

Past, Present, & Future of the Bay Movement

An aerial photograph of a bay area during sunset. The sky is filled with soft, colorful clouds in shades of orange, pink, and blue. The sun is low on the horizon, casting a golden glow over the water and the surrounding green marshlands. A winding waterway cuts through the marshes, leading towards a larger body of water. In the lower right portion of the waterway, a small boat is moving away from the viewer, leaving a white wake behind it. The overall scene is serene and captures the natural beauty of a coastal wetland.

Senator Sarah Elfreth
District 30

Member, Senate Budget & Taxation Committee & Chesapeake Bay Commission

Agenda

- What we've done well
- What we haven't done well
- What we're going to do about it



What We're Doing Well

10 reasons to be hopeful about the Chesapeake Bay in 2024

Rebounding oysters, shrinking dead zones and unprecedented funding gives us hope

BY [JAKE SOLYST](#) | JANUARY 19, 2024

1. The **dead zone** was the smallest it's ever been in 2023
2. **Oyster** populations are coming back
3. **Protected lands** in the watershed increased from 19% to 22%
4. **Underwater grass** is rebounding in places across the watershed
5. Major Chesapeake Bay **tributaries** are improving

Source: [Chesapeake Bay Program](#)

What We're Doing Well

10 reasons to be hopeful about the Chesapeake Bay in 2024

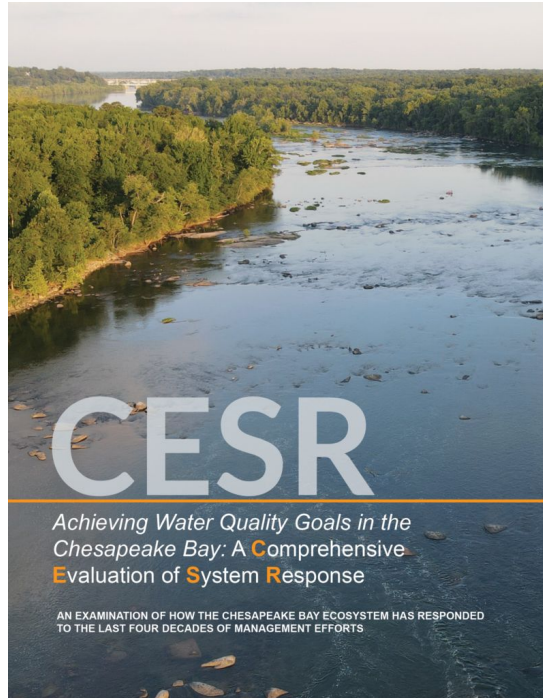
Rebounding oysters, shrinking dead zones and unprecedented funding gives us hope

BY [JAKE SOLYST](#) | JANUARY 19, 2024

6. We have **historic funding** for Bay restoration
7. We **know more** about the Bay than ever before
8. The **streams** in the Bay watershed are getting cleaner
9. Innovative programs are **helping farmers** reduce pollution
10. Communities across the watershed set **ambitious tree planting** goals

Source: [Chesapeake Bay Program](#)

What We Haven't Done Well

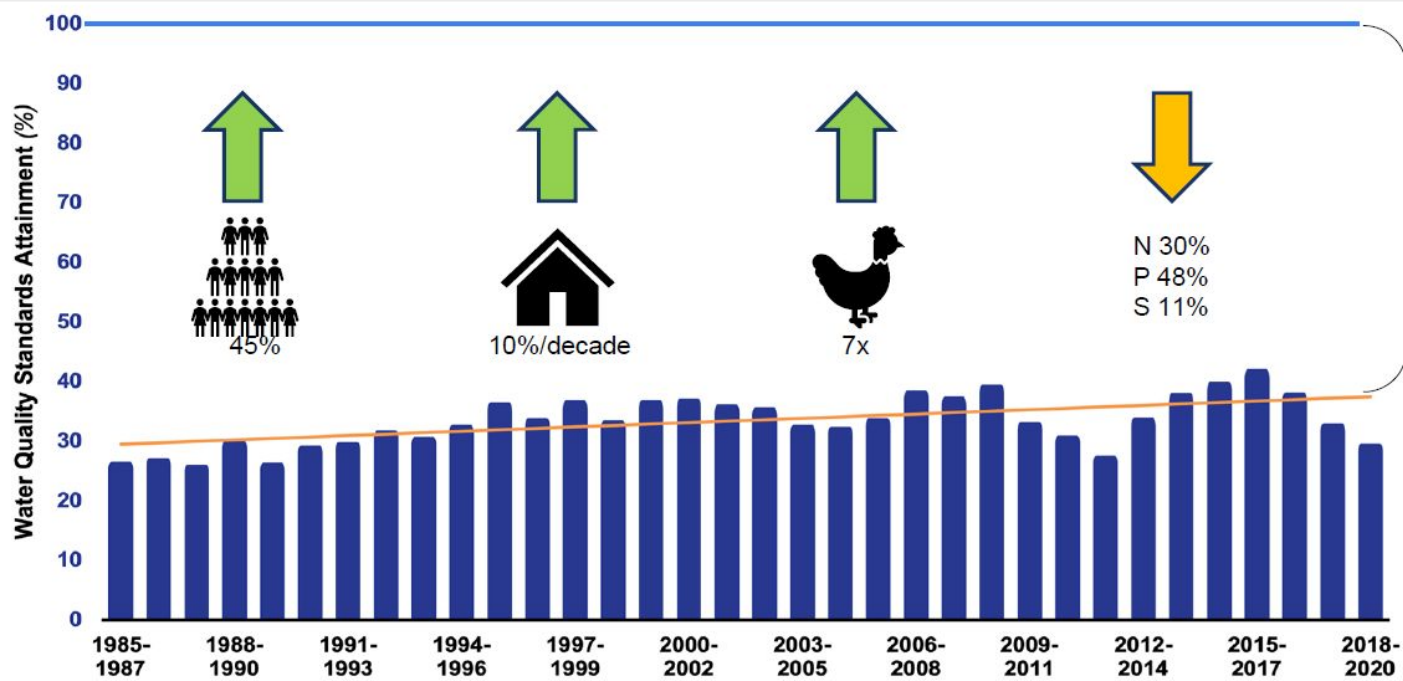


*“The May 2023 report, A Comprehensive Evaluation of System Response (CESR), summarizes the Scientific and Technical Advisory Committee (STAC) evaluation of why progress toward meeting the TMDL and water quality standards has been **slower than expected** and offers options for how progress can be accelerated. CESR is a summation of a **three year investigation** into the 40 year effort to reduce nutrient loads to Chesapeake Bay.”*

- *Chesapeake Bay Scientific and Technical Advisory Committee (STAC)*

Source: [Chesapeake Bay Scientific and Technical Advisory Committee](#)

Why this report, at this time, by these people?



Why?



CESR Summary

1. Achieving pollutant load reductions for the Bay

FINDING: Agricultural and urban nonpoint sources programs are not generating sufficient reductions to achieve Bay pollutant reduction targets.

OPPORTUNITIES: Reforms and new programs have potential to improve nonpoint source program effectiveness

2. Achieving Bay Water Quality Goals

FINDING: Bay water quality is improving but the magnitude of the change unlikely to achieve all water quality criteria

OPPORTUNITIES: Focus on potential impact on Bay living resources

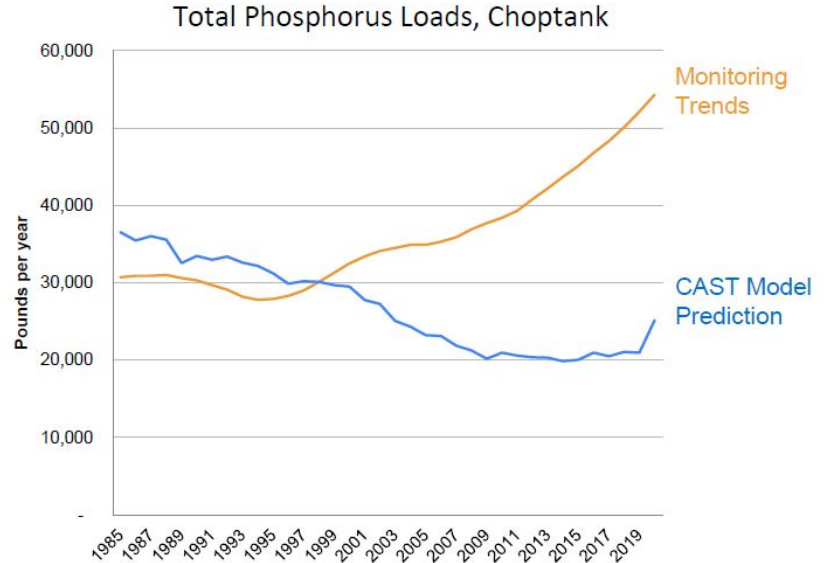
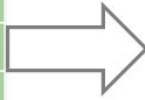


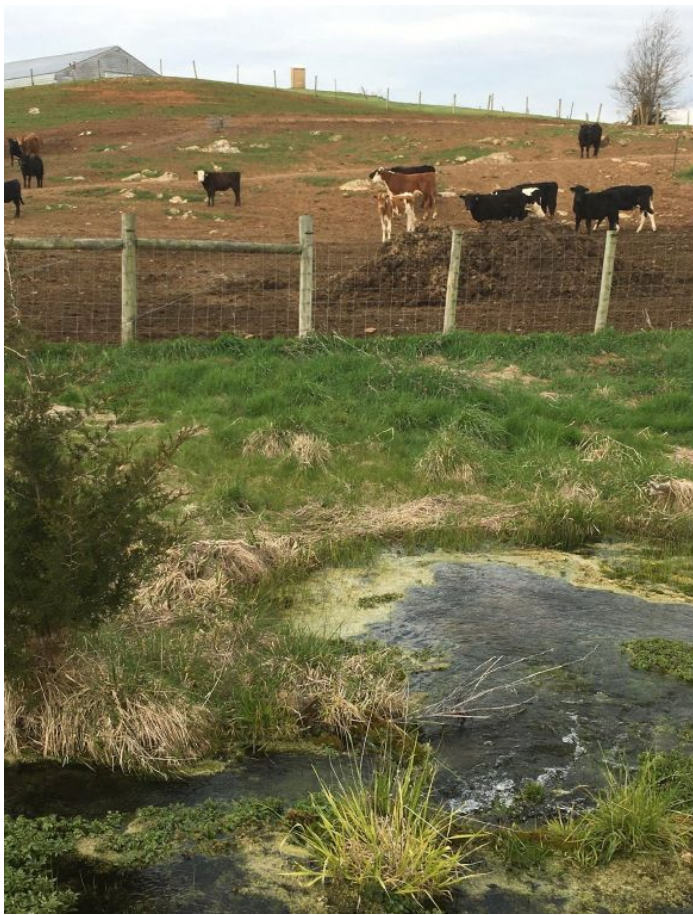
Findings: Achieving Pollutant Reductions

Nonpoint source programs may not be as effective as expected

Long term Trends in Total Phosphorus Loads

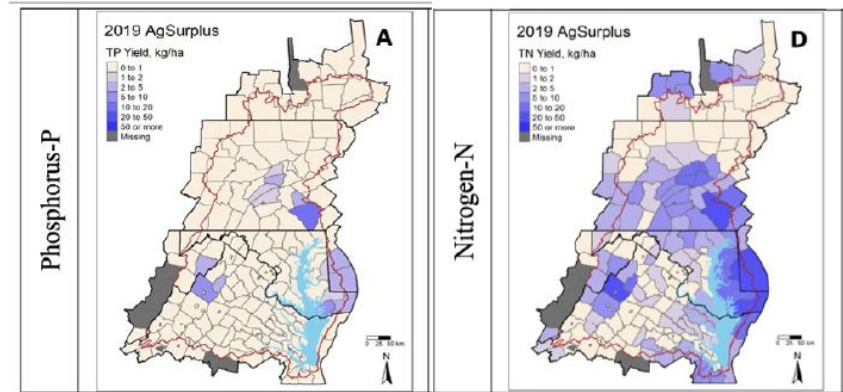
Rivers	Monitoring Observations	CAST model
Susquehanna	—	↓
Potomac	↓	↓
Choptank	↑	↓
Patuxent	↓	↓
Rappahannock	↑	↓
Mattaponi	—	↑
Pamunkey	↑	↓
James	↓	↓
Appomattox	↑	↓





3x increase in
animal numbers

Mass Balance



4x increase
in BMPs

Sabo et al. 2021

Achieving pollutant load reductions for the Bay: Opportunities for Nonpoint Sources

Improve approaches to address nutrient mass balance

Additional Focus on Outcomes:

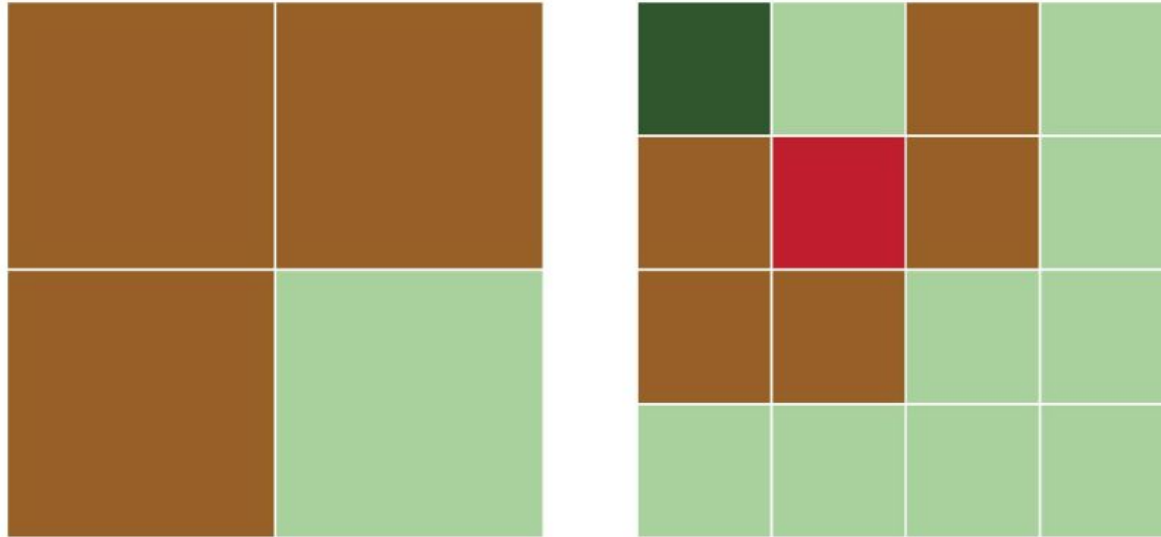
Improved targeting of conservation investments

New incentive programs (behavior change)

Attention/tools on local waters (monitoring, other modeling tools)

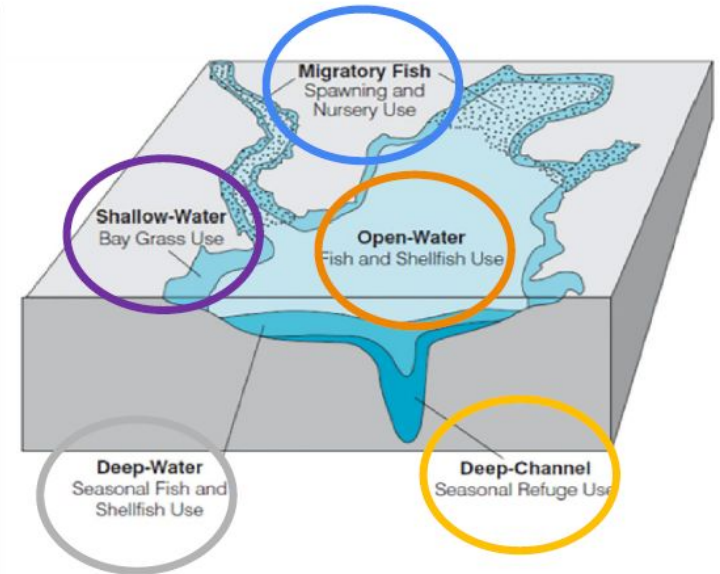
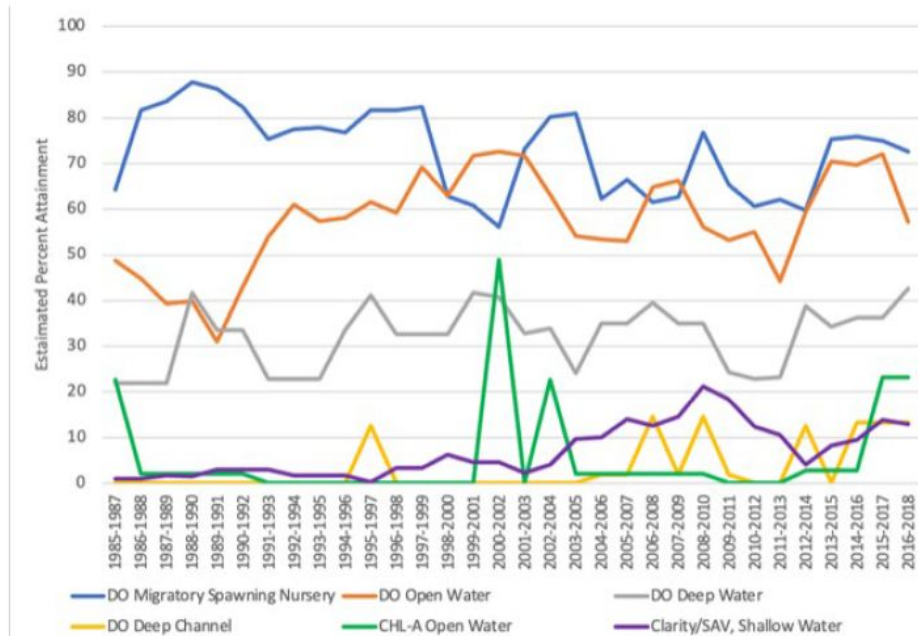
Encourage policy innovation (and permission to fail)

Targeting Conservation



Larger scale makes it more difficult to pinpoint the problem
Targeting helps identify problem areas (red square)

Finding: Bay water quality is improving but the magnitude of the change unlikely to achieve all water quality criteria



Source: [Chesapeake Bay Scientific and Technical Advisory Committee](#)

Finding: Bay water quality is improving but the magnitude of the change unlikely to achieve all water quality criteria

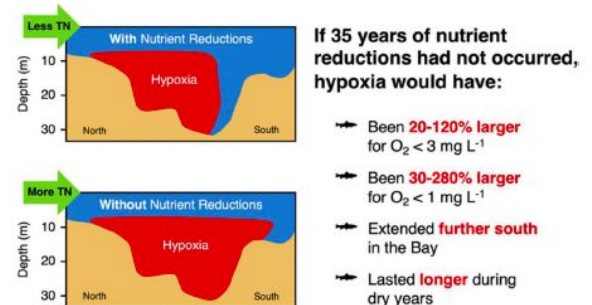
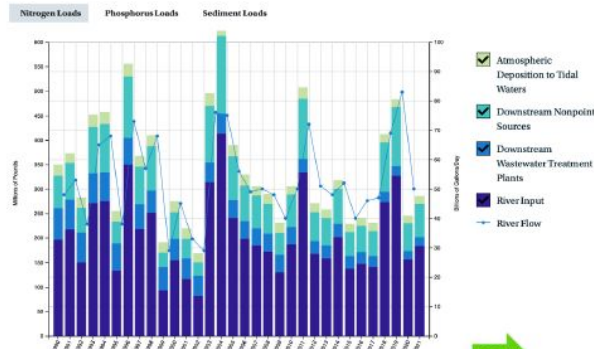
Why?

- Water quality improvements are not sufficiently large
- Climate change, especially warming of Bay waters, has dampened the response that we expected from load reductions.
- Imperfect understanding of conditions and the way that the ecosystem works

Pollution Loads and River Flow to the Chesapeake Bay (1990-2021) [↗](#)

River and Watershed Input of Pollution Loads. Years denote the water year measured between October 1 and September 30.

[VIEW CHART](#) [VIEW TABLE](#)





Achieving Bay water quality goals: Opportunities

Prioritize and focus WQ and restoration investments around living resources

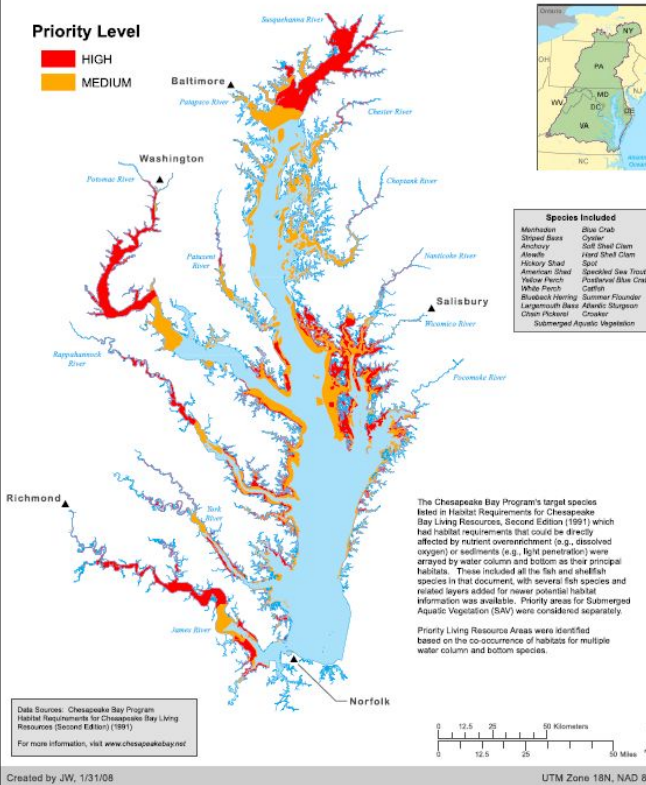
Don't allow water quality investments to leave Living Resource benefits on the table

Priority Living Resource Areas

Chesapeake Bay



Chesapeake Bay Program
A Watershed Partnership



Achieving Bay Water Quality Goals

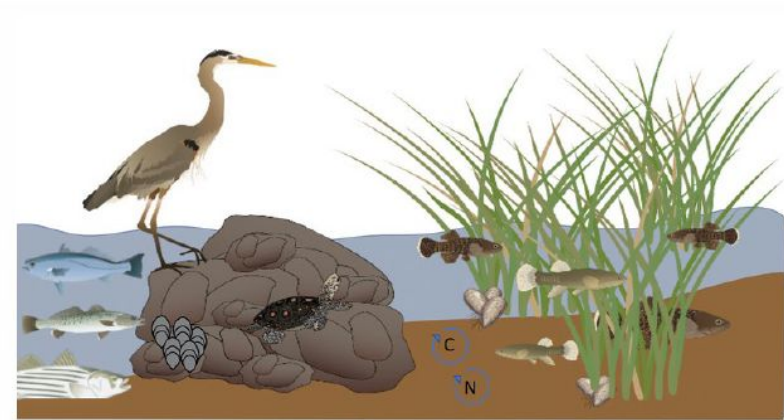
Opportunity: Prioritize our efforts to attain water quality standards so that we can achieve the largest possible benefit to living resources (example: tiered TMDL)

Achieving Bay Water Quality Standards/LR Response

Opportunity: Don't leave benefits to Living Resources on the table



Jane Hawkey, Integration and Application Network (ian.umces.edu/media-library)



ECOSYSTEM SERVICES OF SUSTAINABLE SHORELINES




Credit: Center for Coastal Resources Management; Kelsey Breich, Network for Engineering with Nature, University of Georgia; Integration and Application Network (ian.umces.edu/media-library)


Achieving Water Quality Goals in the Chesapeake Bay: A Comprehensive Evaluation of System Response (CESR)

<https://www.chesapeake.org/stac/cesr/>


The Report




CESR Executive Summary




Achieving Water Quality Goals in the Chesapeake Bay: A Comprehensive Evaluation of System Response



Resource Document: Evaluation of Management Efforts to Reduce Nutrient and Sediment Contributions to the Chesapeake Bay Estuary



Resource Document: Knowledge Gaps, Uncertainties, and Opportunities Regarding the Response of the Chesapeake Bay Estuary to Restoration Efforts



Resource Document: A Proposed Framework for Analyzing Water Quality and Habitat Effects on the Living Resources of Chesapeake Bay



What I hear when I think CESR...

My lens: As an appropriator, a regional actor, a representative of a purple district

Problem: We have been overly focused on TMDL - sometimes at the expense of living resources

Solution: We have to get back to the beginning of the movement: a swimmable & fishable Chesapeake Bay

Problem: Our blanket approach to interventions and increased pressures (climate change, population growth) have led to limited success

Solution: We have to target our limited resources where they will have the greatest results for water quality, living resources, and the public

Problem: “We’ve always done it that way / We’ve never done it that way”

Solution: Innovation is good! Maryland can learn a lot from Pennsylvania

What We're Going To Do About It

Whole Watershed Act

Crossfile: Delegate Sarah Love



The Chesapeake Bay watershed's 64,000-square miles consists of six states and the District of Columbia.

Best In Show

Crossfile: Delegate Pam Guzzone



Photo credit: Chesapeake Bay Foundation

Whole Watershed Act

Crossfile: Delegate Sara Love

Objective

Based on the recent CESR report, incentivizes what is possible in **holistic watershed restoration** by establishing new funding streams and approval pathways for innovative local watershed projects which include **environmental co-benefits** to ensure a long-term positive impact on water quality, habitat restoration, and living resources.

Key Elements

- **\$20M in concentrated, existing State funding** toward 5 whole watershed projects for 5 years
- Focus on watersheds that present opportunities for most significant impact on a (relatively) **expedited timeline** with coordination between State, local, and private partners
- Projects selected to represent different geographic & land use types and will **prioritize Environmental Justice communities**
- Requirement of **multiple co-benefits** to support the health of the whole watershed & community
- **State Management Team** consisting of multiple State agencies, local experts, and more to select projects, monitor and support progress, and expedite the permitting process
- **New certification for developers & contractors** who complete restoration projects to uphold standards & ensure quality

Whole Watershed Act

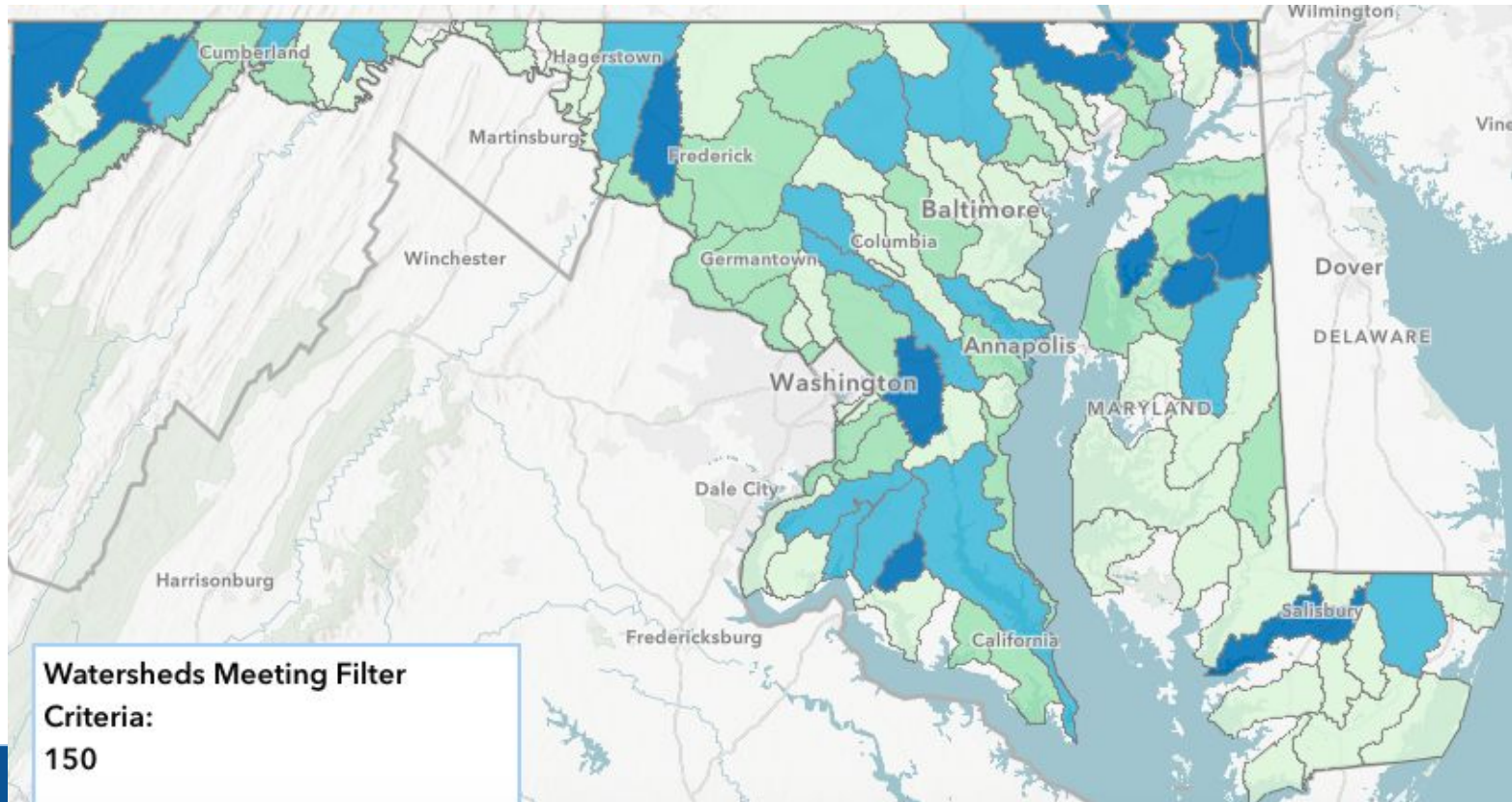
Bigger: Utilizing 8-digit watersheds

Smarter: Targeting the watersheds that need the most attention

Bolder: Requiring multiple co-benefits in order to ensure more holistic projects

Faster: Ensuring DNR, MDE, MDA, other state, local, and federal partners work together to responsibly streamline permitting and implementation

Going bigger: Using 8-digit watersheds



Thinking smarter: Targeting Most Effective Basins

Final TMDL IR MAP 2020 2022

IR - Water Contact Recreation Bacteria Point Source

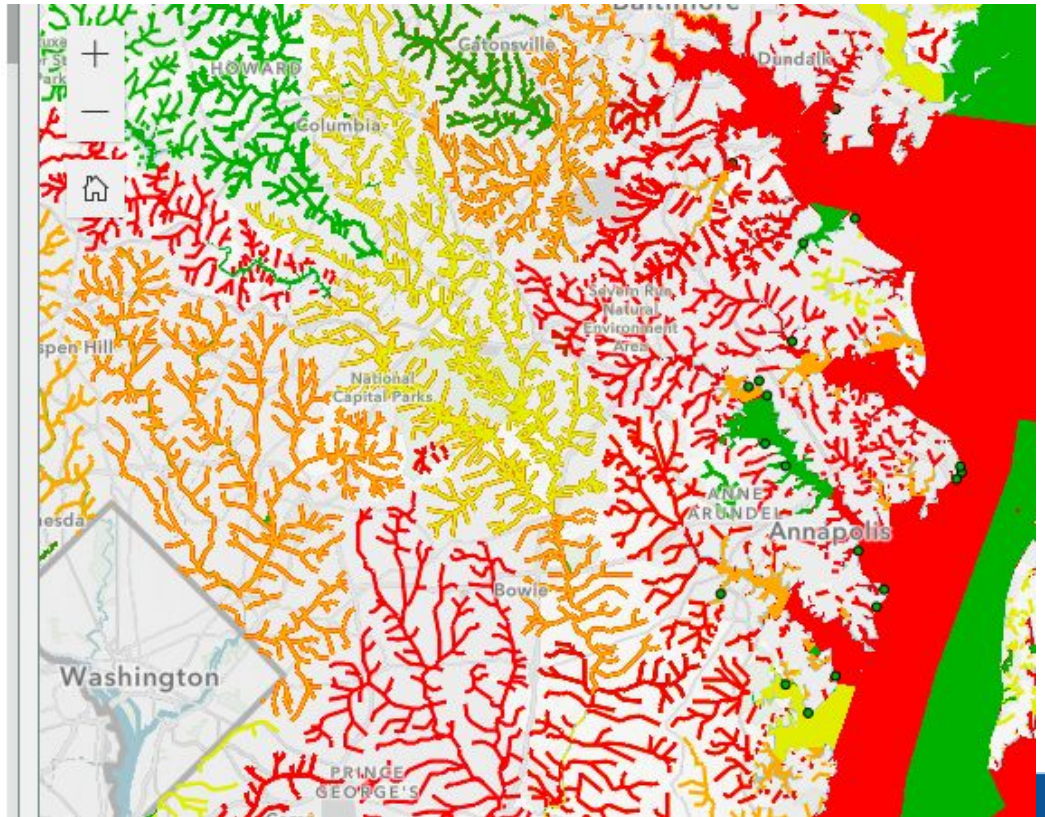
- 2-Meets Water Quality Criterion
- 3-Insufficient Information
- 4a-Impaired, TMDL Complete

IR - Bacteria- Streams

- 2-Meets Water Quality Criterion
- 3-Insufficient Information
- 4a-Impaired, TMDL Complete
- 5-Impaired, TMDL Needed

IR - Bacteria- Impoundments

- 2-Meets Water Quality Criterion



Thinking smarter: Investing in diverse communities



Of the five watersheds:

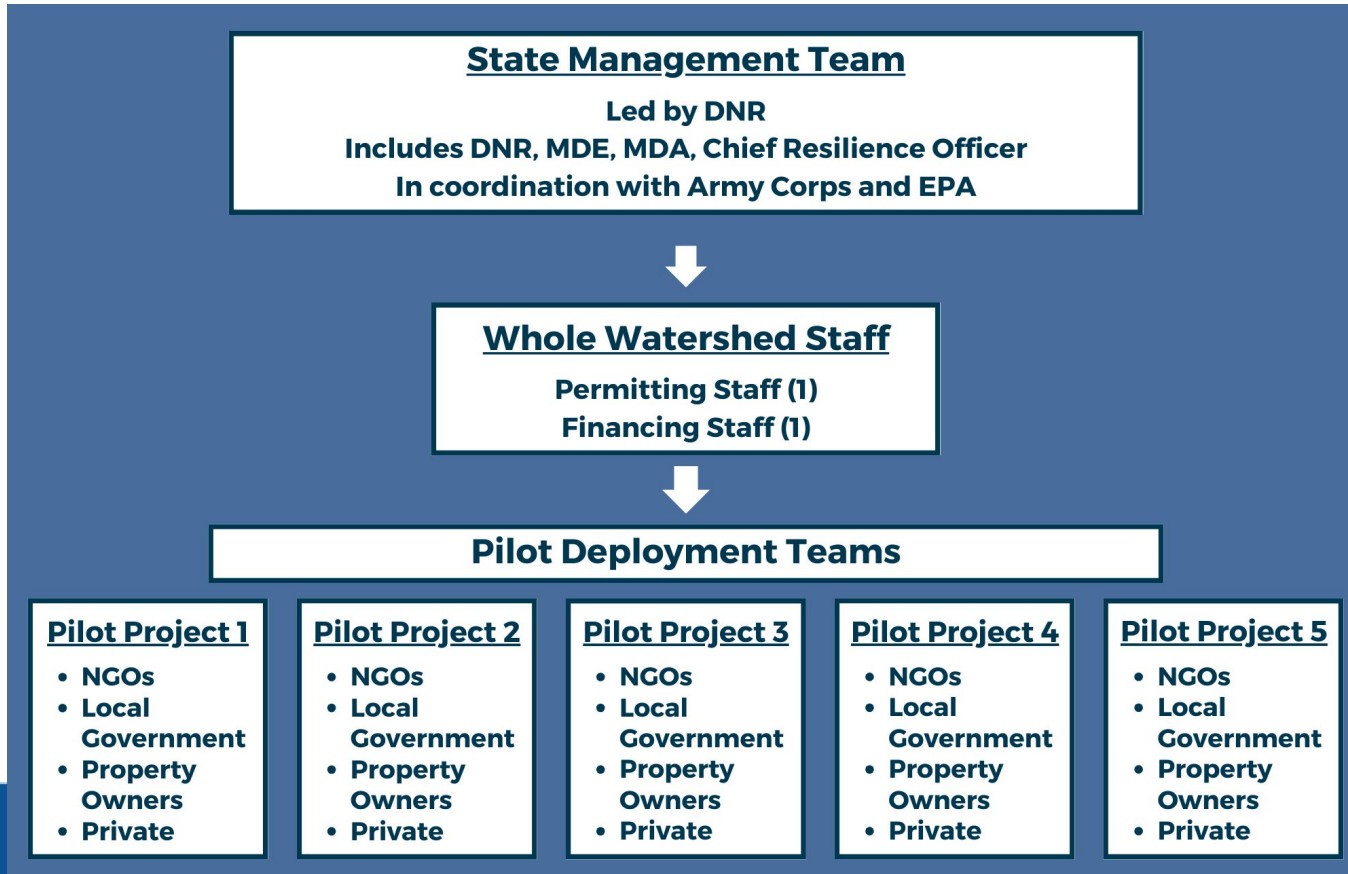
- One urban
- One suburban
- One agricultural
- One project along a state border
- Two within overburdened communities

Being bolder: Requiring co-benefits

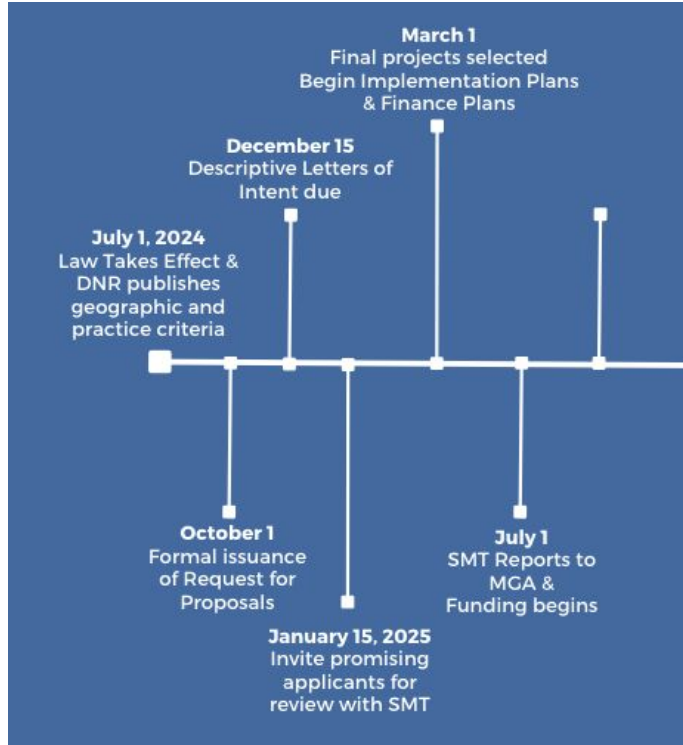
In addition to reducing tree loss, require projects include at least five of the following:

- Creation or restoration of wildlife habitat, riparian buffers, and wetland restoration
 - Restoration of aquatic resources: freshwater mussels, fish passage, or oyster reefs
- 
- Carbon sequestration
 - Climate change mitigation, adaptation, or resilience
 - Local employment opportunities
 - Improving and protecting public health
 - Provision of recreational opportunities and public access to waterways and natural habitats

Moving faster: Streamlining the process



Moving faster: Streamlining the timeline & bundling the funding



Funding Sources:

- Chesapeake and Atlantic Coastal Bays Trust Fund
- Bay Restoration Fund - Clean Water Commerce Act
- Maryland Agricultural Land Preservation Foundation
- Maryland Agricultural Water Quality Cost-Share
- Water Quality Revolving Loan Fund
- Federal: EPA's MEB funding, US Fish & Wildlife, Army Corps - Chesapeake Bay, NOAA
- Local
- Private

Whole Watershed Act

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- **New certification for developers & contractors** who complete restoration projects to uphold standards & ensure quality

Best In Show

Crossfile: Delegate Pam Guzzone

Objective

Incentivizing greater conservation in agriculture by designating funding to incentivize the implementation multiple Best Management Practices for the **greatest environmental impact** on targeted agricultural land.

Key Elements

- **\$5M in annual State funding**
- Prioritizing projects with the opportunity for the **greatest impact for ecological restoration** and **engaging disadvantaged communities**
- **Multiple Best Management Practices (BMPs)** required in the project plan and in coordination with farm conservation plans
- Technical assistance, progress monitoring, and project evaluation **provided collaboratively** by MDA, Department of Natural Resources (DNR), and Maryland Department of the Environment (MDE)

Best In Show

BMPs

- Vegetative environmental buffers, hedgerows, windbreaks, or other practices designed to reduce the transport of air emissions and deposition
- Stream exclusion fencing with wetland/riparian/stream restoration
- Upland or riparian tree planting
- Stream or wetland restoration
- Mussel or oyster restoration / aquaculture
- Land retirement and conservation
- Managed retreat
- Silvopasture / agroforestry
- Small-scale urban agricultural practices
- Living shorelines

Reasons I remain optimistic...

#1

**Our science
has never
been better**



Reasons I remain optimistic...



#2

**Our partnerships
have never been
stronger**

Reasons I remain optimistic...

#3

**We simply
can't fail**



Thank You!

Senator Sarah Elfreth

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