

2019-2020 Bay Barometer

Local Government Advisory Committee

March 19, 2021

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

What is it?

- Annual report on watershed health.
- Provides a progress update on each of the 31 outcomes in the *Chesapeake Bay Watershed Agreement*.
- Retrospective summary of previously published indicators.
- Targeted audiences are typically more informed than the interested public.
 - Legislators, non-governmental organizations, media, academia, internal Chesapeake Bay Program partners, scientists and other researchers.

2015-2016

BAY BAROMETER

Health and Restoration in the Chesapeake Bay Watershed

194 million
adult female blue crabs were in the Bay in 2016, missing 99 percent of the target of 215 million female crabs.

92,315 acres
of underwater grasses were in the Bay in 2015, meeting 50 percent of the 186,000-acre goal.

7,623 acres
of wetlands were created or reestablished on farmland between 2010 and 2015, meeting 9 percent of the 83,000-acre goal.

Six
Bay tri-bay areas have oyster restoration projects underway, with a goal to bring this number to 10.

Chesapeake Bay Program
Science. Restoration. Partnership.

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Health and Restoration in Delaware (2017-2018)

More than 700 square miles of Delaware sit within the 64,000 square mile Chesapeake Bay watershed, and four of the state's major rivers—the Choptank, Nanticoke, Pocomoke and Sassafra—flow into the Bay. Delaware has committed to achieving 22 of the outcomes in the Chesapeake Bay Watershed Agreement. Its progress toward seven of these outcomes is highlighted here.

Protected Lands
According to preliminary data collected in 2018, more than 1.3 million acres of land in the watershed have been permanently protected from development since 2010. Of this total, almost 14,000 acres are in Delaware. This brings the total amount of protected lands in the watershed portion of the state to 105,505 acres: one percent of all the protected land in the watershed.

Forest Buffers
Between 2010 and 2017, 45 miles of forest buffers were planted along rivers and streams in Delaware; during this time more than 2,250 miles of forest buffers were planted across all watershed jurisdictions.

Estimated Nitrogen, Phosphorus and Sediment Pollution Reduced
The Chesapeake Bay Program uses its Watershed Model to estimate reductions in nitrogen, phosphorus and sediment pollution that is flowing into the Bay. By the end of 2017, Delaware had achieved 32 percent of its 2025 targets for nitrogen and 100 percent for phosphorus and sediment. Collectively, Bay Program partners have achieved 36 percent of their nitrogen target, 87 percent of their phosphorus target and 67 percent of their sediment target.

Delaware's progress toward achieving its 2025 targets

32% nitrogen **100%** phosphorus **100%** sediment

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Did you know?

The Chesapeake Bay
The Chesapeake Bay is the nation's largest estuary, part of an interconnected ecosystem that supports countless plants, animals and habitats. More than 64,000 square miles of land make up the Bay's "watershed," the area of land that eventually drains into the Bay.

Water Pollution
Too much nitrogen and phosphorus can fuel the growth of algal blooms that lead to low- or no-oxygen conditions harmful to underwater life. Excess sediment can suffocate shellfish and block sunlight from reaching aquatic plants.

Between October 2016 and September 2017, about 27 million pounds of nitrogen, 8.8 million pounds of phosphorus and 2.9 billion pounds of sediment entered the Bay: a 25 percent, 44 percent and 18 percent drop from the previous year, respectively.

Conserved Lands
Protecting land from development protects water quality, supports fish and wildlife, maintains working farms and forests, preserves our history and provides opportunities for outdoor recreation.

Since 2010, more than one million acres of land in the Chesapeake Bay watershed have been permanently protected from development, meeting 50 percent of the two million-acre goal.

Public Access
Public access to open spaces and waterways can improve public health and quality of life. Access to the water can also build personal connections with places that have shaped life in the region, boosting tourism and creating citizen stewards.

Between 2010 and 2017, 104 boat ramps, fishing piers and other public access sites were opened to the public, meeting 16 percent of the goal to add 300 new sites.

Want to learn more?
Visit www.chesapeakebay.net

Reaching Other Audiences

Chesapeake Bay Watershed Agreement



5 themes.



10 goals.



31 outcomes.



19 indicators.



For 2019-20: 12 updated indicators.

ChesapeakeProgress.com



CHESAPEAKE

PROGRESS



What is this year's Barometer telling us?

Abundant Life: Sustainable Fisheries—Blue Crab Abundance



Target: Maintain a sustainable blue crab population based on the 2012 target of 215 million adult females. Refine population targets through 2025 based on best available science.

Current progress: Between 2019 and 2020, the abundance of adult (age 1+) female blue crabs in the Chesapeake Bay decreased 26% from 191 million to 141 million. This number is above the 70 million threshold which is considered the sustainable level for female blue crabs in the Bay.

Previous progress: In 2018, there was an estimated 191 million adult female blue crabs in the Bay.

Data source: The Chesapeake Bay Stock Assessment's annual Blue Crab Advisory Report. (2020)



Abundant Life: Sustainable Fisheries—Blue Crab Management

Target: Manage for a stable and productive crab fishery including working with the industry, recreational crabbers and other stakeholders to improve commercial and recreational harvest accountability. By 2018, evaluate the establishment of a Bay-wide, allocation-based management framework with annual levels set by the jurisdictions for the purpose of accounting for and adjusting harvest by each jurisdiction.

Current progress: An estimated 17% of female blue crabs were harvested in 2019. For the 12th consecutive year, this number is below the 25.5% target and 34% overfishing threshold. The blue crab stock is not depleted or overfished.

Previous Progress: In 2018, an estimated 23% of female blue crabs were harvested.

Data Source: The Chesapeake Bay Stock Assessment Committee's annual Blue Crab Advisory Report. (2020)



Abundant Life: Sustainable Fisheries-- Oysters

- **Target:** Continually increase finfish and shellfish habitat and water quality benefits from restored oyster populations. Restore native oyster habitat and populations in 10 tributaries by 2025 and ensure their protection.
- **Current progress:** Ten tributaries have been selected for large-scale oyster restoration and are in various stages of progress. Maryland has completed 788 acres of oyster reefs and Virginia, 539 acres.
- **Previous progress:** Nine tributaries had been selected for large-scale oyster restoration and were in various stages of progress. Maryland had completed 773 acres of oyster reefs, and Virginia, 510 acres.
- **Data source:** Annual Maryland and Virginia oyster restoration updates. Current data is from 2019.



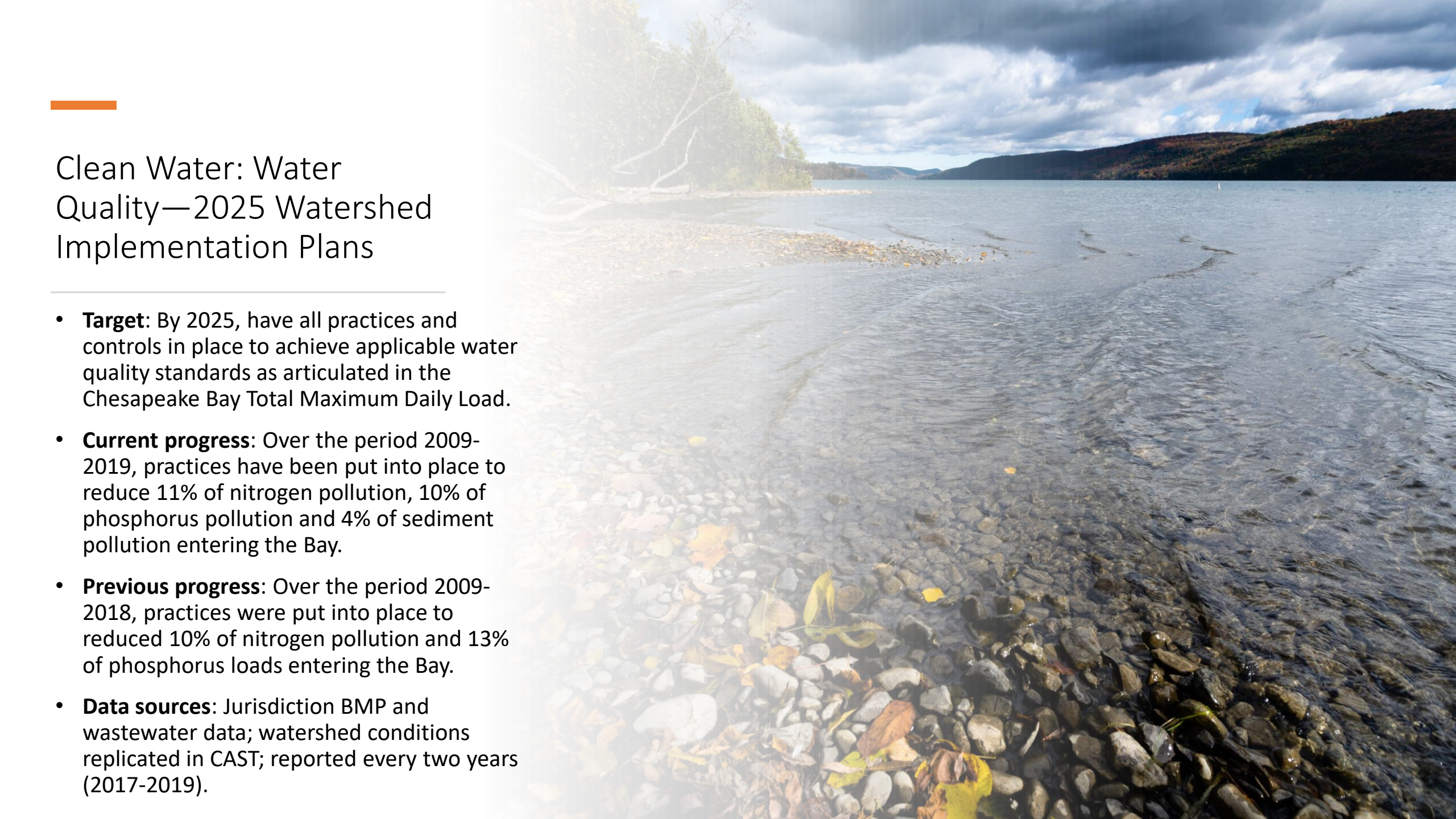
Abundant Life: Vital Habitats—Forest Buffers

- **Target:** Continually increase the capacity of forest buffers to provide water quality and habitat benefits throughout the Chesapeake Bay watershed. 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.
- **Current progress:** Between 2018 and 2019, 83 miles of buffers were planted, falling short of the annual target by 817 miles. Overall, there are 9,190 miles planted across the watershed.
- **Previous progress:** Between 2017 and 2018, 158 miles of buffers were planted, falling short of the annual target by 742 miles. Overall, there are 9,107 miles planted across the watershed.
- **Data source:** State agencies report on an annual basis.

Abundant Life: Vital Habitats— Submerged Aquatic Vegetation (SAV)

- **Target:** Sustain and increase the habitat benefits of SAV in the Chesapeake Bay. Achieve and sustain the ultimate outcome of 185,000 acres of SAV Bay-wide necessary for a restored Bay. Progress toward this ultimate outcome will be measured against a target of 90,000 acres by 2017 and 130,000 acres by 2025.
- **Current progress:** In 2019, 66,387 acres of SAV were mapped in the Bay (51% of the 2025 target)
- **Previous progress:** In 2018, an estimated 108,078 acres of SAV were in the Bay (83% of the 2025 target)
- **Data source:** VIMS annual aerial monitoring survey, satellite imagery



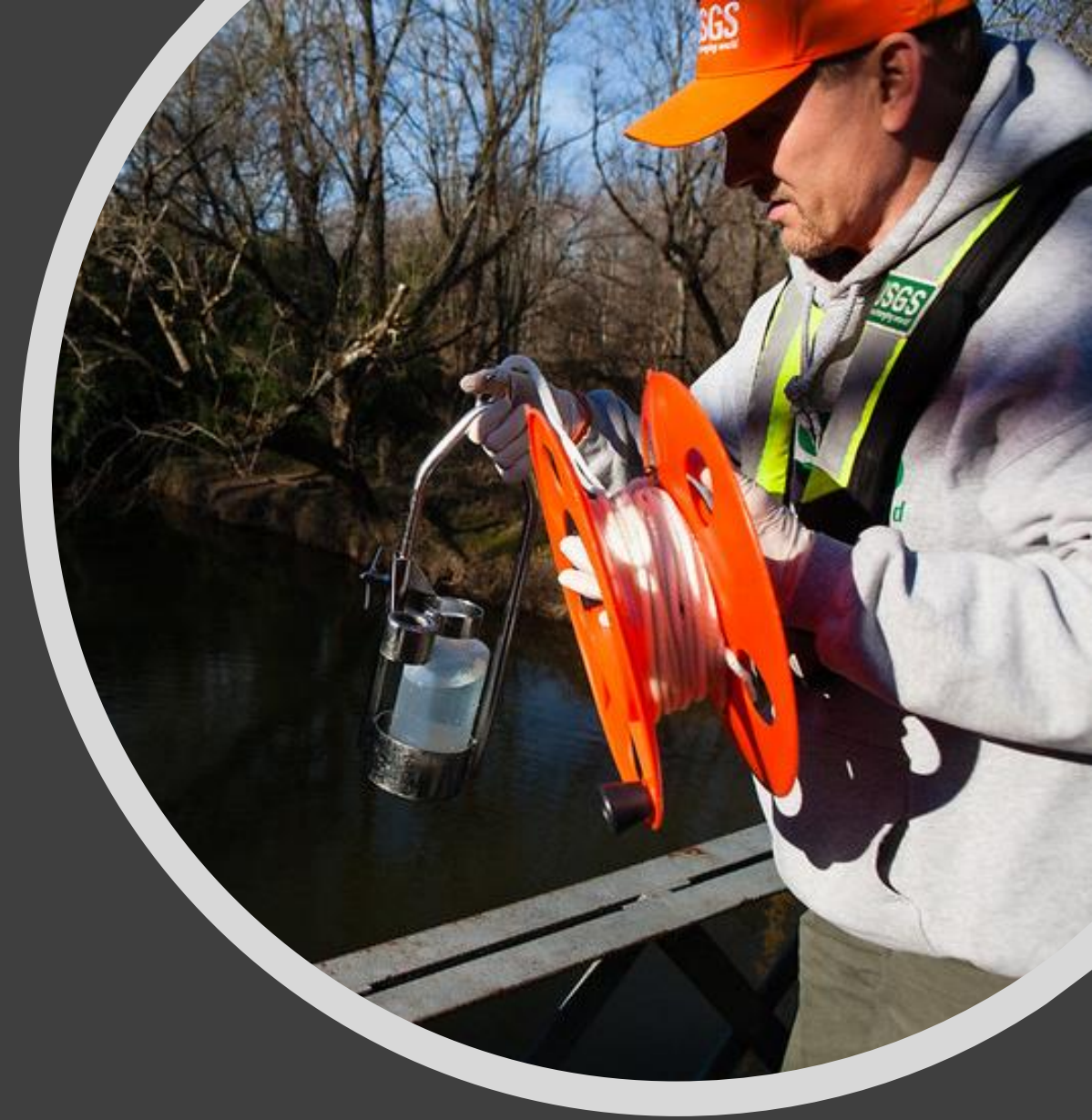


Clean Water: Water
Quality—2025 Watershed
Implementation Plans

- **Target:** By 2025, have all practices and controls in place to achieve applicable water quality standards as articulated in the Chesapeake Bay Total Maximum Daily Load.
- **Current progress:** Over the period 2009-2019, practices have been put into place to reduce 11% of nitrogen pollution, 10% of phosphorus pollution and 4% of sediment pollution entering the Bay.
- **Previous progress:** Over the period 2009-2018, practices were put into place to reduced 10% of nitrogen pollution and 13% of phosphorus loads entering the Bay.
- **Data sources:** Jurisdiction BMP and wastewater data; watershed conditions replicated in CAST; reported every two years (2017-2019).

Clean Water: Water Quality—Water Quality Standards Monitoring and Attainment

- **Target:** Continually improve the capacity to monitor and assess the effects of management actions being undertaken to implement the Chesapeake Bay Total Maximum Daily Load and improve water quality. Use the monitoring results to report annually to the public on progress made in attaining established Bay water-quality standards and trends in reducing nutrients and sediment in the watershed.
- **Current progress:** 38% of the Bay and its tidal tributaries met water quality standards during the 2016-2018 assessment period.
- **Previous progress:** 42% of the Bay and its tidal tributaries met water quality standards during the 2015-2017 assessment period.
- **Data sources:** Dissolved oxygen, SAV acreage, chlorophyll- α , salinity, water temperature, Secchi depth, benthic data, river flow and load data come from MD DNR, VA DEQ, Old Dominion U, VIMS, CMC, UMCES and USGS.



Conserved Lands: Land Conservation—Protected Lands



Target: By 2025, protect an additional two million acres of lands throughout the watershed—currently identified as high conservation priorities at the federal, state or local level—including 225,000 acres of wetlands and 695,000 acres of forest land of highest value for maintaining water quality.

Current progress: Data collected from 2016-2018 show that 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 outcome achieved and brings the total amount of protected land in the watershed to 9.16 million acres.

Previous progress: Data collected in-between 2015-2017 show that a little over one million acres of land in the watershed have been permanently protected from development since 2010. This marked an achievement of 50% of the total outcome achieved.

Data sources: Reported every two years by jurisdictions.



Engaged Communities: Stewardship—Diversity

Target: Identify stakeholder groups not currently represented in leadership, decision-making or implementation of current conservation and restoration activities and create meaningful opportunities and programs to recruit and engage these groups in the partnership's efforts.

Current progress: In 2019, the most recent diversity survey indicated a slight increase (13.7% to 14.6%) in the percentage of CBP partners who self-identified as people of color. The survey results also showed an increase in the percentage of people of color in CBP leadership positions from 9.1% to 10.3%.

Previous progress: In 2016, 13.7% of CBP partners self-identified as people of color, and 9.1% self-identified as people of color in CBP leadership positions.

Data source: Survey of CBP partners every 3 years.

Engaged Communities: Public Access—Public Access

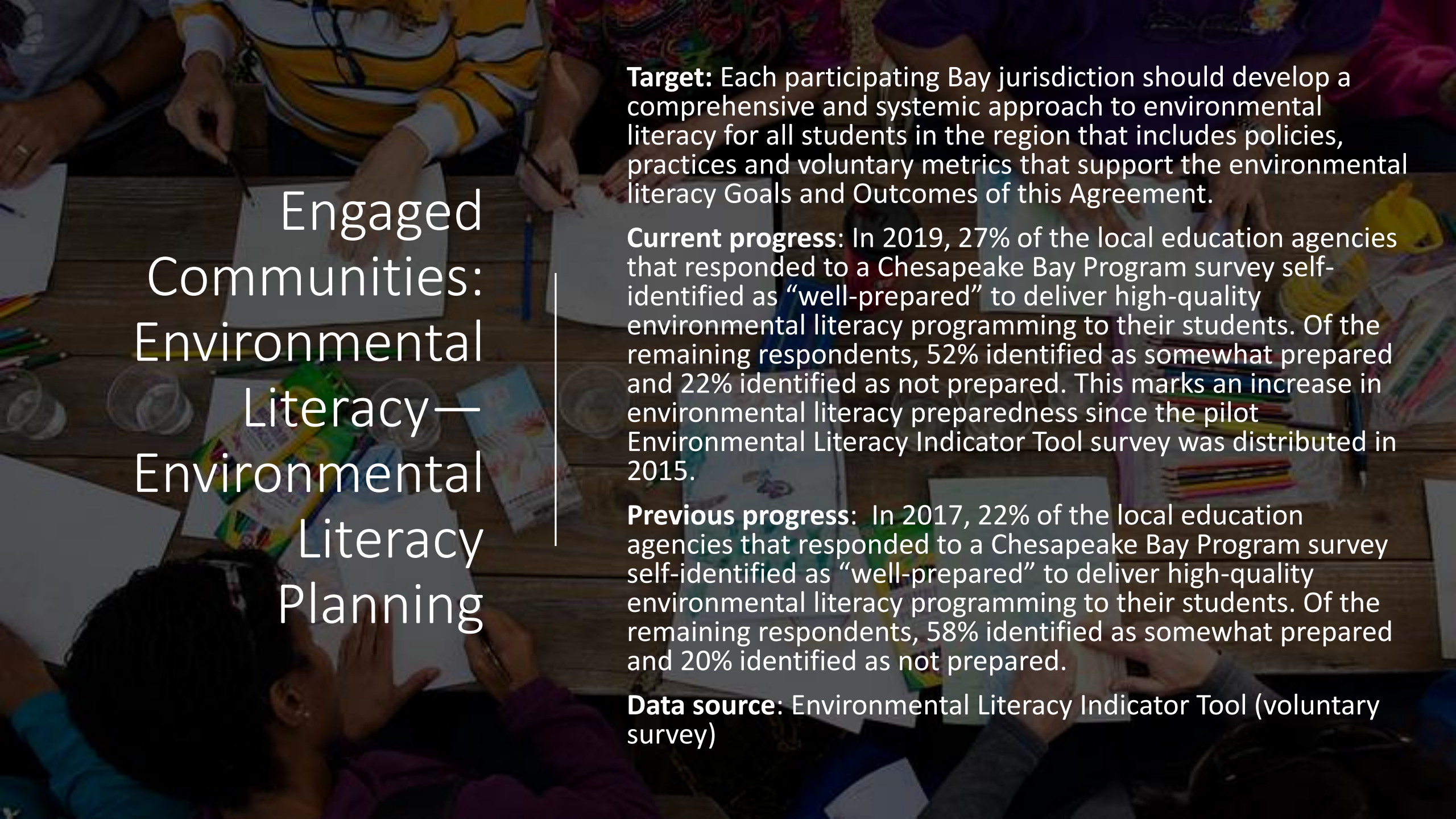
Target: By 2025, add 300 new public access sites, with a strong emphasis of providing opportunities for boating, swimming and fishing, where feasible.

Current progress: Between 2010 and 2019, 194 boat ramps, fishing piers and other public access sites were opened on and around the Chesapeake Bay. This marks a 65% achievement of the goal to add 300 new access sites to the watershed by 2025.

Previous progress: 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.

Data source: Each jurisdiction reports data on an annual basis.





Engaged Communities: Environmental Literacy— Environmental Literacy Planning

Target: Each participating Bay jurisdiction should develop a comprehensive and systemic approach to environmental literacy for all students in the region that includes policies, practices and voluntary metrics that support the environmental literacy Goals and Outcomes of this Agreement.

Current progress: In 2019, 27% of the local education agencies that responded to a Chesapeake Bay Program survey self-identified as “well-prepared” to deliver high-quality environmental literacy programming to their students. Of the remaining respondents, 52% identified as somewhat prepared and 22% identified as not prepared. This marks an increase in environmental literacy preparedness since the pilot Environmental Literacy Indicator Tool survey was distributed in 2015.

Previous progress: In 2017, 22% of the local education agencies that responded to a Chesapeake Bay Program survey self-identified as “well-prepared” to deliver high-quality environmental literacy programming to their students. Of the remaining respondents, 58% identified as somewhat prepared and 20% identified as not prepared.

Data source: Environmental Literacy Indicator Tool (voluntary survey)



Engaged Communities: Environmental Literacy--Student



Target: Continually increase students' age-appropriate understanding of the watershed through participation in teacher-supported meaningful watershed educational experiences and rigorous, inquiry-based instruction, with a target of at least one meaningful watershed educational experience in elementary, middle and high school depending on available resources.

Current progress: In 2019, 32% of the 132 local education agencies that responded to a Chesapeake Bay Program survey reported providing MWEs to at least some of their elementary school students. At the middle school level, this number rose to 38%, and at the high school level, it rose to 43%. Data collected through the ELIT in 2019 for elementary and middle grades show the proportion of districts with system wide MWEs have not increased, and that there has been only a slight increase in high school. However, the 2019 survey includes districts who had previously not responded, and the data suggests that these new districts are not as far along in their programming. When comparing the districts that responded in both 2017 and 2019, the number of districts with systemwide MWEs actually increased from 45% to 52% in elementary school, 51% to 55% in middle school, and 33 to 48% in high school – indicating substantial improvement.

Previous progress : In 2017, 32% of the 132 local education agencies that responded to a Chesapeake Bay Program survey reported providing MWEs to 29% of their elementary school students. At the middle school level, this number rose to 31%, and at the high school level, it rose to 32%.

Data source: Environmental Literacy Indicator Tool (voluntary survey)



Questions?

The 2019-20 Bay Barometer will hit the streets soon.

Thank you!

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