



4th Edition

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### Of Special Interest:

- Build Your Own Stream Buffer
- Contractors Earn Kudos for Protecting The River
- Geese: Fowl or Foul?

## Remember . . .

### POLLUTANTS THAT ENTER HERE:



### END UP HERE:

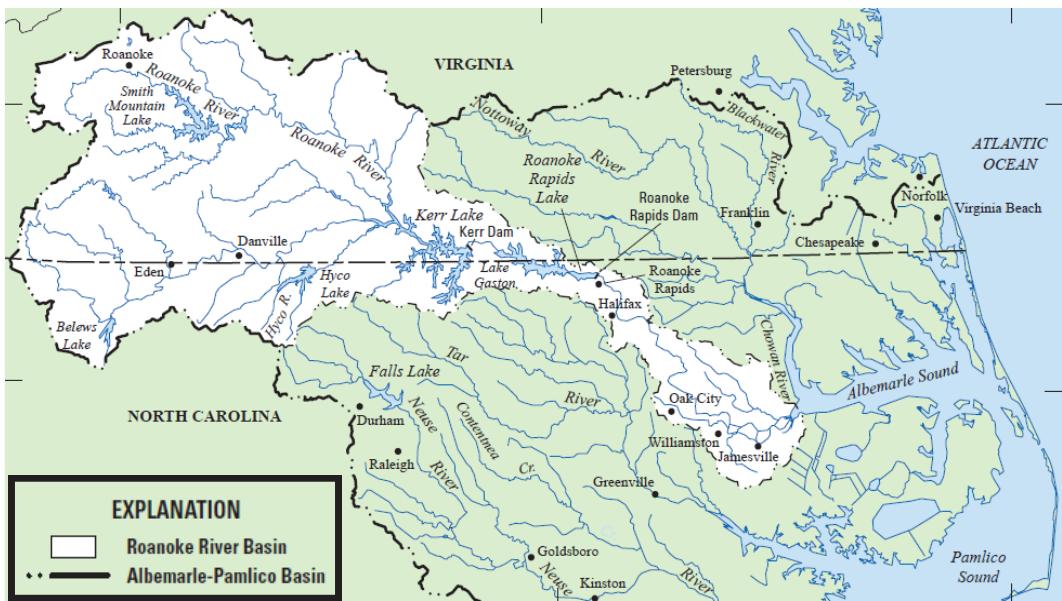


# A Stormwater Guide for Homeowners

## MAY 2018

## Watersheds 101

A watershed is an area of land from which all of its water drains to a single body of water, such as a farm pond, stream, creek, river, bay, or ocean. Watersheds come in many different shapes and sizes, and they are often categorized using terms such as major, minor, or sub-watersheds. One of the most important things to know about watersheds is that **activities upstream impact waterways downstream**.



Source: <http://deq.state.va.us/Portals/0/DEQ/Water/SWRP/App%20B%20Roanoke%20River%20Basin%20Summary.pdf>

The most familiar watershed associated with the County of Roanoke far exceeds her boundaries, and that is the Roanoke River Basin. Per the Virginia Department of Environmental Quality (DEQ), “the Roanoke River Basin [watershed] is bordered by the James River Basin on the north, the Albemarle-Chowan River Basin to the east, and the New River Basin to the west. The southern boundary of the Basin is the Virginia/North Carolina state line. The Roanoke River headwaters begin in the Blue Ridge Mountains in eastern Montgomery County. There are 17 counties and 4 cities that are entirely or partially located within the Roanoke River Basin: **Counties:** Appomattox, Bedford, Botetourt, Brunswick, Campbell, Carroll, Charlotte, Floyd, Franklin, Grayson, Halifax, Henry, Mecklenburg, Montgomery, Patrick, Pittsylvania, and Roanoke; **Cities:** Danville, Martinsville, Roanoke, and Salem.”

### What is YOUR Watershed Address?

In Roanoke County, water drains from 68 sub-watersheds, and all but 4 of them eventually discharge into the Roanoke River. (Sadly, almost all of the associated streams and creeks are impaired for bacteria, sediment, and PCBs.) Do you know in which sub-watershed YOUR property is located? If so, then you already know your watershed address! To learn more about the watersheds and impaired waters in Roanoke County, visit:

- <https://www.roanokecountyva.gov/DocumentCenter/Home/View/221>
- <https://www.roanokecountyva.gov/index.aspx?NID=546>
- <http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs.aspx>

## Stream Buffers: Why We Need Them

Roanoke County is blessed with a plethora of natural streams and creeks, almost all of which drain to the Roanoke River. Unfortunately, due to the effects of urbanization, most of these water bodies have become polluted with sediment and bacteria. As a result, the Virginia Department of Environmental Quality (DEQ) has declared them to be impaired, placed them on its Impaired Waters List, and imposed certain requirements on the County to minimize future sediment and bacteria loadings to them.

According to the Center for Watershed Protection<sup>1</sup>, one particularly effective technique in protecting any stream or creek is the intentional management of the area where the land and water meet, i.e., the “aquatic corridor,” through the use of a stream buffer. The



A well-established stream buffer provides shade, filters pollutants, and protects against shoreline erosion.

buffer has many benefits and uses, but its primary goal is to physically protect the stream or creek from future disturbance or encroachment. Importantly, buffers help to remove pollutants (sediment, bacteria, nutrients) that travel in stormwater runoff, groundwater, and septic system effluent. Buffers provide excellent wildlife habitat and areas for recreation, and they minimize stream bank soil erosion. A network of buffers along streams can provide a “right-of-way” for flood waters and also help to sustain the integrity of stream ecosystems and habitats. Employing the use of stream buffers can serve as an important strategy in the County’s overall goals to protect watersheds and improve the quality of its receiving waters, including its streams, creeks, and the Roanoke River.

### Create a Stream Buffer at Home

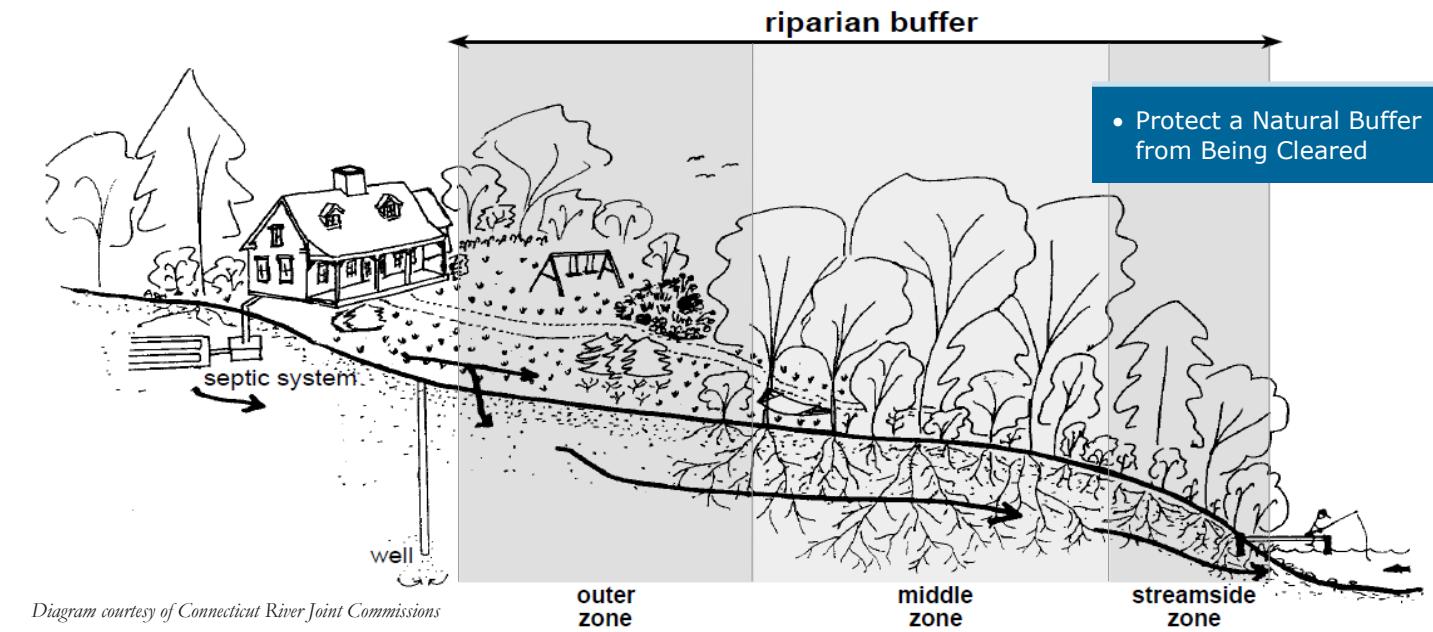
If you own property that abuts a stream or creek, YOU can help the County meet its aforementioned goals by building your own stream buffer. The Connecticut River Joint Commissions<sup>2</sup> (CRJC) notes that permanent vegetation along your streambank will provide a “living filter” for both surface and subsurface water running off the land, while providing your home landscape with privacy and the pleasure of watching wildlife. The flood and erosion “insurance” provided by a stream buffer are added benefits. Sturdy plantings on your streambank are the best protection for your own property and that of your neighbors. No stream is too small to benefit from a buffer. In fact, the smaller the stream, the more your buffer will help. Remember, many little streams make up the lengthy Roanoke River. And, every bit of buffer counts. Even a 25’ buffer is better than no buffer at all.

### A THREE ZONE BUFFER SYSTEM - the most effective backyard buffer has three zones:

- ◆ **Streamside:** from the water to the top of the bank. Protects the bank and offers habitat. The best buffer has mature forest, but large shrubs may be a better choice if trees have collapsed your bank. “[Let it grow and let it go](#)” for the best protection.
- ◆ **Middle zone:** from the top of the bank inland. Protects stream water quality and offers habitat. Varies in width depending on size of stream and the slope and use of nearby land. The best buffer has trees, shrubs, and perennial ground plants. It can allow some clearing for recreational use.
- ◆ **Outer zone:** the yard, garden, or woods between your home and the rest of the buffer. This zone traps sediment. Play areas, gardens, compost piles, and other common residential activities are suitable here.

<sup>1</sup> Schuler, Thomas R., and Holland, Heather K. *The Practice of Watershed Protection*. Ellicott City, Md., Center for Watershed Protection, 2000

<sup>2</sup> Backyard Buffers. Charlestown, N.H., Connecticut River Joint Commissions of NH & VT, 2000



### Stream Buffers Have MANY Benefits for Homeowners

- ◆ Less time spent mowing lawn and maintaining yard
- ◆ Less money spent on fertilizer, pesticides, herbicides, fuel, equipment maintenance
- ◆ Reduced air conditioning costs if house is shaded by buffer plants
- ◆ Reduced heating costs if buffer plants provide winter windbreak
- ◆ More stable shoreline: avoid costs of engineering design, permits, bank stabilization, erosion repair
- ◆ More interesting birds, butterflies, and wildlife to watch
- ◆ Better fishing
- ◆ Cleaner, safer, more attractive water for recreation
- ◆ Source of decorations - Christmas trees, pine cones, grape vines for wreaths, flowers, fall foliage
- ◆ Safer, more reliable drinking water from on-site well
- ◆ Better flood protection
- ◆ Possible tax benefits from conservation easement over buffer area
- ◆ Increased general property value

**Copy Mother Nature:**

- Keep Existing Areas Wooded
- Let Native Plants Establish
- Minimize Lawn Areas

### THE BETTER BUFFER

The best safeguard for water quality, both in the stream and in your well, is a woodland. A variety of trees and shrubs will do the best job of filtering runoff and providing habitat diversity for wildlife.

The bigger the buffer, the better. Trout streams, those used for water sports, and sources of drinking water need the most protection. You need a wider buffer if you have a lawn, landscaped area, or garden where fertilizers and pesticides are used, or if there are parking lots, roads, or hillsides sending runoff through your yard into the stream. Add buffers between your house and the street to filter runoff before it enters a storm drain or ditch on its way to a stream. Another good place for buffers is along a parking area or driveway, easily disguised as shrub borders, perennial flower beds, or fern gardens. Trees planted on the south or west side of your stream will do the best job of shading and cooling its waters for fish, and they help hold the soil, filter runoff, and provide habitat.

**Resources** - if you want to build a stream buffer on your property, here are a few websites to explore:

- [WWW.CRJC.ORG](http://WWW.CRJC.ORG) - Fact Sheet No. 2 Backyard Buffers
- <https://www.albemarle.org/department.asp?department=water&relpage=2979> (Water Resources Program)
- <https://conservationtools.org/guides/131-the-science-behind-the-need-for-riparian-buffer-protection> ■

# Clean Stormwater

*Makes for Happy Kids*



## So... be “Stormwater Smart”

- Throw trash in a trash can
- Pick up after your pet
- Bag or compost leaves & grass clippings
- Limit lawn fertilizers
- Put cigarette butts in an ashtray
- Wash your car on the grass



## County Unveils Contractor Appreciation Program

Land development in Roanoke County presents difficult challenges in the minimization and control of erosion and sedimentation and in the management of stormwater runoff due to the steep slopes and highly erodible soils in the region.

Because of these challenges, Roanoke County, through its Department of Community Development, created the **“Contractor Appreciation Program”** to recognize those land-disturbing contractors who conduct exemplary work within the County relative to the protection of its natural water resources. Their techniques include the proper use of onsite erosion and sediment controls, implementation of effective stormwater pollution prevention and good housekeeping measures, proper upkeep and use of the Stormwater Pollution Prevention Plan (SWPPP), if applicable, and the proper construction and use of stormwater management best practices.

### Which Projects are Eligible?

All land-disturbing projects that comply with the selection criteria are eligible to receive recognition.

### How are Projects Selected?

Roanoke County inspectors submit candidate projects to the County Selection Panel, which meets monthly to evaluate candidate projects for recognition and to review previously-selected projects to ensure continued compliance with the selection criteria.

### What Type of Recognition do Contractors Receive?

- A banner posted at the selected Project Site, entitled [Stormwater Clean Award](#) (see below)
- "Certificate of Appreciation" plaque presented at a formal County meeting
- Recognition in County's *It's Just Dirt* contractor newsletter
- Recognition on County's Stormwater website
- Recognition at County-sponsored Erosion and Sediment Control Training events



Roanoke County's Stormwater Inspector, Rhonda Ferris, shows off a Stormwater Clean Award Banner just after it was placed on the site of a nominated project. Such banners remain in place until the nominated project is completed, provided the project stays in compliance with the program requirements.

## Stormwater Clean Award Recipients

Since the inception of the County's **Contractor Appreciation Program** in the spring of 2017, there have been five recipient projects, two of which are still under construction:

<b>Charles Perry Partners, Inc.</b>	<b>Price Buildings, Inc.</b>
LewisGale Emergency Center project Corner of Ogden and Electric Roads Roanoke, VA	Christ the King Presbyterian Church project 2335 Electric Road Roanoke, VA

<b>Building Consultants, LLC</b>	<b>David Frank Homes</b>	<b>Dominion Builders</b>
Single Family Residence 1600 Bottom Creek Lane Bent Mountain, VA	Single Family Residence 4211 Alleghany Drive Salem, VA	Single Family Residence 6726 Waterstone Drive Roanoke, VA

### What are the Program Benefits?

Through reward and recognition, the County's Contractor Appreciation Program provides an incentive for contractors to "do right for the River." By using on-site best practices, the contractors "keep the dirt from their construction projects ON their projects" and, thereby, out of the area waterways. This helps to ensure that local waters retain their full recreational and environmental benefits. It also helps the County satisfy its program requirements for reducing sediment loading to the Roanoke River and its tributaries. So, this is a win-win proposition for the contractors, the County, County residents, the natural environment, and oh yes, the fish. ■

## Maintaining Your Residential Septic System<sup>1</sup>

Did you know that if your home has a septic system, then you are responsible for maintaining it? Did you know that maintaining your septic system protects your investment in your home? Did you know that you should periodically inspect your system and pump out your septic tank?

If properly designed, constructed, and maintained, your septic system can provide long-term, effective treatment of household wastewater. If your septic system isn't maintained, you might need to replace it, which may cost you thousands of dollars. A malfunctioning system can contaminate groundwater that might be a source of drinking water. And, if you sell your home, your septic system must be in good working order. Here are a few tips for protecting your septic system. For more information, see <https://www.roanokecountyva.gov/DocumentCenter/View/11174>

### DO...

- Inspect your system every 3 years, and pump your tank as necessary, generally every 3 to 5 years.
- Use water efficiently. The less water used in the home means less water into the septic system, which can improve its operation and reduce the risk of failure.
- Repair leaky faucets or toilets, as they waste water.
- Care for your drainfield; plant ONLY grass over and near it. Tree or shrub roots can clog or damage the drainfield.
- Clean toilets, sinks, showers, and tubs with mild detergent or baking soda instead of commercial cleaners.
- Learn the location of your septic system. Keep a sketch of it with your maintenance record for service visits.

### DON'T...

- Dispose of household hazardous wastes in sinks or toilets.
- Throw ANYTHING into the toilet except toilet paper.
- Allow fats, oils, or grease into the septic system, as they quickly form scum layers, which will increase the need for more frequent pumping.
- Do load after load of laundry in a day. While practical, it does not allow adequate time for your septic system to treat wastes. Flooding the drainfield does not allow for sufficient recovery time.
- Use caustic drain openers for a clogged drain. Instead, use boiling water and a drain snake to open clogs.
- Park or drive on your drainfield, as this can cause damage. ■

<sup>1</sup> Excerpted from EPA-832-B-02-005. *A Homeowner's Guide to Septic Systems*. Cincinnati, OH., United States Environmental Protection Agency, 2002.



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This publication is a public service message brought to you by Roanoke County, Department of Community Development. As regulated by federal and state laws, the County's Stormwater Management Program must include public information strategies to encourage the prevention of stormwater pollution. For more brochures or information on ways to prevent stormwater pollution, please contact the County's Department of Community Development, Division of Stormwater Management, at 540-772-2065.

## *Canada Geese: Friends or Foes?*

Canada Geese are certainly pretty. But, these feathery fowls poop at an alarming rate: An adult goose can produce from 1 to 3 pounds of feces PER DAY! Such waste can ruin parks, ballfields, and golf courses, foul stream banks, pollute waterways, and make people sick. So please, don't feed the geese; that just encourages them to stick around. **POOP POLLUTES.**

