



CHESAPEAKE BAY COMMISSION

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Legislative Briefing and Discussion Achieving Water Quality Goals in the Chesapeake Bay: A Comprehensive Evaluation of System Response

Background

- The first “Bay Agreement” was signed in 1983 in response to declining water quality and living resources in the mainstem of the Chesapeake; it committed Maryland, Pennsylvania, Virginia, the District of Columbia and the federal government to work collaboratively to address “the extent, complexity, and sources of pollutants entering the Bay.”
- Subsequent agreements have expanded the number of partners and the number of restoration goals, but reducing two key pollutants, nitrogen (N) and phosphorus (P), have remained a centerpiece of each subsequent agreement.
- In 2010, the country’s most expansive total maximum daily load (TMDL), setting specific numeric targets for N and P, was established for the Bay watershed, under the authority of the Clean Water Act, with a goal to achieve these reductions by 2025.
- Although there has been great progress since the first Bay agreement – it is estimated that N loads have decreased from 370 million lb/year in 1985 to 258 in 2021, in the face of significant population growth and development throughout the watershed – we will still be way short of our 2025 goal (215 m lb/year).
- Additionally, water quality monitoring indicates that the Bay has been slow to respond to realized nutrient reductions in many regions – it is estimated that 27% of the watershed met water quality standards in 1985, yet by 2020 that number had only risen to the 30% range.

CESR Report

- In response to these facts, the Chesapeake Bay Program’s Scientific and Technical Advisory Committee (STAC) undertook a three-year evaluation of why progress toward meeting the TMDL and water quality standards has been slower than expected and what are options for the Program to accelerate progress.

Findings and Policy Implications

Achieving the pollutant targets of the Bay TMDL

- Finding: Existing implementation actions to reduce nonpoint sources of nutrients are insufficient to achieve the TMDL
- Policy implication: There are opportunities to further reduce nutrients from nonpoint sources, but changes to programs and policies need to be considered.

Achieving the water quality standards

- Finding: Preliminary analyses suggest that nutrient load reductions have not produced the expected level of improvement in estuary water quality, and this response gap is particularly pronounced in the Bay's deep channel.
- Policy implication: Additional nutrient reductions will improve water quality, but water quality criteria may be unattainable in some regions of the Bay under existing technologies.

Managing water quality to enhance living resources

- Finding: Significant enhancement of living resources can be achieved through additional management actions without complete achievement of water quality standards across all habitats.
- Policy implication: The legal requirements of the Clean Water Act (the water quality goal) divert attention away from considering multiple means of improving living resources (support of aquatic life as the designated use) as articulated in the Chesapeake Bay Watershed Agreement.
- Policy implication: Opportunities exist to adjust approaches to prioritize management actions that improve living resource response.

Enhancing adaptive management

- Finding: The Chesapeake Bay Program's current portfolio of adaptive management processes is inadequate to address the uncertainties and response gaps described in this report.
- Policy implication: Expanding the scope of adaptive management could address critical uncertainties and response gaps.