



pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION



Bureau of Watershed Restoration
and Nonpoint Source Management

Pennsylvania's 2023 Chesapeake Bay Progress

Agricultural Advisory Board
April 17, 2024

Josh Shapiro, Governor

Jessica Shirley, Interim Acting Secretary

Agenda

- Purpose
- Supporting Agriculture and Local Action
- Reporting and Outcomes
- Summary

Purpose

- Review of agriculture and local action support from the Department of Environmental Protection (DEP) and State Conservation Commission (SCC)
- Highlight reporting as well as modeled and monitored nutrient and sediment reduction outcomes over the course of several years

Agenda

- Purpose
- **Supporting Agriculture and Local Action**
- Reporting and Outcomes
- Summary

Supporting Agriculture and Local Action

- **Capacity is building.** A diverse group of partners working across the watershed have set aside funds for projects identified in county CAPs, as well as to support personnel and water quality monitoring. For example, Hammer Creek Watershed has a new Continuous Instream Monitor (CIM) supported by USGS and SRBC. Little Conewago Creek Watershed has a new CIM supported by USGS and USDA. Both watersheds offer the opportunity to serve as research sites by applying monitoring of agencies and universities to provide data-driven results to inform conservation.
- **Technical assistance partnerships are expanding.** Engineers have been hired to prioritize Agricultural Conservation Assistance Program (ACAP) projects that commingle with NRCS Environmental Quality Incentives Program (EQIP) funds. The State Conservation Commission (SCC) recently entered into a contract with HRG, Inc. to work alongside an NRCS engineer at the new Technical Assistance Center. DEP published an Invitation for Bid to fund additional technical assistance using Infrastructure Investment and Jobs Act (IIJA) funds in coordination with NRCS and SCC and continues to provide 50% of the funding toward the PACD Technical Assistance Grant (TAG) program.
- **Local streams were successfully removed from the impaired waters list.** Local partners in seven counties are working together on implementing precision conservation initiatives, using water quality monitoring and assessment data and mapping tools for data-driven decision-making and watershed-based planning to delist waters from the Clean Water Act (CWA) 303(d) impaired waters list which could ultimately lead to restored watersheds and healthy communities.

Supporting Agriculture and Local Action

- **Funding for Watershed Restoration and Agricultural BMPs**
 - **DEP Countywide Action Plan (CAP) Implementation and Clean Water Coordinators:**
 - A total of \$19.6 million was awarded for County Coordinators and CAP Implementation Grants. This included EPA Most Effective Basin (MEB), Infrastructure Investments and Jobs Act (IIJA), and Local Government Implementation (LGI) funding.
 - 226 projects were approved for funding and are estimated to reduce more than 170,000 lbs per year of nitrogen, 122,000 lbs per year of phosphorus, and more than 18,000 tons per year of sediment.
 - **DEP Growing Greener:**
 - The 2023 round of Growing Greener grant program provided more than \$4.5 million to 27 projects in Pennsylvania's Chesapeake Bay Watershed, with an estimated reduction of more than 48,000 lbs per year of nitrogen, 5,800 lbs per year of phosphorus, and 4,100 tons per year of sediment.
 - 58 implemented BMPs were verified and reported toward Pennsylvania's annual numeric progress. Of these, more than 45 are agricultural BMPs.
 - **DEP / EPA Section 319 Nonpoint Source Management:**
 - 64 implemented BMPs were verified and reported toward Pennsylvania's annual numeric progress. Of these, more than 55 are agricultural BMPs.
 - **SCC Conservation Excellence Grant (CEG):**
 - 108 implemented BMPs were verified and reported toward Pennsylvania's annual numeric progress.
 - **SCC Agriculture Conservation Assistance Program (ACAP):**
 - Roughly 70% of the funding and corresponding applications are in Pennsylvania's Chesapeake Bay watershed.
 - **SCC Agri-Link:**
 - Low interest loan program has processed five loans for producers, totaling \$1.1 million in subsidized loans.

Supporting Agriculture and Local Action



Clean water:
Great for PA
Good for the Bay

PA Clean Water Gathering Summary and Next Steps

Progress Through Partnerships

On October 11, 2023, DEP's Bureau of Watershed Restoration and Nonpoint Source Management (BWRNSM) hosted the first Clean Water Gathering of State Program Action Leaders and Countywide Action Planning (CAP) leaders. Over 80 partners, representing county, state and federal organizations, came together to celebrate successes and discuss high level needs, issues and challenges to continued progress. BWRNSM's Chesapeake Bay Watershed Restoration Division is using the recommendations from this meeting to build collaborative county/state partner Progress Teams that focus on "Strategies for Success" that address challenges and build on successes from Phase 3 WIP and CAP efforts.



In Their Own Words

"CAP planning brings additional funding to leverage for projects and helps build relationships with landowners and other county agencies." - Potter County

"The SCC provides funding, support and resources for County Conservation Districts." - State Conservation Commission

"Consulting capacity keeps projects moving. Predictable funding helps farmers stay interested in doing projects." - Perry County



Value of Implementing Countywide Action Planning

Countywide action planning and implementation adds tremendous value to county and local partners. As the CAP process matures and expands, BWRNSM and State Program Action Leaders are committed to continuing support and growth of this continually adaptive and evolving process. The Clean Water Gathering confirmed that Program Action Leaders and county partners are willing and ready to collaborate and further support this effort as it evolves.

County Leaders' Perspectives

- Funding and resources
- Water quality improvements
- Local involvement
- Identity, organization
- Having a strong voice
- Collaboration and partnerships

Program Leaders' Perspectives

- Funding and resources
- Technical assistance
- Training
- Connections
- Program integration



Partners - Projects - Progress



PA Clean Water Gathering Summary and Next Steps



Clean Water Gathering Outcomes

The meeting gave attendees the chance to celebrate partnership-facilitated clean water successes. Each partner reaffirmed that the foundations of success are: commitment, communication, and collaboration. The partners agree that by working together they can overcome the clean water challenges that still exist.

Together the partners:

- Agreed to a common list of five challenges that keeps PA from leveraging all available resources for implementation of the Phase 3 WIP and CAPs.
- Expressed interest and need to work together collaboratively to resolve these challenges and be able to continue expanding on PA's progress.
- Began conversations to identify strategies to overcome these challenges.

Progress Teams

The five agreed-upon challenges discussed at the Clean Water Gathering were condensed into three focused challenge areas that hinder or prevent Pennsylvania from being more successful. Three Progress Teams, composed of state and county partners, were created to develop "Strategies for Success" focused on addressing these issues that will lead to positive change and progress on these challenge areas. The three key challenge areas identified are:

1. Technical & Administrative Assistance
2. Staff Building / Staff Retention
3. Funding / Multi-Grant Coordination



"Improving water quality and creating partnerships benefits our communities." - Franklin County

Next Steps

1. County, state and federal partners will continue the conversation in 2024, ensuring ongoing progress by:
 - Engaging, collaborating and building on the foundation of success
 - Participating with and/or supporting Progress Teams in developing "Strategies for Success" for positive, effective change and progress in challenge areas.
2. Three Progress Teams collaborate to address ongoing challenges:
 - What can be proposed to ensure effective change?
 - Who is needed to make change happen?
 - How do we go about getting the change that we want?
 - When is the best time to engage additional partners, propose change, etc.?
3. DEP's BWRNSM Chesapeake Bay Watershed Restoration Division staff will coordinate and facilitate Progress Team meetings, in support of county and state leader efforts.

"We have more projects than funding and will do what it takes to finish these projects." - Snyder County

Partners - Projects - Progress

Supporting Agriculture and Local Action

- Updated [Bureau of Watershed Restoration and Nonpoint Source Management website](#)
- [Healthy Watersheds, Healthy Communities](#) story map: 3,000+ views
- [Clean Water Academy](#): Web-based training modules
- [Tracking Pennsylvania's Progress](#): Adding public transparency for milestone commitments and progress
- [Healthy Waters](#) monthly e-newsletter: Increasing subscribers
- CAP Action Items for the Week: weekly email sharing relevant updates, tools, and training opportunities
- Materials and training to support county teams' local outreach needs

[DEP > Businesses > Water > Watershed Restoration and Nonpoint Source Management > Chesapeake Bay Watershed Restoration Division > PA's Phase 3 WIP > Newsletter](#)



HEALTHY WATERS

Pennsylvania. Partnership. Progress

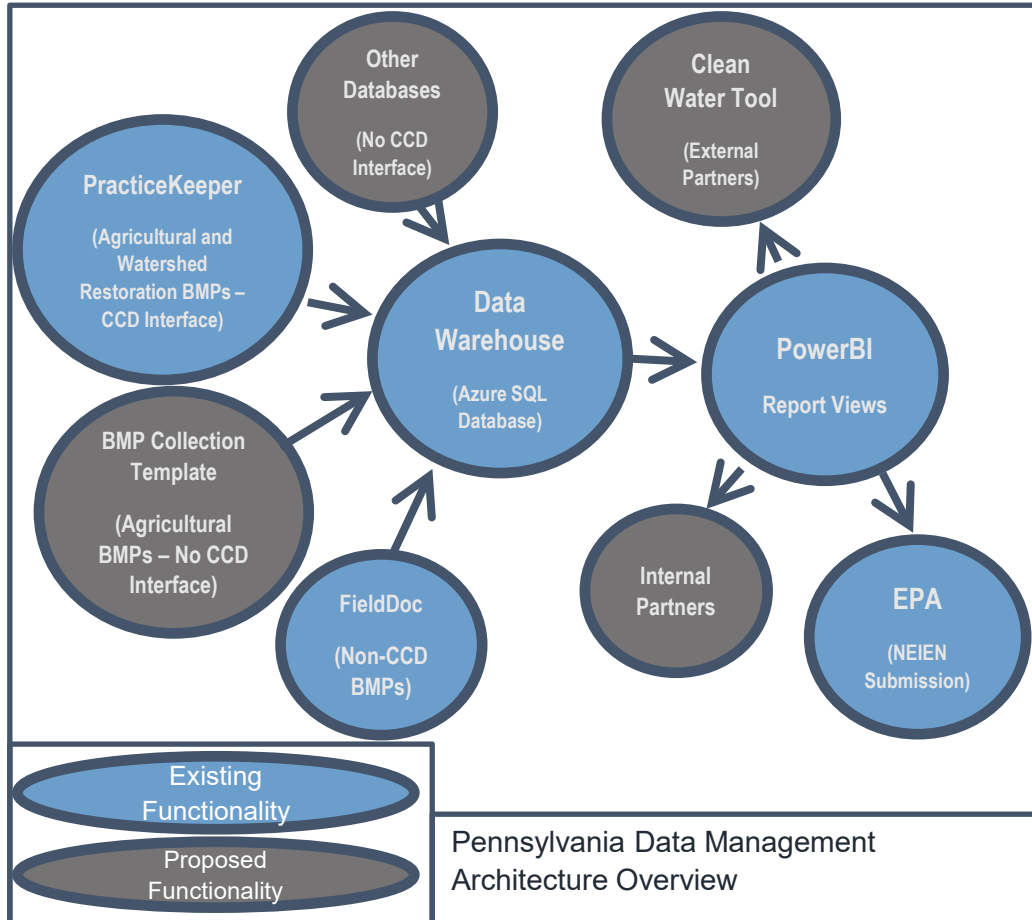
The Department of Environmental Protection Bureau of Watershed Restoration and Nonpoint Source Management, Chesapeake Bay Watershed Restoration Division produces a monthly newsletter to showcase progress and updates on the statewide Phase 3 Watershed Implementation Plan and our local partners' Countywide Action Plans. Our newsletter will highlight activities from the Division and our partnering counties, agencies, and action team leaders; reporting and data tools; funding and grant opportunities; and major announcements.

[Sign up for the newsletter](#) 

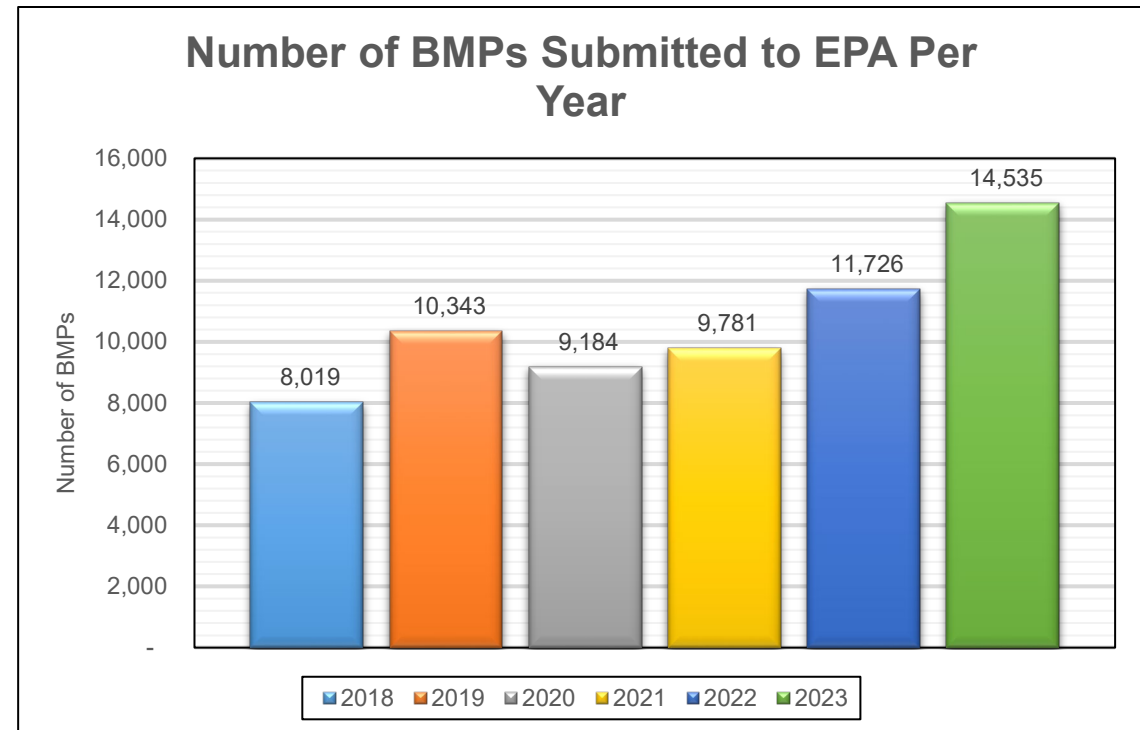
Agenda

- Purpose
- Supporting Agriculture and Local Action
- **Reporting and Outcomes**
- Summary

Reporting and Outcomes

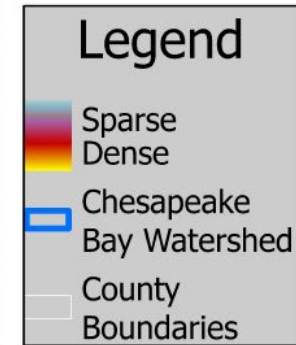
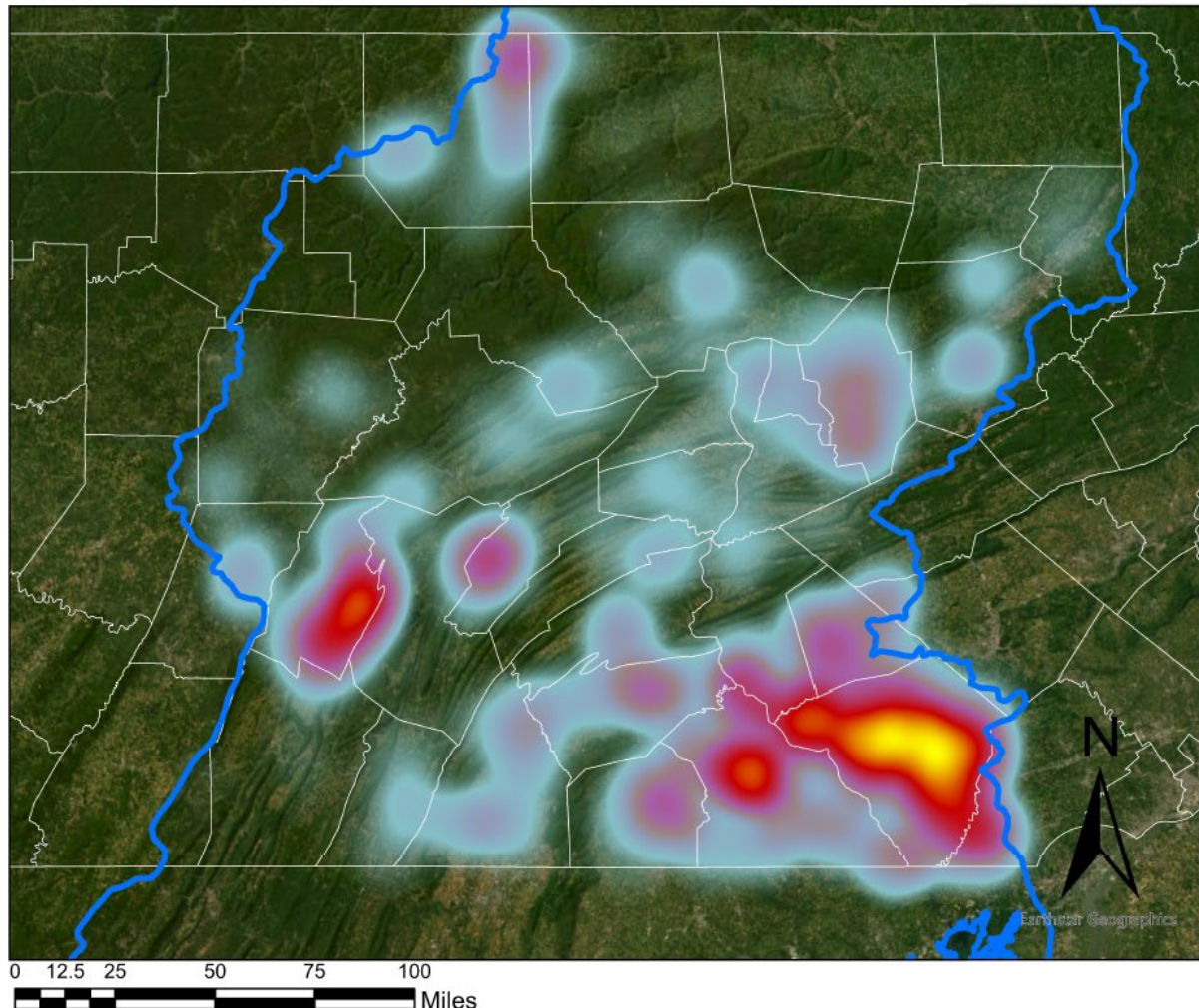


2023 Nonpoint Source Best Management Practice (BMP) records reported to EPA increased by 2,808 records for a total of 14,534 BMP records.



Reporting and Outcomes

BMPs with Lat and Longs for 2023 Progress Year



There are 8,178 new BMPs with Latitudes and Longitudes.

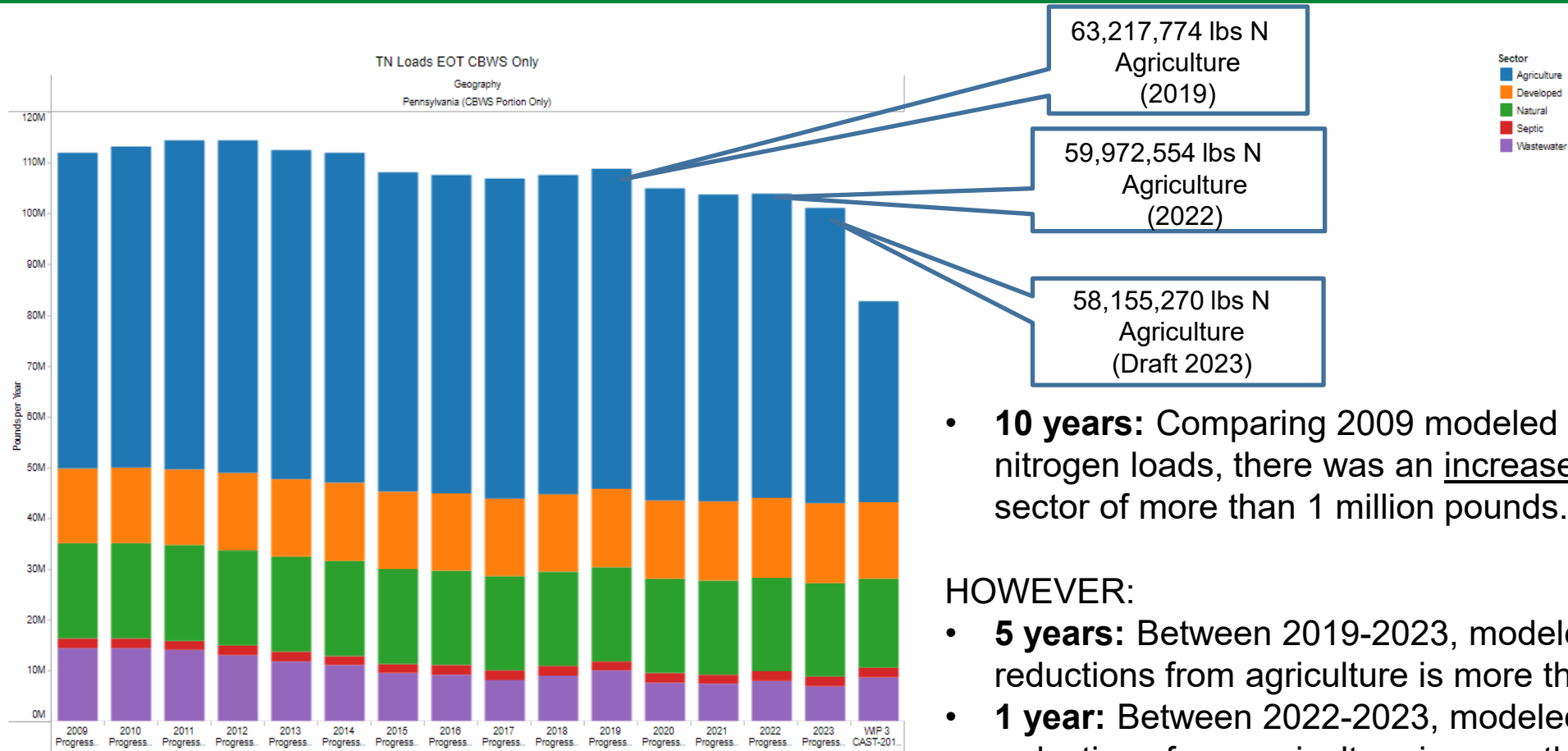
Reporting and Outcomes

Nutrient and sediment pollution is decreasing to the Chesapeake Bay.

The Chesapeake Assessment Scenario Tool (CAST) model shows that Pennsylvania's implementing BMPs that will lead to improved water quality.

USGS monitoring data published on [ChesapeakeProgress](#) shows improving trends and conditions at the Susquehanna River Input Monitoring (RIM) station as well as several of Pennsylvania's Non-tidal Network (NTN) water quality monitoring stations.

Chesapeake Bay Modeled Nitrogen Reductions



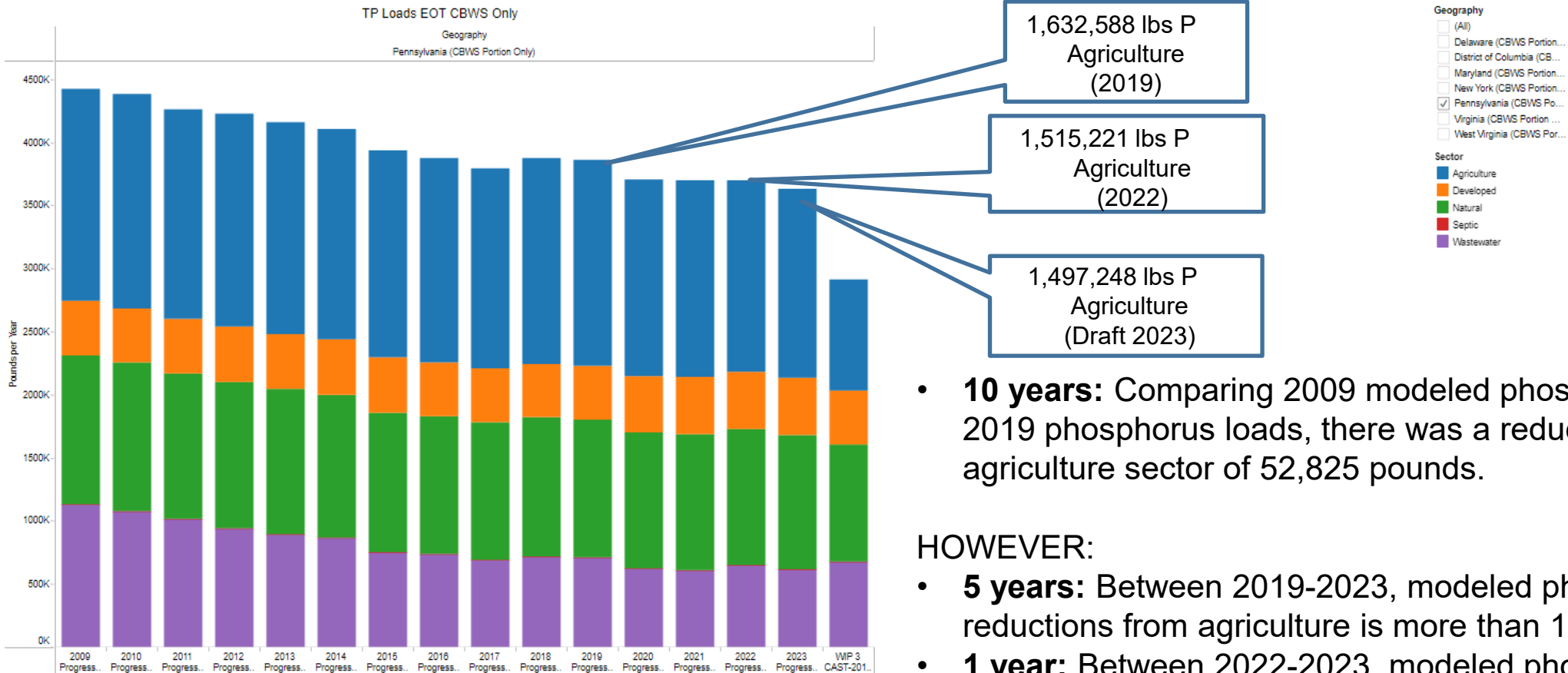
- **10 years:** Comparing 2009 modeled nitrogen loads with 2019 nitrogen loads, there was an increase in the agriculture sector of more than 1 million pounds.

HOWEVER:

- **5 years:** Between 2019-2023, modeled nitrogen load reductions from agriculture is more than 5.06 million pounds.
- **1 year:** Between 2022-2023, modeled nitrogen load reductions from agriculture is more than 1.81 million pounds.

Graph provided by CAST as of February 8, 2024 – data is still draft for 2023 progress

Chesapeake Bay Modeled Phosphorus Reductions



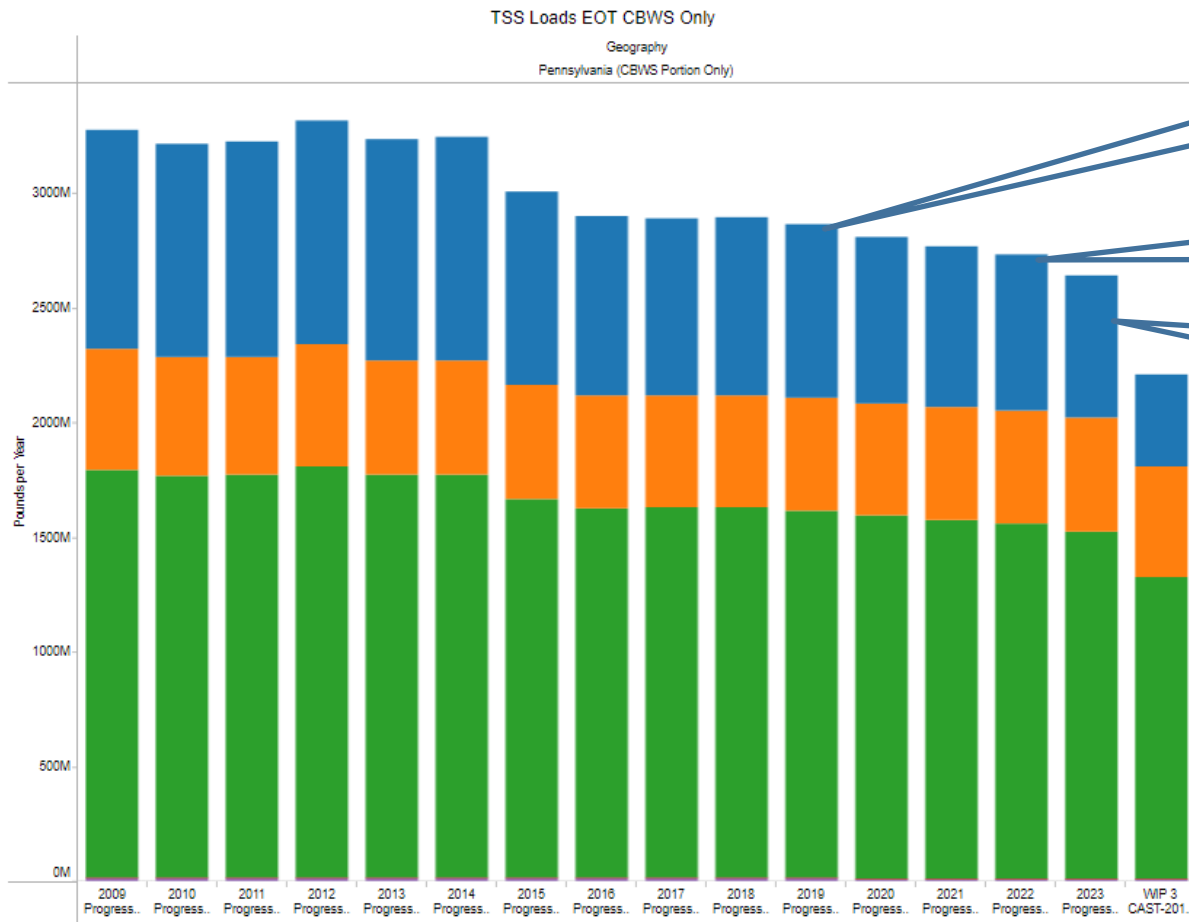
- **10 years:** Comparing 2009 modeled phosphorus loads with 2019 phosphorus loads, there was a reduction in the agriculture sector of 52,825 pounds.

HOWEVER:

- **5 years:** Between 2019-2023, modeled phosphorus load reductions from agriculture is more than 135,300 pounds.
- **1 year:** Between 2022-2023, modeled phosphorus load reductions from agriculture is more than 17,900 million pounds.

Graph provided by CAST as of February 8, 2024 – data is still draft for 2023 progress

Chesapeake Bay Modeled Sediment Reductions



759,387,422 lbs Sediment
Agriculture
(2019)

677,735,694 lbs Sediment
Agriculture
(2022)

618,939,530 lbs Sediment
Agriculture
(Draft 2023)

- Geography
- (All)
 - Delaware (CBWS Portion...)
 - District of Columbia (CB...
 - Maryland (CBWS Portion...
 - New York (CBWS Portion...
 - Pennsylvania (CBWS Po...
 - Virginia (CBWS Portion ...)
 - West Virginia (CBWS Por...
- Sector
- Agriculture
 - Developed
 - Natural
 - Septic
 - Wastewater

- **10 years:** Comparing 2009 modeled sediment loads with 2019 sediment loads, there was a reduction in the agriculture sector of more than 196 million pounds.

HOWEVER:

- **5 years:** Between 2019-2023, modeled sediment load reductions from agriculture is more than 140 million pounds.
- **1 year:** Between 2022-2023, modeled sediment load reductions from agriculture is more than 58 million pounds.

Graph provided by CAST as of February 8, 2024 – data is still draft for 2023 progress

Reporting and Outcomes

Pollution Loads by Monitoring Station

Status of Nitrogen Loads
 Status of Phosphorus Loads
 Status of Sediment Loads

Monitoring Station	Long-Term Trend (1985-2021)	Ten-Year Trend (2012-2021)
Susquehanna River (Conowingo, MD)	Improving	Improving
Potomac River (Washington, DC)	Improving	Improving
James River (Cartersville, VA)	Improving	Improving
Rappahannock River (Fredericksburg, VA)	Improving	Degrading
Appomattox River (Matoaca, VA)	Degrading	Degrading
Pamunkey River (Hanover, VA)	No Trend	No Trend
Mattaponi River (Beulahville, VA)	Improving	Degrading
Patuxent River (Bowie, MD)	Improving	Improving
Choptank River (Greensboro, MD)	Degrading	Degrading

Pollution Loads by Monitoring Station

Status of Nitrogen Loads
 Status of Phosphorus Loads
 Status of Sediment Loads

Monitoring Station	Long-Term Trend (1985-2021)	Ten-Year Trend (2012-2021)
Susquehanna River (Conowingo, MD)	Degrading	Improving
Potomac River (Washington, DC)	Improving	No Trend
James River (Cartersville, VA)	No Trend	Improving
Rappahannock River (Fredericksburg, VA)	Degrading	No Trend
Appomattox River (Matoaca, VA)	Degrading	Degrading
Pamunkey River (Hanover, VA)	Degrading	Improving
Mattaponi River (Beulahville, VA)	No Trend	Degrading
Patuxent River (Bowie, MD)	Improving	Improving
Choptank River (Greensboro, MD)	Improving	Degrading

Pollution Loads by Monitoring Station

Status of Nitrogen Loads
 Status of Phosphorus Loads
 Status of Sediment Loads

Monitoring Station	Long-Term Trend (1985-2021)	Ten-Year Trend (2012-2021)
Susquehanna River (Conowingo, MD)	No Trend	Improving
Potomac River (Washington, DC)	Improving	Improving
James River (Cartersville, VA)	Improving	Improving
Rappahannock River (Fredericksburg, VA)	Degrading	No Trend
Appomattox River (Matoaca, VA)	Degrading	Degrading
Pamunkey River (Hanover, VA)	Degrading	Improving
Mattaponi River (Beulahville, VA)	No Trend	Improving
Patuxent River (Bowie, MD)	Improving	Improving
Choptank River (Greensboro, MD)	Degrading	Degrading

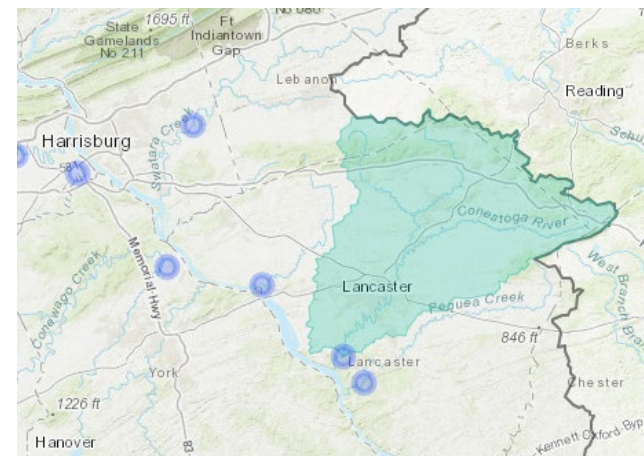
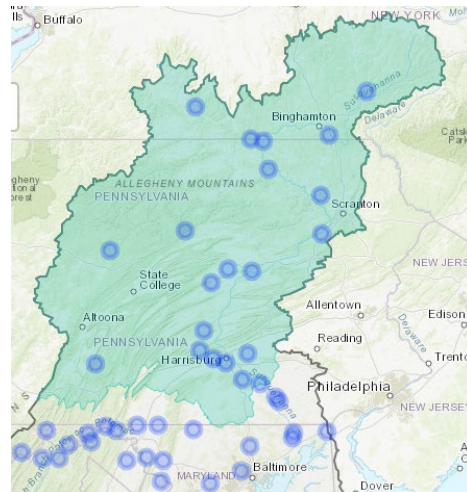
[ChesapeakeProgress: Water Quality Standards and Attainment](#)

Pennsylvania's Progress

Monitored and Expected Total Reduction Indicator for the Chesapeake [\(METRIC\)](#)

Compares anticipated modeled results from CAST with water quality monitoring data using the USGS WRTDS Flow-Normalization Method

Demonstrates reductions in nitrogen, phosphorus, and sediment
Marietta and Conestoga Non-tidal Network (NTN) stations,
along with other stations throughout Pennsylvania



Agenda

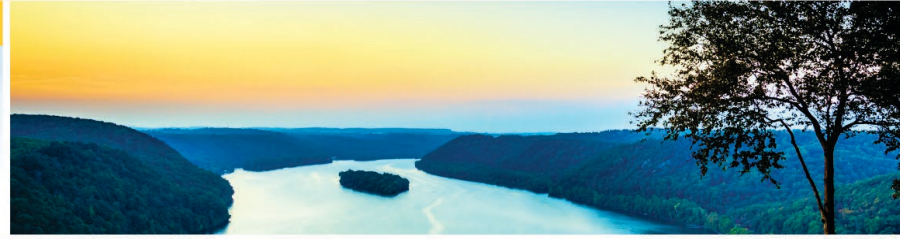
- Purpose
- Supporting Agriculture and Local Action
- Reporting and Outcomes
- **Summary**

Summary

- Pennsylvania’s “bottom-up” approach to the development and implementation of our Phase 3 Watershed Implementation Plan is proving to be the most effective way to improve, protect, and restore local waters and the Chesapeake Bay.
- Our approach to focus on local waters – “Great for PA, Good for the Bay” – and continuous collaboration and connection with local, state, and federal partners has led to innovative program implementation and delivery of more resources to support local partners and priorities.
- We continue to expand our reporting and data collection systems to better demonstrate the practices that are in place to improve water quality.
- Chesapeake Bay Edge of Tide (EOT) modeled load reductions demonstrate accelerated implementation in the agriculture sector over the last five years.
- Water quality monitoring and assessment data are demonstrating positive trends throughout Pennsylvania’s Non-tidal Network (NTN) and River Input Monitoring (RIM) stations.
- While trending in the right direction, there is more work to be done to improve upon where we are now.



pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION



Bureau of Watershed Restoration
and Nonpoint Source Management

Jill Whitcomb, Director

jiwhitcomb@pa.gov

(717) 783-5205