



STREAM BUFFER BASICS

HEADWATERS DEEP RIVER WATERSHED

STORMWATER SMART
PIEDMONT TRIAD REGIONAL COUNCIL



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WHAT TO KNOW

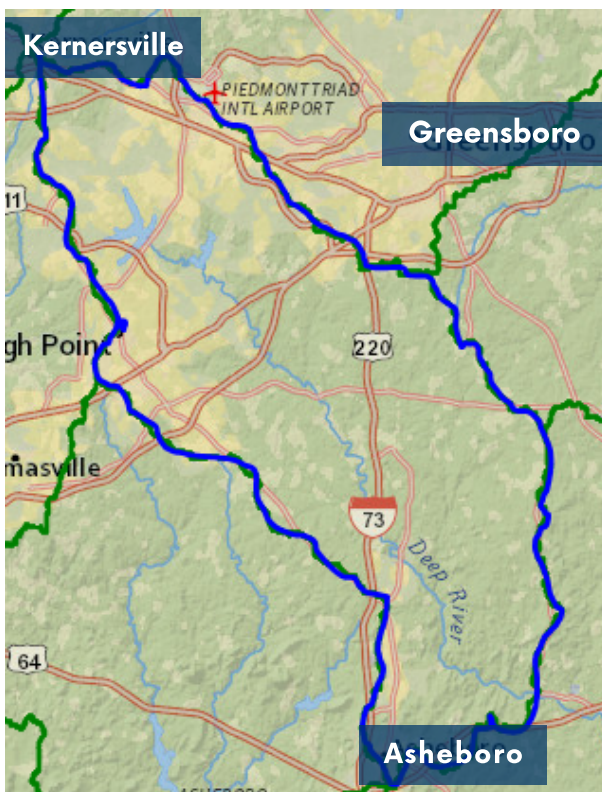
Headwaters Deep River is a vital water source that flows through numerous communities in the Piedmont Triad region of North Carolina. Stewards of the watershed need to know:

- How the Deep River connects to other waterways downstream
- Which pollutants affect its water quality
- What a healthy riparian buffer looks like, and how activities in these buffer zones are regulated and permitted

QUICK INFO

Area (sq miles).....	283
Miles of Streams.....	401
# of Impaired Streams.....	15
Dominant Land Use.....	Forest
Counties: Forsyth, Guilford, Randolph	

Data pulled from the Watershed Stewardship Network, NC DEQ "Know Your HUC", and modelmywatershed.org

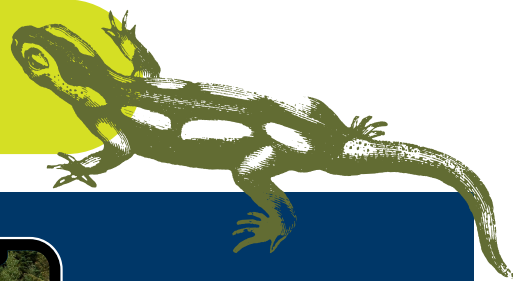


WHERE IS IT?



The Headwaters Deep River watershed is located in the heart of the Piedmont Triad and is a part of the Cape Fear River Basin. The Deep River begins in with two separate branches, the east and west forks, which join at High Point Lake. From High Point Lake, it flows southeast, running through Randleman Lake and continuing on to the next watershed. It also is joined by tributaries like Polecat Creek, Hasketts Creek and Brush Creek. The Deep River later transitions into the Cape Fear River, before ending at the Atlantic Ocean. Headwaters Deep River serves as a starting point for the Cape Fear river basin, which is the largest in all of North Carolina and the Cape Fear itself is the only river in the state that flows directly to the ocean. The Deep River occupies land in 3 counties and numerous communities. The map to the left illustrates the watershed area and the communities it impacts.

HEADWATERS DEEP RIVER WATER QUALITY



The water quality of this watershed can be listed overall as fair. Multiple waterbodies carry impairment listings from the North Carolina Department of Environmental Quality and they are as follows: West Fork Deep River, Deep River, Richland Creek, Hasketts Creek, and Penwood Branch. Also, the East Fork Deep River and Deep River require Total Maximum Daily Loads (TMDLs). TMDL's are management plans created to limit the discharge of specific pollutants into waterbodies that already have excessive pollution. The TMDLs are for **fecal coliform** (a harmful bacteria) and **turbidity** (murkiness of water from suspended solids like dirt), in both waterbodies.

RIPARIAN BUFFER BENEFITS

A riparian stream buffer is an area running parallel alongside both sides of a protected stream, river, pond, or lake. Stream buffers not only filter pollutants, prevent erosion, and reduce flooding; they also provide habitats for a variety of animal species, many of whom use stream buffers like highways to travel within their range in search of food, water and shelter. Healthy vegetation provides a safe, shaded place to rest and reproduce.



Healthy buffer:
natural, mature
vegetation on
creek banks.

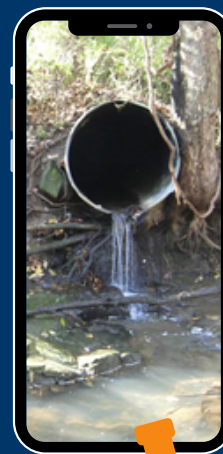


Unhealthy
buffer: stream
banks eroded &
roots exposed



SOIL AND SEDIMENT
FROM DISTURBED
LAND ARE THE #1
SOURCES OF
POLLUTION IN NC
WATERWAYS.

Storm systems carry the runoff from rain events to the nearest creek, untreated and unfiltered. Pollution that enters a storm drain ends up harming aquatic life and degrading water quality. If you see or smell noxious discharge at an outfall, or if you witness someone dumping anything into a storm drain, you can help stop the damage by calling 3-1-1 or your local stormwater department (see last page).

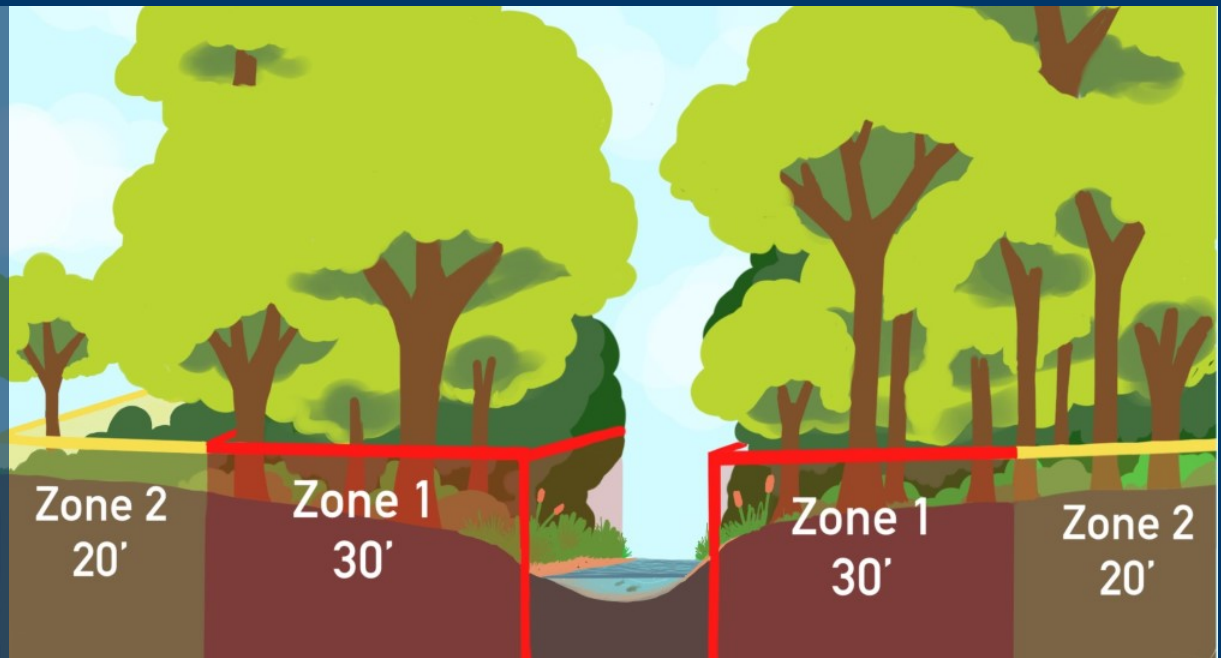


NCDEQ STREAM BUFFER ZONES

Regulations are set by the North Carolina Department of Environmental Quality (NCDEQ). Permitting rules vary slightly depending on the watershed, but the general rule has the riparian buffer divided into Zone 1 and Zone 2; together totaling 50' of protective vegetation.



PROTECTING THE 50' BUFFER ZONE PRESERVES WATER QUALITY AND ALLOWS OUR NATURAL LANDSCAPE AND ITS WILDLIFE TO THRIVE!



●●●●● ZONE 1 ●●●●●

Zone 1 extends from the top of the bank landward for 30 feet on all sides of the stream. Zone 1 has the stronger protections of the two zones, and should have a variety of native grasses, shrubs, and trees.

NO clearing, grading or development should take place here. No mowing, tree removal, or pesticide and fertilizer use.

NO direct deposit of concentrated water runoff flow, such as downspouts from rooftops and paved areas.

●●●●● ZONE 2 ●●●●●

Zone 2 continues landward another 20 feet, creating a 50-foot buffer in total. Grading & revegetation are allowed IF:

- IF no impervious surfaces are added (i.e. paved walkways or slabs)
- IF no trees are removed.

Some stormwater runoff is allowed to enter Zone 2, but the flow must be diffused and traveling at slower speeds. A rock pile or rain garden can help!



HOW DO I KNOW IF A WATERWAY IS REGULATED?



What may look like a dry ditch during part of the year may be a protected stream that requires a permit for any kind of development. Before doing anything within the 50' buffer that affects stream health (clearing trees and shrubs, adding walkways and structures, applying fertilizer and pesticides, redirecting water flow, etc.) check with your local government for assistance in determining if you are dealing with a protected stream, even if water rarely flows. See the next page for local contact information.

HELPFUL VEGETATION

There are a variety of important plants that thrive in riparian buffer habitats, with deep root systems to help filter pollutants and stabilize stream banks, preventing the loss of sediment. Here are just a few to look for and prioritize in a riparian buffer near you:

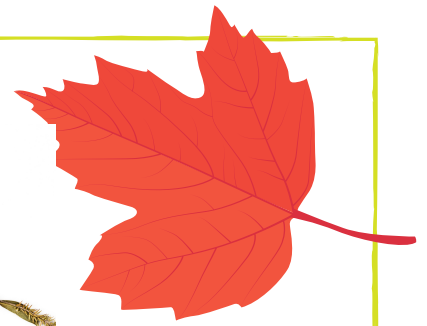
Green Ash



Swamp Milkweed (a favorite of Monarch butterflies)



Black Willow



Red Maple

Southern Wax Myrtle



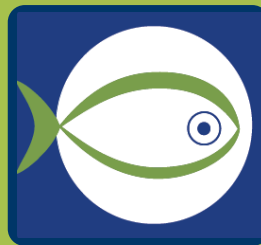
River Birch



Virginia Sweetspire

Learn to Assess Stream Health with Stormwater SMART

The local governments listed at left support healthy watersheds through membership in Stormwater SMART. SMART provides free hands-on programming to schools, libraries, civic groups, businesses, and other organizations. Citizen science and stewardship programs like NC Stream Watch (from the NC Department of Environmental Quality) are a fun way to gain scientific skills, enjoy local parks, and improve the health of our waterways! **With NC Stream Watch, people of all ages and abilities can learn how to:**



- Measure nutrient and pH levels
- Observe aquatic species
- Spot signs of erosion
- Identify soil and plant types
- Track trash/litter density
- Locate storm drains, downspouts, and other conveyances

Visit NCDEQ online at deq.nc.gov. From the Divisions menu, select Water Resources.



LOCAL GOVERNMENT PARTNERS

City of Greensboro
T: (336) 373-2489
300 West Washington Street, Greensboro, NC 27401

City of Asheboro
T: (336) 626-1201
146 N. Church St., Asheboro, NC, 27204

Town of Kernersville
Stormwater Division
T: (336) 996-7166
509 Michael Street, Kernersville, NC 27284

Contact Stormwater SMART for more information about free stormwater programs in the Triad:

Email stormwatersmart@ptrc.org · Phone (336) 904-0300
Piedmont Triad Regional Council
1398 Carrollton Crossing Drive Kernersville, NC 27284

