Chesapeake Bay Health

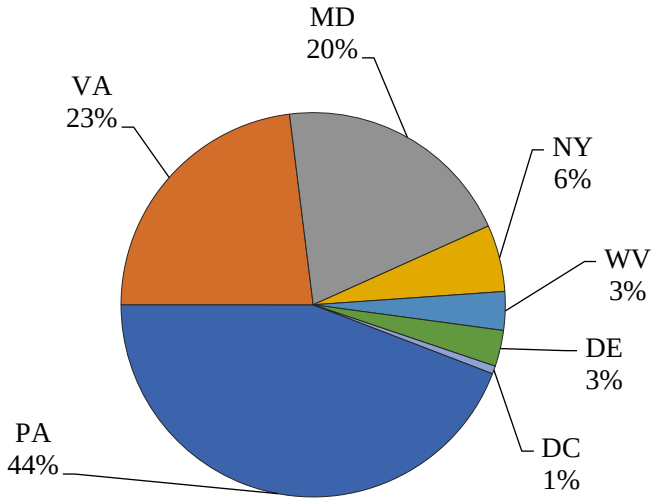
- The Chesapeake Bay watershed encompasses parts of six states, including Maryland, and the District of Columbia. The bay is especially vulnerable to pollution because the ratio of land area drained by the watershed to the volume of water in the bay is large. In 2023, Maryland was responsible for about 20% of the nitrogen and 23% of the phosphorous pollution delivered to the bay, which is roughly a 1% decrease for nitrogen relative to 2022 and a 2% decrease for phosphorus due to improvements in the wastewater sector.

- Despite efforts to improve the health of the bay, limited progress has been made over the last decade and population growth, development, and climate change are expected to complicate future progress.

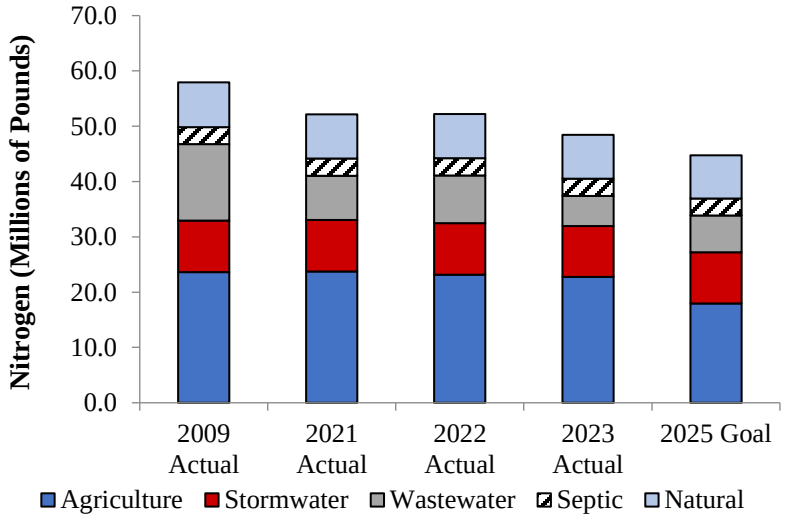
- Nutrient pollution is the biggest problem for the health of the bay. Although nutrients are essential for growth and survival, too many nutrients harm water quality and aquatic life. Excess amounts of nitrogen and phosphorus are the main causes of the bay's poor health.

- Nutrients make their way into the bay from a number of sources, including wastewater treatment plants, agricultural runoff containing fertilizers and manure, urban and suburban runoff from septic systems and fertilizers, air pollution, and natural sources. In Maryland, the biggest source of nitrogen pollution to the bay is from the agricultural sector, which shrank 1.6% between 2022 and 2023. Nitrogen pollution from wastewater decreased by 37.0% between 2021 and 2022, largely due to the correction of failures at the Back River and Patapsco wastewater treatment plants. According to 2023 data, stormwater pollution is no longer the fastest growing source sector and stormwater pollution actually decreased by 1.2% between calendar 2009 and 2023. This decrease appears to be due to a combination of stormwater practices reducing loading, stormwater acres being converted to the natural or forest sector as a result of urban tree planting, and Maryland's stormwater sector not growing as much as had been expected when the stormwater sector's pollution reduction goal was calculated. The septic sector now is the fastest growing source sector, growing by 2.0% between calendar 2009 and 2023.

Nitrogen Loads to the Chesapeake Bay by Jurisdiction (2023)



Maryland Nitrogen Loads and 2025 Bay Agreement Goals by Source Sector

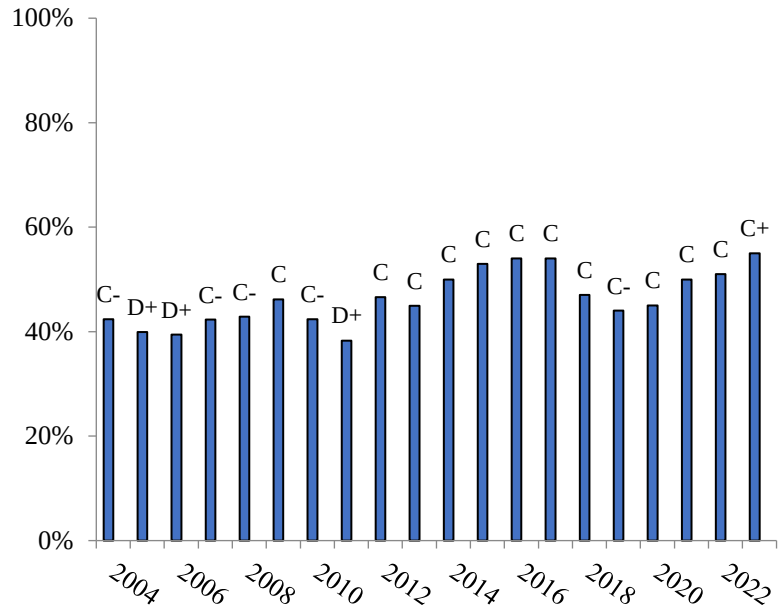


- The Chesapeake Bay Health Index is developed annually by the University of Maryland Center for Environmental Science and provides an overall assessment of the health of the bay. The index reflects a variety of indicators and presents an overall health index score (between 1 and 100) and accompanying letter grade.

- The health of the bay has generally remained the same since 2004. The overall health of the bay improved in 2023 with an overall score of C+ (or 55%, up from 51% in 2022), indicating that the bay is in "moderate ecosystem health." This is the highest score over the 2004-2023 time period. However, a relatively new measure, the watershed score, has shown a decreasing trend: B- (60%) in 2019, B- (64%) in 2020, C+ (56%) in 2021, C (52%) in 2022, and C (52%) in 2023. The years are not comparable because 2021 includes new economic indicators and 2022 includes the fish community indicator and an adjusted water quality index.

- The bay health index generally increases in dry years, because lower river flow typically means that fewer nutrients and sediments enter the bay.

Chesapeake Bay Health Index
Calendar 2004-2023



Prepared by: Department of Legislative Services
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