

**Chesapeake Bay Program***A Watershed Partnership*

# Backgrounder

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Over the next several years, Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia and the District of Columbia will continue their joint effort to improve water quality for the plants and animals living in the Chesapeake Bay and its tributaries.

Working with the U.S. Environmental Protection Agency, this seven-jurisdiction cooperative partnership will continue to work together to improve water quality through an innovative process that uses three simple, yet encompassing, criteria to monitor the health of the Bay's complex ecosystem and living resources — dissolved oxygen, chlorophyll *a* and water clarity.

This paper outlines the critical steps in this new process.

## Restoring the Chesapeake Bay: How We Get There

### Water Quality Criteria for the Chesapeake Bay

Prior water quality criteria applied to the Chesapeake Bay were based on the assumption that all areas in the Bay were identical and did not take into account the natural variability found in the Bay's waters. Newly proposed water quality criteria – dissolved oxygen, chlorophyll *a* and water clarity – vary based on the needs of a healthy ecosystem. By analyzing the relationship between these three criteria, scientists are able to understand and monitor the more complex processes of the Bay ecosystem. Design and implementation of tributary strategies to meet these new, more appropriate criteria will enable the states and the District of Columbia to remove the Bay and its tidal tributaries from the impaired waters list.

### Designated Uses and the Bay

A “designated use” refers to a water body's primary function – such as fishing or swimming – and takes into account the use of the water body for public water supply, the protection of fish, shellfish and wildlife, as well as its recreational, agricultural, industrial and navigational purposes. The suitability of the water body for these uses is also examined based on the physical, chemical and biological characteristics of the water body, its geographic setting and scenic qualities, and economic considerations.

To better position the states and the District to adopt new water quality standards that relate to the needs of the Bay's living resources, the Bay Program has developed and recommended five new refined designated uses for the Chesapeake Bay derived from different types of habitat. The five habitats – shallow water, open water, deep water, deep channel, and migratory and spawning areas – allow the water quality standards to be matched with the plants and animals that are adapted to life in those different areas, rather than on a single baywide standard.

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The Chesapeake Bay Program is restoring the Bay through a partnership among the U.S. Environmental Protection Agency representing the federal government, the State of Maryland, the Commonwealth of Pennsylvania, the Commonwealth of Virginia, the District of Columbia, the Chesapeake Bay Commission, and participating citizen advisory groups.



### **Water Quality Standards & Water Quality Criteria**

Standards combine water quality criteria and designated uses to produce a target numeric value that, if achieved, will maintain healthy water quality. Together, the states and the District must achieve the standards needed for a thriving ecosystem if the Chesapeake Bay is to be removed from the list of impaired waters.

### **Cap Load Allocations & Implementation**

Cap loads are the maximum amounts of pollutants allowed to flow into a waterbody and still ensure achievement of the water quality standards.

Bay Program partners used the Chesapeake Bay Watershed and Water Quality Models, along with monitoring data, to help determine these cap loads for nitrogen, phosphorus and sediment. These models are computer representations that simulate the real world, interpreting various levels of actions (management scenarios) to reduce different amounts of pollutant loads. These scenarios were run through the models to determine how to achieve baywide attainment of the water quality criteria.

The models, along with other information, were used to allocate cap loads to the nine major tributary basins in the watershed, and, then to twenty state-specific sub-basins. Each state and the District bear a proportional burden for achieving and maintaining the assigned cap based on their pollutant loadings and effects on different tributaries.

### **The Role of Tributary Strategies**

Tributary strategies are the blueprint for improving Bay water quality by outlining the types and amount of reductions needed in a particular river basin. Each tributary strategy will be based on meeting the assigned cap load allocations. Strategies will outline the pollution reductions actions required to achieve the cap load allocations.

Development of tributary strategies has traditionally been a very public process with the direct participation of local governments and a wide variety of other interested stakeholders. In creating the strategies, the states and District of Columbia will explore and evaluate a wide variety of point and nonpoint source control measures. They will then draft a strategy using the most effective reduction options to achieve the cap load allocations.

### **Permits & Improving Water Quality**

The 1972 Clean Water Act prohibits point source pollutants from being discharged into a waterbody without a National Pollutant Discharge Elimination System (NPDES) permit. The permit limits what can be discharged, requires monitoring and reporting, and ensures that the discharge is not harmful to water quality or human health.

Together, EPA, the states and the District are developing an approach for addressing permits that are consistent with the overall cooperative process.

**For additional information about restoring Chesapeake Bay water quality, visit  
<http://www.chesapeakebay.net>.**