

Maryland's Bay Restoration Fund – Success on the Chesapeake Bay



Maryland
Department of the Environment

A Bay in Need

The Chesapeake Bay is the largest estuary in the United States; its 64,000 square mile watershed encompasses nearly the entire state of Maryland and portions of five other states and Washington D.C. The estuary provides important ecological functions that help bolster the local economy, but by the early 2000s, water quality in the bay continued to show signs of degradation in spite of the previous restoration efforts.

The reason for the declining water quality was determined to be an over-enrichment of nutrients like phosphorus and nitrogen, which can enter the water from a variety of human-related activities. Excess nutrients can result in a process called eutrophication, which increases the amount of algae and plant material able to grow in an area. This can lead to algal blooms and, when plants and algae die off, result in dead zones where living organisms no longer have enough oxygen to survive.

Main sources of nutrients entering the Bay came from wastewater treatment plants, agriculture, and urban runoff. As the situation worsened, officials realized that current cleanup efforts were not enough to drive meaningful restoration to the Bay and a larger effort would instead be necessary.

Residents to the Rescue: The Bay Restoration Fund

Senate Bill 320, also known as the Bay Restoration Fund (BRF), was passed in 2004 by the Maryland General Assembly. Since then, the BRF has collected a monthly fee from each Maryland home serviced by a wastewater treatment plant or septic system to create a dedicated fund for implementing nitrogen reduction strategies.

In 2010, the U.S. Environmental Protection Agency, in collaboration with the Maryland Department of the Environment (MDE) and other state jurisdictions, established total maximum daily loads (TMDLs) for the Bay. To meet the TMDLs, BRF monies were directed towards cost-efficient and effective nitrogen-reduction strategies, including continued upgrades to existing wastewater treatment plants.

The BRF also provides funding opportunities to address nutrients from septic systems and agricultural runoff. With these funds, Maryland farmers receive an incentive to plant cover crops on their land to help prevent excess nitrogen from running off and entering waterways.

In addition, around 10% of BRF funds are earmarked for an incentive program that encourages treatment plants to aim for higher nutrient removal levels than what is required of them. Facilities that meet the criteria receive grants based on the level of additional reduction achieved.



Chesapeake Bay Watershed

TOTAL MAXIMUM DAILY LOAD (TMDL)

A TMDL defines the maximum amount of a pollutant that a waterbody can receive while still meeting water quality standards.

Maryland BRF by the Numbers

- **\$1.912 billion** raised for the BRF.
- **8.5 million** pounds of nitrogen prevented per year.
- **12,553** septic systems upgraded.
- **1,334** homes connected to public sewer.
- **67** major wastewater treatment plant upgrades.
- **20** years since BRF was implemented.



Success by the Numbers

In the 20 years since the implementation of the BRF, the water quality of the Chesapeake Bay has shown significant signs of improvement. More than \$1.9 billion has been collected since the program began, which has been used to prevent an estimated 8.5 million pounds of nitrogen from entering the Bay each year.

The restoration funding has supported upgrades to all 67 major wastewater treatment plants that discharge into the bay, as well as additional updates to minor plants in the area. These upgrades added enhanced nutrient removal technologies that are essential to meeting the nitrogen and phosphorus reduction goals for each plant. In total, upgrades at the wastewater treatment plants are responsible for around 7.5 million pounds of nitrogen reduction per year.

Another successful strategy has been the planting of cover crops. In 2022, more than 424,616 acres of cover crops were added, helping to remove an estimated 3 million pounds of nitrogen and an additional 3,400 pounds of phosphorus. In addition to nutrient reductions, these cover crops also helped farmers prevent soil erosion and improve soil health.

In total, \$233 million of the BRF has gone towards upgrading 12,553 total septic systems. In 2022 alone, more than 910 failing septic systems were upgraded with the best available technology for nutrient removal, many of which were located in designated critical areas for the state of Maryland. Since the BRF began, 1,334 homes that were previously using septic systems have been connected to public sewers that are capable of higher levels of nitrogen reduction.

What is Next for the Chesapeake Bay?

With the contributions from Maryland residents, the Bay is cleaner and closer to meeting the TMDLs. Nitrogen, phosphorus, and sediment loads have decreased throughout the state of Maryland. In June of 2023, the lowest recorded amount of hypoxic (low dissolved oxygen) waters since 1985 was recorded.

Despite this progress, further steps are still needed in order to meet the 2025 load reduction goals in the Chesapeake Bay Partnership Agreement. Currently, Maryland releases around 52.7 million pounds of nitrogen into the Bay per year; by 2025, the goal is to reduce this number to 45.8 million pounds. One of the main priorities is ensuring that BRF-targeted upgrades to wastewater and agriculture continue to be implemented in Maryland during the upcoming years.



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