



Responding to the PSC Request to Improve the CBP Monitoring Networks- Update

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Chesapeake Bay Program

PSC Meeting

November 23, 2021

Feedback Needed from the PSC in November

- Scope of the report that will be delivered?
-

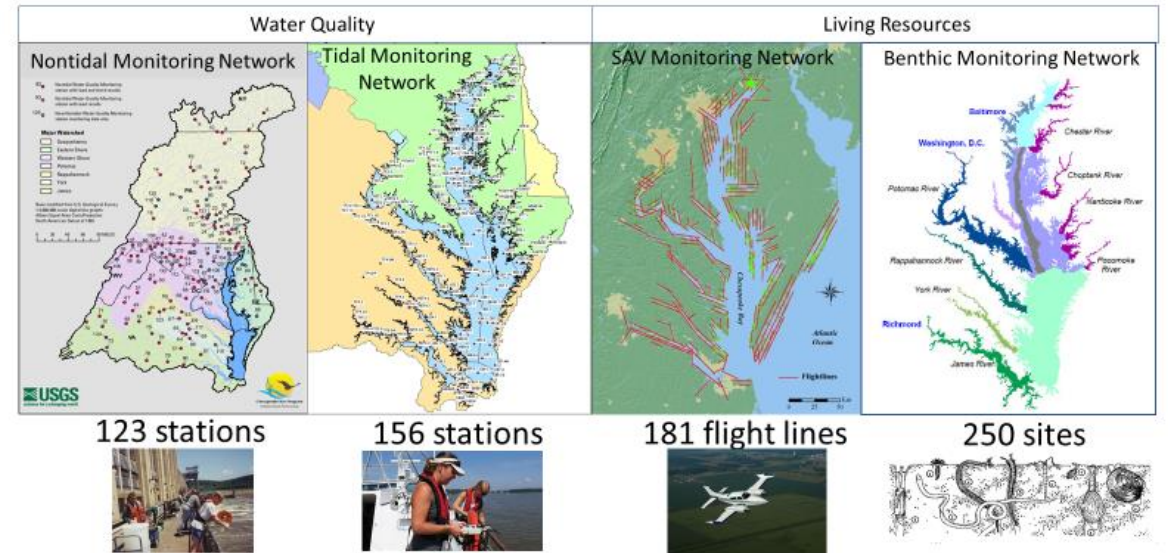
- Outline for today:
 - Introduction
 - Key issues for recommendations
 - Scope and structure of our report
 - PSC Feedback

REMINDER: Where we started

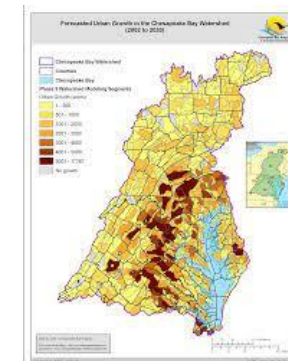


- Lee McDonnell provided monitoring presentation on March 2, 2021
- Help the PSC better understand CBP budget and funding for monitoring
- CBP networks:
 - Tidal water quality
 - Nontidal nutrients and sediment
 - SAV
 - Tidal benthic organisms
 - Community Science
 - *Land change monitoring
- Current Funding:
 - CBP \$5M and partners >\$7M
 - (not including land change monitoring)

CBP Partnership Monitoring Networks: Annual Monitoring



Community Science



Land Change Assessment



Recommendations developing around support addressing three key issues

WQS Criteria

Criteria	Designated Use	Threshold	Applicable Segments
Dissolved Oxygen	Migratory Fish Spawning & Nursery (MSN)	30-day mean, February-May	73
	Open Water (OW)	30-day mean, June-September	92
	Deep Water (DW)	30-day mean, June-September	18
	Deep Channel (DC)	Instantaneous, June-September	10
Chlorophyll-a	Open Water (OW)	Chlorophyll-a concentrations	7
SAV and/or Water Clarity	Shallow Water (SW)	Segment-specific water clarity and bay grass acreage goals	79

Note: The indicator uses a subset of the complete accounting for the water quality criteria to ESTIMATE the attainment of water quality standards.

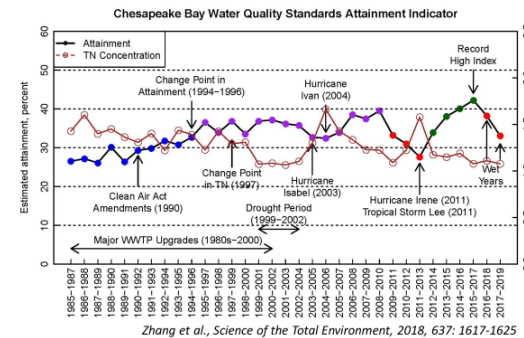
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- Unassessed water quality criteria and standards
 - Criteria were published by EPA in 2003, adopted by the tidal bay partners into regulatory water quality standards. All segments lack data; no bay segment has been fully assessed

- Explaining change in response to management actions
 - Assessing return on investment and informing pace of change in watershed health, bay health and living resources

- Accountability to the 2014 Watershed Agreement 10 goals, 31 outcomes
 - Monitoring needs extend across outcomes to support assessment of our progress toward diverse goals

Effect of Nitrogen Input



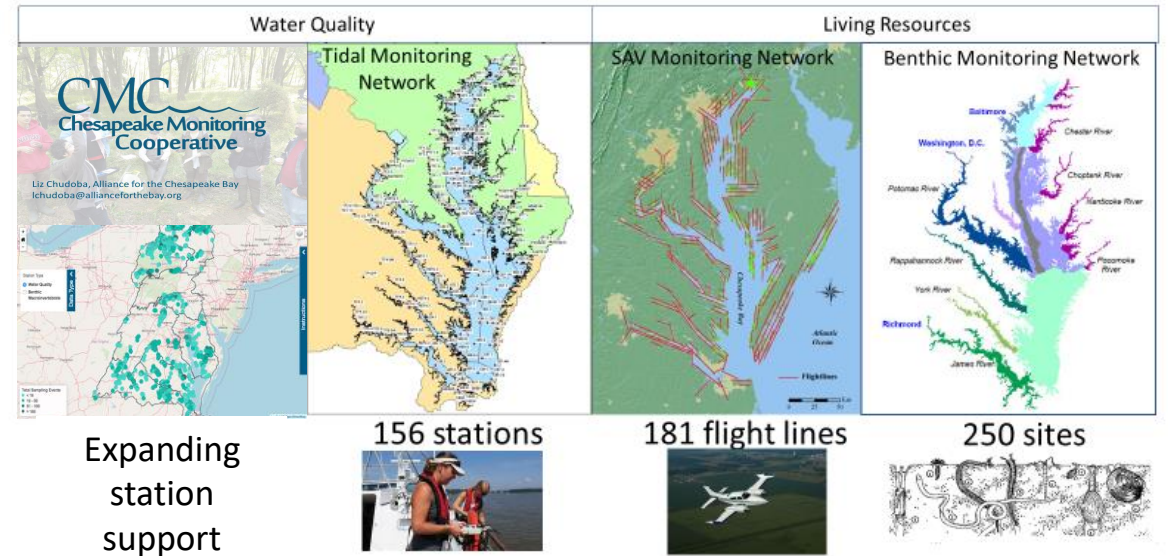
A decrease in TN concentration leads to an increase in the indicator score ($p < 0.05$).



Issue: Unassessed Water Quality Standards

- Data collection networks:
 - Tidal Water Quality
 - Submerged Aquatic Vegetation
 - Benthic Macroinvertebrates
 - Community Science

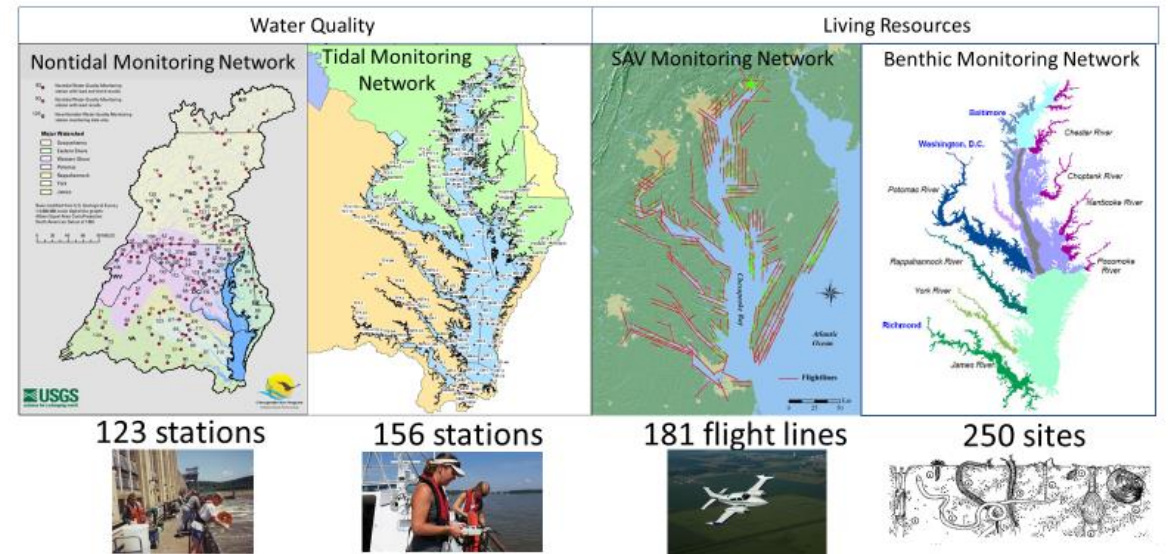
CBP Partnership Monitoring Networks: Annual Monitoring



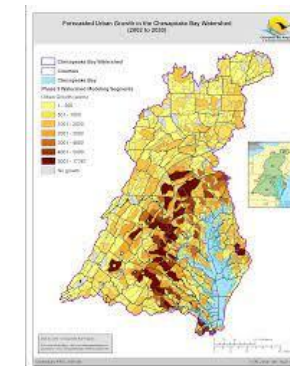
Issue: Explaining change in response to management actions

- Data collection networks:
 - Tidal Water Quality
 - Submerged Aquatic Vegetation
 - Benthic Macroinvertebrates
 - Community Science
 - Nontidal Water Quality
 - Land Change Assessment

CBP Partnership Monitoring Networks: Annual Monitoring



Community Science



Land Change Assessment

Issue: Accountability for 10 goals, 31 outcomes of the 2014 Watershed Agreement

Data collection networks touch all of our goal management areas:

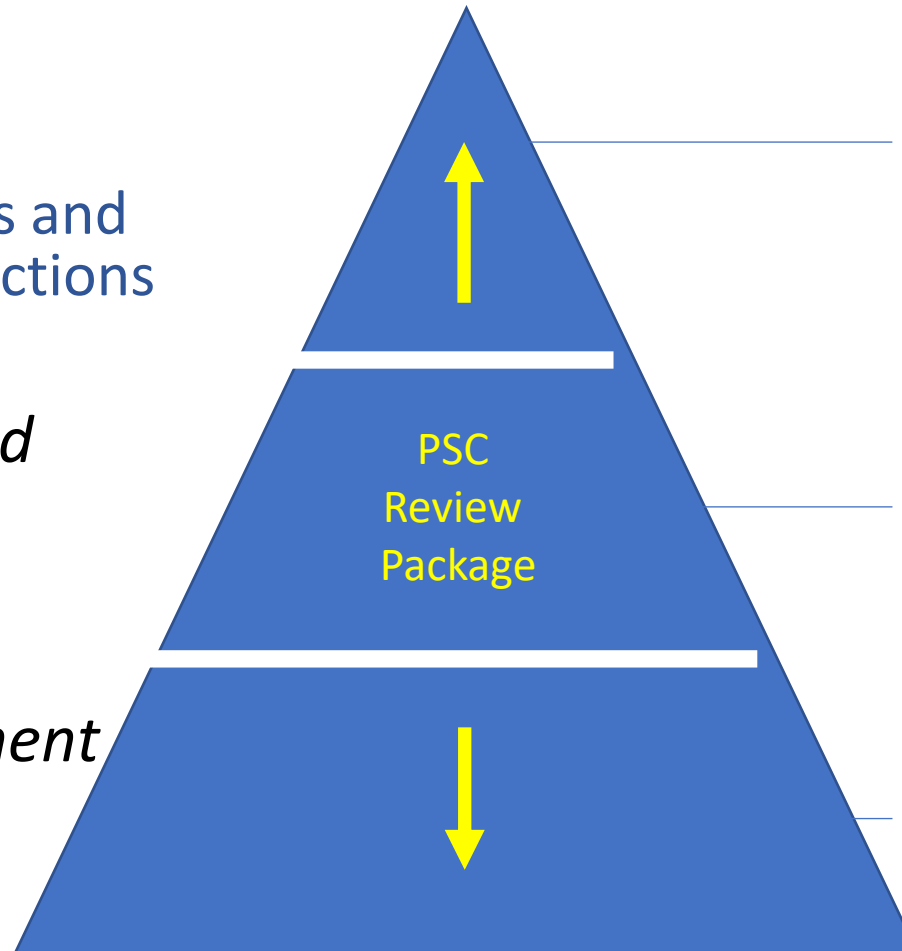
- Engaged Communities
 - Stewardship Goal
 - Public Access Goal
 - Environmental Literacy Goal
- Abundant Life
 - Sustainable Fisheries
 - Vital Habitats



- Conserved Lands
 - Land Conservation Goal
- Climate Change
 - Climate Resiliency Goal
- Clean Water
 - Water Quality Goal
 - Toxic Contaminant Goal
 - Healthy Watersheds Goal

Feedback from PSC: Is the Tiered communication ok?

- **Section 1: Prospectus**
 - Issue importance
 - Recommendations on strategies and resources needed for data collections
- **Section 2: Network portfolios and Unmet Needs**
 - Detail supporting resource need
- **Section 3: Foundational Assessment**
 - (9 questions answered)



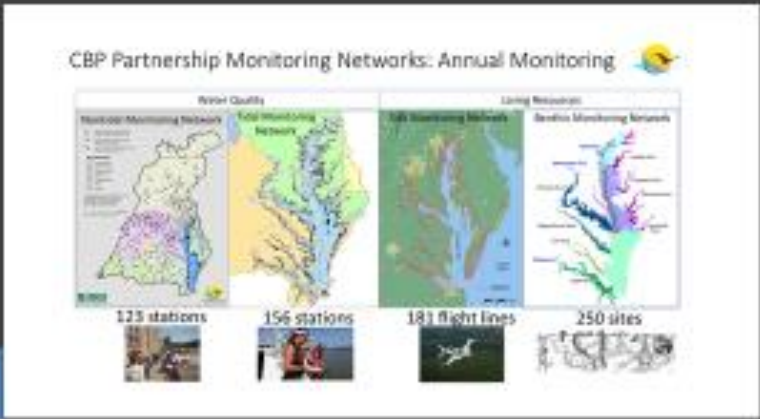
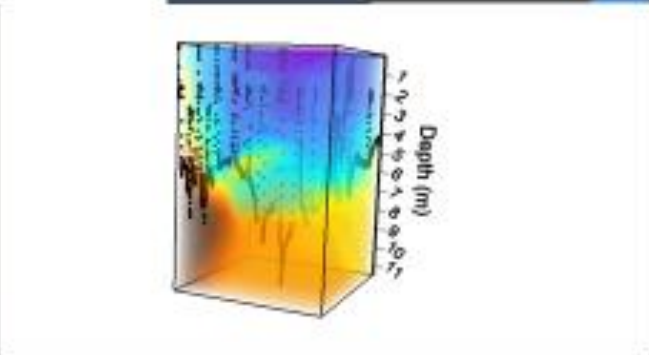
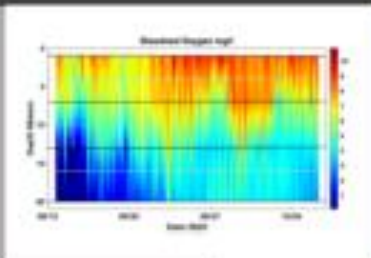
Section 1
Prospectus

Example Product Target:
Network portfolios with recommendations

- **Innovations**
 - Enhanced monitoring with Community science support
 - Hi-Res satellite SAV, light and CHLA
 - Cutting edge, cost-effective vertical profiles of water quality
- **Recommendations**
 - Partner with ABCD organizations to finalize protocols on satellite-based monitoring
 - Adopt satellite-based monitoring for SAV, light, CHLA
 - Adopt AI algorithm interpretation for satellite-derived data for cost effective assessments
 - Increase 11% budget to augment losses on core monitoring SX
- **Vulnerabilities**

Category	Issue	Explained
Reliation	Being power	Use of...
Level funding	COLA impact	Use of...
Aging infrastructure	Replacement cost	Resource distribution
Contractor viability	Discontinuity of service	Mixed sampling
Pandemic	Safety	Mixed sampling
Staffing	Capacity	Missing 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.
- **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

Section 3



Thank you!

Q&A

