

QUARTERLY PROGRESS MEETING – July 2020
Chesapeake Bay Program



Water Quality Standards Attainment & Monitoring Outcome

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CBP Monitoring
Coordinator*

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



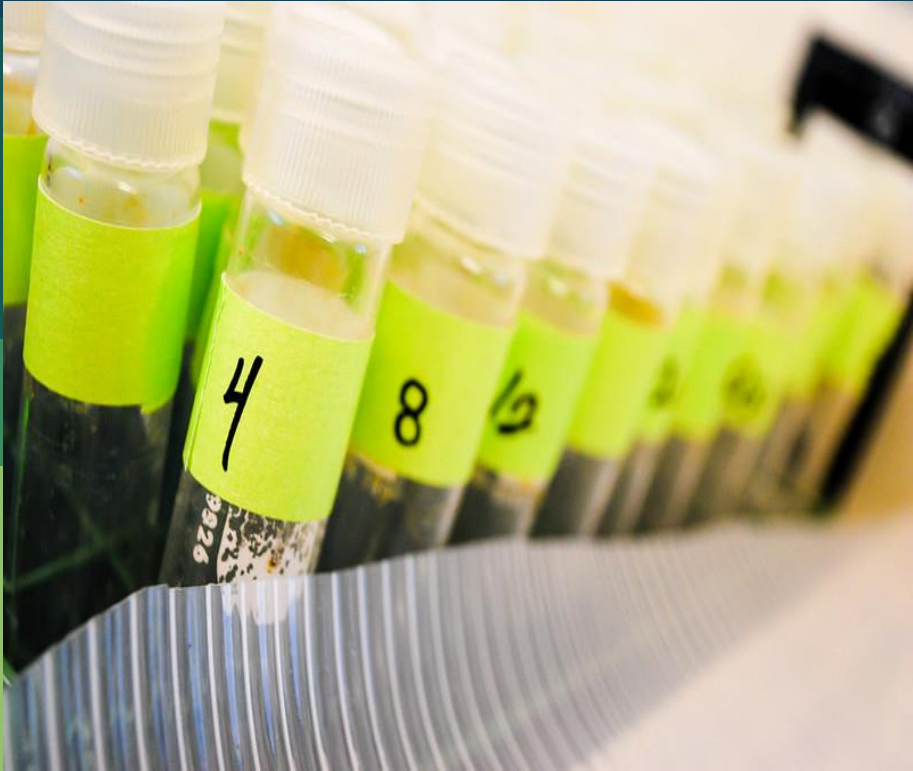
Goal: *Water Quality*

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.



How You Can Help



Overview:

- Traditional monitoring capacity is declining
- Analysis and synthesis are improving.

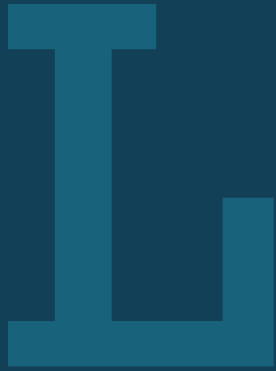
Help Needed:

Monitoring support:

- Maintain & enhance funding
- Prioritize State grant match funding investments
- Incorporate new data streams
- Update assessment methods

Jurisdictional involvement

- CAP WG



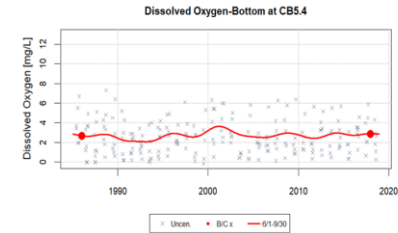
Learn

What have we learned in the last two years?



Successes and Challenges

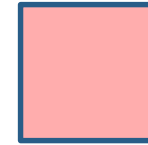
- New analysis tools
- Enhanced communications
- Implemented CBP's Strategic Science and Research Framework
- Advanced scientific syntheses completed
- Supported an MOU using Citizen Science -based data





Successes and Challenges

- **Unassessed criteria** remain a hurdle for delisting decisions of State-adopted water quality standards with our existing framework
- **Slow** pace for expanded assessment of water-quality standards
- **Contraction** of traditional long-term monitoring programming
- **Limited** non-traditional data use in assessments
- **Needs** for deeper explanation of water quality response to BMPs



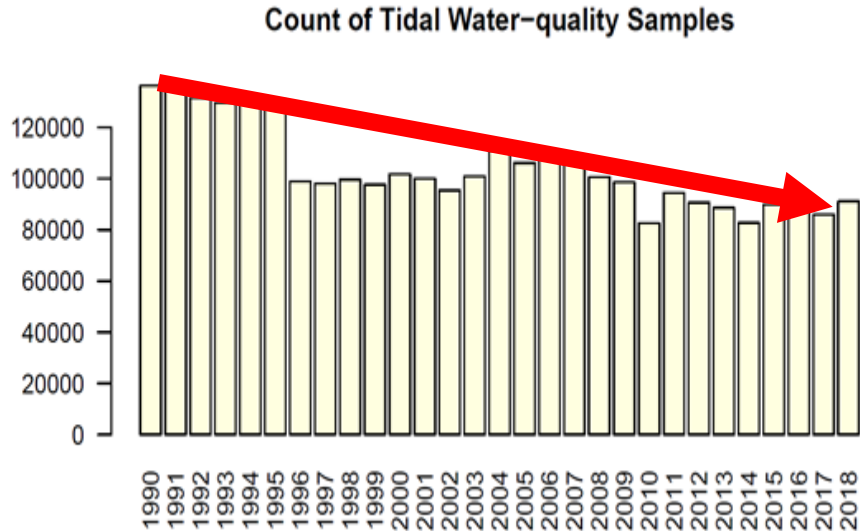
= Inability to report on standard attainment

Designated Use	Dissolved oxygen Criteria Concentration/Duration	Temporal Application
Migratory fish spawning and nursery use	7-day mean \geq 6 mg/L tidal habitats with 0-0.5ppt salinity	February 1 – May 31
	Instantaneous min \geq 5 mg/L	
Open water fish & shellfish designated use criteria apply	Open water fish & shellfish designated use criteria apply	June 1 – January 31
	Open water fish & shellfish designated use criteria apply	
Shallow water Bay grass use	Open water fish & shellfish designated use criteria apply	Year-round
Open water fish and shellfish use	30-day mean \geq 5.5 mg/L Salinity: (0-0.5ppt)	Year-round
	7-day mean \geq 4 mg/L	Year-round
	Instantaneous min \geq 3.2 mg/L	
Deep-water seasonal fish and shellfish use	30 day mean > 3mg/L	June 1 – September 30
	1-day mean >2.3 mg/L	
	Instantaneous min \geq 1.7 mg/L	
Open water Fish and shellfish designated use criteria apply	Open water Fish and shellfish designated use criteria apply	October 1-May 31
	Open water F & S applies	
Deep channel seasonal refuge	Instantaneous min > 1 mg/L	June 1 – September 30
Open water F & S applies	Open water F & S applies	October 1 – May 31



What is our Expected and Actual Progress?

Monitoring Capacity: Good/**Fair**/Poor

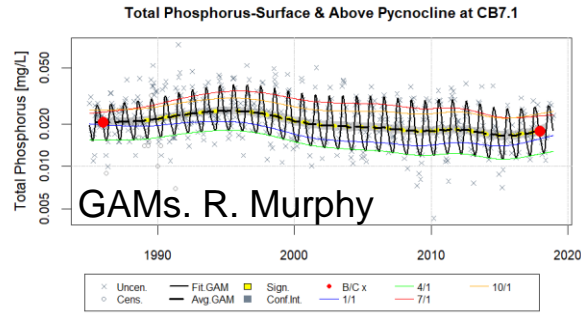


- Capacity is highly stressed and declining
- ▮ Data collections remain “marginal” for the Bay criteria assessment, “adequate” for the watershed loads estimates



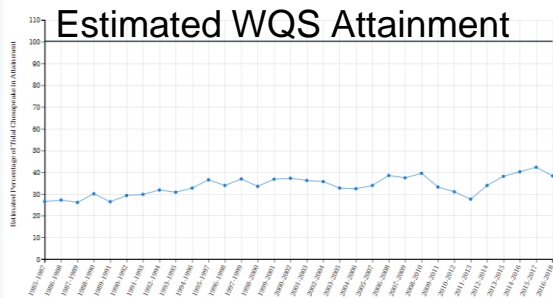
What is our Expected and Actual Progress?

Analysis: Good/Fair/Poor



Water Quality Standards Attainment (1985-2018)

Water quality is evaluated using three parameters: dissolved oxygen, water clarity or underwater grass abundance, and chlorophyll *a* (a measure of algal growth).

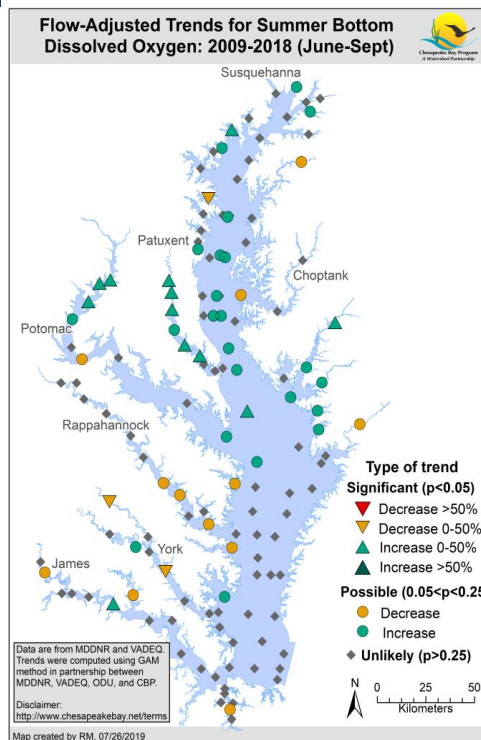
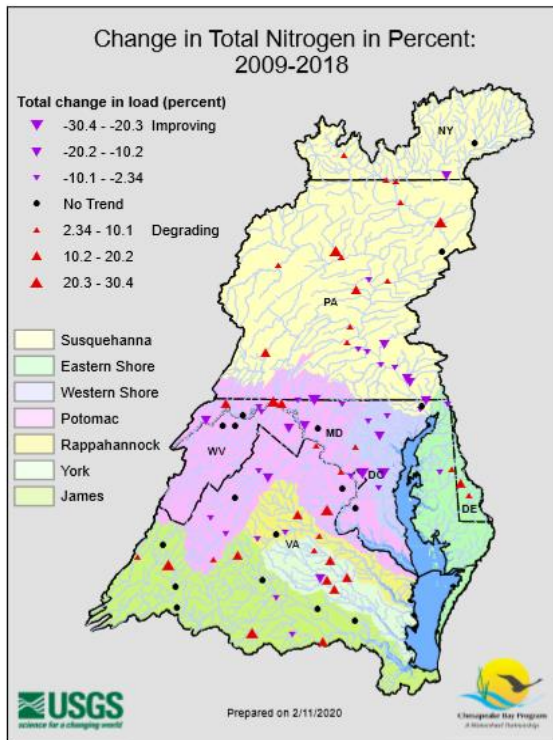


- Annual updates for status and trends
- Increased analysis supported the Mid-Point Assessment:
 - * new tools, explanations and publications
- Building on lessons learned from past 2 years:
 - * more insights using advanced analytics.
- Continued focus on explaining effects of BMPs and stressors



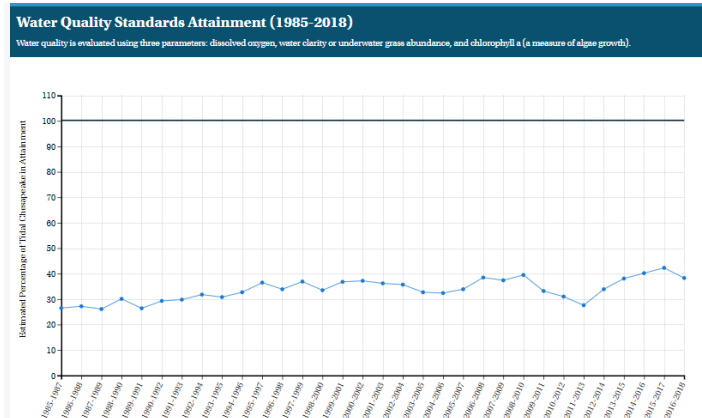
What is our Expected and Actual Progress?

Communication: Good/Fair/Poor



Chesapeake Bay Watershed Data Dashboard (Beta)

Start Here | Rivers & Streams | Tidal Waters | Targeting Restoration | Management Practices | Land Policy & Conservation





On the Horizon

Fiscal:

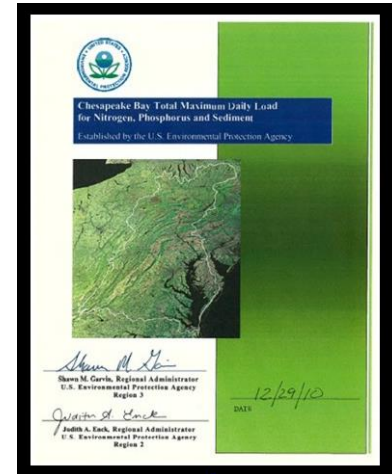
- Our traditional monitoring program capacity is declining
 - * fixed and reduced funding levels
 - * State match considerations
 - * rising costs
 - * pandemic impacts
- Fewer data will cost your jurisdiction more money:
 - Less data produces greater uncertainty in assessments
 - Creating a big enough WQ response to overcome uncertainty costs more money.



On the Horizon

Policy:

- Improving water quality standards attainment decision support
- Discussing EPA policy for allowable grant match
- Better informed targeting of BMP implementation for the Bay TMDL: 2-year milestones
- Preparing for 2025 communications: WQ standards are not coincidentally attained

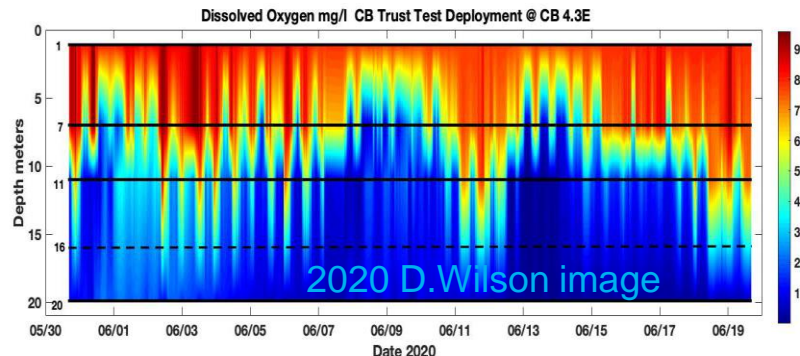




On the Horizon

Science:

- Updating assessments, explaining patterns with new data and approaches
- Defining ecosystem linkages
- Incorporating new tech, research recommendations and climate change impacts into our future monitoring plans
- Demonstrating use of citizen science data to fill gaps



D.Wilson image

A large, stylized, blue letter 'A' is centered on a dark blue background. The letter has a thick, blocky font with a slight shadow effect. The background is divided into horizontal bands of color: a dark blue band at the top, a medium blue band in the middle, and a light green band at the bottom.

Adapt

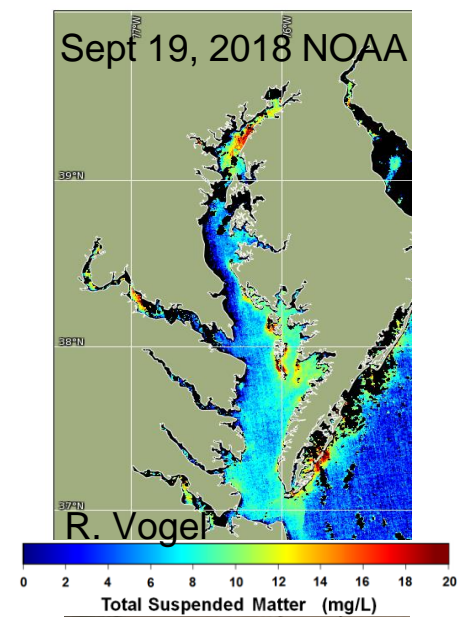
How does all of this impact our work?



Based on what we learned, we plan to ...

Fiscal:

- Work with financial professionals for options for monitoring support
- Use new data from existing investments on citizen science to enhance assessments
- Consider reprogramming funding for better information return on investment

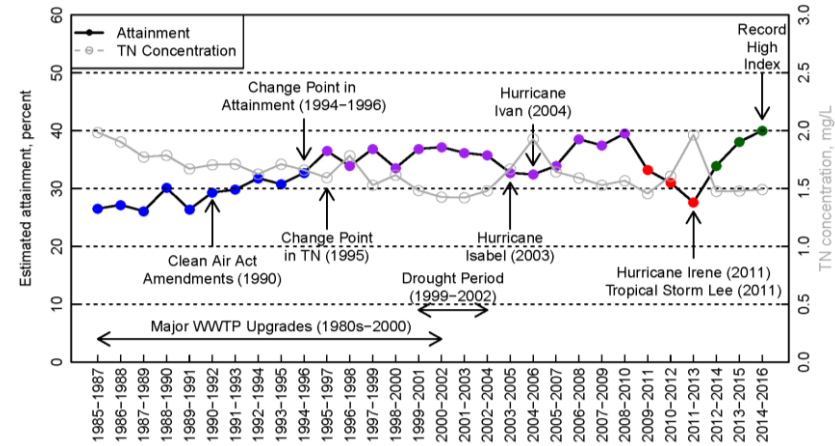




Based on what we learned, we plan to ...

Policy:

- Expand presentations on explaining WQSA indicator and water quality patterns
- Increase jurisdiction use of results informing 2-year milestones
- Increase interaction through jurisdictional meetings
- Work on further engaging science provider partners



Zhang et al. 2018

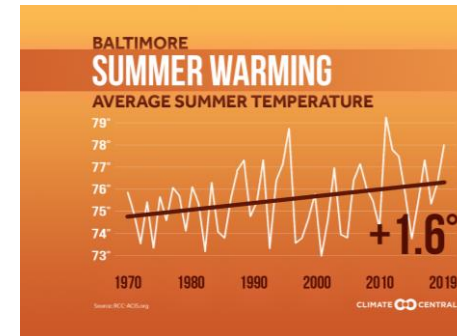
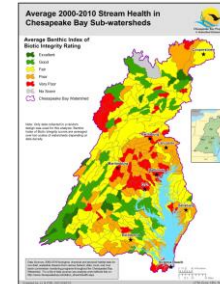
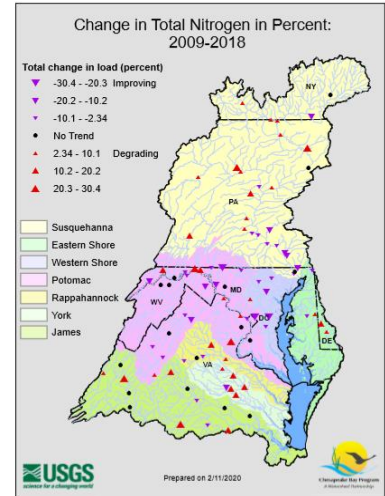




Based on what we learned, we plan to ...

Science:

- Expand analysis collaboration with jurisdictional technical staff
- Further explore factors influencing patterns and trends
- Adopt freely available data streams
- Apply new tools to fill information gaps





Help

*How can the Management Board
lead the Program to adapt?*



Help Needed

Monitoring Support:

- Maintain existing funding support
- Commit to assessing application of matching funds in 117e grants. Adjust your match portfolio
- Request WQGIT and STAR to formally incorporate new data streams (e.g. Citizen Science data) into WQS attainment assessments
- Request STAC and STAR to work with the Bay science and management community to extend monitoring capacity with monitoring program updates.



Help Needed

Jurisdictional Involvement:

- Commit to providing a list of essential jurisdictional participants for the Criteria Assessment Protocol Workgroups
- Work with jurisdictions on making their jurisdictional technical staff available to help improve use of monitoring results to inform 2-year milestones

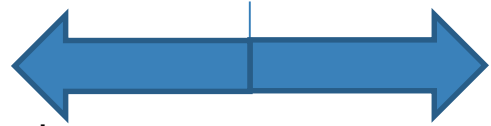


Discussion

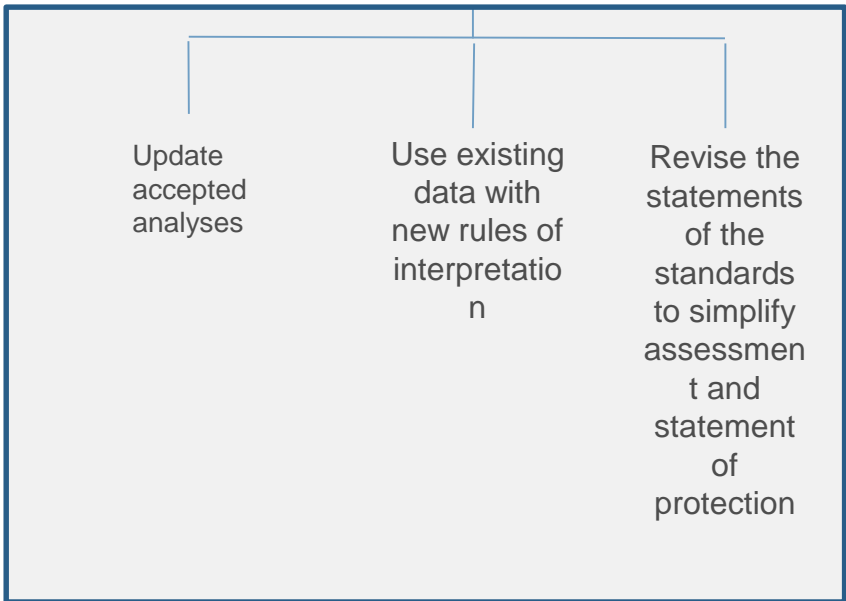
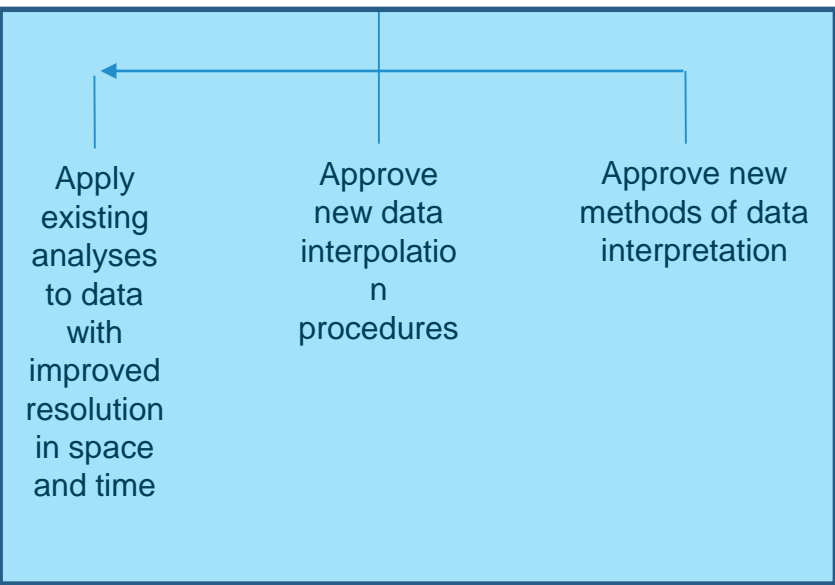
Since 2003 we have not, nor will we anytime soon, assess all our water quality criteria to evaluate standards for the TMDL under the present framework

MANAGEMENT and POLICY OPTIONS

Update data collections and analyses through revised investments and programming



No new data
Sustain existing monitoring



Perspective

1834 Charleston, West Virginia enacts a law protecting vultures from hunters. The birds help eat the city's garbage.

1860s Residents of Washington, D.C., dump garbage and slop into alleys and streets, pigs roam freely, slaughterhouses spew nauseating fumes, and rats and cockroaches infest most dwellings including the White House.

1951 Low dissolved oxygen levels kill thousands of fish during the summer. The Washington Post calls the Potomac River “an open sewer.”

Policies a century in the making:

1965 The Solid Waste Disposal Act, the first federal solid waste management law, is enacted.

1970 The federal Clean Air Act enacted. New regulations lead to incineration shut downs.

1972 The federal Clean Water Act is enacted to restore and maintain the chemical, physical, and biological integrity of the nation's waters

