

CHESAPEAKE BAY PROGRAM 2018-2019

BAY BAROMETER

ABUNDANT LIFE

Restoring oyster habitats, sustaining the population of blue crabs and increasing underwater grass abundance

ENGAGED COMMUNITIES

Supporting environmental stewardship

CLEAN WATER

Improving the water quality of the Chesapeake Bay and your local waterways



ANNUAL PROGRESS REPORT OF THE CHESAPEAKE BAY PROGRAM

BAY BAROMETER

The Chesapeake Bay watershed is a dynamic ecosystem. Tracking changes in its health over time allows scientists to understand the effects of our management actions and our progress toward meeting health and restoration goals. The data in this report reflect the goals and outcomes our partnership agreed to work toward in the 2014 *Chesapeake Bay Watershed Agreement*.

THE CHESAPEAKE BAY WATERSHED AGREEMENT

The Chesapeake Bay Program is guided by the goals and outcomes of the *Chesapeake Bay Watershed Agreement*. Signed on June 16, 2014, this agreement commits our partners to protecting and restoring the Bay, its tributaries and the lands that surround them. Our environment is an interconnected system and achieving the goals and outcomes of this agreement will support improvements in the health of the watershed and the people who live here. Track our progress toward the *Chesapeake Bay Watershed Agreement* at chesapeakeprogress.com.

THE CHESAPEAKE BAY PROGRAM

The Chesapeake Bay Program is a regional partnership that works across state lines to protect and restore the Chesapeake Bay watershed. Our partners include the U.S. Environmental Protection Agency, the Chesapeake Bay Commission, the District of Columbia and the states of Delaware, Maryland, New York, Pennsylvania, Virginia and West Virginia. Through the Bay Program, federal, state and local agencies, non-profit organizations, academic institutions and citizens come together to secure a brighter future for the Bay region. Learn more at chesapeakebay.net.

INTRODUCTION

This past year can be described as a “building” year for the Chesapeake Bay Program, as we lay the foundation for several vital programs and projects guiding Bay restoration.

In 2019, the seven Chesapeake Bay watershed jurisdictions—Delaware, the District of Columbia, Maryland, New York, Pennsylvania, Virginia and West Virginia—completed their third and final Watershed Implementation Plans (WIPs). These plans outline the direction they plan to take in order to meet their pollutant reduction commitments under the Chesapeake Bay Total Maximum Daily Load (Bay TMDL) by 2025. While these plans aim to reduce pollutants flowing into local waterways and the Bay, they, along with the ten goals of the *Chesapeake Bay Watershed Agreement*, provide additional benefits, such as increasing tourism, providing jobs, strengthening the local economy and improving public health, to the people who live, work and play throughout the watershed.

Internally, the Chesapeake Bay Program kicked off the second round of its Strategy Review System (SRS) process in March 2019. Spanning two years, the SRS process provides an opportunity for the partnership’s Management Board to review the progress we are making toward the 31 outcomes of the *Chesapeake Bay Watershed Agreement*. It is also an opportunity to use new knowledge to adjust the strategies and approaches that each workgroup is taking to meet their associated outcome. In turn, the workgroups have the opportunity to explain their challenges, ask for assistance and celebrate their successes.

To further these efforts, the Chesapeake Bay Program developed and, in the summer of 2019, launched ChesapeakeDecisions (chesapeakebay.net/decisions), an online platform to support the overall SRS process and promote transparency and accountability.

Discussions in the SRS progress meetings have led to an increased focus on local engagement, social marketing and brand awareness across the partnership, with multiple projects now underway in all three disciplines. As these progress meetings offer an in-depth view to better understand the work of their colleagues, workgroups are finding it easier to collaborate and coordinate with one another.

In January 2019, the Environmental Protection Agency (EPA) named a new director to head its Chesapeake Bay Program Office: Dana Aunkst. Dana joins the Chesapeake Bay Program from the Pennsylvania Department of Environmental Protection, where he was responsible for developing the Pennsylvania Chesapeake Bay reboot strategy. EPA plays a vital leadership role within the Chesapeake Bay Program, and his perspective has only added to the strength of the partnership’s foundation.

The restoration of the Chesapeake Bay is an evolving process and as complex as its ecosystem. The next few pages explore the challenges, successes and notable events of our partnership over the past year. The groundwork has been laid to help the Chesapeake Bay Program continue to meet the goals and outcomes set out in the Chesapeake Bay Watershed Agreement and Bay TMDL.



ABUNDANT LIFE

The Chesapeake Bay Program continues its efforts to restore oyster habitat, sustain the population of blue crabs and increase underwater grass abundance. However, extreme weather conditions in 2018 influenced the health of the Chesapeake Bay in 2019.

The U.S. Geological Survey reported that an influx of rain in 2018 brought the highest flows of fresh water into the Chesapeake Bay since data was first collected in 1937. From October 1, 2018 to September 30, 2019, water flowed into the Bay at an average of 978,077 gallons per second. This is equivalent to approximately one and a half Olympic-sized swimming pools rushing into the Bay every second for a year.

Water flowed into the Bay at an average of 978,077 gallons per second from 10/1/2018–09/30/2019.

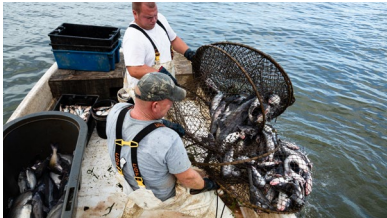
All this fresh water flowing into the Bay resulted in lower salinity levels in the upper and mid Bay, as well as in many of its tributaries. For example, the salinity level in the middle of the Chesapeake Bay was below the long-term average (1985–2019) for 17 consecutive months, from May 2018 to September 2019.

The low salinity levels negatively impacted restoration efforts, as well as the Bay's plant and animal species. The fresher water allowed invasive

species like blue catfish, flathead catfish and snakehead to spread into more tributaries, where they compete with native species for food and habitat. Oysters also rely on salty waters for their survival, and as a result of the increased fresh water, oyster die-offs did occur in some parts of the Bay. Additionally, oyster reef restoration efforts slowed, as the water was too fresh for seeding. Despite these challenges, oyster reef construction in the Bay and its tidal tributaries did continue in a limited capacity. During the summer of 2019, Maryland selected the Manokin River as the tenth and final tributary for large-scale oyster restoration, joining four other sites in Maryland and five in Virginia.

The Manokin River was chosen as the tenth and final tributary for large-scale oyster restoration.

According to the 2018 Maryland Oyster Restoration Update, 773 acres of oyster reefs have been restored in the Choptank Complex—which includes Harris Creek, the Little Choptank River and the Tred Avon River. Initial restoration work has now been completed in Harris Creek and monitoring results from 56 restored reefs show that from 2015 to 2017, 98% of those reefs met the minimum threshold for both oyster density and biomass. The 2018 Virginia Oyster Restoration Update states that 510 acres of oyster reefs have been restored, with reef construction and seeding to the Lafayette River now complete.



INVASIVE CATFISH WORKGROUP

The Invasive Catfish Workgroup is a collaborative, multi-stakeholder team that focuses on mitigating the spread and ecological impacts of invasive catfish in the Chesapeake Bay through coordination and development of strategic, science-based actions. The workgroup includes representatives from state agencies across the watershed that handle fisheries management, as well as commercial and recreational watermen, seafood processors and distributors, federal agencies, academic researchers and independent conservation organizations.

Oyster Reef Restoration Progress Dashboard				
TRIBUTARY	TRIBUTARY RESTORATION PLAN	REEF CONSTRUCTION & SEEDING	MONITORING & EVALUATION	COMPLETED/TARGET ACREAGE
Harris Creek (Md.)	COMPLETE	COMPLETE	IN PROGRESS	351/351
Little Choptank (Md.)	COMPLETE	IN PROGRESS		339/440
Manokin (Md.)	IN PROGRESS			TBD/TBD
Tred Avon (Md.)	COMPLETE	IN PROGRESS		84/147
Upper St. Mary's (Md.)	IN PROGRESS			TBD/TBD
Great Wicomico (Va.)	IN PROGRESS	IN PROGRESS		61/TBD
Lafayette (Va.)	COMPLETE	COMPLETE	IN PROGRESS	80/80
Lower York (Va.)	IN PROGRESS	IN PROGRESS		TBD/TBD
Lynnhaven (Va.)	COMPLETE	IN PROGRESS		91/152
Piankatank (Va.)	COMPLETE	IN PROGRESS		278/438

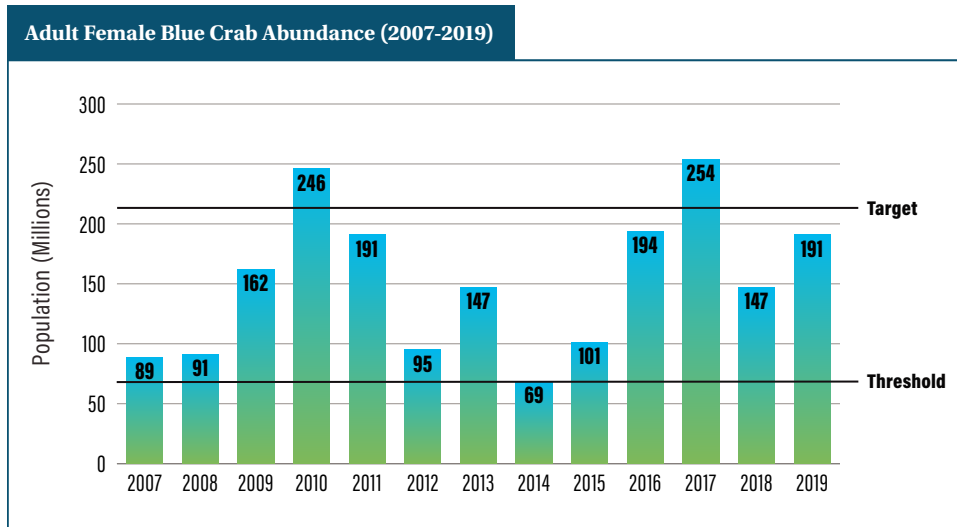
Like oysters, blue crabs thrive in salty waters. The increase in fresh water in the northern parts of the Chesapeake Bay drove blue crabs farther south in 2019, which resulted in a less-than-optimal start to crabbing season in the northern portion of the Bay. Despite the influx of fresh water, the Bay-wide winter dredge survey suggests the population of blue crabs increased nearly 60% from 372 million in 2018 to 594 million in 2019. Survey results also show that the Bay's total adult female blue crab population has increased nearly 30% to 191 million. This is well above the management goals for the blue crab fishery that aim to maintain a female blue crab abundance threshold of 70 million crabs and near the target of 215 million crabs.

The population of blue crabs increased nearly 60% from 372 million in 2018 to 594 million in 2019.

The juvenile blue crab population—crabs that will grow to harvestable size by fall—was estimated to be 323 million, above the long-term average of 224 million. The number of crabs that die in-between fall and spring—the overwintering mortality—was lower this year at 1.8%, due to a warmer 2018–2019 winter. This is a decrease from the 6.37% observed the previous winter.

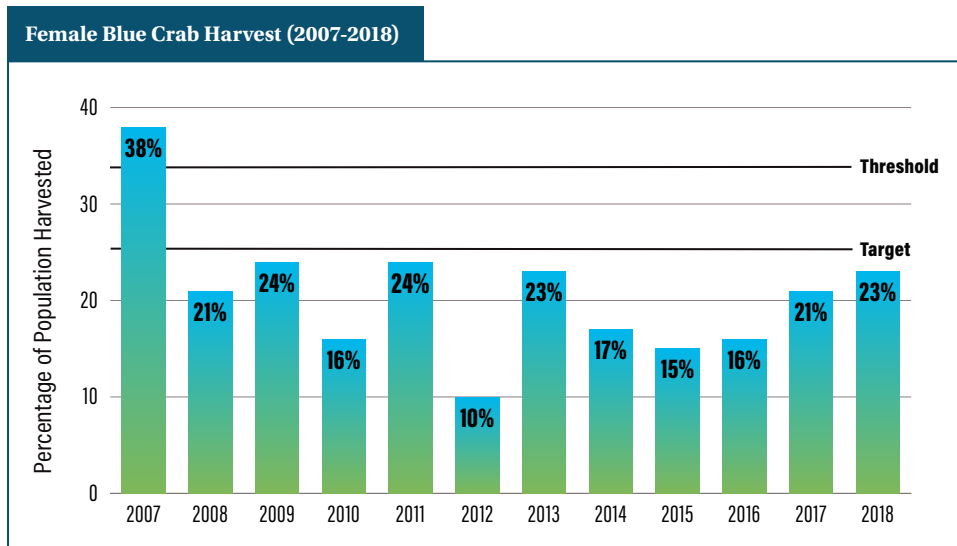
According to the Chesapeake Bay Stock Assessment Committee, an estimated 23% of the female blue crab population was harvested in 2018. For the 11th consecutive year, this number is below the 25.5% target and the 34% overfishing threshold. Therefore, the Chesapeake Bay blue crab population is not considered depleted or overfished.

An estimated 23% of the female blue crab population was harvested in 2018.



BLOEDE DAM

Over eight miles of the Patapsco River now flow freely thanks to the removal of the Bloede Dam, completed in August 2019. Bloede is the third dam along the Patapsco to be removed since 2010, restoring a total of 65 miles of the river and its tributaries; allowing a clear path for fish and other aquatic species to pass through.



BROOK TROUT

Environmental DNA (eDNA) is a more cost-effective way to receive detailed information about the genetic make-up and migration patterns of brook trout. Organisms release their DNA into the environment around them, allowing researchers to collect samples directly from air, water and snow. The Brook Trout Action Team is exploring ways to use this data to identify at-risk populations in the watershed.

Underwater grasses provide vital habitat for blue crabs, but they are also sensitive to prolonged extreme weather. With the record-breaking rainfall observed by most of the Chesapeake region in 2018, which contributed to the changes in the Bay's salinity, experts were concerned about how the grasses would fare. There are many different species of underwater grasses, and each has varying habitat requirements. Those that depend on saltier waters were more heavily impacted over the past year, and since they cannot migrate to a more hospitable environment, many ultimately died off. In 2018, an estimated 91,559 acres of underwater grasses were mapped in the Chesapeake Bay and its tidal tributaries. While this acreage is less than the previous year, it is likely that substantially more underwater grasses grew in the Bay than the mapped acreage suggests. Frequent rain, cloudy water and security restrictions prevented researchers from successfully collecting aerial imagery over 22% of the Bay. Researchers are working

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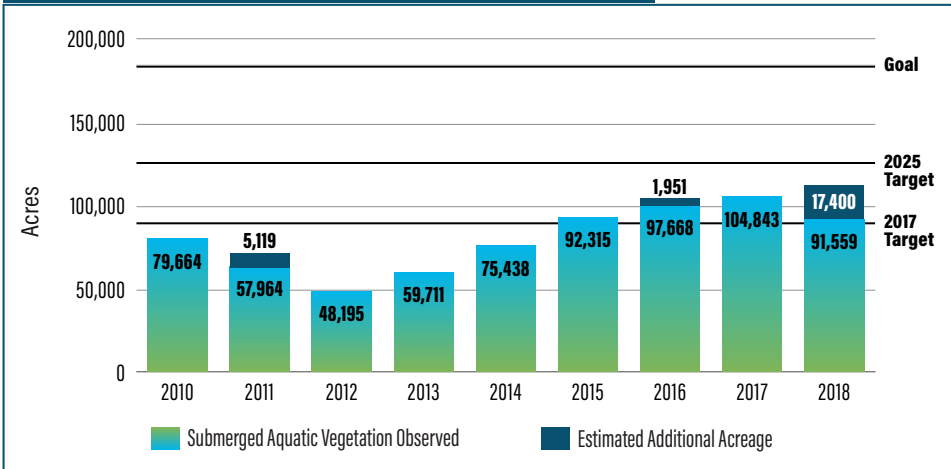
to supplement this aerial imagery with satellite imagery to ascertain a better estimate of the grasses in 2018. Using 2017 levels for the unmapped areas, it's possible that the Bay may have supported up to 108,960 acres of underwater grasses in 2018, which would have been a four percent increase from 2017 figures and 59% of the partnership's 185,000-acre goal.



THE IMPACT OF WEATHER ON THE CHESAPEAKE BAY

A changing climate led most of the watershed to experience their rainiest year ever, coupled with it being the fourth warmest year on record globally since the 1880s. This led to more fresh water entering the Bay, a decrease in salinity and ultimately, the hottest summer observed for the northern hemisphere and the second hottest summer observed for the southern hemisphere in the past 140 years.

Submerged Aquatic Vegetation (SAV) Abundance (2010-2018)



WHAT ELSE IS HAPPENING WITH UNDERWATER GRASSES?

- In 2018, the Proceedings of the National Academy of Sciences (PNAS) published a paper detailing the unprecedented recovery of underwater grasses (also referred to as submerged aquatic vegetation, or SAV) in the Chesapeake Bay due to long-term nutrient reductions. In 2019, this paper, with co-authors including members of the Chesapeake Bay Program SAV Workgroup, won the PNAS Cozzarelli Prize, an annual award acknowledging scientific excellence and originality. The 2019 award was given to six papers out of a pool of 3,200.
- Chesapeake Bay SAV Watchers is a volunteer monitoring program that provides citizen scientists with an engaging and educational experience with underwater grasses while generating useful data for Bay scientists and managers. Launched in April 2019, program resources include a methods manual, training videos and pocket-sized field guide. Visit chesapeakebaysavwatchers.com to get started.



CLEAN WATER

In 2019, the Chesapeake Bay Program took a big step forward in improving the water quality of the Chesapeake Bay and your local waterways. Each of the seven Chesapeake Bay watershed jurisdictions submitted their Phase III WIPs, which detail how they plan to meet their 2025 pollutant reduction goals under the [Bay TMDL](#). These actions will help ensure Bay water quality is healthy enough for the plant and aquatic species that depend on it for survival (e.g. blue crabs, oysters, underwater grasses).

The WIPs provide information on the actions and commitments each watershed jurisdiction plans to implement between 2019 and 2025. These WIPs incorporate the latest science, data and tools, consider lessons learned from the past seven years of implementation and incorporate a much-expanded level of local data. They also include hundreds more verified best management practices that the jurisdictions can use to receive credit toward their pollutant reduction goals.

To make sure they account for all potential increases in pollution, this third and final phase of the WIPs also includes future projections of what human and livestock populations will be in 2025 and written strategies as to how each jurisdiction will address additional pollution due to climate change.



WATERSHED IMPLEMENTATION PLANS
Outline the strategy that each jurisdiction will take to meet the pollution reduction goals of the Bay TMDL.

The Chesapeake Bay Program’s Phase 6 Watershed Model is used to estimate nitrogen and phosphorus reductions under the Phase III WIPs. The Phase 6 Watershed Model is part of a suite of modeling tools that simulate water quality conditions in the Bay and throughout its watershed. The Watershed Model is used to show the estimated drop in pollution from the best management practices each jurisdiction identifies in their Phase III WIPs.

As of 2018, pollution reducing practices are in place across the Chesapeake Bay watershed to achieve 39% of the nitrogen reductions and 77% of the phosphorus reductions necessary to attain applicable water quality standards as compared to the 2009 baseline established by the EPA as part of the Bay TMDL.

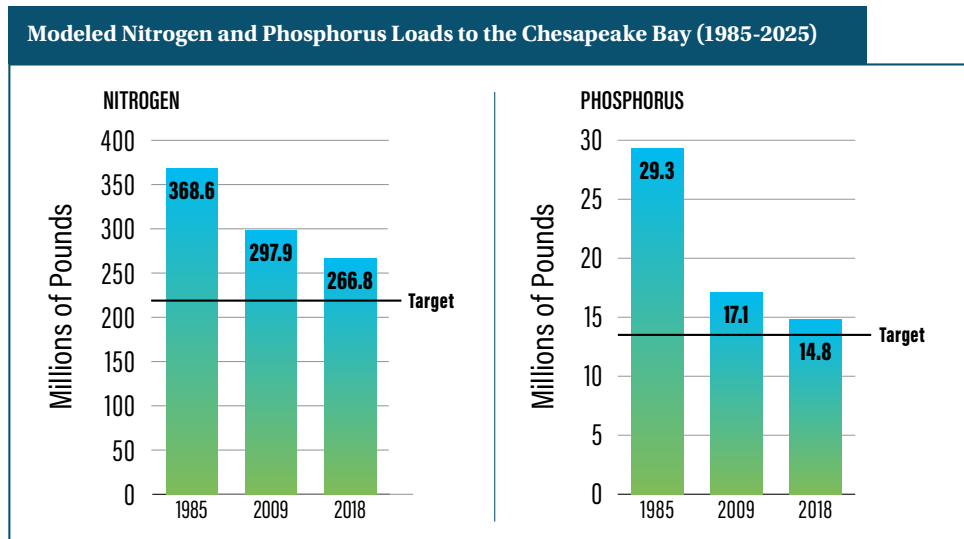
Pollution controls put in place between 2009 and 2018 have lowered nitrogen loads by 10% and phosphorus loads by 13%, which can mainly be attributed to upgrades to wastewater treatment plants. For the short term, between 2017 and 2018, most nitrogen load reductions (55%) came from the agricultural sector.



CHESAPEAKE BAY TOTAL MAXIMUM DAILY LOAD (TMDL)

A federal “pollution diet” to restore the Chesapeake Bay and its vast network of streams, creeks and rivers.

Pollution controls put in place between 2009-2018 have lowered nitrogen by 10% and phosphorus by 13%.



High freshwater flows can also carry a significant amount of nutrient and sediment pollution into the Bay, which contributes to the size and duration of the annual dead zone. Last year saw the largest dead zone in the past five years, lasting 13 days longer than in 2018. Despite this, the duration of the dead zone still fell within its normal range (looking across summers since 1985), an indication that our management actions are helping to make the Bay more resilient to extreme weather events.

Another place where pollution is a concern is the Conowingo Dam. Since its construction in 1928, the reservoir behind the Conowingo Dam has captured sediment—along with attached nutrients—flowing down the Susquehanna River, reducing the amount of pollution entering the Chesapeake Bay. However, the U.S. Geological Survey estimates that the reservoir has reached over 90% of its capacity, allowing more sediment and nutrients to pass into the Bay each year.



CHESAPEAKE MONITORING COOPERATIVE

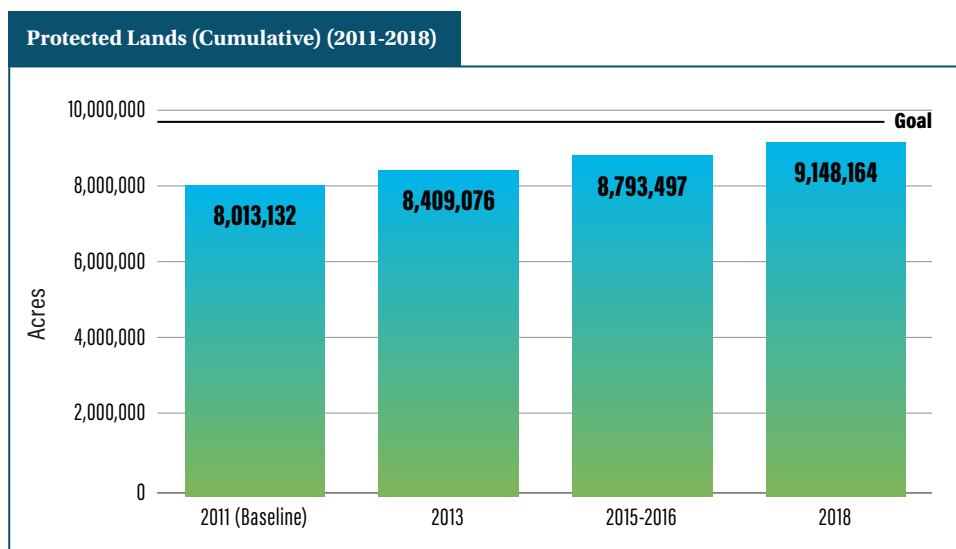
The Chesapeake Bay community can now access water quality data collected by citizen scientists and nontraditional monitoring partners through the Chesapeake Data Explorer at chesapeakemonitoringcoop.org. The Chesapeake Monitoring Cooperative has provided technical, logistical and outreach support through 80 workshops over the last three years and has incorporated data from over 70 monitoring groups into the Chesapeake Data Explorer, reaching over 100,000 data points in 2019. In addition to being used to support education, management, restoration targeting and regulatory assessment at the local level, these data are also being integrated into the Chesapeake Bay Program datasets.

A Chesapeake Bay Program steering committee, comprised of members from each of the seven watershed jurisdictions, is currently developing a separate [WIP](#) to address pollution flowing into the Chesapeake Bay from behind the [Conowingo Dam](#). To aid this effort, the EPA awarded nearly \$600,000 to support the development and implementation of the WIP and associated two-year milestones of progress, create a comprehensive financing strategy and associated investment plan, and track, verify and report those practices intended to reduce the additional pollutant loads entering the Bay from behind the Conowingo Dam. EPA will oversee the WIP once implemented.

Since 2010, hundreds of additional best management practices have been approved by the Chesapeake Bay Program to receive credit in the Phase III WIPs. In 2019, the Chesapeake Bay Program approved the first pollution reduction credit for managing growth and conserving forests, wetlands and farmlands. These [land policy best management practices](#) not only help jurisdictions meet their Bay TMDL goals, but they also provide a long-term, cost-effective incentive for land conservation and sustainable development.

Conserving land also plays an important role in clean water and watershed health. Earlier this year, the [Healthy Watersheds Goal Implementation Team](#) released a draft of their “[Assessing the Healthy and Vulnerability of Healthy Watersheds within the Chesapeake Bay Watershed](#)” report. Pulling together a set of metrics that looked at everything from biology to water quality, and habitat to land use, the assessment provides a framework to inform overall watershed health, allowing jurisdictions to account for any negative or positive changes in watershed health using their own processes and methods.

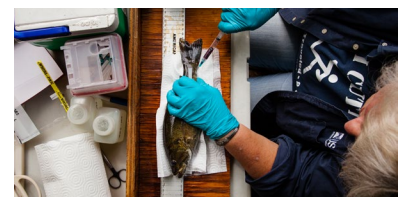
According to data collected through early 2019, nearly 1.36 million acres of land in the Chesapeake Bay watershed have been [permanently protected](#) since 2010. This marks an achievement of 68% of the land conservation goal adopted in the *Chesapeake Bay Watershed Agreement* and brings the total amount of protected land in the watershed to 9.16 million acres.



MULTIPLE BENEFITS

The Chesapeake Bay Program developed a series of [fact sheets](#) to show how implementing certain conservation practices can benefit other outcomes in the Watershed Agreement. For example, planting streamside forest buffers allows your state to receive credit toward meeting their pollutant reduction goals under the Bay TMDL, but it also benefits such outcomes as stream health, fish habitat and tree canopy. Additionally, the Communications Workgroup developed a [toolkit](#) in 2019 to highlight the community and economic benefits associated with conservation practices. Some of these benefits include improving public health, reducing flood damage to buildings and other infrastructure, lowering energy costs and increasing job opportunities.

Nearly 1.36 million acres of land has been permanently protected across the watershed since 2010.



CONTAMINANTS OF CONCERN

Experts from across the country came together in spring 2019 to consider innovative ways to [reduce contaminants in agricultural and urban settings](#) in the watershed. They looked at contaminants that impact fish health and the risk to humans who consume them, as well as the effectiveness of certain conservation practices to reduce contaminants of concern in both urban and agricultural settings.

The [Chesapeake Conservation Partnership](#), a workgroup under the [Stewardship Goal Implementation Team](#), undertook the most comprehensive survey of land conservation and funding throughout the watershed in over a decade, releasing “[Marking Milestones: Progress in Conserving Land in the Chesapeake Bay Watershed](#)” in August 2019. The report summarizes recent federal and state land conservation funding by jurisdiction and includes a library of success stories that celebrate land conservation progress.

The “Marking Milestones” report features land conservation success stories from around the watershed.



MICROPLASTICS

As plastic pollution continues to become a more significant issue, the Chesapeake Bay Program is beginning to look at the impacts related to microplastics—plastic pieces under five millimeters in size, the largest of which is equivalent to a kernel of corn. The Scientific and Technical Advisory Committee convened a workshop in the spring of 2019 to look at the issue of microplastics in the Chesapeake Bay with over 50 participants from all levels of government, academia, consulting and non-government organizations. The resulting [report](#) noted that microplastics in the Bay present a serious risk to ongoing restoration efforts and recommended five actions that the Chesapeake Bay Program should immediately take, including the creation of a Plastic Pollution Action Team to address the growing threat.

Remember all plastics eventually becomes microplastics. Here are some ways to reduce your plastic consumption:

- Buy clothes made of natural fibers like cotton, linen, wool, silk or hemp.
- Skip straws, plastic take-out containers and utensils.
- Bring your own reusable water bottle and to-go cup.
- Carry a reusable shopping bag.
- Choose household products with less packaging.



ENGAGED COMMUNITIES

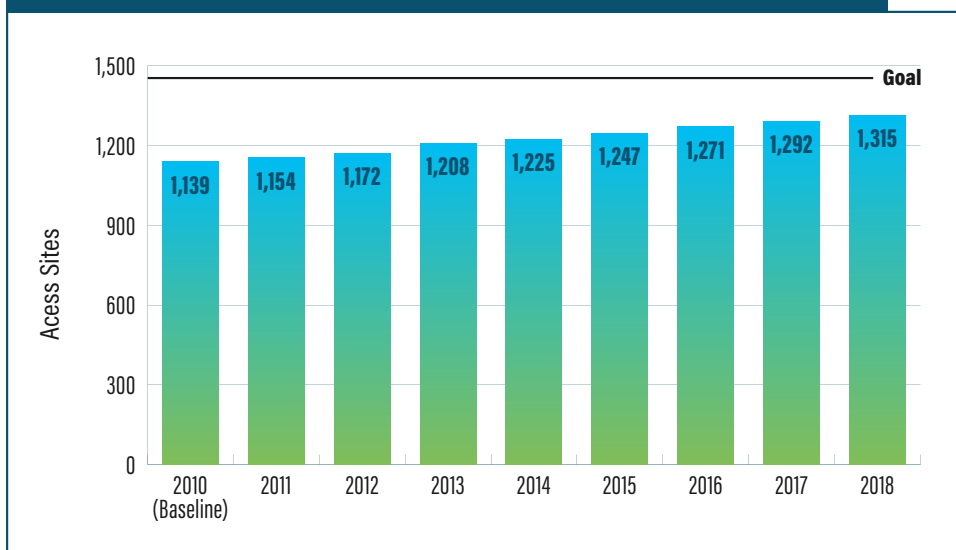
The long-term success of the Bay restoration effort depends on the individuals and organizations that live, work and play in the region. The Chesapeake Bay Program supports environmental stewardship in all forms: increasing public access to the water, expanding the environmental literacy of all students, engaging underserved communities, increasing the diversity of those working on environmental issues and expanding the ability of local government leaders to promote restoration activities.

Between 2010 and 2018, 176 boat ramps, fishing piers and other public access sites were opened on and around the Chesapeake Bay. This marks a 59% achievement of the goal to add 300 new access sites to the watershed by 2025 and brings the total number of access sites in the region to 1,315. In 2018, 23 new sites were added: 12 in Maryland, 7 in Virginia and 4 in Pennsylvania.

Since 2010, 176 new public access sites have opened across the watershed.

Our partners are focusing on improving the quality of new public access sites. Where feasible, they are ensuring that there are ample parking spaces, amenities and multilingual signs to meet the needs of diverse communities. Additionally, efforts aim to add new access opportunities at existing sites to take advantage of infrastructure already in place.

Public Access Sites in the Chesapeake Bay Watershed (Cumulative) (2010-2018)



Increased access to the water gives students in the region additional opportunities for unique [Meaningful Watershed Educational Experiences \(MWEEs\)](#) to enhance their environmental literacy. In September 2019, the Education Workgroup launched the [Outdoor Learning Network Initiative](#) to build the capacity of school districts and nonprofits to advance environmental education in underserved school districts. The first local networks will convene in Berkeley, Jefferson and Morgan counties, West Virginia, and Lancaster County, Pennsylvania.

In June 2019, the biennial [Environmental Literacy Summit](#) convened in Woodbridge, Virginia, bringing together environmental education experts, state cabinet-level representatives and other decision-makers from throughout the watershed. The summit highlighted challenges to, and explored possible solutions for, ensuring environmental education resources and opportunities are distributed equitably among all students.

For the second year, the Chesapeake Bay Program hosted college students as part of [Chesapeake Student Recruitment Early Achievement Mentoring \(C-StREAM\)](#). This program focuses on recruiting, advising and mentoring college students from populations that have been historically excluded from the environmental field and are therefore currently underrepresented in environmental research and management professions. C-StREAM focuses specifically on creating pathways for students who identify as people of color and/or are first-generation college students. The program, hosted by the Chesapeake Research Consortium, continues to grow, from three students in 2018 to 11 in 2019.

In addition to the C-StREAM program, the Diversity Workgroup continues to identify opportunities with historically black colleges and universities for collaboration. In May 2019, the Environmental Protection Agency signed a Memorandum of Understanding (MOU) with Virginia State University and the Virginia Department of Agriculture and Consumer Services to strengthen staff, faculty and student connection, awareness and participation of the Chesapeake Bay, its tributaries and coastal resources



PARTNERS HELP "GREEN" SCHOOLS

Students at [Binford Middle School](#) in Richmond, Va. helped turn their school into one of the most environmentally innovative campuses in the watershed. It features permeable pavement, conservation landscaping and a rainwater harvesting system that doubles as a piece of public art, while catching stormwater runoff and redirecting it into the school's rain garden.

The Outdoor Learning Network was launched to advance environmental education in underserved school districts.



WANDERING VIRGINIA'S WATERWAYS

Organized by the Local Leadership Workgroup and hosted by the Virginia delegation of the Local Government Advisory Committee, a two-day bus tour in October 2019 brought local government officials from the Shenandoah Valley of Virginia to meet with their counterparts from the Northern Neck/Middle Peninsula. This opportunity allowed local officials from the non-tidal region of Virginia to better understand how their activities can impact the Bay.

The EPA signed a MOU with Virginia State University to better connect faculty and staff to the Bay.

through interaction with Chesapeake Bay Program partners or hands-on learning experiences. Internally, the Diversity Workgroup completed a Diversity, Equity, Inclusion and Justice (DEIJ) assessment of the Chesapeake Bay Program that will help inform the development of the partnership's first-ever DEIJ strategy in 2020.

The Local Government Advisory Committee held a workforce development forum in September 2019 to address the needs of local governments in installing and maintaining stormwater and green infrastructure best management practices, while developing a robust green collar workforce. Attendees from local and state government, employers and trainers studied several existing successful workforce development models throughout the region, and developed a set of recommendations to help support local government needs.

This fall in Pennsylvania, 16 inmates from the Huntingdon State Correctional Institution graduated from the first Corrections Conservation Collaborative, a 14-week riparian buffer vocational training. The program was founded to increase the size and strength of the workforce needed to maintain forest buffers, while at the same time helping to reduce recidivism by offering green career training at state correctional institutions for inmates nearing release. The collaborative is run by the Alliance for the Chesapeake Bay and the Pennsylvania Department of Conservation and Natural Resources.



MWEES

A free online course was launched in March 2019 to provide an in-depth understanding of the Meaningful Watershed Educational Experience, (MWE) for all educators. MWEs include learning activities that aim to increase the environmental literacy of all students. The course can be found at <https://cbexapp.noaa.gov>.

In 2019, 16 inmates graduated from the first Corrections Conservation Collaborative in Pennsylvania.



Photo: Michael Bowman/Chesapeake Conservancy

MAKING THE CHESAPEAKE BAY WATERSHED ACCESSIBLE FOR ALL

- During the summer of 2019, the Chesapeake Conservancy and the National Park Service piloted a bilingual outreach program to address the growing needs of a diverse community. Interpreters were stationed at Sandy Point State Park in Maryland to help bridge the language gap during the busy summer months between the park's naturalists and the Hispanic community. They also developed programming and outreach events for all celebrating Hispanic culture. The interpreters will return in summer 2020.
- Recently, the Maryland Department of Natural Resources and the National Park Service opened an all sensory trail at Patapsco Valley State Park—the first in Maryland. Every detail of the trail has been carefully designed to encourage hikers to engage all of their senses. A guide rope leads visitors around a wheelchair-friendly trail that is outfitted with bells that alert to upcoming natural features and interpretative signage is provided in Braille. It also features a sound garden and raised planting boxes filled with herbs and spices.

Would you like to learn more about our progress toward protecting and restoring the Chesapeake Bay?

Visit ChesapeakeProgress.com for the most up-to-date information on our progress toward the goals and outcomes of the *Chesapeake Bay Watershed Agreement*.





Chesapeake Bay Program
Science. Restoration. Partnership.

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