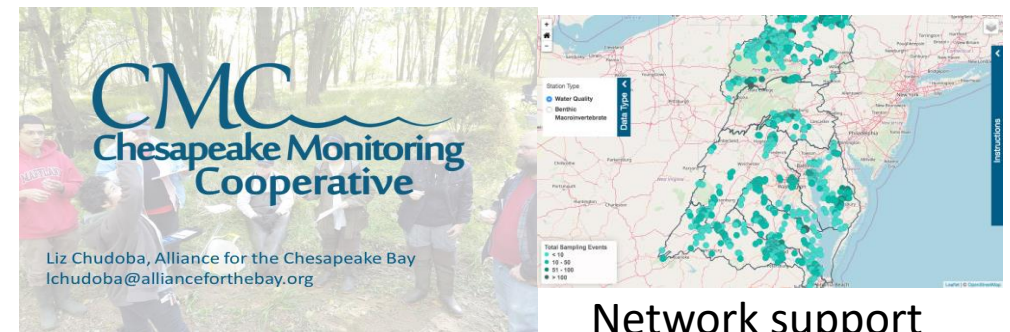
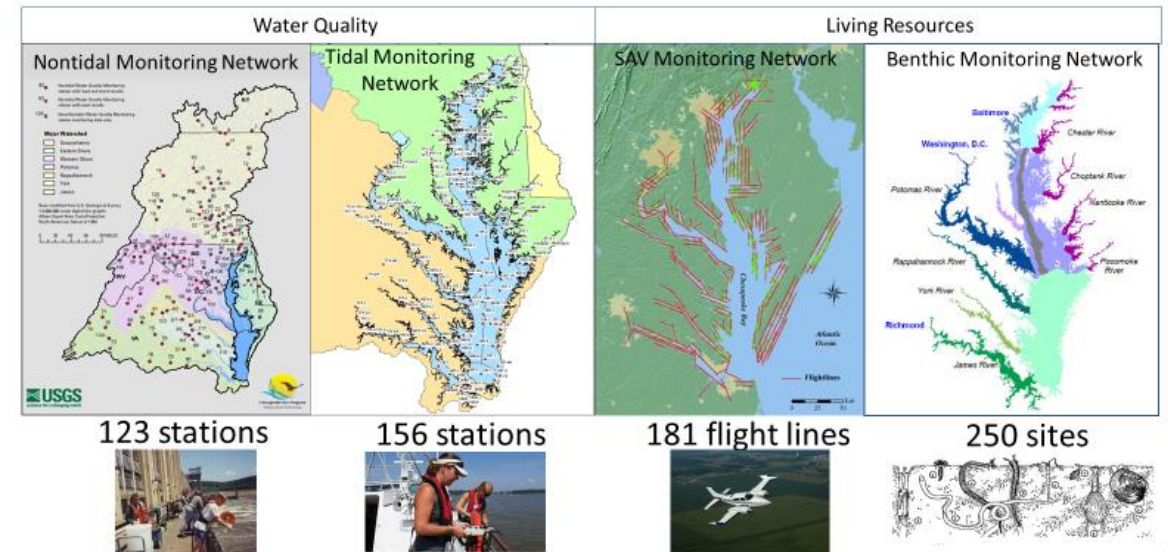
Let's start here:

March 2021: Monitoring Presentation to the Principal Staff Committee



- Lee McDonnell provided monitoring presentation on March 2
- Help them better understand CBP budget and funding for monitoring
- *CBP Monitoring Networks:*
 - Tidal water quality
 - Nontidal nutrients and sediment
 - SAV
 - Tidal Benthic organisms
 - Citizen Monitoring
- Current Funding:
 - CBP \$5M and partners >\$7M

CBP Partnership Monitoring Networks: Annual Monitoring




PSC request:

- In response to the monitoring program status report, the PSC requested information 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.
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Opportunities and Benefits of the PSC request

- Over a decade since the last CBP monitoring evaluation
- Address network support for CBP Outcome: Standards Attainment and Monitoring Outcome
- Address selected monitoring needs of other CBP outcomes
- Consider new technologies and innovation
- Identify priority improvements and fill gaps

Through the 2014 Chesapeake Bay Watershed Agreement, the Chesapeake Bay Program has committed to...



Goal: Water Quality
Outcome:
Continually improve the capacity to monitor and assess the effects of management actions being undertaken to implement the Bay TMDL and improve water quality. Use the monitoring results to report annually to the public on progress made in attaining established Bay water-quality standards and trends in reducing nutrients and sediment in the watershed.



Process

9 months start to
finish

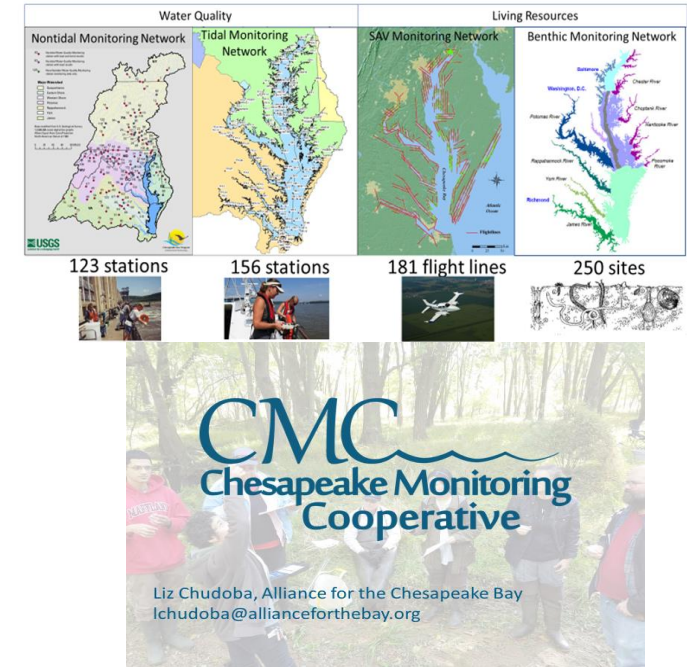
8 questions to
answer

Provide a short
synthesis to address
the questions, vision
going forward.

8 Questions to address in this 9-month review

1. Network Status?
2. Vulnerabilities to sustaining network operation?
3. Program management strategy?
4. Monitoring information gaps?
5. Monitoring program options for filling gaps with existing resources?
6. What innovations are available?
7. Who are the partners on operationalizing the innovations?
8. Financial perspective on sustaining, growing and innovation needs for our networks?

CBP Partnership Monitoring Networks: Annual Monitoring 





The Path Ahead

Supporting group consultations



Data Integrity WG –
All Network update
considerations

Climate Resiliency WG
– All networks

Fish Habitat Action
Team – Tidal network,
Hypoxia Collaborative,
4D BORG links

Forage Fish Team –
Benthic Network

Black Duck Team –
Benthic Network

Healthy Habitats –
outputs of 4-D
analysis

Modeling WG – 4D
water quality
estimator

Water Quality GIT

Toxic Contaminants
WG – leverage WQ
network operations

STAR

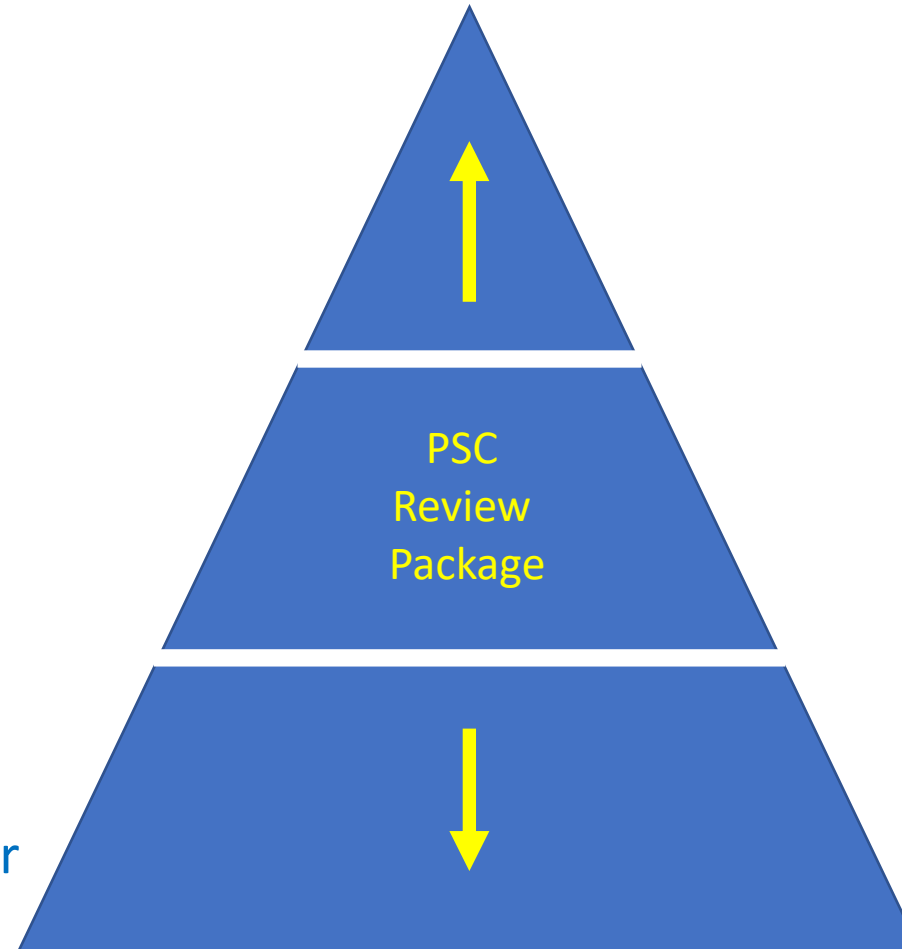
STAC

Process timeline and themes to answer questions

[illegible]

Delivering a final product: Tiered communication

- 1 page: Executive summary on the recommendations to sustain and grow networks: strategies, resources needed
- 1 (max 2) page network portfolio summaries
- Short report on the 8 questions
 - Include cross-GIT leveraging opportunities as a final chapter



Exec
Summary
1 pg

Example Product Target:
Network portfolios with recommendations

Recommendations

- Partner with ABCD organizations to finalize protocols on satellite-based monitoring
- Adopt satellite-based monitoring for SAV, light, chl
- Adopt AI algorithm interpretation for satellite-derived data for cost effective assessments
- Increase 117e budget to augment losses on core monitoring SX

Vulnerabilities

Category	Issue	Explained
Reliability	Boating power	Low capacity, low reliability
Level funding	COLA impact	Low capacity, low reliability
Aging Infrastructure	Replacement cost	Low capacity, low reliability
Contractor viability	Discontinuity of service	Mixed sampling
Pandemic	Safety	Mixed sampling
Staffing	Capacity	Mixed capacity

Status

The current tidal monitoring network was established in 1984. Its first full year was 1985. There are 154 active stations sampled for physical, chemical, and biological measures throughout the water column with a consistent set of collection and analysis protocols.

Innovations

Enhanced monitoring with Community science support

Hi-Res satellite SAV, light and CHL

Cutting edge, cost-effective vertical profiles of water quality

Financials

- 2021 – level funding at \$X.x M
- Projected program changes include XY Z

Gaps

- Short duration D.O. criteria
- Efficient CHLA coverage
- Efficient light limitation coverage

Report
Q1-Q8
Reference

The finish line: Sharp, focused recommendations on sustaining and growing the networks



- Operationalizing research knowledge into monitoring program activities
- Acknowledge and grow partner commitments
- Enhanced use of existing resources
 - E.g., Hg and PCB Indicator support
 - E.g., Leverage network activities
- Define investment needs with planned gap filling return on investment (ROI)
 - E.g., Needs for new monitoring



Next Steps



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addressing capacity shortfalls

- Peter Tango
- USGS@CBPO
- WQGIT Meeting
- May 24, 2021

Conduct work according to work plan endorse by PSC at their June 2, 2021 meeting

Coordinate with teams to address the questions for each network AND OTHER OUTCOMES (Spring-Summer-Fall 2021)

STAC workshop development and participation (fall-winter 2021-22)

Deliver recommendations to PSC by January 2022.