

2024-2025

Bay Barometer

Health and Restoration in the
Chesapeake Bay Watershed



2025 was a momentous point in the 42-year effort to protect and restore the Chesapeake Bay and its watershed.

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In December, the Chesapeake Executive Council approved the revised *Chesapeake Bay Watershed Agreement*, establishing goals and outcomes that will achieve an environmentally and economically sustainable Chesapeake Bay watershed. During the revision process, we received and incorporated feedback from hundreds of people and organizations about the issues that matter most to their communities. Teams from across the partnership are already working closely to begin implementing the updated goals and outcomes.

In this year's Bay Barometer, we're reporting on the progress of the *Watershed Agreement*, signed in 2014, and its 10 goals and 31 outcomes. In some cases, we saw significant progress toward our goals, such as successfully restoring oyster habitat in 10 Chesapeake Bay rivers, culminating in the largest oyster restoration effort ever in the world, and opening 312 new public access sites across the watershed so residents can enjoy fishing, hunting, hiking and other activities that benefit directly from our decades of work. In other cases, such as forest buffer plantings and wetland conservation, we see the opportunity to better leverage resources and technical assistance to meet our goals.

The revised *Watershed Agreement* demonstrates why the Chesapeake Bay Program continues to serve as a global model for ecological restoration on a regional scale. As we adapt to population growth and land use changes, the *Watershed Agreement* represents our guide to protecting, restoring and conserving the Bay and its watershed—a vital natural resource that more than 18.5 million people call home.

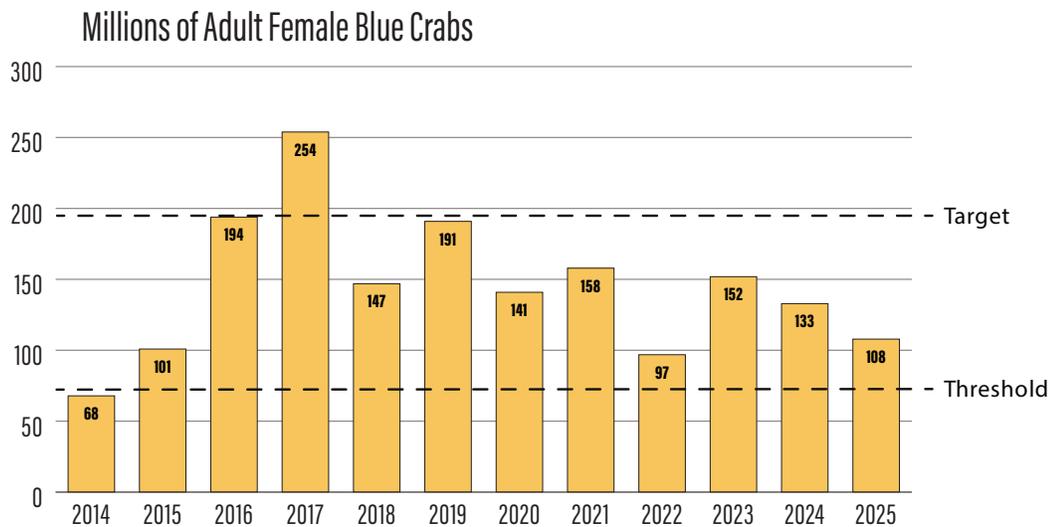
COVER: Jerry Sturmer holds a striped blenny and its eggs, found at his oyster aquaculture operation on Maryland's Choptank River.
(Photo by Charlie Nick/Chesapeake Bay Program)



SUSTAINABLE FISHERIES



The blue crab Winter Dredge Survey records adults and juveniles in Talbot County, Md. (Photo by Will Parson/Chesapeake Bay Program)



Blue Crab Abundance

Maintain a sustainable blue crab population based on a target of 196 million adult females.

Progress: 108 million adult female blue crabs estimated in the Bay in 2025, which is above the threshold for a sustainably managed population.

Since 2014, the number of adult female blue crabs in the Chesapeake Bay has remained above 72.5 million, which is the minimum amount needed for a sustainable blue crab population. The adult female population reached a record high of 254 million in 2017 and came close to the target in 2016 and 2019. In 2025, the overall blue crab population (males, females and juveniles) was the second lowest since the Winter Dredge Survey began in 1990. In 2026, scientists will complete a comprehensive blue crab stock assessment which has not been done since 2011 and is intended to improve our understanding of how blue crab populations are changing and provide new information to refine management targets.

Blue Crab Management

Manage a stable and productive blue crab fishery.

Progress: Completed.

In November 2017, the Chesapeake Bay Program agreed to maintain the existing blue crab management framework, which focuses on conserving the female population. The current framework includes a minimum threshold of 72.5 million and a target of 196 million adult female blue crabs as well as a harvest rate target of 28% and threshold of 37%. As a result of jurisdictional coordination and science informed management actions, both female abundance and harvest have remained sustainable each year—meaning blue crabs are not overfished and overfishing is not occurring.

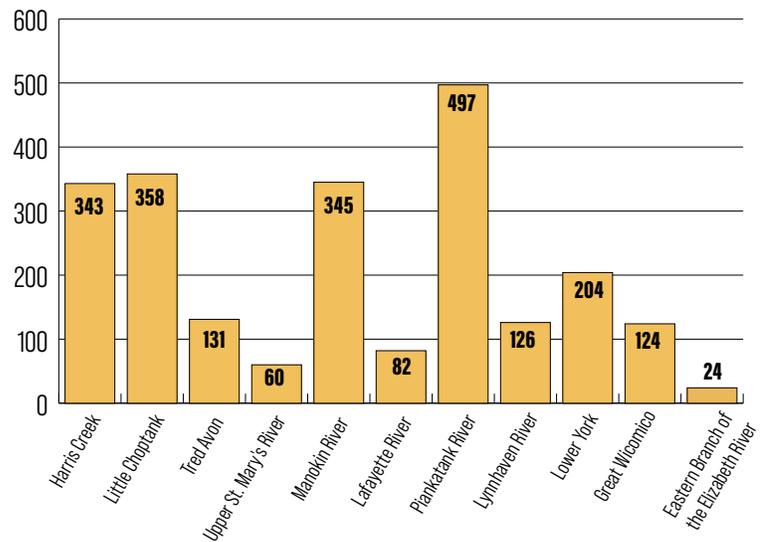
Oysters

Restore native oyster habitat and populations in 10 tributaries by 2025 and ensure their protection.

Progress: Completed.

In the summer of 2025, Chesapeake Bay Program partners officially completed the outcome of oyster reef restoration in all 10 tributaries as set forth in the 2014 *Chesapeake Bay Watershed Agreement*—and an 11th “bonus” tributary. In total, partners actively restored 2,294 acres of oyster reef habitat across the Chesapeake Bay, making this the largest oyster reef restoration project in the world. These reefs, as well as the billions of juvenile oysters that have been added to the Bay in the process, will provide habitat for commercially and recreationally important fish species, help keep the estuary clean and boost the Bay’s oyster population. These reefs will continue to be monitored, and restoration in additional areas is expected to be continued in the revised *Watershed Agreement*.

Acres of Restored Oyster Habitat



Atlantic menhaden swim through sago pondweed in Maryland's Severn River Sanctuary. (Photo by Will Parson/Chesapeake Bay Program)

Forage Fish

Continually improve the partnership's capacity to understand the role of forage fish populations in the Chesapeake Bay.

Progress: The analysis of monitoring data and new research have enhanced understanding of the Bay's forage species.

In 2014, the partnership knew relatively little about the status of forage fish: smaller fish and invertebrates that are eaten by larger keystone species. Now, the partnership has analyzed years of monitoring data and supported new research that paints a clearer picture of which forage species are most important, estimated changes in their abundances and identified key factors that influence their populations year to year. Looking ahead, the team is developing three indicators related to the abundance of key invertebrates, the relationship between warming waters and forage abundance, and the relationship between suitable habitat and forage abundance.

Fish Habitat

Continually improve effectiveness of fish habitat conservation and restoration by identifying critical spawning, nursery and forage areas within the Bay and tributaries while integrating information and conducting assessments through new and existing tools.

Progress: New tools and research have increased understanding of tidal and non-tidal fish habitats.

Scientists and fishery management experts working across the partnership continue to advance understanding of the spawning, nursery and forage areas used by fish and shellfish in the Bay. With the use of new and existing tools, partners have developed assessments of tidal and non-tidal fish habitats, studies that inform shoreline restoration and analyses on how changes in environmental conditions impact fish populations.

VITAL HABITATS

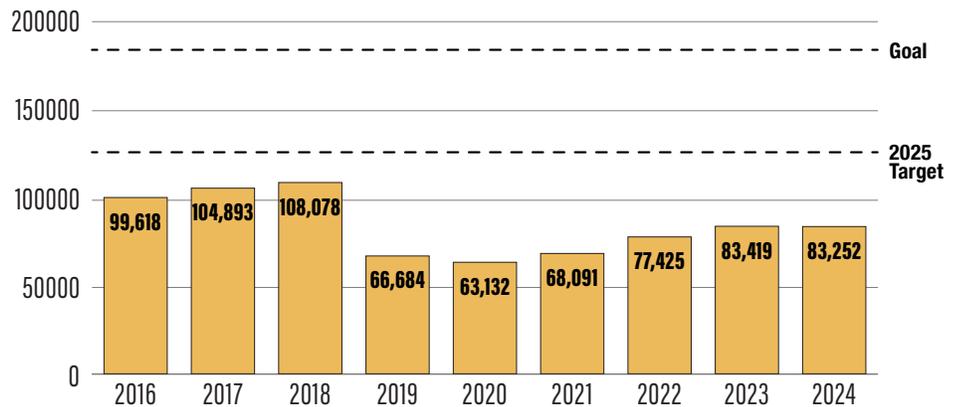
Submerged Aquatic Vegetation (SAV)

Achieve and sustain 185,000 acres of submerged aquatic vegetation necessary for a restored Bay; measured against a target of 90,000 acres by 2017 and 130,000 acres by 2025.

Progress: 64% of the 2025 target achieved and 45% of the ultimate target achieved.

The Chesapeake Bay Program set a goal of achieving 130,000 acres of submerged aquatic vegetation, also known as underwater grasses, by 2025. The estuary came closest to reaching the 2025 target in 2018, when an estimated 108,078 acres were mapped. But in 2019, high amounts of rainfall lowered salinity levels while washing in nitrogen, phosphorus and sediment runoff from across the watershed, leading to a 38% drop. Since then, underwater grasses have gradually recovered—with major gains recently occurring in the upper and lower Bay. Overall, acreage has increased 112% since the first aerial survey was conducted in 1984.

Acres of Submerged Aquatic Vegetation (Observed and Estimated)



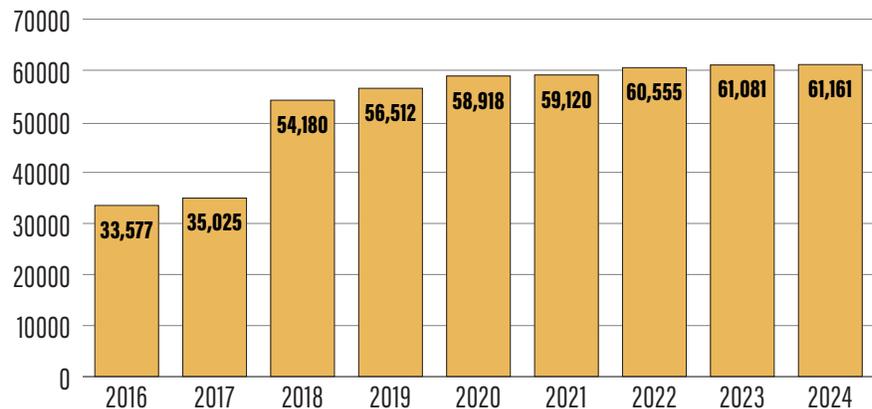
Wetlands

Create or reestablish 85,000 acres of tidal and non-tidal wetlands and enhance the function of an additional 150,000 acres of degraded wetlands by 2025.

Progress: 5.72% of the creation and re-establishment outcome achieved; 40.77% of the enhancement outcome achieved.

Between 2014 and 2024, Chesapeake Bay Program partners enhanced the function of over 61,000 acres of wetlands in the watershed, leading to a 40.77% achievement of the partnership's goal. During the same timeframe the watershed gained 4,862 acres of wetlands, which is only 5.72% of the 85,000-acre goal, though experts believe there were enhancements and gains in the watershed not accounted for. The partnership will continue to protect, restore and increase wetlands—a critical habitat for fish, shellfish and waterfowl, and buffer against stormwater runoff.

Cumulative Acres of Wetlands Enhanced



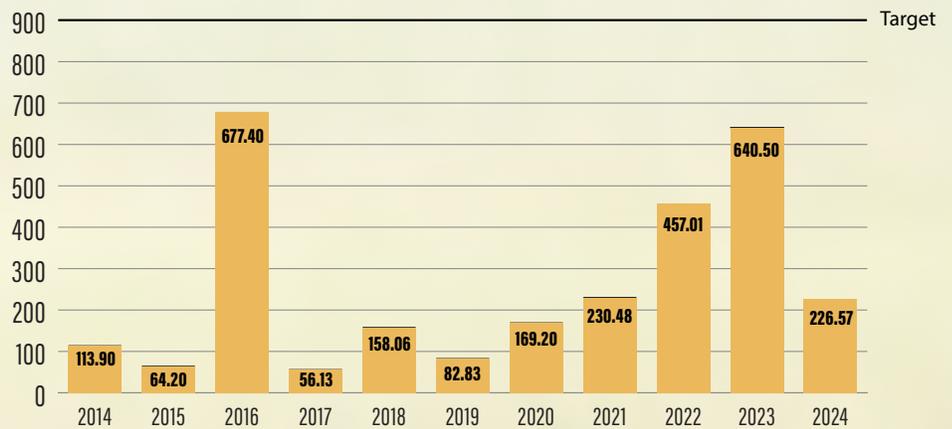
Forest Buffers

Restore 900 miles of riparian forest buffers per year and conserve existing buffers until at least 70% of riparian areas in the watershed are forested.

Progress: 25% of planting outcome achieved, 99.9% of riparian forest cover outcome achieved.

From 2019 to 2023, Chesapeake Bay Program partners steadily increased forest buffer plantings as a result of increased investments in flexible forest buffer programs and improved reporting. Reported plantings returned to a near-average rate of implementation in 2024 when approximately 227 miles of riparian forest buffers were planted. The partnership also strives for 70% of the riparian areas in the watershed to be forested. Data from 2021/2022 showed that 69.96% of the riparian area in the watershed was forested, leaving only a 1,753-acre gap to the goal. However, between 2013/2014 and 2021/2022, the region saw a net loss of 41,941 riparian forest acres, highlighting the need to pair forest buffer planting programs with robust forest buffer conservation efforts.

Miles of Forest Buffers Planted



Tree Canopy

Expand urban tree canopy by 2,400 acres by 2025.

Progress: 17,082 acres of trees planted with losses outweighing the gains.

Since 2014, Chesapeake Bay Program partners have planted approximately 17,082 acres of trees in communities. In 2023 and 2024 community tree plantings surged, with partners planting 5,743 acres in 2024, the highest amount reported since tracking began in 2014. Recent progress likely stems from increased federal and state investments in programs that increase plantings on public and private property. However, despite this progress, data released in June 2025 showed a net loss of more than 28,000 acres of community tree canopy in the watershed between 2013-2014 and 2021-2022. This highlights the need for tree planting programs to be paired with tree canopy conservation to minimize losses and shift the overall trajectory toward gain.

Cumulative Acres of Community Trees Planted



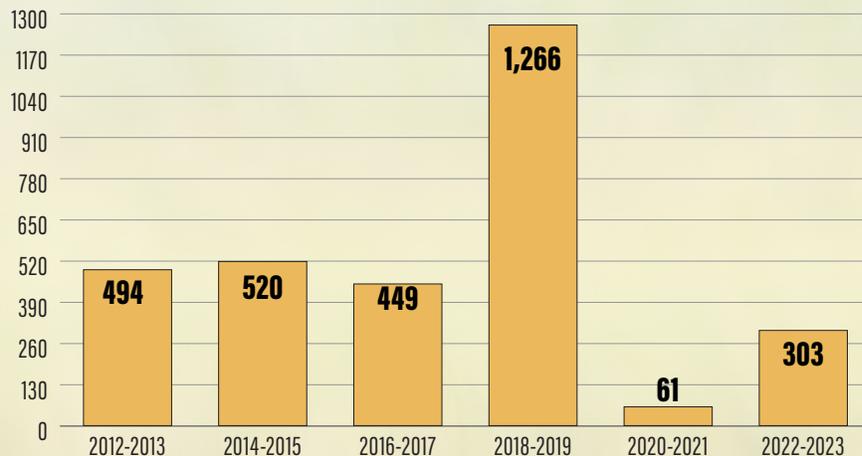
Fish Passage

Restore historical fish migration routes by opening an additional 132 miles every two years to fish passage.

Progress: 100% achievement in 2022-2023.

Chesapeake Bay Program partners remove dams and install fish-passage devices to allow alewife, herring, shad, brook trout and other migratory fish to reach their spawning grounds. The original goal of the Fish Passage Outcome was to open an additional 1,000 stream miles to fish passage by 2025. The goal was achieved in 2019, so partners set a new goal to open up 132 miles every two years. With the exception of 2020-2021, this goal has been completed each year, with 303 stream miles opened during 2022-2023. Chesapeake Bay Program partners have been working on this issue for decades and have opened approximately 35,258 stream miles since 1989.

Stream Miles Opened for Fish Passage



Black Duck

By 2025, restore, enhance and preserve wetland habitats that support a wintering population of 100,000 black ducks.

Progress: 4.08% of the wetland creation and restoration goal; 18.3% of the wetland enhancement and preservation goal as of 2024.

In 2017, the Black Duck Decision Support Tool estimated that an additional 151,272 acres of high-quality tidal marsh are needed to support 100,000 wintering black ducks in the Bay watershed. Since then, only 470 acres have been created, 2,995 acres restored and 27,457 acres enhanced. Current gains remain far short of what is required, leaving the outcome off course for 2025. Conserving these habitats benefits black ducks, other waterbirds, and the long-term resilience of the Bay ecosystem.

Brook Trout

Restore and sustain naturally reproducing brook trout populations in Chesapeake Bay headwater streams, with an eight percent increase in occupied habitat by 2025.

Progress: 0.5% increase in occupied habitat as of 2024.

In 2016, estimates showed that naturally reproducing brook trout (as opposed to those raised in hatcheries) occupied 33,212 square kilometers of habitat in the Bay watershed. As of 2024, partners have increased occupied habitat by 0.5%, which falls short of the partnership's goal. To see an increase in brook trout habitat, experts believe there should be a focus on forest buffer plantings, acid mine drainage treatment, removal of aquatic organism passage barriers, erosion control and land conservation, especially near existing brook trout streams.

Stream Health

Improve the health and function of 10% of stream miles above the 2008 baseline for the watershed.

Progress: 6% increase in stream health as of 2017.

The health of the Chesapeake Bay depends on the health of the hundreds of thousands of streams that flow into it. According to data collected between 2012 and 2017, approximately 67.8% of the watershed's stream miles are considered healthy, which is a six percent increase from the 2006-2011 baseline. While analysis of year end data is not complete, partners are expected to reach the goal of a 10% increase in stream health by 2025, with trends suggesting the impact of environmental stressors may be slowly lessening in many parts of the watershed.



A saltmarsh sparrow visits Irish Grove Sanctuary in Somerset County, Md. (Photo by Will Parson/Chesapeake Bay Program)

WATER QUALITY

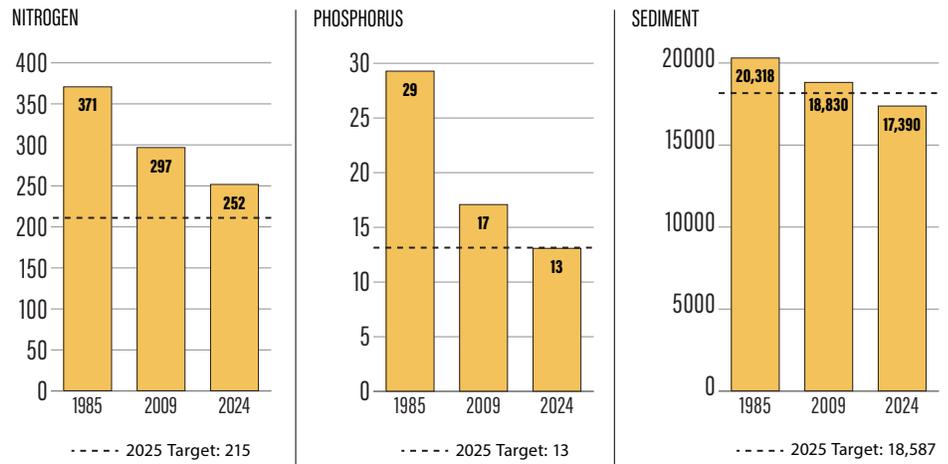
2025 Watershed Implementation Plans*

By 2025, have all pollutant-reducing practices in place to achieve the water quality standards outlined in the Chesapeake Bay Total Maximum Daily Load.

Progress: As of 2024, installed BMPs are on track to achieve 59%, 92% and 100% of the necessary nitrogen, phosphorus and sediment reductions, respectively.

Under the Bay TMDL, Chesapeake Bay Program partners are working to install 100% of the necessary best management practices (BMPs) by 2025 to reduce the amount of nitrogen, phosphorus and sediment entering the Bay, to achieve applicable water quality standards. As of 2024, the Chesapeake Assessment Scenario Tool (CAST) estimates that BMPs such as tree plantings or wastewater treatment plant upgrades have achieved 59% of the necessary nitrogen reductions, 92% of the necessary phosphorus reductions and 100% of the necessary sediment reductions. **In 2017, the Chesapeake Bay Program completed its 2017 Watershed Implementation Plans Outcome.*

Millions of Pounds of Simulated Pollution Loads



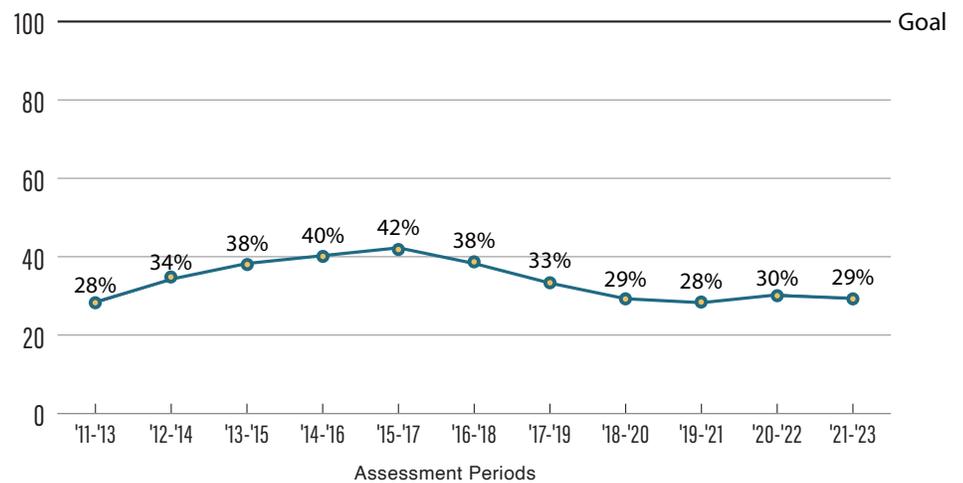
Water Quality Standards Attainment and Monitoring

Continually improve our capacity to monitor and assess the effects of the management actions being taken to implement the Chesapeake Bay Total Maximum Daily Load and improve water quality. Use Monitoring results to report annual progress being made in attaining water quality standards and trends in reducing nutrients and sediment in the watershed.

Progress: 29.4% of standards for Bay and tidal tributaries were attained as of 2023.

The Chesapeake Bay Program coordinates a robust monitoring program that assesses the health of the Chesapeake Bay. Each year, the partnership estimates what percentage of the Bay met water quality standards, as defined by dissolved oxygen, water clarity or underwater grass abundance and chlorophyll-a (a measure of algae growth), taken in three-year intervals. During the 2021 to 2023 assessment period, 29.4% of the Chesapeake Bay and its tidal tributaries were estimated to have met water quality standards. While the current attainment score is below the record high of 42.2% achieved during the 2015-2017 assessment period, recent indications show slow improvement and continued recovery from the 2018-2019 wet years.

Estimated Percentage of Tidal Waters Meeting Water Quality Standards



Annual Nutrient and Sediment Loads to the Chesapeake Bay

Chesapeake Bay Program partners track river flows to the Chesapeake Bay as brought by rainfall, as well as subsequent levels of nitrogen, phosphorus and sediment draining to the Bay. In 2023, average river flow to the Chesapeake Bay measured 42.5 billion gallons per day, a 10% decrease from 2022. The corresponding amounts of nitrogen, phosphorus and sediment that entered the Bay that same year were approximately 199 million pounds of nitrogen, 9.7 million pounds of phosphorus and 12 billion pounds of sediment. All of these are below both their 2022 levels and their long-term (1985-2023) average.

Nitrogen Loads

Approximately 199 million pounds of nitrogen entered the Bay in 2023.

Phosphorus Loads

Approximately 9.7 million pounds of phosphorus entered the Bay in 2023.

Sediment Loads

Approximately 12 billion pounds of sediment entered the Bay in 2023.

Nitrogen, Phosphorus and Sediment Trends in the Chesapeake Bay Watershed

Nitrogen, phosphorus and sediment loads are monitored at 123 river and stream stations throughout the nontidal portion of the Chesapeake Bay watershed. Data collected throughout the nontidal monitoring network are analyzed by the U.S. Geological Survey (USGS) to calculate trends which describe how loads of nitrogen, phosphorus and sediment have changed over time. Trends are mixed across the watershed, with pollution levels increasing at some stations and reducing at others.

Nitrogen Trends

From 2014 to 2023, total nitrogen trends were improving at more stations (43%) than degrading (39%), with 18% showing no discernable trend.

Phosphorus Trends

From 2014 to 2023, total phosphorus trends were degrading at more stations overall (47%) than improving (24%), with 29% showing no discernable trend.

Sediment Trends

From 2014 to 2023, suspended-sediment trends at stations were evenly split between improving (33%), degrading (34%) and no discernable trend (33%).



A crew plants thousands of trees in one day on farms in Frederick County, Md. (Photo by Will Parson/Chesapeake Bay Program)



A permeable trail and stormwater drainage lead to a rain garden in Washington, D.C. (Photo by Charlie Nick/Chesapeake Bay Program)

Progress Toward the Chesapeake Bay Total Maximum Daily Load

The Chesapeake Bay Total Maximum Daily Load, or Bay TMDL, Indicator combines monitored and modeled data to estimate the progress of nitrogen and phosphorus loading rate reductions in response to implemented best management practices (BMPs). To achieve the TMDL planning target for nitrogen, the annual loading rate needs to be reduced by 145.42 million pounds from this indicator's 1995 baseline. To achieve the TMDL planning target for phosphorus, the annual loading rate needs to be reduced by 9.35 million pounds from this indicator's 1995 baseline.

Since 1995, the reduction of both nitrogen and phosphorus loading rates has trended toward meeting the Bay TMDL. As of 2023, implemented BMPs are yielding estimated nitrogen load reductions of 81.83 million pounds per year and estimated phosphorus load reductions of 1.63 million pounds per year. Implemented BMPs are expected to yield additional nitrogen load reductions of 27.21 million pounds per year and additional phosphorus load reductions of 4.05 million pounds per year. Planned BMPs are expected to yield additional nitrogen load reductions of 16.07 million pounds per year and additional phosphorus load reductions of 0.05 million pounds per year.

Pollution Load Reduction Yields

Implemented BMPs are yielding estimated nitrogen load reductions of 81.83 million pounds per year and estimated phosphorus load reductions of 1.63 million pounds per year.

Pollution Load Reduction Expected Yields

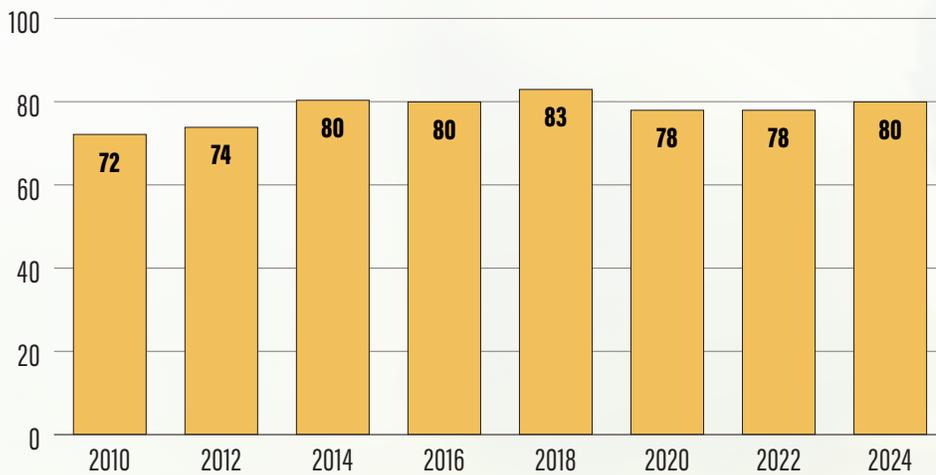
Implemented BMPs are expected to yield additional nitrogen load reductions of 27.21 million pounds per year and additional phosphorus load reductions of 4.05 million pounds per year.

Pollution Load Additional Reductions

Planned BMPs are expected to yield additional nitrogen load reductions of 16.07 million pounds per year and additional phosphorus load reductions of 0.05 million pounds per year.

TOXIC CONTAMINANTS

Percentage of the Chesapeake Bay Impaired by Toxic Contaminants



Toxic Contaminants Policy and Prevention

Continually improve practices and controls that reduce and prevent the effects of toxic contaminants.

Progress: 80% of the Chesapeake Bay's tidal segments were partially or fully impaired by toxic contaminants as of 2024.

According to data submitted by Delaware, Maryland, Virginia and the District of Columbia to the Environmental Protection Agency in 2024, 80% of the Chesapeake Bay's tidal segments were partially or fully impaired by toxic contaminants. Since 2014, this percentage has remained steady between 78% and 82%. The 2020 data set was the first to include some assessment of per- and polyfluoroalkyl substances (PFAS). Since there is increased monitoring of PFAS in Bay waterways, the percentage of impaired tidal segments may increase as well. Chesapeake Bay Program partners are exploring ways to help local governments test for and address toxic contaminants, particularly PFAS.

Toxic Contaminants Research

Continually increase our understanding of the impacts and mitigation options for toxic contaminants.

Progress: Ongoing research has furthered our understanding of emerging toxic contaminants in the Bay.

Ongoing research and coordination led by Chesapeake Bay Program partners continue to help characterize the occurrence, concentrations, sources and effects of toxic contaminants in the Bay. This includes quarterly technical meetings focused on PFAS, including the accumulation of PFAS in agriculture and advances in PFAS monitoring. In addition, partners will assess emerging concerns such as microplastics and the compound, GPPD-quinone. PFAS has been linked to various health issues, including increased cancer risk, reproductive effects and immune system interference, while GPPD-quinone can have negative effects on brook trout survival.

LAND CONSERVATION

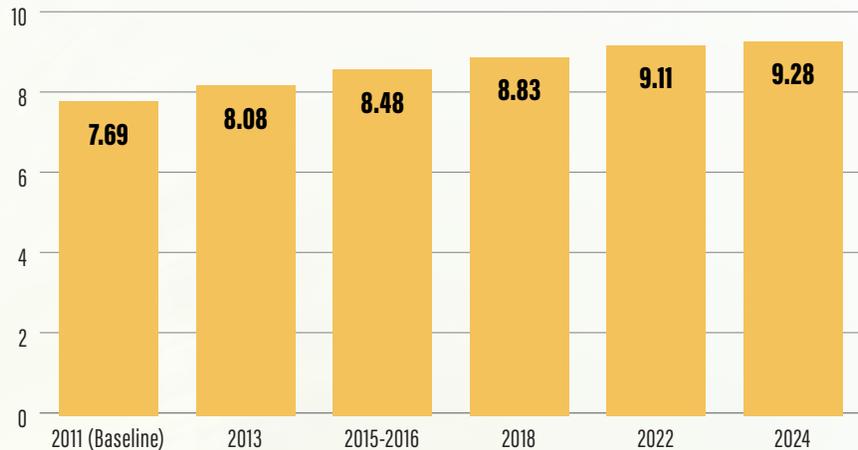
Protected Lands

By 2025, protect an additional two million acres of land throughout the watershed currently identified as high-conservation priorities at the federal, state or local level.

Progress: 1.8 million acres of additional land permanently protected as of 2024.

Between 2010 and 2024, Chesapeake Bay Program partners have permanently protected 1.8 million acres of land in the watershed. In total, 9.28 million acres of land have been protected across the watershed as of 2024—23% of the total land in the region. While the partnership does not expect to achieve the Protected Lands Outcome target by 2025, the overall trend in land protection is positive, as federal agencies, jurisdictions, local governments, Tribes, non-governmental organizations and other partners collaborate to safeguard land throughout the region.

Millions of Acres of Protected Lands (Cumulative)



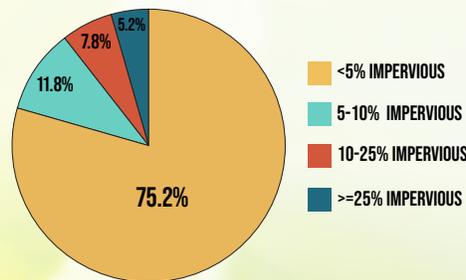
Land Use Options Evaluation

Evaluate policy options, incentives and planning tools that could assist local governments in continually improving their capacity to reduce the rate of conversion of agricultural lands, forests and wetlands to impervious surfaces.

New planning tools and research are helping to inform local governments about land conversion.

Efforts to update land use change data, assess the extent of impervious surfaces across the watershed, and evaluate policy options, incentives and planning tools to help local governments conserve forestland have all contributed to the increase in capacity of local governments and others to reduce the rate of land conversion. Communicating the available data, tools and resources to local governments will continue to progress toward this outcome.

Impervious Surface Cover in the Sub-Watersheds of the Chesapeake



Land Use Methods and Metrics Development

Continually improve our knowledge of land conversion and associated impacts throughout the watershed.

Progress: High-resolution land use and land cover, and change data, provides a detailed view of how the land is changing across the watershed.

The Chesapeake Bay Program releases high-resolution data related to how land in the Chesapeake Bay watershed is being used and how it has changed. This includes the extent of impervious surfaces like roads, parking lots and rooftops where water runs off the surface rather than soaking into the ground. The partnership measures impervious surface coverage across 81,653 catchments (sub-watersheds) of the larger Chesapeake Bay watershed. As of 2021, about 75.2% of the catchments have less than 5% impervious surface; 11.8% have 5-10% impervious surface; 7.8% have 10-25% impervious surface; and 5.2% have more than 25% impervious surface. From 2013/14 to 2017/18, there were 32 catchments that experienced increases in impervious cover greater than 10%. From 2017/18 to 2021/22, there were 45 catchments that experienced increases in impervious cover greater than 10%. New solar panel arrays or new warehouses were evident in many of the catchments that experienced high percentage increases in impervious cover.

A river birch planted by Friends of the Rappahannock is part of a silvopasture project in Greene County, Va. (Photo by Charlie Nick/Chesapeake Bay Program)

HEALTHY WATERSHEDS

Healthy Watersheds

100% of state-identified currently healthy waters and watersheds remain healthy.

Progress: The development of Chesapeake Healthy Watersheds Assessment 2.0 assesses watershed conditions across the region.

Chesapeake Bay Program partners strive to sustain watersheds where healthy streams already exist. Waters and watersheds identified as healthy in 2017 serve as the baseline for tracking progress toward this outcome. Because each Bay jurisdiction defines and measures healthy waters differently, consistent data to assess overall progress is not available. However, the development of the Chesapeake Healthy Watersheds Assessment 2.0 enables comparable and consistent assessments of watershed conditions across all Bay jurisdictions.



Sebastian Leavitt snorkels in the South Fork Shenandoah River in Warren County, Va. (Photo by Charlie Nick/Chesapeake Bay Program)

STEWARDSHIP

Stewardship

Increase the number and diversity of trained and mobilized volunteers who have the knowledge and skills needed to enhance the health of their local watersheds.

Progress: The Chesapeake Bay Stewardship Index reveals high-impact behavioral trends across the watershed.

The 2023 Chesapeake Bay Stewardship Index Survey Data, collected from over 6,000 watershed residents, reveals insights into the knowledge, attitudes and practices of residents in the Chesapeake Bay watershed, and is a useful resource for organizations working to foster stewardship. Survey trends reveal that high-impact behaviors such as individuals installing rain barrels or picking up pet waste have become more common since the 2017 data collection. In addition, residents responded that assistance and education can greatly increase the adoption of positive environmental behaviors. Finally, survey data show that the public is optimistic and engaged around water pollution and environmental protection, and the health of local rivers, streams and the Chesapeake Bay is an important personal priority for many residents.



Nansemond Indian Nation Assistant Chief Ruth Hennaman and other officials and volunteers haul oysters to a reef restoration site on Chuckatuck Creek during an annual oyster planting event hosted by the tribe in Suffolk, Va. (Photo by Rhiannon Johnston/Chesapeake Bay Program)

Local Leadership

Continually increase the knowledge and capacity of local officials on issues related to water resources and in the implementation of economic and policy incentives that will support local conservation actions.

Progress: More than 8,500 local officials engaged through training and educational opportunities.

In 2022 and 2024, the Chesapeake Bay Program engaged more than 8,500 local officials through 31 training and education opportunities and reached more than 3,500 unique visitors through a website that provides a local government guide to the Bay. These engagement efforts may be reflected in the results of the most recent Local Leadership Survey. Completed in 2024, this survey shows improvements in local officials' self-reported knowledge of federal rules and regulations around water resources. It also shows an increase in reported actions undertaken on water quality or water resources.

Knowledge of Federal Regulations

2024 survey responses show improvements in the knowledge of federal regulations among local leadership, both when assessed by community size and by time in office. Fewer smaller community officials (43%, down from 52%) reported uncertainty about federal water resource regulations. Similarly, those who served for less than two years showed lower uncertainty than in 2022 (46%, down from 55%). The uncertainty among officials of larger communities remained about the same (between 31.1% and 31.5%).

Reported Conservation Actions

The number of local elected officials who reported implementing or enforcing local rules or regulations rose from 47% in 2022 to 61% in 2024, while reports of applying for grants or other funding for projects increased from 64% to 70%. The survey results showed no change in activity for "on the ground" projects to improve water quality (54% in both years). The only decrease in conservation activities indicated by the survey was in the implementation of new rules or regulations, which fell from 50% in 2022 to 44%.

PUBLIC ACCESS

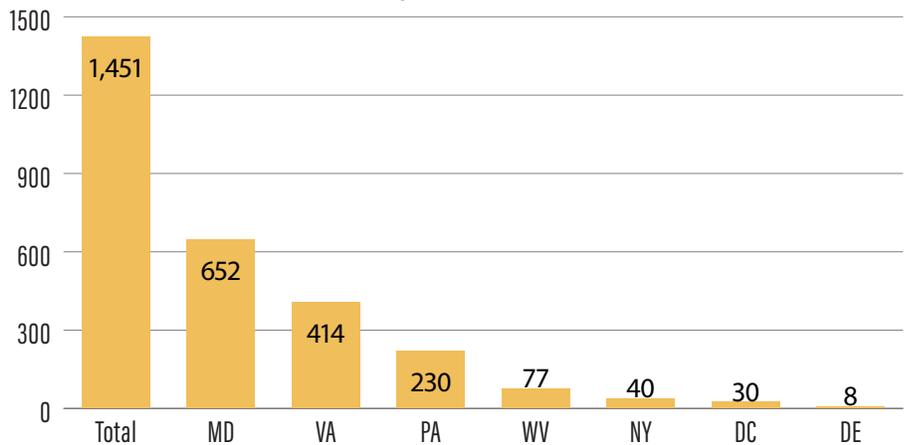
Public Access Site Development

Add 300 new public access sites by 2025.

Progress: Completed.

In 2024, Chesapeake Bay Program partners added 27 new public access sites to the Bay watershed, for a total of 312 sites installed since 2010. Boat ramps, kayak launches, docks and other sites that provide water access allow residents to form a connection with the water that instills a sense of environmental stewardship. These sites also support the watershed's billion-dollar outdoor recreation and tourism industry. In total, there are now 1,451 public access sites throughout the watershed: 652 in Maryland, 414 in Virginia, 230 in Pennsylvania, 77 in West Virginia, 40 in New York, 30 in the District of Columbia and eight in Delaware.

Public Access Sites in the Bay Watershed



ENVIRONMENTAL LITERACY

Environmental Literacy Planning

Develop a comprehensive and systemic approach to environmental literacy for all students in the region.

Progress: 76% of local education agencies are “well prepared” or “somewhat prepared” to advance environmental literacy programming.

In 2024, the Chesapeake Bay Program’s environmental literacy survey measured the degree of environmental literacy preparedness among 302 local education agencies (LEAs)—44% of the total, representing 74% of the total K-12 student body population. The survey was distributed to all LEAs within five jurisdictions (Delaware, the District of Columbia, Maryland, Pennsylvania and Virginia), but in West Virginia, it was only distributed to the eight LEAs in the watershed.

- 19% of respondents self-identified as “well-prepared” to put a comprehensive and systemic approach to environmental literacy in place.
- 57% of respondents self-identified as “somewhat prepared” to put a comprehensive and systemic approach to environmental literacy in place.
- 25% of respondents self-identified as “not prepared” to put a comprehensive and systemic approach to environmental literacy in place.

Sustainable Schools

Continually increase the number of schools in the region that reduces the impact of their buildings and grounds on their local watershed, environment and human health.

Progress: 597 sustainable schools as of 2021.

Since 2015, the number of sustainable schools in the Bay watershed has increased 19% from 501 in 2015 to 597 in 2021. Certified sustainable schools include public and charter schools within the Chesapeake Bay watershed that have been recognized as sustainable by various state and federal education programs, typically by carrying out environmentally friendly projects and meeting different environmental standards. At 79% of the total (or 470 schools), Maryland is home to most of the certified sustainable schools in the watershed.



Students from St. Michaels Middle High School drag a seine survey net along the shoreline of the Choptank River during a field trip at the UMCES Horn Point Laboratory in Cambridge, Md. (Photo by Will Parson/Chesapeake Bay Program)

Student

Continually increase students’ age-appropriate understanding of the watershed with a target of at least one teacher-supported meaningful watershed educational experience in elementary, middle and high school depending on available resources.

Progress: 34% of students attend schools that offer system-wide meaningful watershed educational experiences.

Chesapeake Bay Program partners work closely with educational professionals to help them provide Meaningful Watershed Educational Experiences (MWEEs) to students in watershed states. In 2024, 302 local education agencies (LEAs)—44% of the total, representing 74% of the total K-12 student body population—were represented in the Chesapeake Bay Program’s fifth Environmental Literacy Indicator Tool (ELIT). This voluntary survey, which also measures the degree of environmental literacy preparedness, provides new data on the extent of MWEEs among schools. The survey was distributed to all LEAs within five jurisdictions (Delaware, the District of Columbia, Maryland, Pennsylvania, and Virginia), but in West Virginia, it was only distributed to the eight LEAs in the watershed.

Elementary School Level

31% of reporting LEAs provide system-wide MWEEs to at least one grade level, 39% provide some MWEEs to at least one grade level and 30% have no MWEEs available.

Middle School Level

33% provide system-wide MWEEs to at least one grade level, 41% provide some MWEEs and 26% have no MWEEs available.

High School Level

30% provide system-wide MWEEs in at least one required course, 44% provide some MWEEs in at least one required course and 26% have no MWEEs available.



Oxford Conservation Park provides restored forest, meadow and wetland habitat in Oxford, Md. (Photo by Will Parson/Chesapeake Bay Program)

Monitoring and Assessment

Continually monitor and assess the trends and likely impacts of changing environmental conditions on the Chesapeake Bay ecosystem, including the effectiveness of restoration and protection policies, programs and projects.

Progress: Monitoring showed an increase in air temperature and annual precipitation rates across the watershed as of 2021.

In 2018, the partnership adopted five indicators to track the impact of changing environmental conditions on the Chesapeake Bay. Two of these indicators—Average Air Temperature Increases and Total Annual Precipitation Change—were selected by the Management Board as priority indicators to be regularly updated.

Adaptation

Continually pursue, design and construct restoration and protection projects to enhance the resiliency of Bay and aquatic ecosystems from the impacts of coastal erosion, coastal flooding, more intense and more frequent storms, and sea level rise.

Progress: Potential projects and collaborative partnerships identified to support adaptation practices.

Chesapeake Bay Program partners work to identify potential projects and collaborative partnerships that fund and implement marsh restoration and resilience, provide advisory support to projects related to green infrastructure and marsh migrations, and participate in workshops on tidal wetlands. However, the outlook of this outcome is off course because the metrics for tracking and measuring the success of projects to enhance resilience (e.g., carbon sequestration, flood reduction and shoreline protection) have not yet been developed.

Air Temperature

In 2021, all 33 of the climate divisions located within the watershed experienced statistically significant increases in the average annual rate of change in air temperature when compared to the 1901-2000 long-term average. In 2017, there were 32 climate divisions with statistically significant increases. The rates of change for 2021 range from 0.6°F per century in southern West Virginia to more than 2.8°F per century in southern Delaware. This is higher than 2017's range of 0.4°F per century to about 2.5°F per century (same climate divisions).

Annual Precipitation

In 2021, 32 of the 33 climate divisions located within the Chesapeake Bay watershed experienced an increase in total annual precipitation change in inches compared to the 1901-2000 baseline. The percent change ranged from a decrease of -0.203% in southern West Virginia to an increase of 17.62% in central New York. This varies from 2017, where percentage changes ranged from -4.04% in southern West Virginia to 15.97% in central New York. As air circulation patterns across the region and around the world are altered by changing environmental conditions, annual precipitation rates will rise in some areas and fall in others.

CHESAPEAKE BAY PROGRAM DATA

ChesapeakeProgress

ChesapeakeProgress is designed to help the partnership track our progress toward the *Chesapeake Bay Watershed Agreement*, understand what impacts our work and determine how this work is funded. You can visit ChesapeakeProgress.com for more in-depth information related to the goals and outcomes listed in this report.

 ChesapeakeProgress.com

ChesapeakeData

ChesapeakeData is a central point of access for data, decision-support tools and other data resources. The resources on this site cover a wide range of environmental topics, from pollution loads, land use and habitat cover to environmental stewardship and literacy. Content contributors include the Chesapeake Bay Program and its partners, such as the U.S. Environmental Protection Agency, U.S. Geological Survey, National Park Service and Chesapeake Conservancy.

 Data.ChesapeakeBay.net

CHESAPEAKE BAY WATERSHED AGREEMENT

In December 2025, the Chesapeake Executive Council approved a revised version of the *Watershed Agreement* that was signed in 2014. This updated version contains four goals and 21 outcomes, many of which include measurable, time-bound targets that enable the partnership to track progress.

Partners will work to achieve these goals, outcomes and targets by 2040.

 ChesapeakeBay.net/watershed-agreement



Bay Barometer is the annual progress report
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