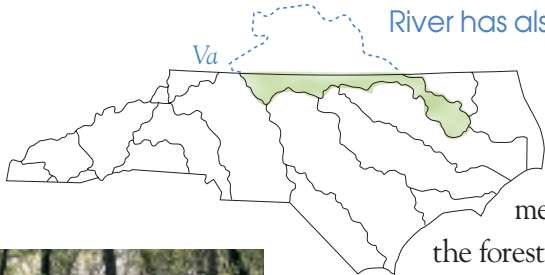


# ROANOKE RIVER BASIN



It was known as the “river of death” to Native Americans and early settlers because its spring floods claimed so many lives. But the mighty Roanoke

River has also been a giver of life.



As it flows to the Coastal Plain, it drains the rich lands of the mountains and Piedmont of Virginia and North Carolina, then carries sediment downstream and spreads a blanket of soil on the forest floor. This cycle has created fertile farmland for

cotton, corn, tobacco, peanuts and soybeans. Before the 400-mile river was dammed in the mid-1950s, it was an avenue for heavy springtime runs of striped bass, herring and other anadromous fish—fish that live in the ocean but swim upriver to spawn in the fresh waters where they were born. Striped bass, also called “stripers” and “rocks,” made the town of Weldon the “rockfish capital of the world.” Anadromous fish still return to the Roanoke but are limited to the river below the Roanoke Rapids Reservoir Dam.



MELISSA MCGAW, NCWRC

*Sunlight dapples the floor of a floodplain forest (left); a black bear takes a drink from the Roanoke (below).*



BILL LEA

In spite of population growth and other changes, the basin still contains ecological marvels. The Roanoke carries more water than any other North Carolina river. It also has the widest floodplain—up to 5 miles in places. With the state’s densest populations of white-tailed deer, wild turkey and black bear, the land in the lower basin is a hunter’s paradise. It’s also a birder’s heaven. At least 214 bird species are found in the Roanoke floodplain, including 88 resident species—the highest density of nesting birds anywhere in the state. More than 235 square miles of bottomland and cypress-tupelo forests lie along the lower Roanoke: Biologists consider the lower Roanoke to be the largest intact and least disturbed expanse of these ecosystems on the East Coast.

It’s no wonder then that so many partners—including conservation groups, government agencies and corporations—have joined forces to protect this place.



KEN TAYLOR, NCWRC

## profile:

Total miles of streams and rivers: 2,389

Municipalities within basin: 41

Counties within basin: 16

Size: 3,503 square miles

Population: 335,194 (2000)

(in North Carolina)

## fast FACTS:

### Teeming with Turkeys

When overhunting eliminated wild turkeys from most of North Carolina, the birds managed to hold on in the remote, productive reaches of the Roanoke River floodplain. Eventually, they became part of the stock for a state-wide restoration program that has placed turkeys in 99 of the state’s 100 counties.



## fast FACTS:

### Spring Spawning

Striped bass migrate up the Roanoke River to spawn in early spring near Weldon. A single fish can release as many as 1 million eggs, which will float downstream to hatch near Hamilton. The larvae continue to float downriver, reaching "yolk-sac" stage near Williamston and "fin-fold" stage near Plymouth. Finally a "young of the year" or juvenile striper reaches the Albemarle Sound, where it will spend the year feeding and growing.



CARL V. GALIE JR.

The Roanoke River National Wildlife Refuge was created in 1989. Through the cooperation of The Nature Conservancy, the U.S. Fish and Wildlife Service and the N.C. Wildlife Resources Commission, more than 34,000 acres of the Roanoke floodplain have been brought into conservation ownership. Along with 21,000 acres the Conservancy recently acquired from Georgia-Pacific, an almost 137-mile forested corridor now stretches from Roanoke Rapids to the Albemarle Sound.

*Devil's Gut Natural Area, on the lower Roanoke, contains centuries-old bald cypress and tupelo trees. The site is owned by the North Carolina chapter of The Nature Conservancy.*

The Roanoke River begins in the Blue Ridge Mountains of southwestern Virginia and ends where it meets the Albemarle Sound, part of the second largest estuary system in the United States (Albemarle-Pamlico). The North Carolina portion of the basin has two major parts: the Dan River and its tributaries in the western section and the Roanoke River and its tributaries in the eastern section. The Roanoke enters North Carolina through John H. Kerr Reservoir ("Kerr Lake") and continues through Lake Gaston and Roanoke Rapids Lake before flowing freely as a

river downstream of Weldon. As it flows from the foothills, across the "fall line" and to the flat Coastal Plain, the Roanoke River changes from narrow and lively to broad and slow. There are 11 major reservoirs in the North Carolina portion of the Roanoke. Most are located in the upper portion of the basin on tributaries of the Dan and Roanoke rivers.

MELISSA MCGAW, NCWRC



*The brilliant prothonotary warbler is known locally as "swamp canary."*

Diversity is not limited to the lower Roanoke. Three rare caddisflies are found in Cascade Creek within Hanging Rock State Park in the





KEN TAYLOR, NCVRC

*The Sauratown Mountains at Hanging Rock*



BILL LEA

*Great blue heron*

upper basin's Stokes County. And several rare and endemic fish live in a section of the Dan River that flows through the park—including the riverweed darter, bigeye jumprock and Roanoke hog sucker. A portion of the upper Dan is classified as trout waters by the state. A section of Aarons Creek in Granville County supports rare freshwater mussels, including the Atlantic pigtoe and the brook floater. Rare mussels and the riverweed darter also live in Country Line Creek in Caswell County.

The most prominent feature of Hanging Rock State Park is its series of steep, quartzite-capped ridges dissected by Cascade and Indian Creeks. Portions of these two streams were reclassified recently by the state as Outstanding Resource Waters and will receive special protection due to excellent water quality and rare aquatic species. The scenic Sauratown Mountains, as the park's peaks are called, are often referred to as the “mountains east of the mountains” because of their location in the middle Piedmont.

Frequent and serious flooding has defined the Roanoke River Basin and was relentless during the first half of the 20th century. After a devastating flood in August 1940, residents in the floodplain called on the U.S. Congress for help. A string of dams was planned to control flooding in the basin. In 1953, the John H. Kerr Dam was completed. Two more dams and reservoirs, Lake Gaston and Roanoke Rapids Lake, were completed in 1955 and 1963, respectively. The three lakes together submerge 82 miles of the Roanoke River between South Boston, Va., and Roanoke Rapids. The lakes are important sources of hydroelectric power as well as popular recreation areas.

GEORGE HUMPHRIES



*Bald cypresses find anchor along the shore of Albemarle Sound.*





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*A paddler skims the surface of Kerr Lake.*



CHARLES BRASWELL, JR.

*Moratock Park reflects on the Roanoke River near Williamston.*

But flood control and other benefits upstream have cost the river below. The amount and timing of water release from the dams have affected the web of life downstream. Fish, wildlife, trees and other plants have become adapted to seasonal fluctuations of high and low water. When these natural patterns are changed significantly over a long time, it affects both the health and diversity of plant and animal life in the floodplain. The challenge is managing the release of water from dams in a way that balances human needs with the needs of the entire ecosystem.

Altered flows, along with overfishing and habitat loss, contributed to a serious decline of the striped bass fishery in the 1980s and early 1990s. Thanks to strict harvesting regulations and managed releases of water from dams during the spawning season, the striper fishery on the Roanoke has recovered. Populations of hickory shad also have rebounded, although American shad are still in trouble and sturgeon are nonexistent.



ILLUSTRATION BY DUANE RAVER

Residents in the Roanoke River Basin face several challenges. In 1997, 43 public water systems served 114,000 consumers living in the basin. The demand for water from these systems is expected to increase as much as 55 percent by 2020. Thirsty outsiders also are looking toward the Roanoke basin as a water source. In

## ROANOKE RIVER BASIN

You may notice “Roanoke River Basin” signs posted along highways throughout the basin. The signs are part of a statewide educational program to raise public awareness that we all live in a river basin and that our individual actions affect the quality of its waters. Signs in all 17 river basins of the state are made possible by a partnership between the N.C. Department of Environment and Natural Resources and the N.C. Department of Transportation, along with funds from the Federal Transportation Enhancement Program.



CARL V. GALIE JR.

*The sky paints an  
amber veneer on a  
peaceful Roanoke.*

1997, the City of Virginia Beach, Va., obtained the right to withdraw up to 60 million gallons of water each day from Lake Gaston following an involved and hotly contested Federal Energy Regulatory Commission approval process. Opponents contended that the withdrawal could cause reduced flows on the Roanoke River downstream, stressing the environment and economy. Urban areas in North Carolina also have expressed interest in withdrawing water from the Roanoke basin.

Destruction of aquatic habitat is the most prevalent water quality problem in the basin. It is caused in part by sedimentation, which results from a variety of land-use practices including agriculture, forestry and construction. Moreover, high levels of dioxin, selenium and mercury have prompted several fish consumption advisories in the basin.

Many citizens are working to protect the Roanoke River Basin. Most recently, one company scrapped its plan to operate barges on 18 miles of the Roanoke River after meeting intense public concern over harm to the environment. At least 15,000 members of fishing and conservation groups organized to prevent barging on the river.

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CARL V. GALIE JR.

## WHERE SHOULD I GO ?

What makes the Roanoke River Basin so special? See for yourself. The basin contains the 51,321-acre Roanoke River National Wildlife Refuge. Also, visit these Environmental Education Centers to discover more about your ecological address:

- Betsy-Jeff Penn 4-H Education Center
- Kerr Lake State Recreation Area
- Hanging Rock State Park
- Roanoke/Cashie River Center

For more information about Environmental Education Centers in North Carolina, call the Office of Environmental Education at (919) 733-0711, or check out the Web site at <http://www.ee.enr.state.nc.us>

## WHAT CAN I DO ?

- Do your part to positively influence water quality in the Roanoke River Basin.
- Get involved in basinwide planning or a local organization interested in rivers and streams in the river basin.
- Take the time to learn about the environmental consequences of your actions.

## WHO SHOULD I CONTACT ?

*The following contacts can provide information:*

- North Carolina Office of Environmental Education, Department of Environment and Natural Resources, (800) 482-8724 or (919) 733-0711, Web site: <http://www.ee.enr.state.nc.us>
- Stream Watch Program, Division of Water Resources, Department of Environment and Natural Resources, (919) 733-4064, Web site <http://www.ncwater.org>
- Albemarle-Pamlico National Estuary Program, (919) 733-5083 Ext. 585, <http://h2o.enr.state.nc.us/nep/>
- Roanoke River Partners, (252) 794-2793, <http://www.roanokeriverpartners.org>
- Rockingham County Watershed Preservation Coalition Inc., (336) 992-8734, <http://www.geocities.com/Yosemite/Rapids/4604/>
- Roanoke River Basin Association, [www.rrba.org](http://www.rrba.org)
- Albemarle Environmental Association, <http://members.inteliport.net/~aea/index.htm>
- Partnership for the Sounds, (888) 737-0437, <http://www.albemarle-nc.com/pfs/about.htm>
- The Nature Conservancy Roanoke River Project Office, (252) 794-1818, <http://nature.org/wherewework/northamerica/states/northcarolina/>

To find out more about water quality in the Roanoke River Basin, contact the Division of Water Quality's Basinwide Planning Program, Department of Environment and Natural Resources, at (919) 733-5083, Web site <http://h2o.enr.state.nc.us/basinwide/>.