



Department of
Environmental
Conservation

Chesapeake Bay Monitoring and Trend Analysis & Funding Opportunities

USC Retreat
January 31st, 2023

Overview

- Monitoring Trends
- Overall Progress (Loads)
- BMP Progress
 - Various ag. BMPs
 - Buffer BMPs
 - Animal BMPs
 - Wetland BMPs
- DEC Program Updates
- Funding Opportunities



Monitoring Trends

<https://va.water.usgs.gov/geonarratives/ntn/>



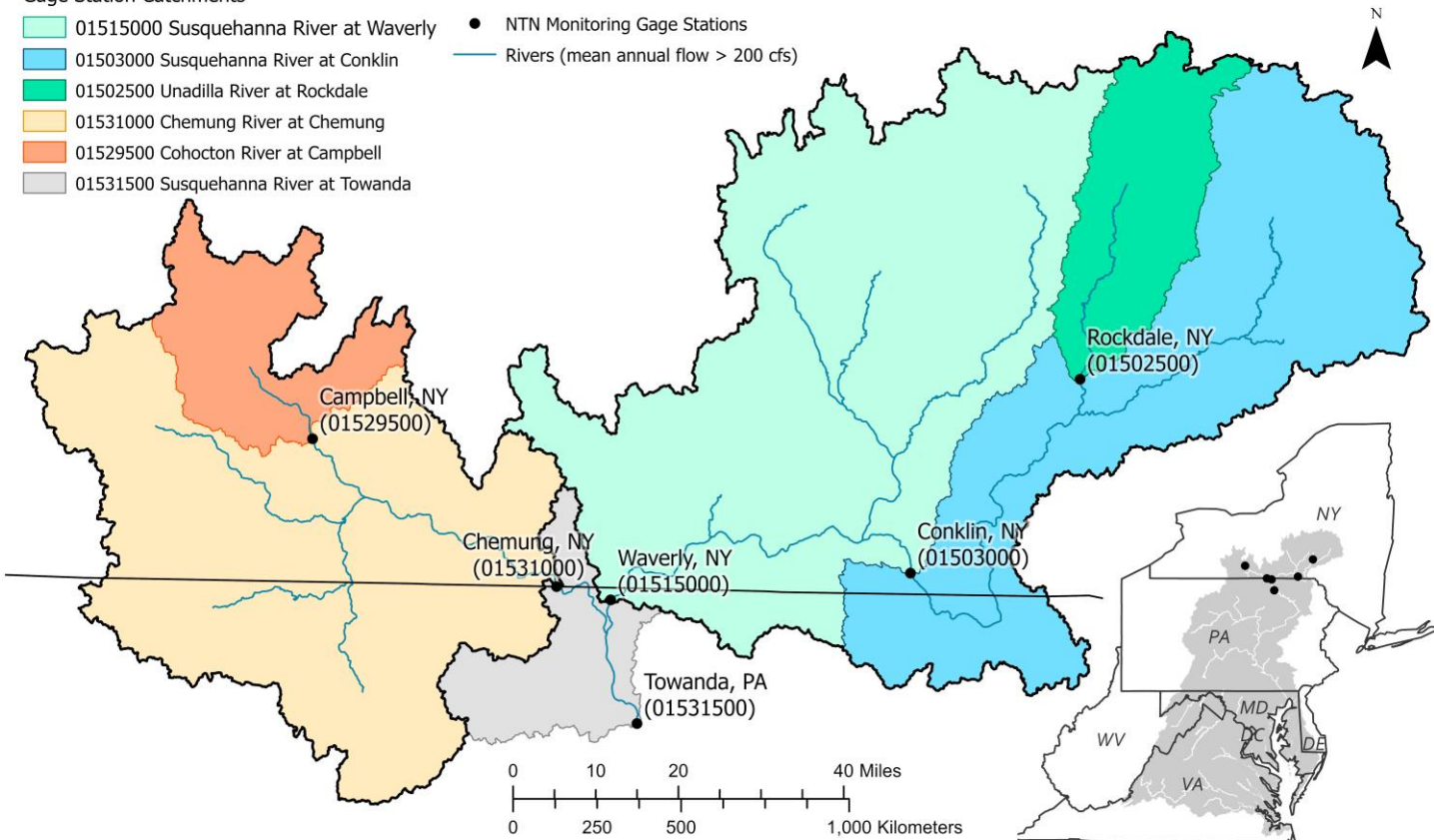
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Nontidal Network Gage Station Catchments

Gage Station Catchments

- 01515000 Susquehanna River at Waverly
- 01503000 Susquehanna River at Conklin
- 01502500 Unadilla River at Rockdale
- 01531000 Chemung River at Chemung
- 01529500 Cohocton River at Campbell
- 01531500 Susquehanna River at Towanda

- NTN Monitoring Gage Stations
- Rivers (mean annual flow > 200 cfs)



Chemung River at Chemung

2011-2020

Nitrogen Trends:

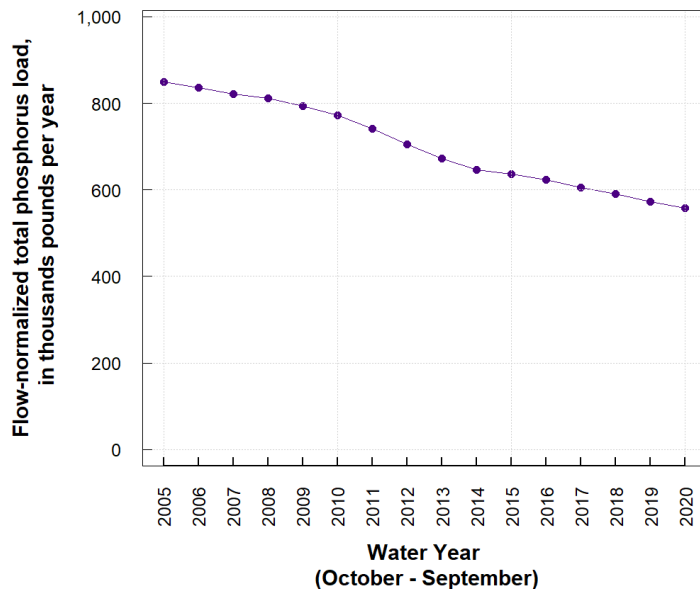
- Average load lbs/acre: 4.09
- Degrading
- 7.38% increase in flow normalized loads

Phosphorus Trends:

- Average load lbs/acre: 0.32
- Improving
- 24.8% decrease in flow normalized loads



CHEMUNG RIVER AT CHEMUNG NY
U.S. GEOLOGICAL SURVEY STATION IDENTIFIER 01531000



Cohocton River at Campbell

2011-2020

Nitrogen Trends:

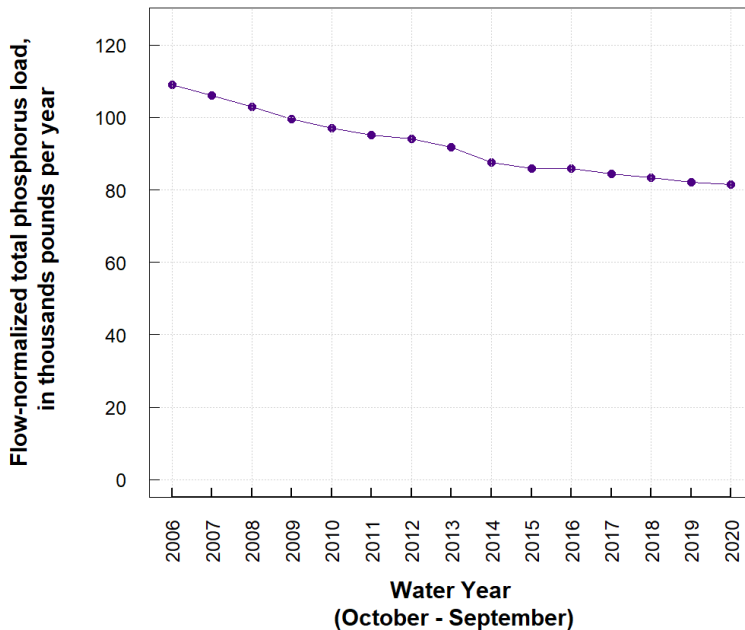
- Average load lbs/acre: 5.75
- Degrading
- 6.16% increase in flow normalized loads

Phosphorus Trends:

- Average load lbs/acre: 0.22
- No Trend
- 14.6% decrease in flow normalized loads



COHOCTON RIVER NEAR CAMPBELL NY
U.S. GEOLOGICAL SURVEY STATION IDENTIFIER 01529500



Susquehanna River at Waverly

2011-2020

Nitrogen Trends:

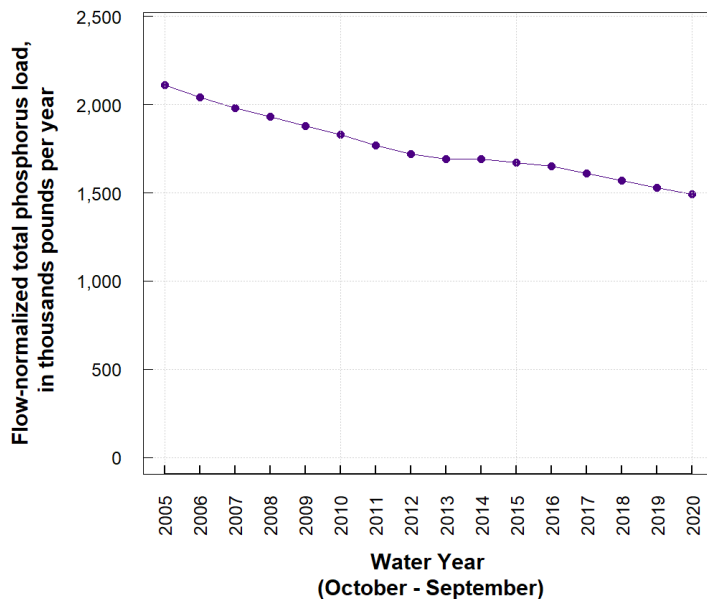
- Average load lbs/acre: 5.37
- No Trend
- 2.88% increase in flow normalized loads

Phosphorus Trends:

- Average load lbs/acre: 0.43
- Improving
- 16% decrease in flow normalized loads



SUSQUEHANNA RIVER NEAR WAVERLY NY
U.S. GEOLOGICAL SURVEY STATION IDENTIFIER 01515000



Susquehanna River at Conklin

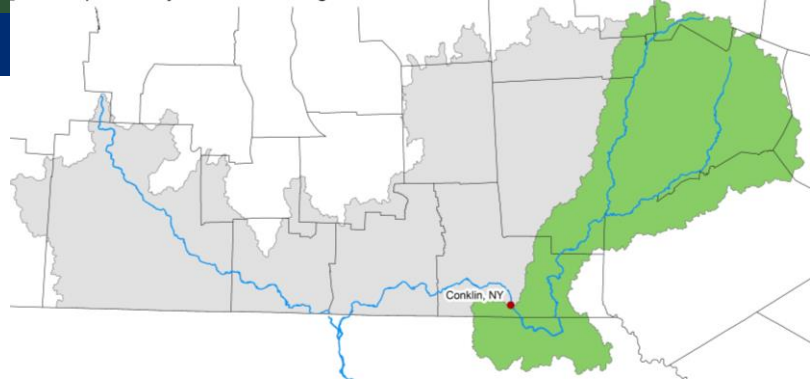
2011-2020

Nitrogen Trends:

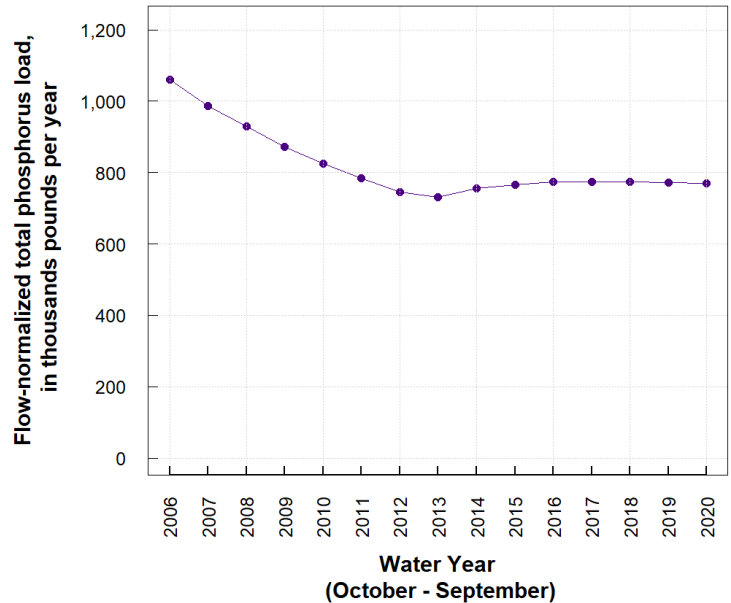
- Average load lbs/acre: 4.37
- Improving
- 2.81% decrease in flow normalized loads

Phosphorus Trends:

- Average load lbs/acre: 0.39
- Improving
- 2.19% decrease in flow normalized loads



SUSQUEHANNA RIVER AT CONKLIN NY
U.S. GEOLOGICAL SURVEY STATION IDENTIFIER 01503000



Unadilla River at Rockdale

2011-2020

Nitrogen Trends:

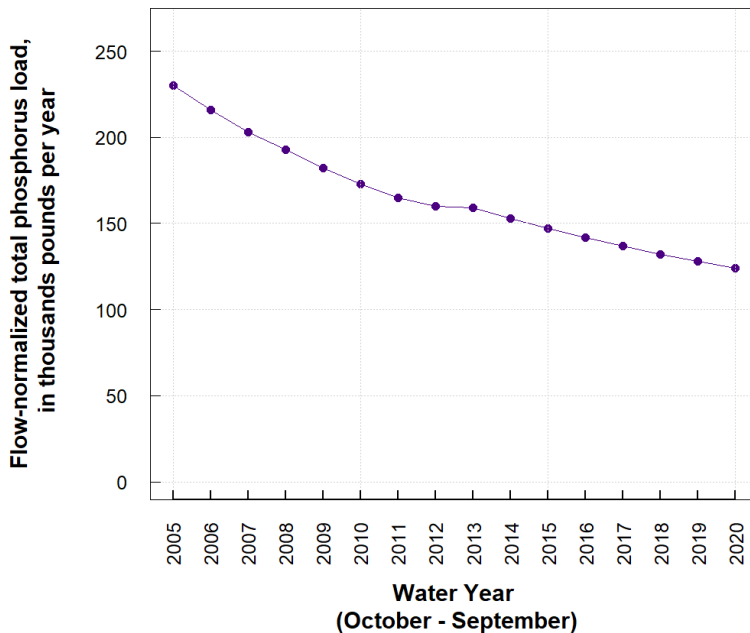
- Average load lbs/acre: 6.02
- No Trend
- 1.97% increase in flow normalized loads

Phosphorus Trends:

- Average load lbs/acre: 0.34
- Improving
- 25% decrease in flow normalized loads



UNADILLA RIVER AT ROCKDALE NY
U.S. GEOLOGICAL SURVEY STATION IDENTIFIER 01502500



Susquehanna River at Towanda, PA

Nitrogen Trends:

2011-2020

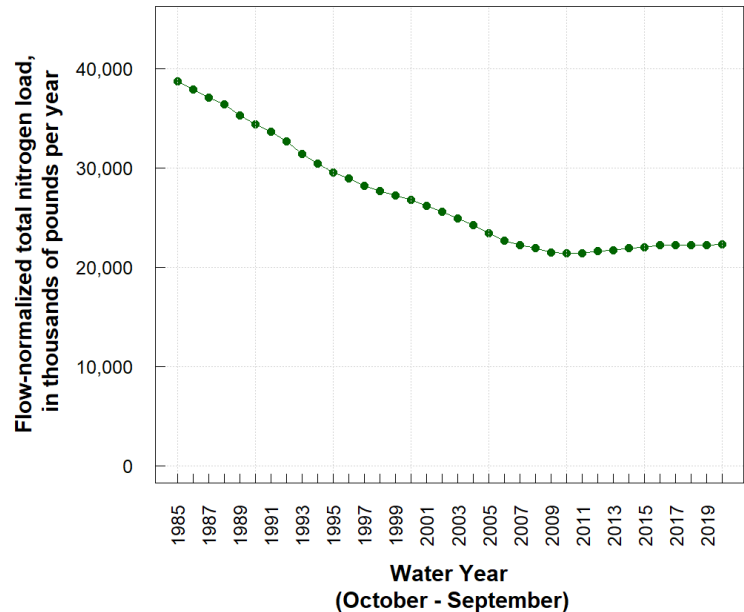
- Average load lbs/acre: 4.42
- Degrading
- 4.05% increase in flow normalized loads

1985-2020

- Improving
- 42.4% decrease in flow normalized loads



SUSQUEHANNA RIVER AT TOWANDA, PA
U.S. GEOLOGICAL SURVEY STATION IDENTIFIER 01531500



Susquehanna River at Towanda, PA

Phosphorus Trends: 2011-2020

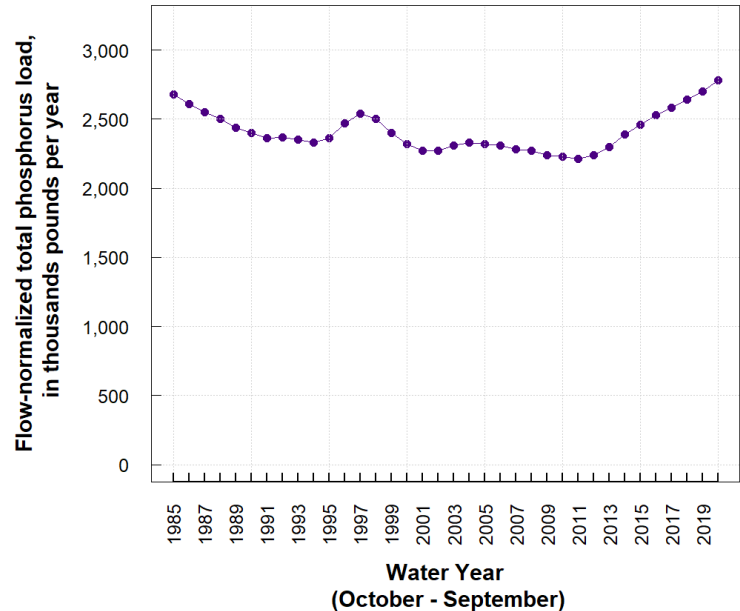
- Average load lbs/acre: 0.376
- Degrading
- 25.6% increase in flow normalized loads

1985-2020

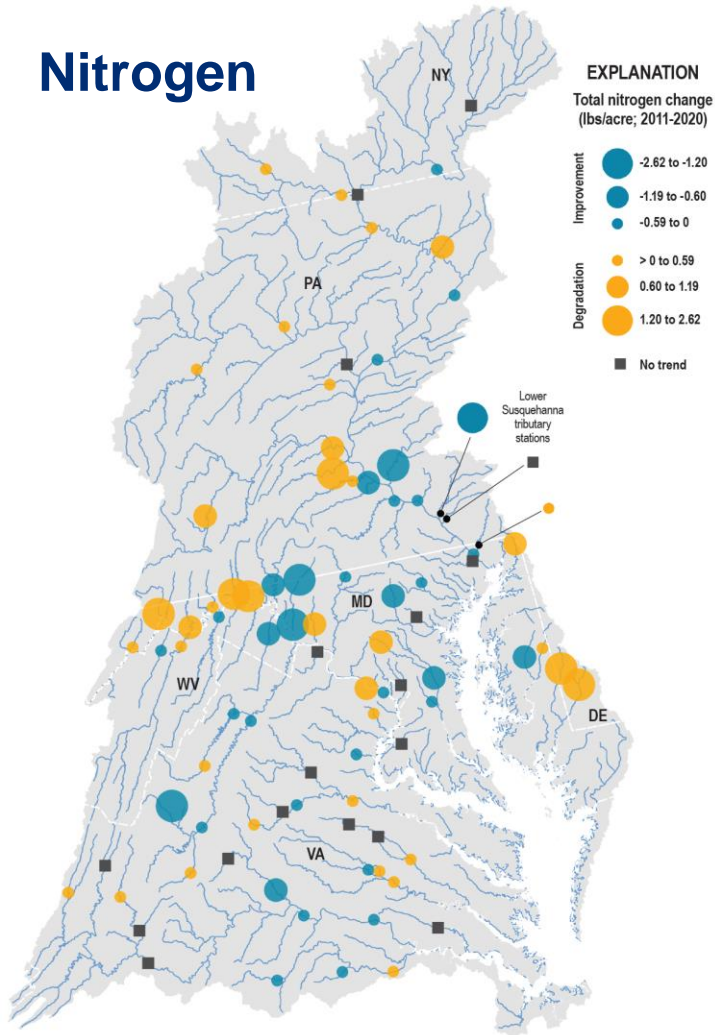
- No Trend
- 3.26% increase in flow normalized loads



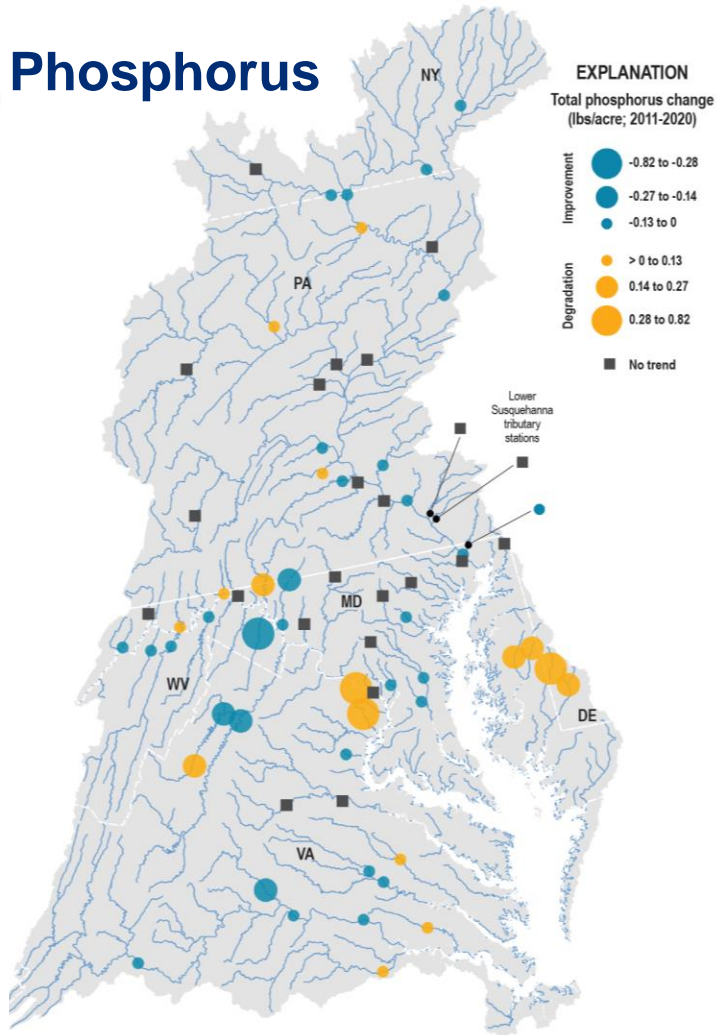
SUSQUEHANNA RIVER AT TOWANDA, PA
U.S. GEOLOGICAL SURVEY STATION IDENTIFIER 01531500



Nitrogen



Phosphorus



Updated Progress

2022 Nitrogen Progress

Sector	2021 Nitrogen Progress	2022 Nitrogen Progress	2025 WIP III Nitrogen Target
Agriculture	5.91	5.82	5.51
Developed	2.1	2.1	1.52
Natural	3.07	3.07	2.93
Septic	0.19	0.19	0.19
Wastewater	1.35	1.65	1.41
Total	12.61	12.83	11.56

Millions of lbs delivered to the Chesapeake Bay



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Total	12.61	12.83	11.56

+0.22

-1.27

Millions of lbs delivered to the Chesapeake Bay



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2022 Phosphorus Progress

Sector	2021 Phosphorus Progress	2022 Phosphorus Progress	2025 WIP III Phosphorus Target
Agriculture	0.159	0.157	0.136
Developed	0.075	0.076	0.052
Natural	0.235	0.235	0.218
Wastewater	0.069	0.080	0.070
Total	0.539	0.548	0.476

Millions of lbs delivered to the Chesapeake Bay



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Wastewater	0.069	0.080	0.070
Total	0.539	0.548	0.476

+0.009

-0.072

Millions of lbs delivered to the Chesapeake Bay



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2022 Nutrient Increases

- Binghamton-Johnson facility experienced a failure in February 2022.
- The facility has since resolved the issue and is meeting permit limits for nitrogen and phosphorus.
- This will be reflected in next year's progress

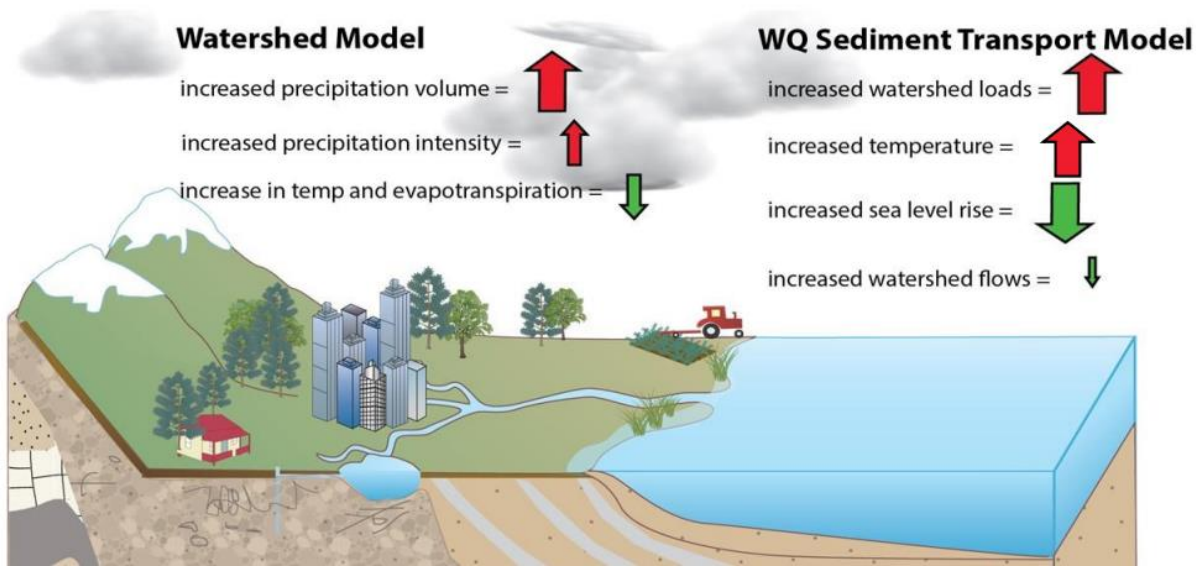


Addressing 2025 Climate Change Conditions

An updated BMP scenario list was developed for the 2022-2023 milestones.



Components of Climate Change – Effect on Tidal Dissolved Oxygen

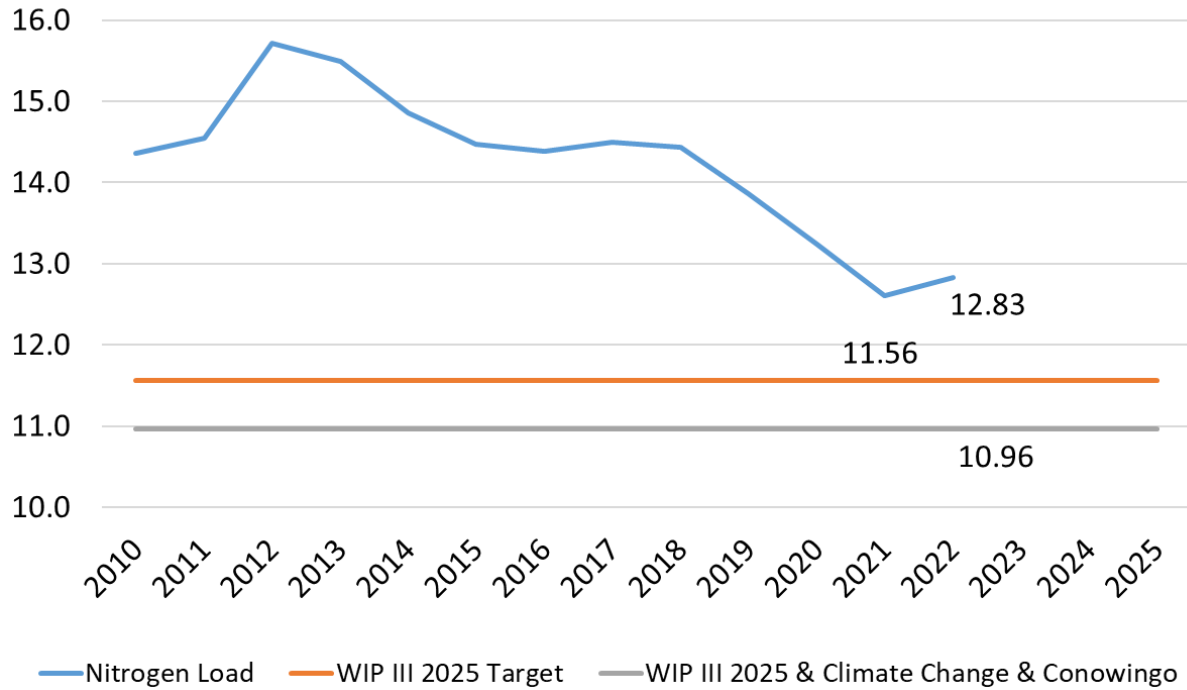


Conowingo Watershed Implementation Plan

- The Conowingo WIP was released in July 2021
- Additional BMPs were assigned to areas of MD, NY, and PA in the Susquehanna Watershed
- These loads do not need to be addressed by 2025

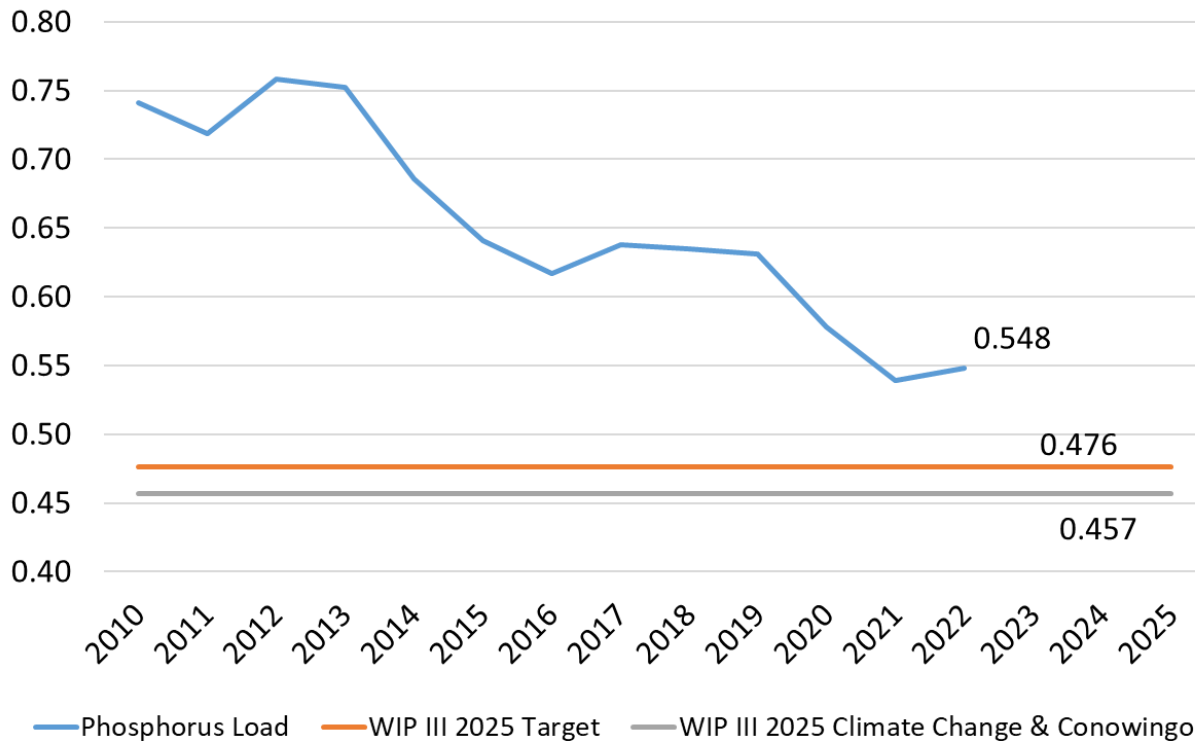


Nitrogen Load 2010-2022



Millions of pounds nitrogen delivered to the Chesapeake Bay

Phosphorus Load 2010-2022

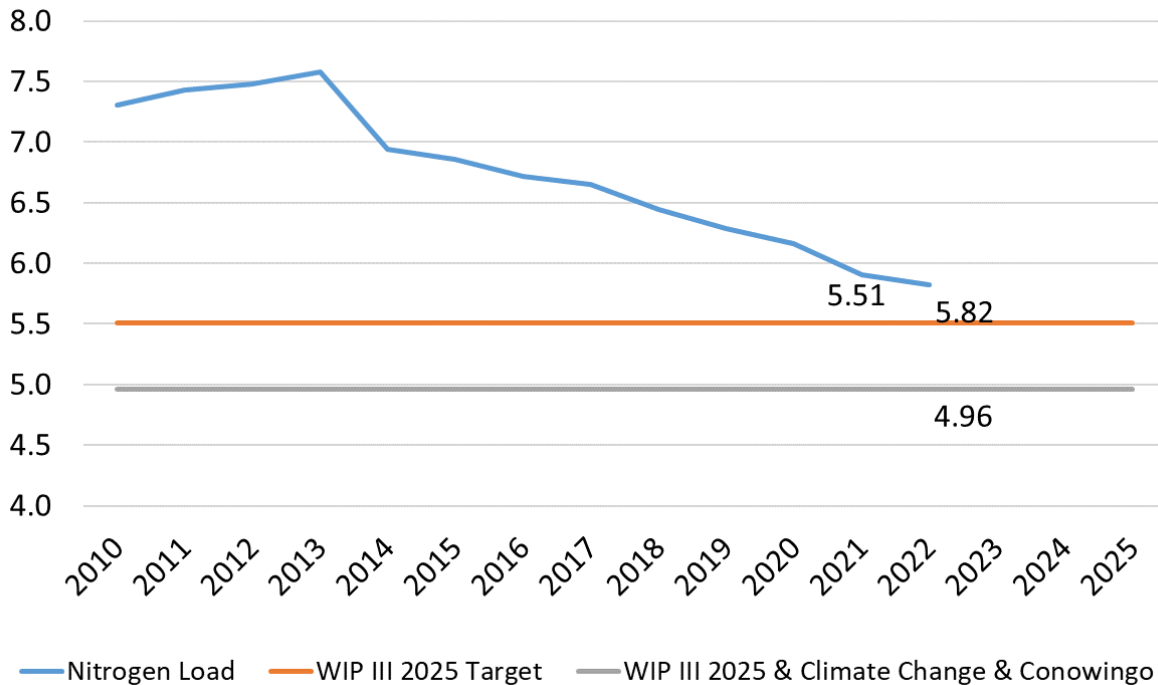


Millions of pounds phosphorus delivered to the Chesapeake Bay



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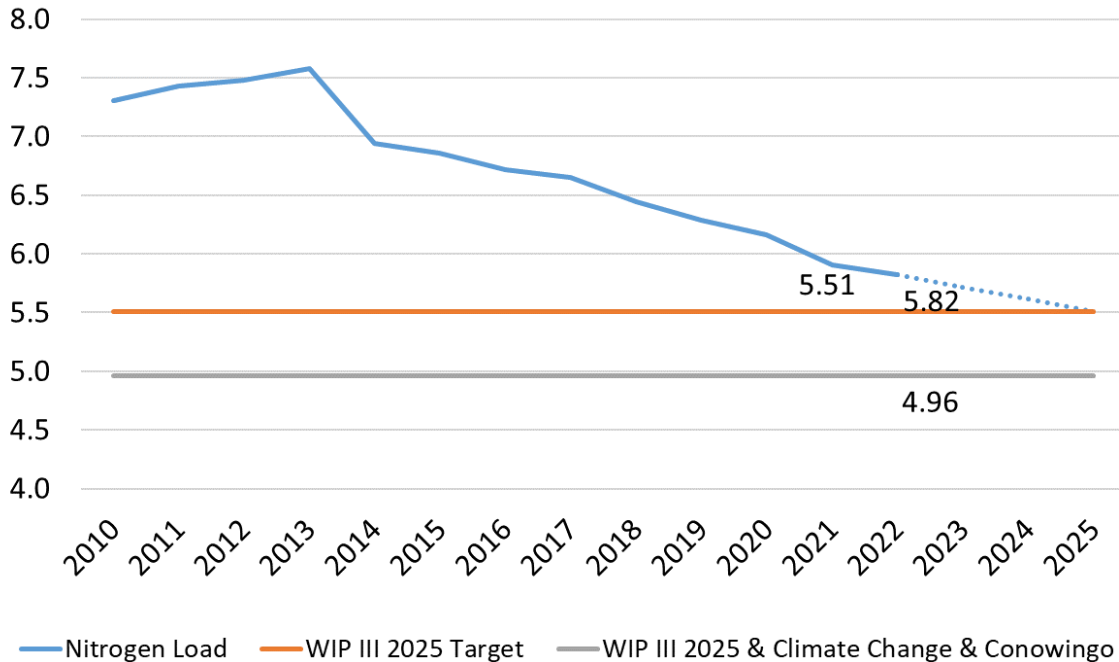
Agriculture Nitrogen Load 2010-2022



Millions of pounds nitrogen delivered to the Chesapeake Bay



Agriculture Nitrogen Load 2010-2022



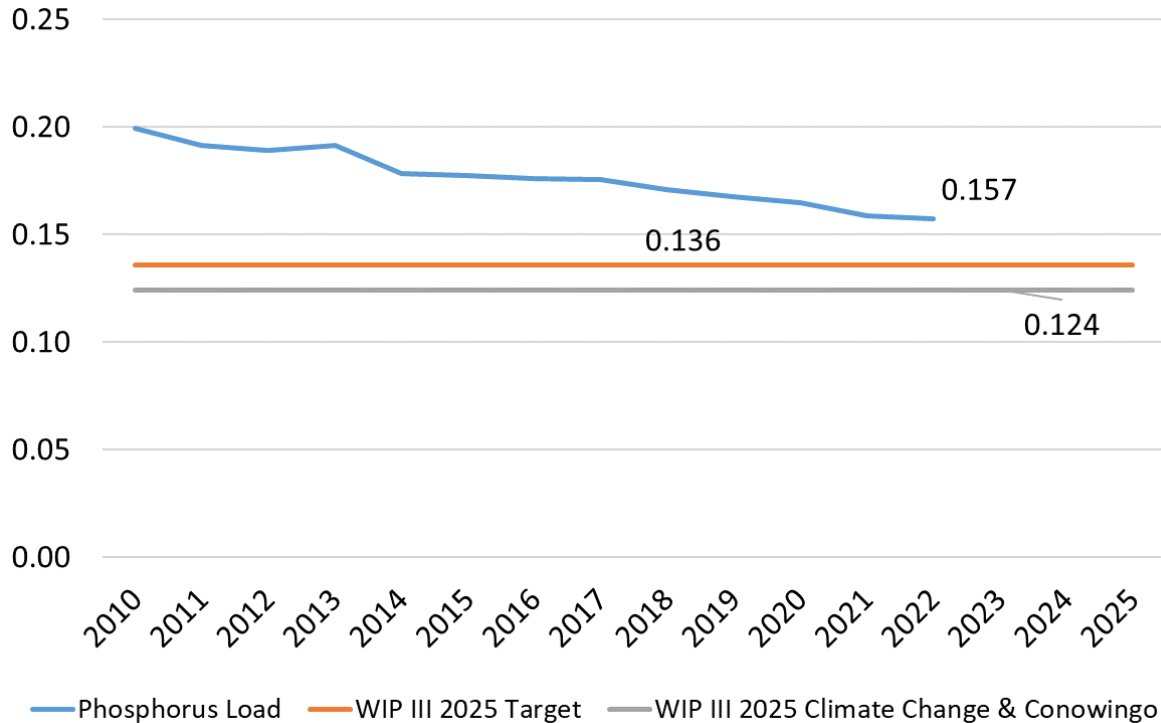
To meet WIP III Nitrogen goal, a consistent reduction of 103,800 lbs/yr is required.

2022 = 83,994 lbs/yr reduction

2020 = 259,836 lbs/yr reduction (best year), average is 123,853 lbs/yr

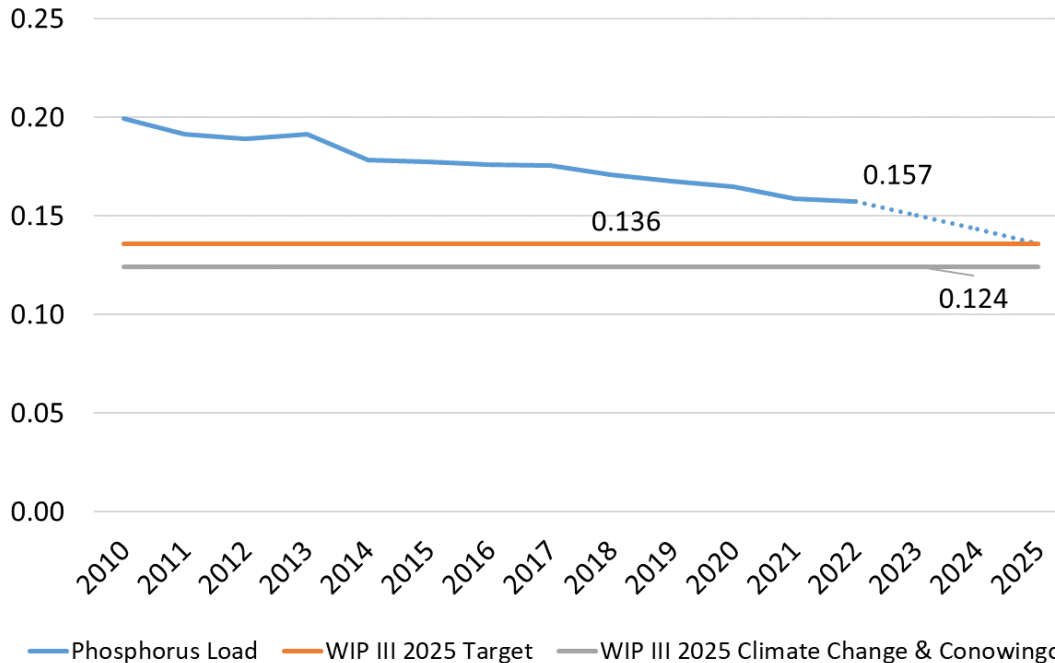


Agriculture Phosphorus Load 2009-2019



Millions of pounds phosphorus delivered to the Chesapeake Bay

Agriculture Phosphorus Load 2009-2019



To meet 2025 Phosphorus goal, a consistent reduction of 7,000 lbs/yr is required.

2021 = 1,393 lbs/yr reduction

2020 = 6,201 lbs/yr reduction (best year), average is 3,514 lbs/yr



Nutrient Management Plans (Core)

2022 Progress:

- 110,500 acres

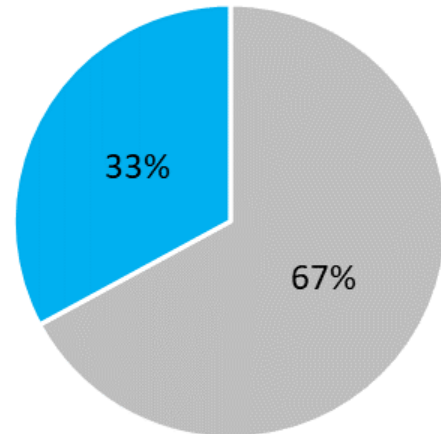
Phase III WIP Goal:

- 151,245 acres/year

With Climate Change &
Conowingo Goal:

- 164,681 acres/year

WIP III, Climate Change, &
Conowingo WIP



■ 2022 Progress

■ Remaining Acres

Tillage (Conservation, High Residue, Low Residue)

2022 Progress:

- 26,163 acres/year

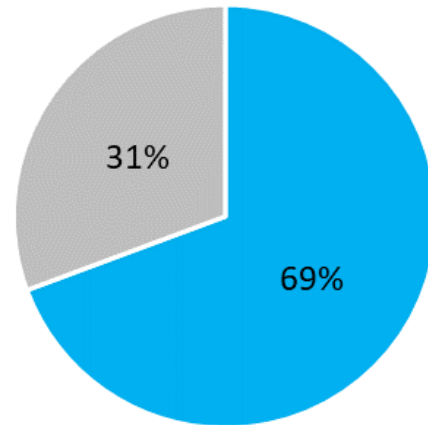
Phase III WIP Goal :

- 14,884 acres/year

With Climate Change &
Conowingo Goal:

- 37,731 acres/year

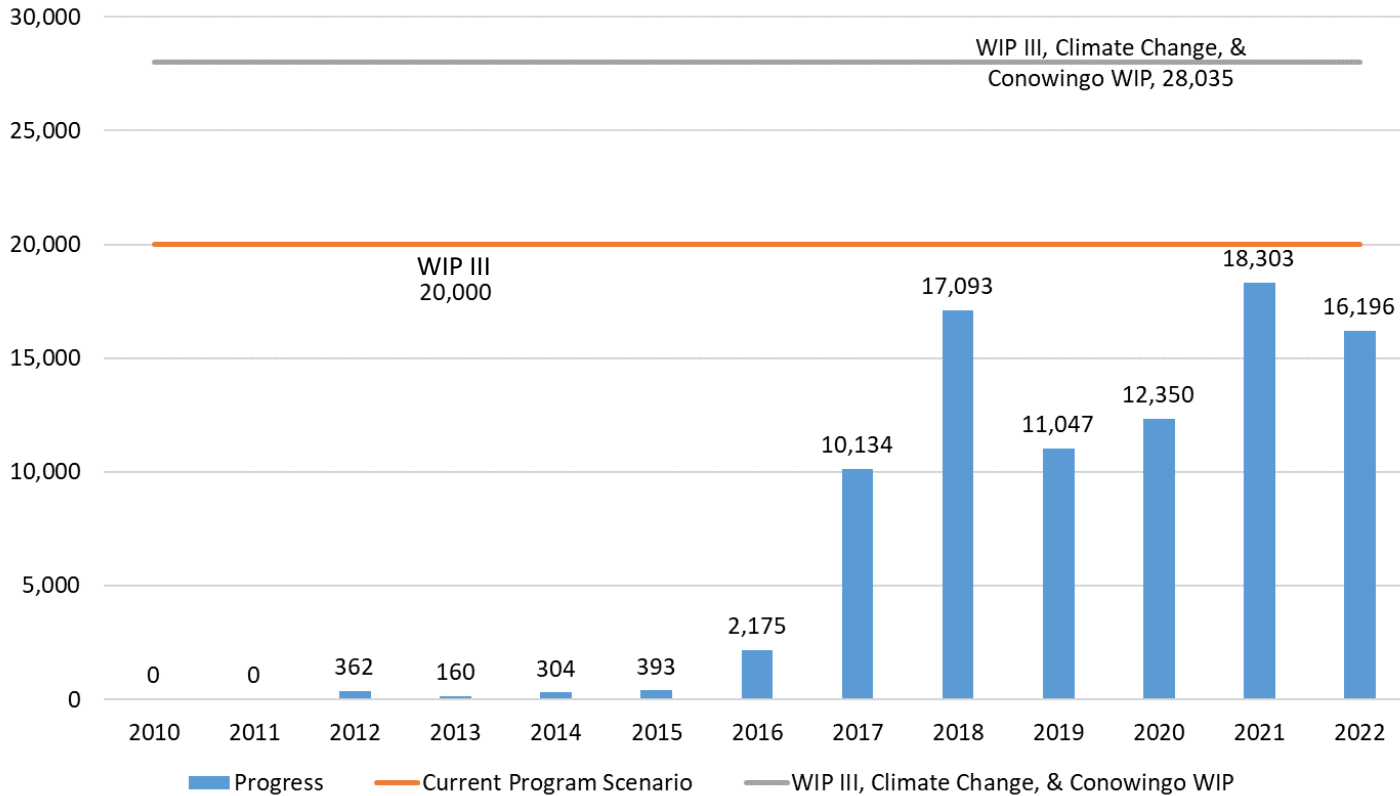
WIP III, Climate Change, &
Conowingo WIP



■ 2022 Progress ■ Remaining Acres

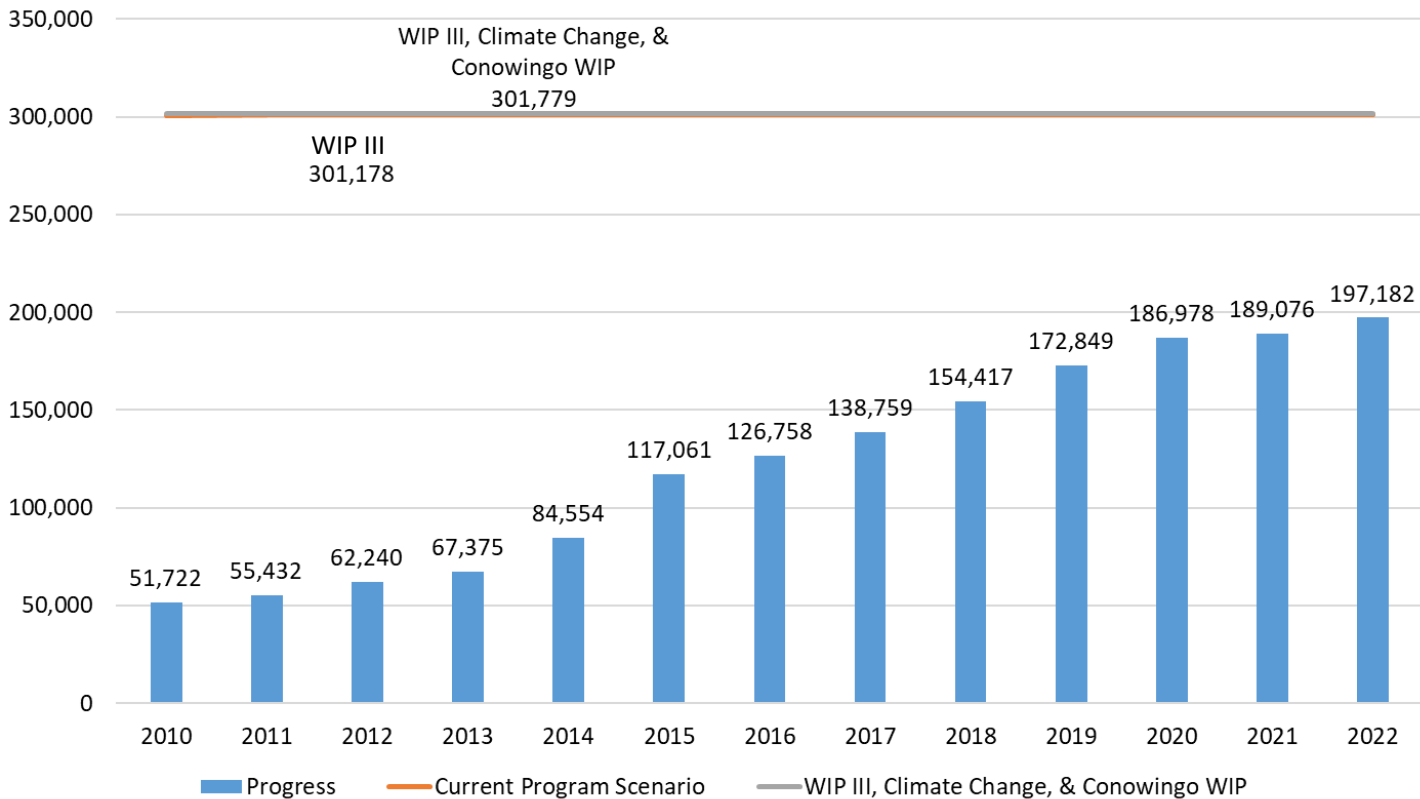
Cover Crops

Annual acres



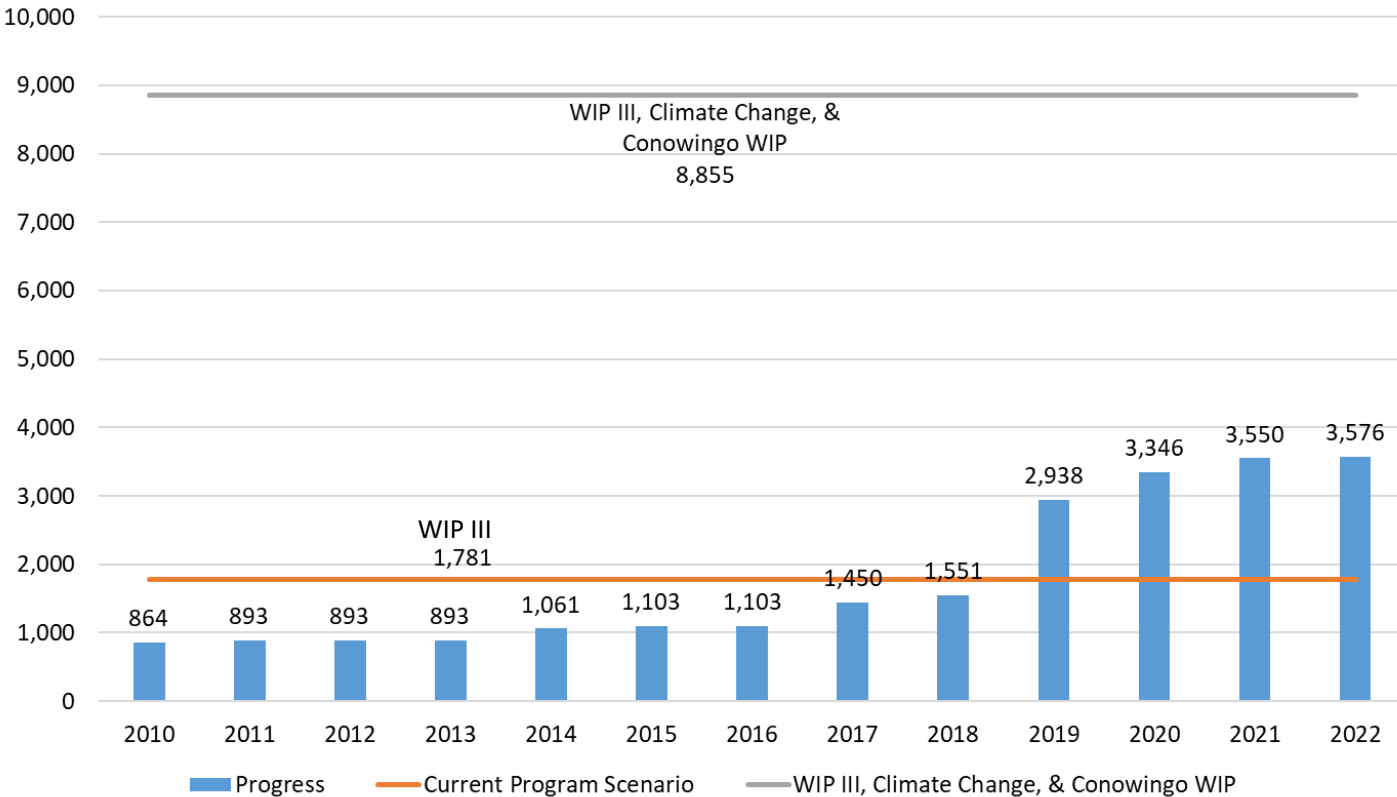
Soil and Water Conservation Plans

Cumulative acres



Land Retirement

Cumulative acres



Non-Urban Stream Restoration

First reported in 2018

2022 Progress:

- 56,585 ft (6 mi)

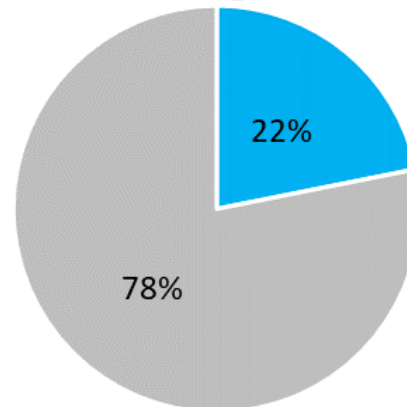
Current Program Goal:

- 169,000 ft (32 mi)
- 0.5% of available acres

With Climate Change & Conowingo WIP:

- 258,800 ft (49 mi)

WIP III, Climate Change, & Conowingo WIP



■ 2022 Progress ■ Remaining Acres



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Riparian Buffer Action Plan

- Current Efforts
- Opportunities for Implementation
 - Participating Partners
 - Strategy for Implementation
 - Current Programs
 - Technical Assistance
 - Opportunity Analysis
 - Riparian Buffer Maintenance and Verification
 - Support Needed
- Climate Change
- Available Resources

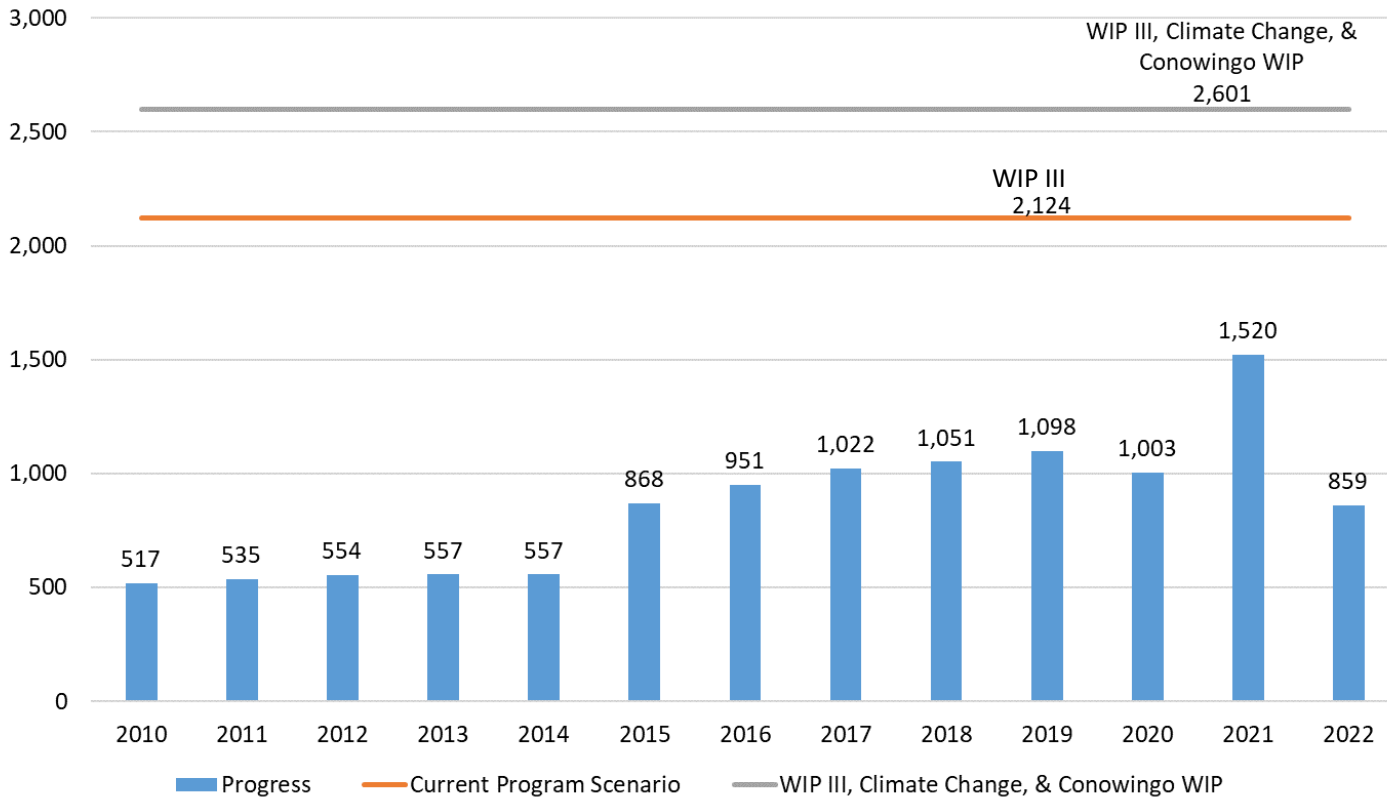


Kathy Hochul, Governor | Basil Seggos, Commissioner



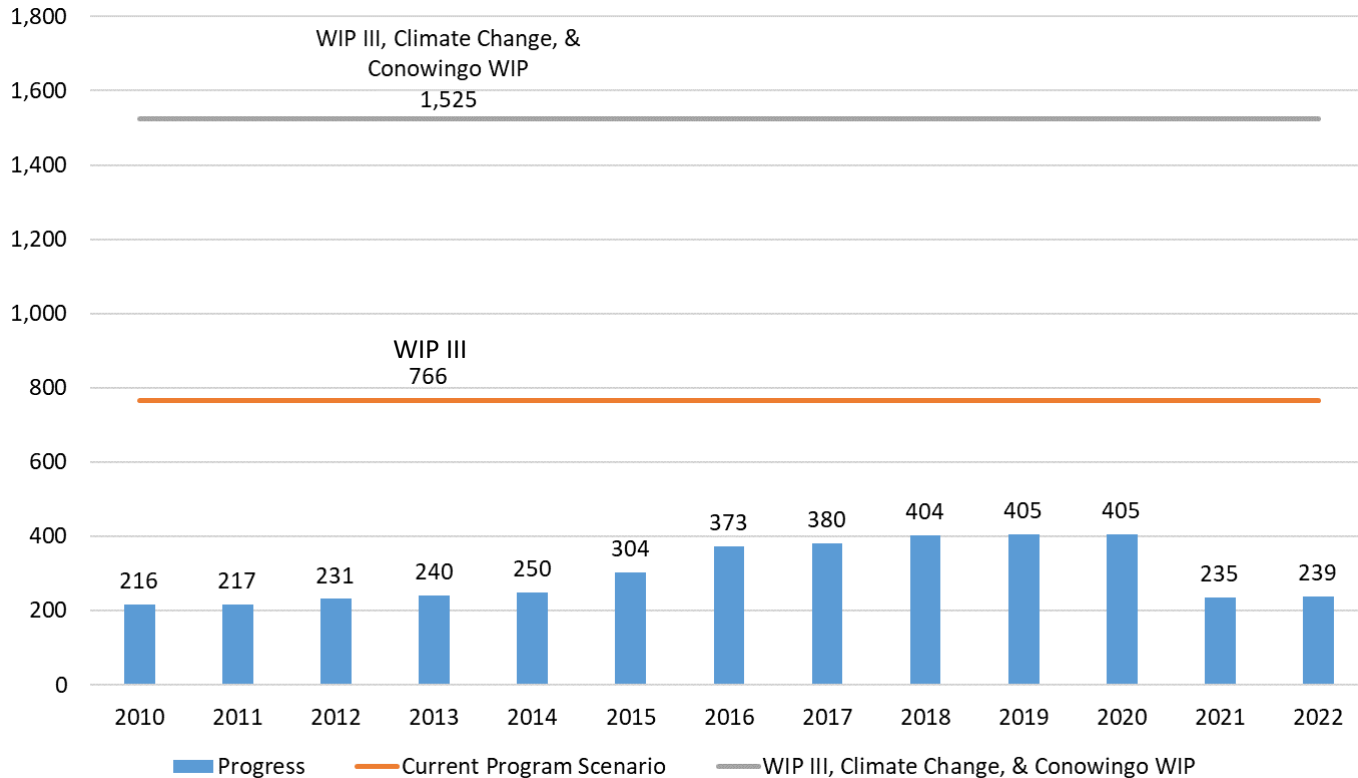
Forest Buffer on Cropland

Cumulative acres



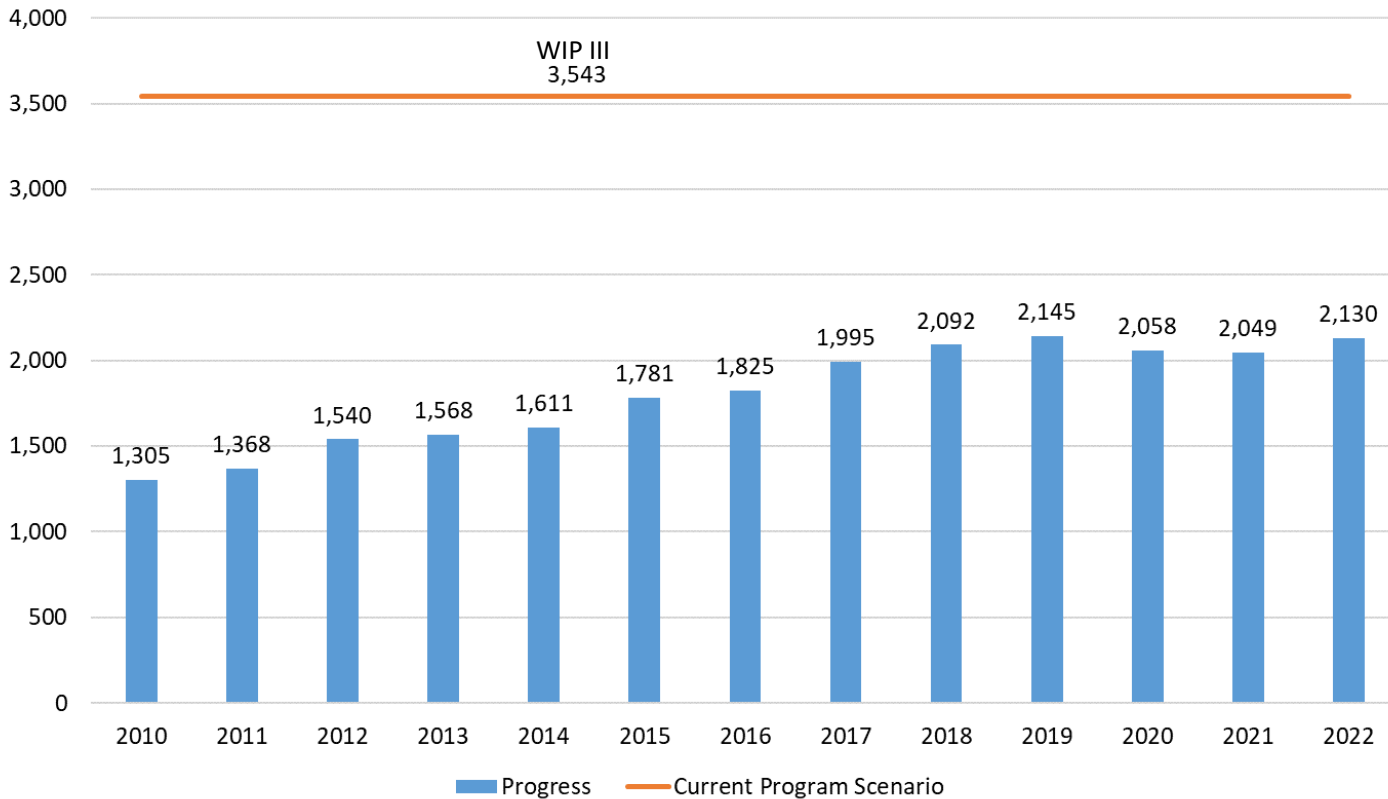
Grass Buffer on Cropland

Cumulative acres



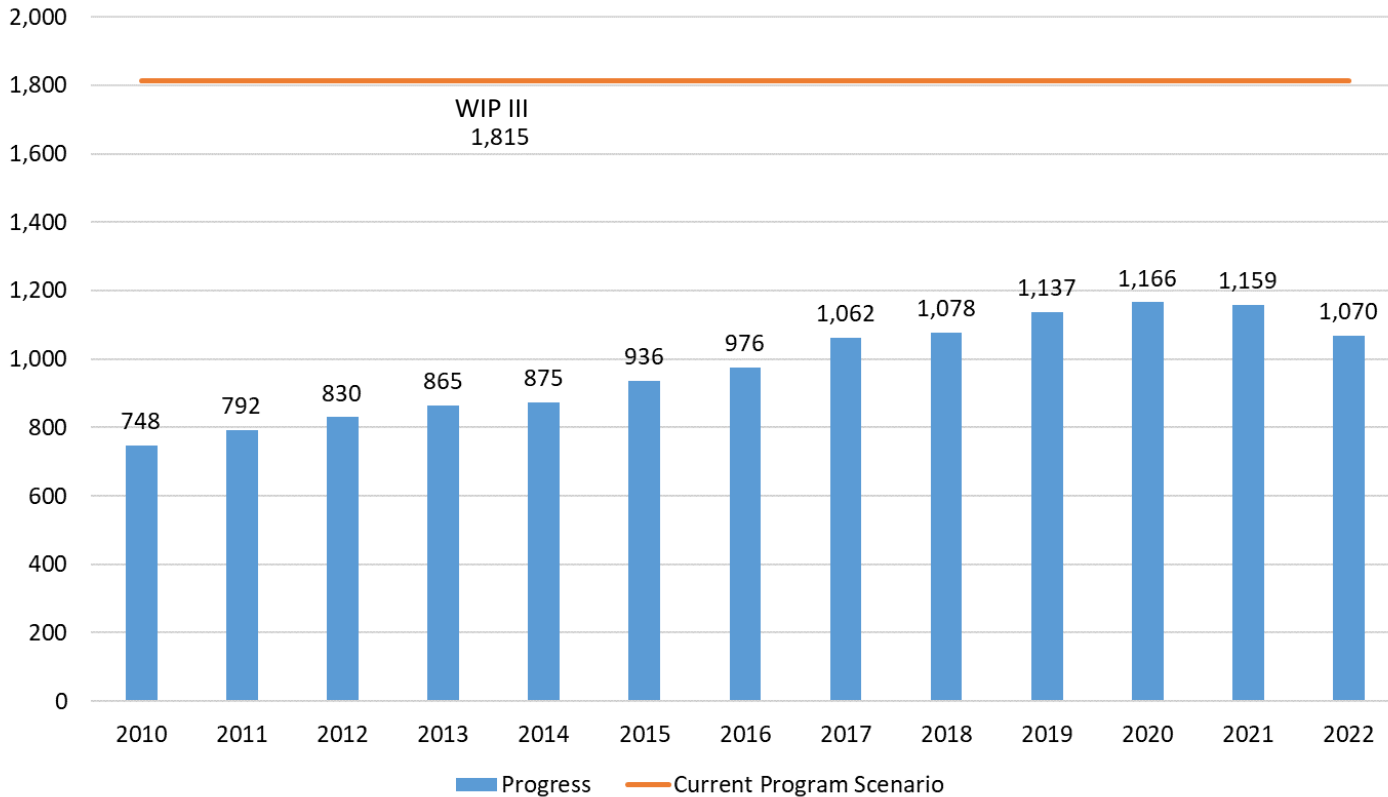
Forest Buffer and Exclusion Fence on Pasture

Cumulative acres



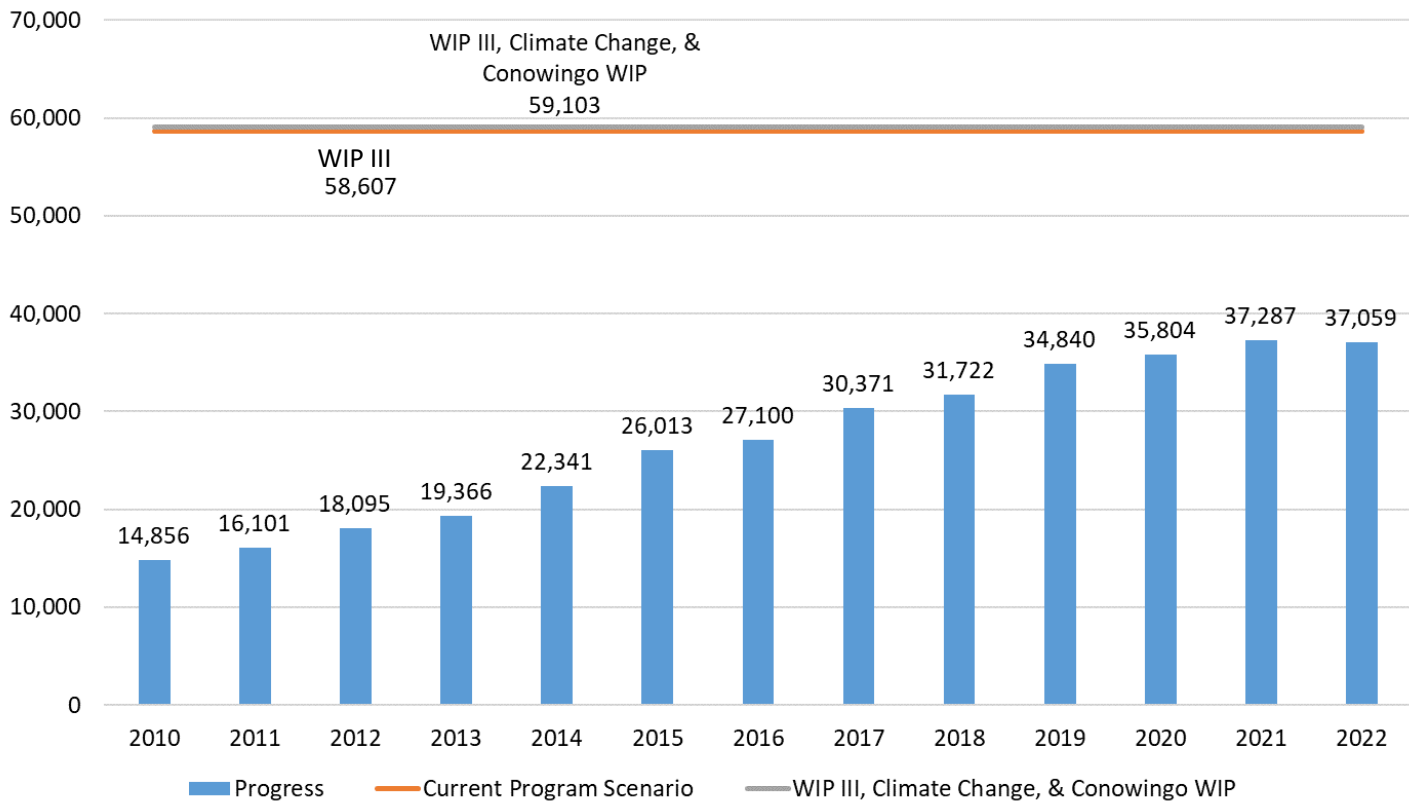
Grass Buffer and Exclusion Fence on Pasture

Cumulative acres



Prescribed Grazing

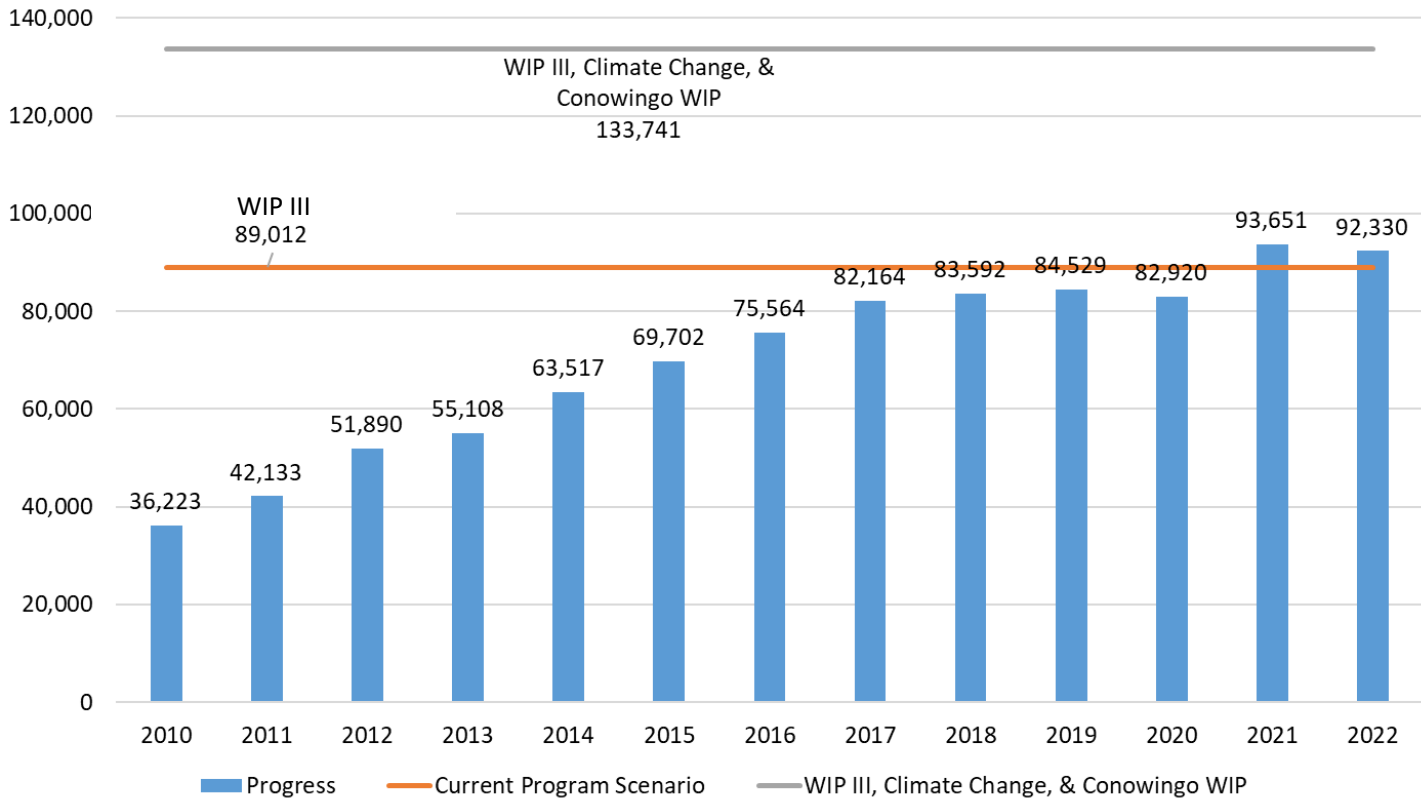
Cumulative acres



Livestock Waste Management Systems

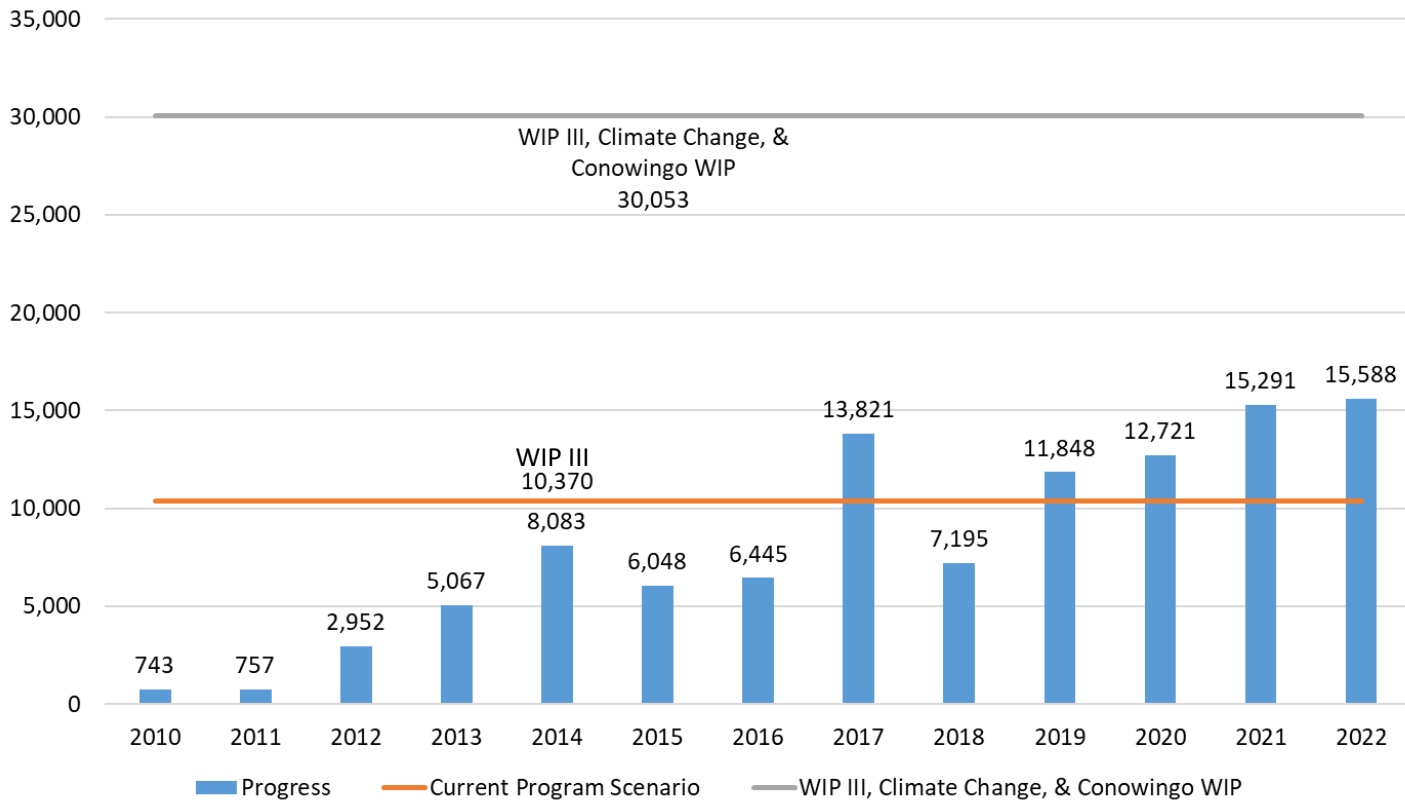


Cumulative animal units



Dairy Precision Feeding

Annual animal units



Barnyard Runoff Control & Loafing Lot Management

2022 Progress:

- 247 acres

Current Program Goal:

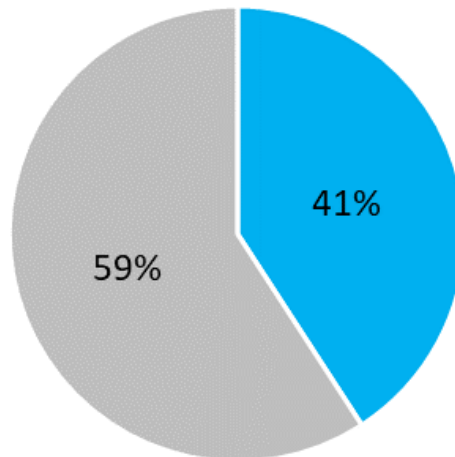
- 115 acres/year

With Climate Change &

Conowingo Goal:

- 605 acres/year

WIP III, Climate Change, &
Conowingo WIP



■ 2022 Progress ■ Remaining Acres

Manure Incorporation

First reported in 2019

2022 Progress:

- 20,832 acres

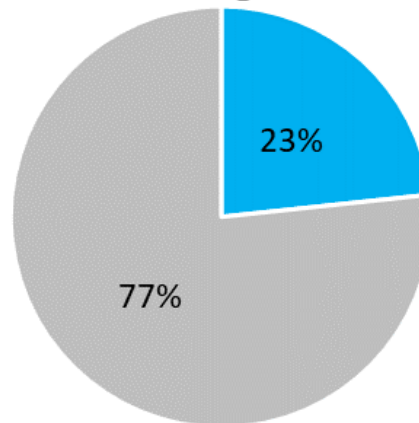
Current Program Goal:

- N/A

With Climate Change & Conowingo WIP:

- 89,359

WIP III, Climate Change, & Conowingo WIP



■ 2022 Progress ■ Remaining Acres

NY Chesapeake Bay Wetland Action Plan



• Strategic Planning

- Form NY Chesapeake Bay Wetland Action Team
- Address barriers to implementation
- Account for climate change



Capacity Building

- Explore potential partners
- Increase collaboration between agencies



Outreach

- Landowner Engagement
- Highlight co-benefits and ecosystem services



Sustainable Funding to Support Wetland Restoration

- Continue to secure funds to support staffing, planning, design, implementation, and administration of grant funds

Wetland Restoration

2022 Progress:

- 1,176 acres

Current Program Goal:

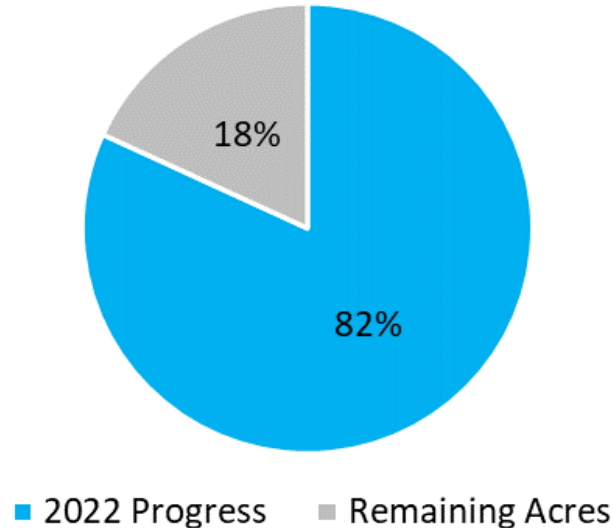
- 1,274 acres

With Climate Change &

Conowingo Goal:

- 1,437 acres

WIP III, Climate Change, &
Conowingo WIP



Wetland Creation

2022 Progress:

- 65 acres

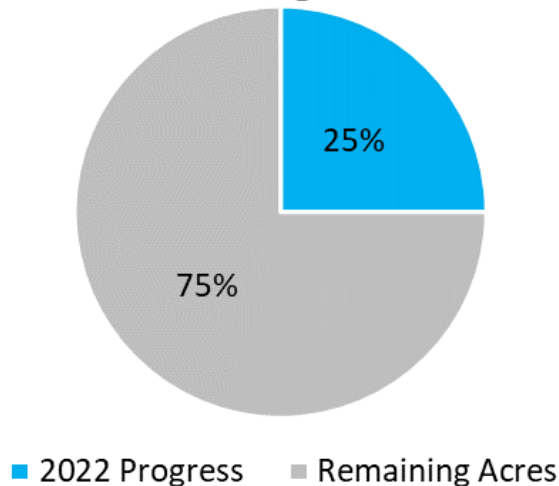
Current Program Goal:

- N/A

With Climate Change &
Conowingo Goal:

- 258 acres

WIP III, Climate Change, &
Conowingo WIP



Wetland Rehabilitation

2022 Progress:

- 514 acres

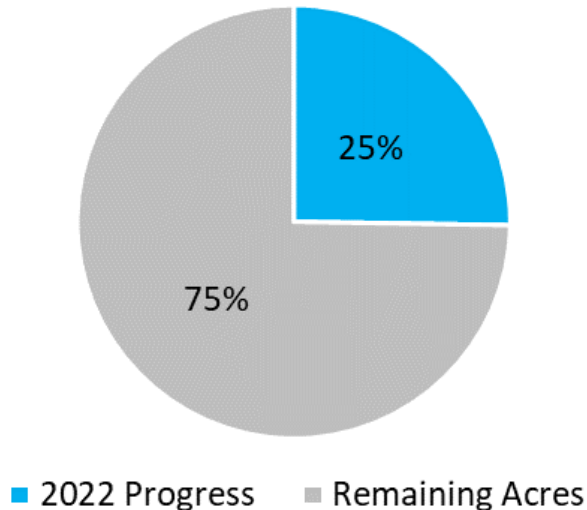
Current Program Goal:

- N/A

With Climate Change &
Conowingo Goal:

- 2,034 acres

WIP III, Climate Change, &
Conowingo WIP



DEC Program/Funding Updates

DEC Program/Funding Updates

- Chesapeake Bay Implementation Grant (CBIG)
 - Existing USC Capacity Contract – 10/1/21-8/31/2025 for \$7,367,000
 - BMP Tracking, Reporting and Verification
 - Outreach and Education
 - Hosting bi-monthly meetings
 - Leveraging other funding sources
 - Project Planning and Implementation (road ditches, T4T, cost-share program, wetlands, cover crops)
 - Bay Program Participation
 - Data Management System
 - Reporting



DEC Program/Funding Updates

- Environmental Protection Fund (EPF) – Ocean and Great Lakes
 - \$1,000,000 to support Chesapeake Bay Phase III WIP Implementation
 - USC Capacity Contract Amendment for TBD tasks



DEC Program/Funding Updates

- Chesapeake Bay Implementation Grant (CBIG) con't
 - NYSAGM Capacity MOU
 - NY Rural Water Association – WWTP Optimization
 - Previous USC Cover Crop contract
 - Previous DEC-AGM-USC Buffer Program
 - Tetrattech Urban Nutrient Management Plan Guidance
 - USC BMP Verification Mobile App



DEC Program/Funding Updates

- Chesapeake Bay Infrastructure Investment Jobs Act (IIJA)
 - FFY2022 - \$1,289,000, continued funding at similar level expected for next 4 years
 - First year of funding - \$500,000 to the USC to support Conowingo WIP implementation, \$525,000 to support USC Buffer Program
 - CREP incentives, CREP re-enrollment activities, assessment, planning, implementation (new sites), evaluation of existing buffers, volunteer events
 - Conowingo: riparian buffers, prescribed grazing, nutrient management
- Chesapeake Bay Most Effective Basin (MEB) Funding - \$409,000 to support additional cover crops



DEC Program/Funding Updates

Environmental Bond Act - \$4.2 billion

- Funding categories:
 - Water quality and resilient infrastructure (\$650 million)
 - Open space conservation and recreation (\$650 million)
 - Restoration and flood risk reduction (\$1.1. billion)
 - Climate change mitigation (\$1.5 billion)
 - \$300 million for other projects



Thank You

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DEC Chesapeake Bay Webpage:

<http://www.dec.ny.gov/lands/33279.html>



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