

## The Benefits of Buffers

Despite new and innovative water quality improvement strategies, riparian buffers remain one of the most reliable mechanisms for removing pollutants from runoff. Referred to as “the last line of defense,” vegetated buffers adjacent to local waterways provide backup for upslope BMPs. They also help to prevent land uses from encroaching into sensitive areas. Riparian buffers:

- Control streambank erosion and flooding
- Promote infiltration and groundwater recharge
- Provide food and cover for fish and other aquatic life
- Provide shade and decrease water temperatures
- Provide wildlife habitat
- Provide recreational opportunities
- Reduce sediment up to 97 percent
- Reduce nitrogen up to 80 percent
- Reduce phosphorus up to 77 percent



Guidance on restoring and maintaining riparian buffers can be found in the “Riparian Buffer and Modification Mitigation Manual,” available from DCR.

## Chesapeake Bay Local Assistance

**D**CR’s Chesapeake Bay Local Assistance staff helps localities administer Bay Act programs. The range of services includes reviewing programs and site plans, providing training, and administering grant funds. The program has provided millions of dollars in grants to localities to support local Bay Act programs. Chesapeake Bay Local Assistance also performs program compliance evaluations to provide additional feedback to localities on their programs.

**Mission:** Partnering with local governments to protect the Chesapeake Bay and other state waters through sound land use management.

### Chesapeake Bay Local Assistance

James Monroe Building  
101 North 14th Street, 17th Floor  
Richmond, VA 23219  
1-800-CHES-BAY  
(804) 225-3440 • (804) 225-3447 fax  
[www.dcr.virginia.gov](http://www.dcr.virginia.gov)



## Virginia's Chesapeake Bay Preservation Act & Local Bay Act Programs

## Working Together

## to Protect Streams, Rivers and the Bay



### The Chesapeake Bay Preservation Act

Water is one of Virginia’s most precious resources. Abundant, clean water is important for our health and our economy. For more than a decade, Virginia’s Chesapeake Bay Preservation Act, known simply as the Bay Act, has protected water quality in the Chesapeake Bay and its tributaries. Through the implementation of sensible, straightforward water protection measures, local governments in the Chesapeake Bay watershed successfully manage nonpoint sources of pollution.

The Virginia General Assembly passed the Chesapeake Bay Preservation Act in 1988 on the premise that land should be used and developed in ways that do not degrade water quality. In fact, the Bay Act begins, “Healthy state and local economies and a healthy Chesapeake Bay are integrally related; balanced economic development and water quality protection are not mutually exclusive.”

The Bay Act and the Chesapeake Bay Preservation Area Designation and Management Regulations, adopted in 1989, established a cooperative program between state and local governments aimed at reducing nonpoint source pollution. The program promotes sound land use planning and management practices on environmentally sensitive lands. The Virginia Department of Conservation and Recreation administers the state component of the program.

*“Healthy state and local economies and a healthy Chesapeake Bay are integrally related; balanced economic development and water quality protection are not mutually exclusive.”*

—The Virginia Chesapeake Bay Preservation Act



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## Water Quality and the Chesapeake Bay

With a watershed encompassing 64,000 square miles, the Chesapeake Bay is North America's largest estuary. Through its tributaries, water from six states—Virginia, Maryland, Pennsylvania, West Virginia, Delaware and New York—and the District of Columbia drains into the Chesapeake Bay. Fifteen million people and more than 3,000 species of plants and animals call the watershed home. The vast amount of land in the watershed and its growing human population make wise land use critical to protecting water quality in the bay.

In the collection *Call of the River*, Page Stegner writes, "A river, like all natural forces is not indifferent or unresponsive to humankind." This is visibly true for the Chesapeake Bay and its tributaries. Scientists studying the estuary's decline have cited the effects of human influences since the 1970s.

Many land use activities significantly affect water quality. Poor land management and development practices lead to increased stormwater runoff, which carries pollutants to the Chesapeake Bay. These pollutants include:

- **Sediment.** Caused by the erosion of land, sediment clouds waterways, prevents light from reaching aquatic plants, and clogs fish gills.
- **Nutrients.** Nitrogen and phosphorus from farm and lawn fertilizer, animal waste, and septic systems can lead to algal blooms in waterways, depleting oxygen and shading beneficial aquatic plants.
- **Toxic substances.** Metals, pesticides, household chemicals and deicing materials can cause health problems for aquatic life and people.
- **Pathogens.** Bacteria and viruses from human and animal waste also pose health risks to both aquatic life and people.

Although Virginia and other Chesapeake Bay communities have made great strides in improving water quality across the watershed, the future brings even greater challenges.

## Local Bay Act Programs

All 84 of the Tidewater localities identified in the Bay Act are implementing local Bay Act programs. Tidewater localities are required to adopt and implement the Bay Act, however local governments outside Tidewater may also adopt Bay Act programs.

A locality adopts and implements its local program in several phases, during which the locality must:

- Map environmentally sensitive lands.

- Develop or amend ordinances to implement the performance criteria addressed in the regulations.
- Amend its comprehensive plan to address water quality in five policy areas: physical constraints to development, protection of potable water, shoreline and streambank erosion, public and private access to waterfront areas, and redevelopment.
- Evaluate local ordinances and policies to identify and address conflicts and barriers to protecting water quality.



*"A river, like all natural forces, is not indifferent or unresponsive to humankind . . ."*

— Page Stegner in *Call of the River*



## A Comprehensive Approach to Water Quality — Protecting Streams, Rivers and the Bay

By addressing the many types of land use and development in the Chesapeake Bay watershed, local Bay Act programs provide a comprehensive approach to protecting water quality from nonpoint source pollution. The result is cleaner water locally and a cleaner Chesapeake Bay. Tidewater localities implementing local Bay Act programs experience the many advantages of improved water quality.

### Protecting Wetlands and Other Environmentally Sensitive Lands . . .

Through their Bay Act programs localities manage land use on environmentally sensitive lands, referred to as Chesapeake Bay Preservation Areas (CBPAs). The Bay Act further classifies these lands into Resource Protection Areas (RPAs) and Resource Management Areas (RMAs).

RPAs include tidal wetlands; nontidal wetlands connected by surface flow and contiguous to tidal wetlands or water

bodies with perennial flow; tidal shores; and a 100-foot-wide vegetated buffer adjacent to these features and along both sides of any water body with perennial flow. Development within RPAs is limited to water-dependent uses and redevelopment.

RMAs include floodplains; highly erodible soils including steep slopes; highly permeable soils; nontidal wetlands not included in RPAs; and any other lands the local government deems necessary to protect the quality of state waters. Development is permitted within RMAs, but developers must adhere to the performance criteria contained in the regulations and incorporated into local ordinances.

More than 10,000 miles of Virginia's streambanks and shorelines are protected under the Bay Act, as are more than 330,000 acres of wetlands.

### Preserving Riparian Buffers . . .

By implementing the buffer requirements of the Bay Act, local governments have helped to preserve or restore an estimated 635,000 acres of riparian buffers. These buffers filter pollutants from runoff before they can enter streams, rivers, ponds, lakes and ultimately the Chesapeake Bay. They capture up to 97 percent of the sediment, 80 percent of the nitrogen and 77 percent of the phosphorus in runoff.

### Controlling Erosion . . .

By reducing the state erosion and sediment control threshold from 10,000 square feet to 2,500 square feet, Bay Act localities address erosion control on more development sites. This means less sediment in local waterways and the Chesapeake Bay.

### Maintaining Septic Systems . . .

By requiring that septic systems be pumped out at least once every five years, Bay Act localities help prevent septic system failures, which can pollute local waterways. As an added precaution, these localities also require a reserve sewage disposal site that can be used in the event of a failure.

### Managing Stormwater Runoff . . .

By requiring that development plans incorporate Best Management Practices (BMPs) to protect water quality, Bay Act localities control the impacts of urban runoff. They also require maintenance agreements to ensure that the BMPs continue to function properly.



Stormwater ponds protect water quality by slowing and filtering runoff from developed areas.

### Improving Development Designs . . .

By promoting better site design, Bay Act localities can achieve the three general performance criteria spelled out in the act: minimizing land disturbance, preserving indigenous vegetation and minimizing impervious cover. In Tidewater, less clearing and paving translates into cleaner local waters and reduced costs for developers. Available from DCR, the "Better Site Design" handbook explains the principles of better site design in Virginia.

### Developing Farm Plans . . .

By preparing soil and water quality conservation plans, Soil and Water Conservation Districts (SWCDs) help farmers reduce the amount of sediment, nutrients and pesticides entering local waterways. To date, nearly 5,500 conservation plans covering nearly 270,000 acres have been approved in Tidewater. The implementation of these plans and their associated BMPs has kept 1.3 million pounds of nitrogen, 90,000 pounds of phosphorus and 27 million pounds of sediment from local waterways.



Conservation practices and buffer preservation on farms help minimize water pollution.

### Managing Timber Harvesting . . .

By working closely with local foresters, Tidewater localities ensure that landowners and timber companies implement water quality BMPs. Timbering projects are exempt from the Bay Act only if they implement these BMPs.



To protect riparian buffers adjacent to streams, timber harvesting is limited to 50 percent of the trees within streamside management zones

