Health and Restoration in Virginia

More than 21,000 square miles of Virginia sit within the Chesapeake Bay watershed, and five of the Commonwealth's major rivers—including the Appomattox, James, Potomac and Rappahannock—flow into the Chesapeake Bay. The following outcomes of the *Chesapeake Bay Watershed Agreement* were updated in 2023 and the Chesapeake Bay Program is pleased to present specific data for Virginia.

Oysters

Outcome: Increase finfish and shellfish habitat and the water quality benefits of restored oyster populations. Restore native oyster habitat and populations in 10 tributaries by 2025 and ensure their protection.

Progress in Virginia: Virginia has completed oyster habitat on four of six Chesapeake Bay tributaries chosen for restoration. As of late 2022, Virginia had restored a total of 983 acres of oyster habitat.

Tributary	Reef Construction and Seeding	Completed Acreage
Lafayette	Complete	82/82
Piankatank	Complete	444/438
Lynnhaven	In Progress	114/152
Lower York	In-Progress	195/200
Great Wicomico	Complete	124/124
Eastern Branch of the Elizabeth River	Complete	24/20

Submerged Aquatic Vegetation

Outcome: Sustain and increase the habitat benefits of submerged aquatic vegetation (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.

Progress in Virginia: According to preliminary data, 36,702 acres of underwater grasses were mapped in Virginia's portion of the Chesapeake Bay in 2022. Across the entire Bay, 76,462 acres of underwater grasses were mapped. This is 59% of the Chesapeake Bay Program's 2025 restoration target of 130,000 acres and 41% of the partnership's 185,000-acre goal.

Tree Canopy

Outcome: Continually increase urban tree canopy capacity to provide air quality, water quality and habitat benefits throughout the watershed. Expand urban tree canopy by 2,400 acres by 2025.

Progress in Virginia: Virginia reported 445 acres of community tree plantings in 2021, but lost 9,548 acres of tree canopy between 2013/14 and 2017/18. Click here to see tree canopy gain/loss for individual Virginia counties.

Forest Buffers

Outcome: 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 percent of the watershed's riparian areas are forested.

Progress in Virginia: Virginia planted 72 miles of forest buffers in 2021, roughly 52 miles more than in 2020.

2025 Watershed Implementation Plans

Outcome: By 2025, have all practices and controls in place to achieve applicable water quality (i.e., dissolved oxygen, water clarity/submerged aquatic vegetation and chlorophyll a) standards as articulated in the Chesapeake Bay Total Maximum Daily Load.

Progress in Virginia: Virginia has best management practices (BMPs) in place to achieve 84% of its pollutant reduction goal for nitrogen, 70% of its reduction goal for phosphorus and 100% of its reduction goal for sediment by 2025. BMPS put in place from

2021 to 2022 in Virginia are estimated to have lowered nitrogen, phosphorus and sediment pollution entering the Bay by 2.3%, .04% and 0.1% by 2025, respectively. In 2022, Virginia released 50.6 million pounds of nitrogen, four million pounds of phosphorus and 7,570.8 million pounds of sediment into the Bay.

Water Quality Standards and Attainment

Outcome: 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 (Bay TMDL) 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 in Virginia: As of 2021, 28.1% of the Chesapeake Bay has attained water quality standards. This is a slight decrease from the previous assessment period, when the Bay was estimated to have attained 28.9% of water quality standards. Short-term trends (2012-2021) show the following for three of Virginia's largest rivers:

- James River: Imrpoving for nitrogen, phosphorus and sediment.
- Appomattox River: Degrading for nitrogen, phosphorus and sediment.
- Pamunkey River: No trend for nitrogen and improving for phosphorus and sediment.
- Mattaponi River: No trend for phosphorus and degrading for nitrogen and sediment.

Toxic Contaminants

Outcome: Continually improve practices and controls that reduce and prevent the effects of toxic contaminants below levels that harm aquatic systems and humans. Build on existing programs to reduce the amount and effects of polychlorinated biphenyls (PCBs) in the Bay and watershed. Use research findings to evaluate the implementation of additional policies, programs and practices for other contaminants that need to be further reduced or eliminated.

Progress in Virginia: Thirty-seven percent of Virginia's portion of the Bay was considered to be impaired by toxic contaminants in 2020. Seventy-eight percent of the entire Bay was considered to be impaired in 2020, a decrease from 83% in 2018.

Land Use Methods and Metrics

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

Progress in Virginia: Seventy-six percent of Virginia's land is covered by 5% or less impervious surfaces, 9.7% is covered by 5-10% impervious, 6.8% is covered by 10-25% impervious and 6.9% is covered by over 25%. In Virginia, areas with greater than 25% impervious surface cover grew by .22% in that time period.

Protected Lands

Outcome: 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 forestland of highest value for maintaining water quality.

Progress in Virginia: According to data collected through 2022, nearly 1.64 million acres of land in the Chesapeake Bay watershed have been permanently protected since 2010. Within the watershed, Virginia has about 2.9 million acres of protected lands total as of 2022.

Public Access

Outcome: By 2025, add 300 new public access sites to the Chesapeake Bay watershed, with a strong emphasis on providing opportunities for boating, swimming and fishing, where feasible.

Progress in Virginia: Between 2011 and 2022, 284 boat ramps, fishing piers and other public access sites were opened on and around the Chesapeake Bay. Virginia has opened 120 of these sites.

Environmental Literacy Planning

Outcome: Each participating Chesapeake 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 the Watershed Agreement.

Progress in Virginia: In 2022, 137 local education agencies (LEAs) from Virginia responded to the Chesapeake Bay Program's Environmental Literacy Indicator Tool (ELIT) that measures the degree of environmental literacy preparedness among school districts across the watershed. Of the LEAs that responded to the survey, 12% reported being well-prepared, 44% reported being somewhat prepared, 12% reported being not prepared and 31% did not report a status.

Student

Outcome: Increase students' age-appropriate understanding of the watershed through participation in teacher-supported Meaningful Watershed Educational Experiences (MWEEs) and rigorous, inquiry-based instruction, with a target of at least one MWEE in elementary, middle and high school depending on available resources.

Progress in Virginia: ELIT survey responses captured the extent to which Meaningful Watershed Educational Experiences (MWEEs) were available at schools. In Virginia, 24% of LEAs reported offering no MWEEs, 45% reported offering some MWEEs and 31% reported offering system-wide MWEEs in at least one grade level.

Climate Monitoring and Assessment

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

Progress in Virginia: When compared to a 100-year baseline (1901-2000), total annual precipitation in 2021 increased in all six climate divisions within Virginia, ranging from a 4.9% increase in the Southwestern Mountain area to a 12.9% increase in the Northern division. Average air temperature also increased when compared to the 100-year temperature baseline (1901-2000) in all of but one of Virginia's climate divisions, ranging from an increase of 0.87°F per century in the Southwestern Mountain area to an increase of 2.1°F per century in the Northern division.

Bay-Wide Outcomes

In addition to the above, the following outcomes were updated in 2023 and their Bay-wide data and information can be found on ChesapeakeProgress.com:

- Blue Crab Abundance
- Wetlands
- Stream Health
- Local Leadership
- Diversity