

CREATING A BUFFER TO DEMONSTRATE REDUCED NUTRIENT LEVELS

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Maryland's coastal bays, located along the east coast of the United States, are constantly at risk due to chemical contamination, habitat loss, and eutrophication. Eutrophication is by far the greatest environmental problem of these fragile coastal bays. However, the damage created by loss of aquatic and terrestrial habitat has also contributed to the degradation of these bays. These bays comprise a watershed that spreads over 175 acres of Worcester County, Maryland. A diverse interaction between the many plant and animal communities is evident. Agriculture, commercial and recreational fishing, water sports, and tourism are just a few of the examples of the many interactions that take place in this pristine part of coastal Maryland. The northern bays, Cape Isle of Wight and Assawoman, face the most degradation, while the southern bays, Sinexpent, Newport, and Chincoteague, display relatively healthy conditions.

Located in the middle of an agricultural field in the small community of Bishopville, Maryland is a small, oblong pond. During periods of heavy rain, this pond overflows into a local river in the northern section of the Maryland coastal bays watershed. During the summer of 2002, students from Stephen Decatur Middle School collected water quality data from this pond. Returning to the pond twice a week in the summer of 2003, these students will continue to collect data on the following parameters: pH, dissolved oxygen, temperature, salinity, total suspended solids, chlorophyll a, nitrates and phosphates. In early fall, the pond will be graded to make it more easily accessible, and several trees and shrubs will be planted around the perimeter. The goal is to simulate a shoreline buffer. The students will continue to collect water quality data during the school year, as well as during the summer of 2004. Analysis of data occurs on the campus of the University of Maryland Center for Environmental Science, Horn Point Laboratories, Cambridge, Maryland.

The main objective of this research project is to determine whether "buffers" will diminish the nutrient run-off of agricultural fields and golf courses that are found near the shoreline. As these young minds begin to analyze their data and draw some conclusions, they will quickly become ambassadors of the environment in which they live. Making research real to them, where they can view the outcome firsthand, is far more valuable than reading about it in a textbook. By participating in an on-going research project, these students take ownership and have a stake in the entire process. When students become involved, their parents will inevitably also become involved and, perhaps, take on the role of ambassador of the environment as well.