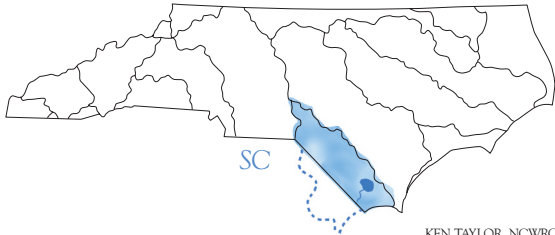


LUMBER RIVER BASIN

The Lumber River Basin is a rich ecological expanse of flat land, gently rolling hills and swamp waters. Part Sandhills but mostly Coastal Plain, the basin is a flatwater paddler's dream and a naturalist's wonderland.



KEN TAYLOR, NCWRC



Lumber River,
Robeson County

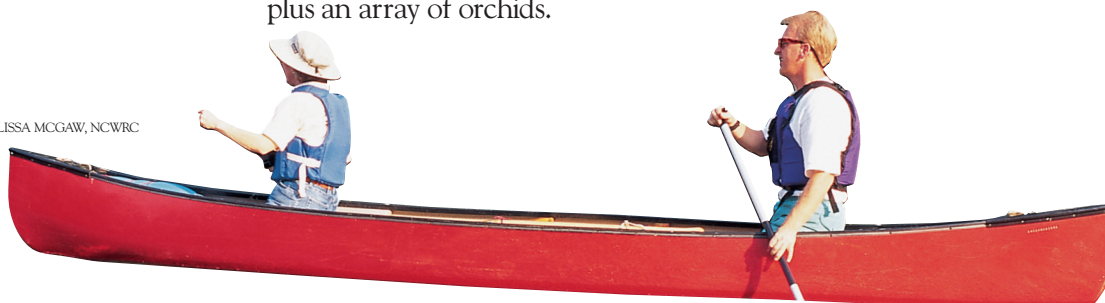
Even though it is named for the Lumber River, the Lumber River Basin is actually four distinct river systems that include the Lumber River, the Waccamaw River, the headwaters of the Little Pee Dee River and a system of small coastal rivers that empty into the Atlantic.

The Lumber River is one of the state's four Natural and Scenic Rivers, and an 81-mile portion of the river is designated a National Wild and Scenic River. In bestowing the federal designation, the National Park Service determined the Lumber River has "outstandingly remarkable" resources, which include recreation, fish, wildlife, scenery and botany. The wildness of the Lumber and Waccamaw rivers draws canoeists and other paddlers by the thousands.

The Waccamaw River flows from Lake Waccamaw, the most biologically diverse lake in North Carolina and one of the most species-rich lakes in the Western hemisphere. It has 52 fish species, 11 species of snails and 15 species of mussels and clams, many of them rare and endemic

to the lake, meaning they have been found nowhere else on earth. The Waccamaw's watershed also includes a large portion of the Green Swamp. In wet savannas of this swamp, scientists have recorded the highest density of small-scale plant diversity in North America — more than 40 species in a single square meter. Some of these intriguing plants include insect-eaters such as flytraps, pitcher plants and sundews, plus an array of orchids.

MELISSA MCGAW, NCWRC



profile:

Total miles of streams and rivers: 2,247

Total acres of lakes: 9,865

Total acres of estuary: 4,848

Municipalities within basin: 51

Counties within basin: 9

Size: 3,329 square miles

Population: 472,276 (2010 U.S. Census)

Biodiversity

Biodiversity refers to all of the organisms (plants, animals, fungi, bacteria, etc.) and ecosystems that can be found in a region. A high level of biodiversity indicates that natural systems are in balance and that the environment is healthy. We depend on biodiversity for many natural goods and services, such as the pollination of crops and wild plants, the cycling of air and water, the regeneration of soil and the development of new foods and medicines.

THOSE *Mysterious* CAROLINA BAYS

About the time scientists started studying craters on the moon, the public began debating the earthly mystery of the Carolina bays. Captured in a 1930s aerial photograph, these oval-shaped depressions were curious repeating patterns scattered along the East Coast and concentrated in the Carolinas. Wild theories of their origins abounded. Were they dinosaur footprints? Prehistoric whale wallows? Spaceship landing pads? Today, the most widely accepted theory is that prevailing Ice Age winds reshaped existing bodies of water into elliptical pools. These unique wetlands are important breeding grounds for frogs and salamanders. They range in size from 45 feet to 7 miles long (Lake Waccamaw).

Horseshoe Lake, Bladen County



KEN TAYLOR, NCWRC

Oh, Blackwater

Tributaries and smaller streams that form within Coastal Plain swamps receive lots of decaying organic material. Tannins from this material impart a dark color to the water. These tannin-tinted waters are known as “blackwater” streams.

MELISSA MCGAW, NCWRC



Lake Waccamaw is a special kind of wetland known as a Carolina bay. Of puzzling origin, Carolina bays are elliptical depressions that collect rainwater throughout the year. Concentrated in the Carolinas, many of these bays are scattered throughout the Lumber River Basin. Lake Waccamaw is the largest permanently water-filled Carolina bay in North Carolina. The degree of aquatic diversity is unusual for a Carolina bay, most of which are highly acidic and therefore inhospitable to many plants and animals. Outcrops of limestone on the northeast shore of Lake Waccamaw lower the acidity of the water to a neutral pH, allowing diversity to thrive. Two fish, the federally threatened Waccamaw silverside and the Waccamaw darter, are endemic. Two mussels, the Waccamaw spike and the Waccamaw fatmucket, are also found nowhere else in the world. Even though an estimated 778 million spike mussels live on the lake bottom, ecologists warn that just one catastrophic event could have an irreversible effect on a species with such a limited distribution.

The lake and the headwaters of the Waccamaw River make up Lake Waccamaw State Park. Just below the lake, River Swamp is the largest remaining blackwater cypress-gum swamp in the state. The Waccamaw River is one of North Carolina’s largest blackwater rivers. Its tea-colored waters are nearly free of sediment and would be clear if not for the stain of decayed organic matter from surrounding swamp forests. About 90 percent of all the waters in the Lumber River Basin are swamp waters.

The northwestern tip of the basin includes part of Sandhills Game Land and its longleaf pine communities, another rare and diminishing habitat. The coastal part of the Lumber River Basin includes Boiling Springs Lake and other scattered Carolina bays. The American alligator, which inhabits Lockwoods Folly River, is state-listed as a threatened species. Coastal North Carolina, including the Lumber River Basin, is the northernmost part of its natural range. The Lumber



River Basin also contains three animals on the state Endangered Species List—the yellow lampmussel and Savannah lilliput, both freshwater mussels, and the West Indian manatee, a visitor to coastal estuaries.

Water quality in the Lumber River Basin is generally good. Growth in human population and animal farms, however, has been significant. The number of people in the basin is expected to increase 30 percent by 2020.

For now, the water quality in the basin’s streams and rivers is good enough to support swimming and boating as well as shellfish harvesting in some estuary areas. There are some fish species, however, that have been contaminated by mercury. Power plant and incinerator emissions are important sources of this pollutant. Certain household and medical wastes also contain mercury. State officials advise limited consumption of largemouth bass, chain pickerel and bowfin throughout the basin because of high levels of mercury in their flesh.

Another concern in the basin is that many shellfishing areas in coastal rivers are closed due to high levels of fecal coliform bacteria. This kind of bacteria indicates contamination from animal, and possibly human, waste. Runoff from animal lots and outdated or malfunctioning septic systems are potential sources of contamination.

Since some of these pollution sources involve leaked household chemicals and household solid waste, the actions of each person in the basin can make a difference. The residents of the Lumber River Basin have the opportunity to protect their waters as the region grows. They are learning valuable lessons from other river basins that are now grappling with polluted wastewater and development issues. Many local citizens are working together to preserve and protect the waters of the Lumber River Basin. See the list on the back of this brochure.

MELISSA MCGAW, NCWRC



Pitcher plant

MELISSA MCGAW, NCWRC



Venus flytrap

THE Kudzu of the WATER

Hydrilla, originally from Asia, showed up in North Carolina waters more than 30 years ago. A small fragment of hydrilla can grow into a whole colony of plants and clog a waterway from top to bottom in just a few years, damaging fisheries and vegetation by creating a tangled web that smothers aquatic species and blocks sunlight. Once the weed becomes established in an area, boating and water recreation becomes nearly impossible. Though the plant can spread by natural causes, the most common cause of spreading is by human activities. Signs posted on public boat ramps advise boaters about the need to inspect boats, trailers and gear and to remove any sign of the weed before leaving the site. Eradicating the plant through the use of herbicides or by using a fish called grass carp is an expensive and lengthy process. Hydrilla has been a serious problem in the Roanoke River Basin since the 1990s. It is now spreading within the Chowan and beginning to colonize shoreline along the Albemarle Sound. Biologists fear that it could find its way into pristine lakes such as those in and around Pocosin Lakes National Wildlife Refuge.



Lake Waccamaw, Columbus County

CHARLES BRASWELL JR.

WHERE SHOULD I GO ?

What makes the Lumber River Basin special? See for yourself. Visit these Environmental Education Centers to discover more about your ecological address:

- Lake Waccamaw State Park
- Lumber River State Park
- Museum of Coastal Carolina and Ingram Planetarium
- North Carolina Museum of Natural Sciences at Whiteville

For more information about Environmental Education Centers in North Carolina, check out the Office of Environmental Education and Public Affairs' website at www.eenorthcarolina.org.

HOW CAN I HELP ?

You can gain a sense of community pride by learning more and helping to protect streams, rivers and lakes in the Lumber River Basin. The contacts listed below can help you do just that. To find out about local river organizations and conservation groups, contact your local soil and water conservation district.

Clean Water Management Trust Fund
<https://cwmtf.nc.gov/>

Lumber River Basinwide Plan*
<https://deq.nc.gov/about/divisions/water-resources/planning/basin-planning>

North Carolina Association of Soil & Water Conservation Districts
www.ncaswcd.org

North Carolina Division of Water Resources Education Programs
<https://deq.nc.gov/about/divisions/water-resources/water-resources-training/public-involvement/project-wet>

North Carolina Water Science Center
<http://nc.water.usgs.gov/>

**Basinwide water quality planning is a nonregulatory, watershed-based approach to restoring and protecting the quality of North Carolina's surface waters. The N.C. Division of Water Resources welcomes community input.*

▶ To order additional brochures on any of North Carolina's 17 river basins, a general river basin booklet or a poster, fill out the online order form at www.eenorthcarolina.org.

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