

Health and Restoration in Pennsylvania

More than 22,000 square miles of Pennsylvania sit within the Chesapeake Bay watershed, and one of the Commonwealth's major rivers—the Susquehanna—flows 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 Pennsylvania.

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 Pennsylvania: Pennsylvania planted 98.5 miles of forest buffers in 2021, 11.9 more miles than in 2020.

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 Pennsylvania: Pennsylvania reported 915.5 acres of community tree plantings in 2021 but lost 2,444 acres of tree canopy between 2013/14 and 2017/18. [Click here](#) to see tree canopy gain/loss for individual Pennsylvania counties.

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 Pennsylvania: Pennsylvania has best management practices (BMPs) in place to achieve 21% of its pollutant reduction goal for nitrogen, 48% of its reduction goal for phosphorus and 49% of its reduction goal for sediment by 2025. BMPS put in place from 2021 to 2022 in Pennsylvania are estimated to have increased the amount of nitrogen flowing into the Bay by .2% and lowered the amount of sediment by 1.4%. The phosphorus amount did not change. In 2022, Pennsylvania released 104.7 million pounds of nitrogen, 3.7 million pounds of phosphorus and 2,745.3 million pounds of sediment into the Bay.

Land Use Methods and Metrics

Outcome: Continually improve our knowledge of [land conversion](#) and the associated impacts throughout the watershed.

Progress in Pennsylvania: 87.5% of Pennsylvania's land is covered by 5% or less impervious surfaces, 8.4% is covered by 5-10% impervious, 3.5% is covered by 10-25% impervious and .6% is covered by over 25%. In Pennsylvania, areas with greater than 10-25% impervious surface cover grew by .7% between 2013/2014-2017/2018.

Pennsylvania's Progress Towards Meeting its 2025 Targets

21%

Nitrogen

48%

Phosphorus

49%

Sediment

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 Pennsylvania: 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, Pennsylvania has about 3.6 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 Pennsylvania: Between 2011 and 2022, 284 boat ramps, fishing piers and other public access sites were opened on and around the Chesapeake Bay. Pennsylvania has opened 37 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 Pennsylvania: In 2022, 499 local education agencies (LEAs) from Pennsylvania 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, 2% reported being well-prepared, 14% reported being somewhat prepared, 9% reported being not prepared and 76% 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 Pennsylvania: ELIT survey responses captured the extent to which Meaningful Watershed Educational Experiences (MWEEs) were available at schools. In Pennsylvania, 46% of LEAs reported offering no MWEEs, 40% reported offering some MWEEs and 15% 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 Pennsylvania: When compared to a 100-year baseline (1901-2000), total annual precipitation in 2021 increased in all 10 climate divisions within Pennsylvania, ranging from 6.5% increase in the Middle Susquehanna to 13.7% in the Upper Susquehanna. Average air temperature also increased in all of Pennsylvania's climate divisions when compared to the 100-year temperature baseline (1901-2000), ranging from 1.08°F per century in the Central Mountains to 2.7°F per century in the Southeastern Piedmont 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](#)
- [Oysters](#)
- [Submerged Aquatic Vegetation](#)
- [Wetlands](#)
- [Stream Health](#)
- [Water Quality Standards and Attainment](#)
- [Toxic Contaminants](#)
- [Local Leadership](#)
- [Diversity](#)