

Urban Water-Quality Management

What Is a Watershed?

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A Watershed Defined

A watershed is an area of land that drains to a lake, river, wetland, or other waterway. When precipitation occurs, water travels over forest, agricultural, or urban/suburban land areas before entering a waterway. Water can also travel into underground aquifers on its way to larger bodies of water. Together, land and water make up a watershed system.

Watersheds can be any size, but generally, the larger the body of water the larger the watershed. For example, the Chesapeake Bay Watershed covers 64,000 square miles and drains from six states, including Virginia. Smaller, local watersheds drain much smaller areas. Even a local stream has a watershed associated with it, perhaps only a few acres in size.

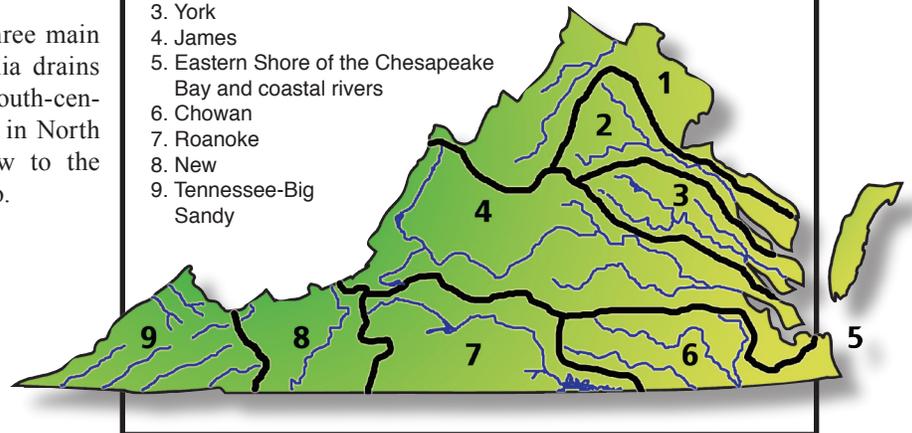
Virginia Watersheds

No matter where you live in Virginia you are part of one the state's nine major watersheds. You may have even noticed signs identifying the boundaries of each watershed while traveling through the state.

Virginia's watersheds ultimately drain into three main bodies of water. Nearly two-thirds of Virginia drains into the Chesapeake Bay. Southeastern and south-central Virginia drain into the Albemarle Sound in North Carolina. Rivers in Southwest Virginia flow to the Mississippi River and on to the Gulf of Mexico.

There are nine major watersheds in Virginia. Some flow to the Chesapeake Bay. Some go directly into the Atlantic Ocean. Others flow to the Albemarle Sound in North Carolina. Some rivers in Virginia even flow to the Mississippi River and then to the Gulf of Mexico.

1. Shenandoah-Potomac
2. Rappahannock
3. York
4. James
5. Eastern Shore of the Chesapeake Bay and coastal rivers
6. Chowan
7. Roanoke
8. New
9. Tennessee-Big Sandy



Why Are Watersheds Important?

Healthy watersheds are a vital component of a healthy environment. Watersheds act as a filter for runoff that occurs from precipitation and snowmelt, providing clean water for drinking, irrigation, and industry. Recreation and leisure are important components of watersheds, with many Virginians taking advantage of boating, fishing, and swimming in our waterways. Watersheds also support a variety of plant and wildlife communities.

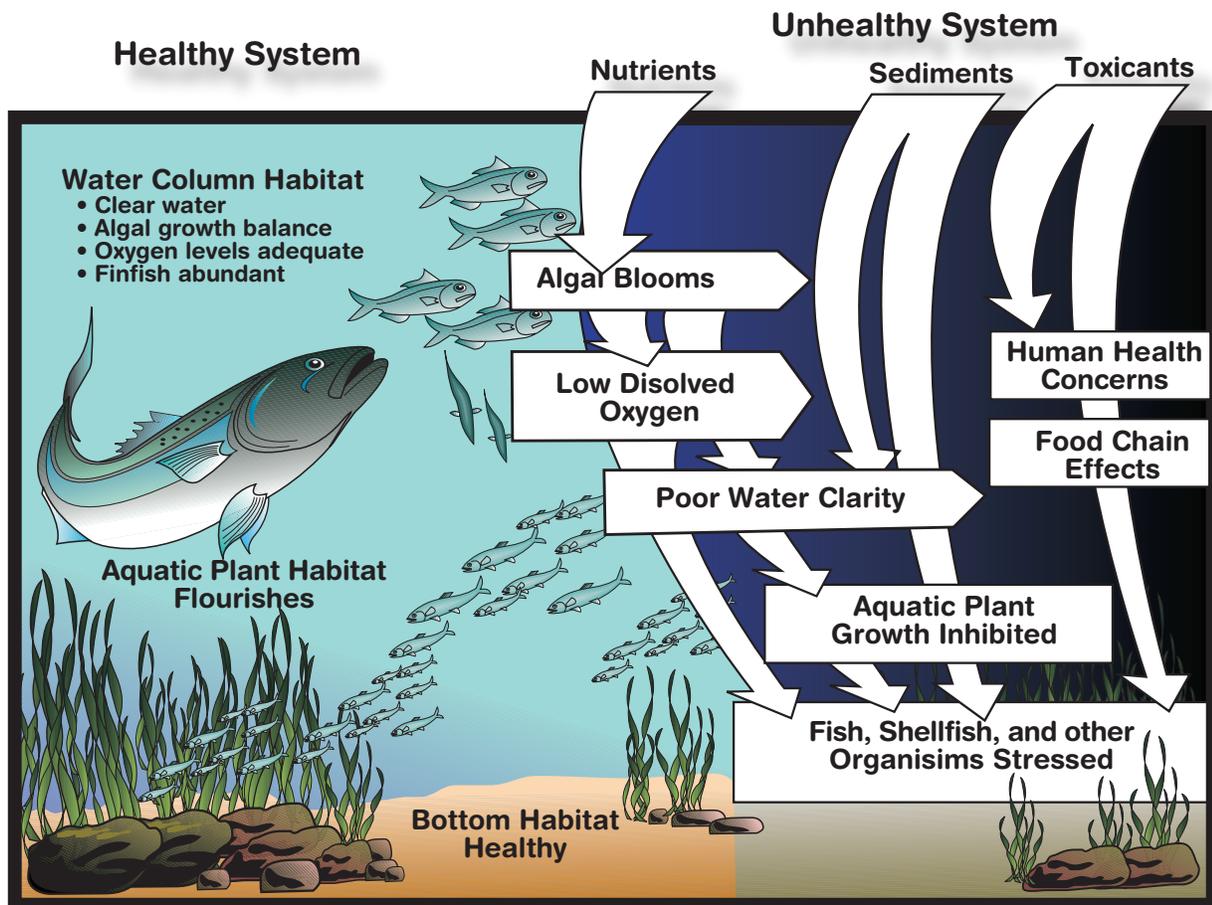
Scientists and community leaders recognize the best way to protect our water resources is to understand and manage them on a watershed basis. Human activities as well as natural events that occur in a watershed can affect water quality throughout the entire system.

Human Impacts on Watersheds

Nearly all watersheds have something in common; they are populated by humans. With humans comes development and, unfortunately, pollution. As development encroaches on natural areas, the filtering system of the watershed is re-

placed by impervious surfaces such as concrete and asphalt. Water runs off these surfaces in sheets, carrying with it a variety of pollutants. This type of pollution is called non-point source pollution because it comes from multiple sources over a large area. Anything on the impervious surface, such as automobile fluids, litter, leaves, debris, sediments, or animal feces is swept away by the run-off. It is carried directly into a waterway by storm drains and culverts. These non-point source pollutants can have devastating effects on the health of Virginia waterways.

Fertilizer runoff from lawns and landscapes is another part of non-point source pollution. The overuse and incorrect use of fertilizers account for this type of pollution. The adage “if a little is good, then more is better” is not only false, but has serious detrimental effects on water quality. Excess fertilizer in the lawn is easily washed off by rain or irrigation. It travels into waterways, causing algal blooms that block sunlight, smother aquatic plants, and increase bacterial decay. As a result, dissolved oxygen is decreased and the water is unable to provide a healthy environment for aquatic life.



How can you help?

If everyone in Virginia would do a few simple things, we can greatly improve how our watersheds function in protecting water quality. Below are just a few ways you can help.

- Reduce your daily water usage.
- Never dispose of anything by dumping into a storm drain. Storm drains lead directly to waterways.
- Use the correct amounts of fertilizer at the correct time for your grass species.
- Reduce your use of pesticides and fertilizers by replacing grass with hardy trees and shrubs.
- Follow label directions carefully on all chemicals and use them only when necessary.
- Clean up after your pets.
- Maintain home septic systems.
- Create buffers along waterways on your property.
- Know your watershed address.
- Volunteer for clean up, restoration, and conservation programs.
- Promote sustainable land stewardship throughout your community.

For more details about watersheds and what you can do to help, please refer to the following agencies.

- Virginia Department of Conservation and Recreation
<http://www.dcr.state.va.us/sw/index.htm>
- Alliance for the Chesapeake Bay
<http://www.alliancechesbay.org>
- Chesapeake Bay Program
<http://www.chesapeakebay.net/>

Virginia Cooperative Extension offers a wide variety of publications regarding proper fertilizer and pesticide use, plant selection and buffers. Please see our website, <http://www.ext.vt.edu>, or contact your a local Extension agent for more details.

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