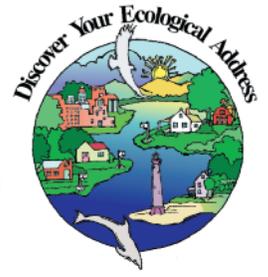
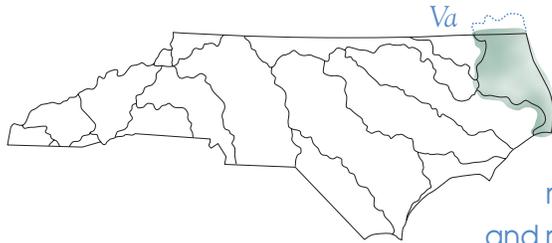


PASQUOTANK RIVER BASIN



What North Carolina river basin is 41 percent water, contains more national wildlife refuges than any other and has the fewest people? If you guessed the Pasquotank



River Basin, you're right. But these facts probably escape the notice of the millions of visitors who flock to the basin's Outer Banks every year. They need only the region's reputation for unsurpassed beauty and rich natural heritage to entice them.

profile:

Total miles of streams and rivers: 2,000

Total acres of estuary: 918,500

Total miles of coastline: 107

Municipalities within basin: 11

Counties within basin: 10

Size: 3,366 square miles

Population: 118,913 (2000 U.S. Census)



BILL LEA

Bodie Island Lighthouse, Cape Hatteras National Seashore (left); Jockey's Ridge, the tallest natural sand dune system in the eastern United States, fluctuates between 80 and 120 feet high (below).

Most tourists come to see the lighthouses, and to fish, hang-glide, windsurf and swim. They scale the tallest natural sand-dune system in the eastern United States (Jockey's Ridge). They travel to the barrier islands to witness the fall migration of thousands of ducks, geese and swans and to pay tribute to the first powered flight by humans—the one Orville and Wilbur Wright made at Kill Devil Hills in 1903. Others take the bridge across the sound to the site of the first English settlement in America (Roanoke Island, 1585). However, other tourists travel to the mainland to glimpse the basin's lesser-known treasures—the pristine waters of the Alligator River and its newest residents, red wolves; the country's oldest operating canal (Dismal Swamp); and Native American cypress canoes as old as the pyramids (Lake Phelps).



BILL LEA



KEVIN ADAMS

Snow geese at Pea Island National Wildlife Refuge (above); Great Dismal Swamp National Wildlife Refuge (below)

CHARLES BRASWELL JR.



Probably the most famous “new” residents of the Pasquotank River Basin are endangered red wolves. The red wolf’s range once included all of the Southeastern United States. During the 1960s, the species was brought to the brink of extinction as a result of aggressive predator control programs and clearing of forested habitat. To preserve the species, the U.S. Fish and Wildlife Service captured as many red wolves as possible. Only 14 red wolves formed the nucleus of a captive-breeding program. In 1987, four pairs of red wolves were reintroduced into the wild at Alligator River National Wildlife Refuge. The following year, the first litter of wild pups was born at the refuge. As of 2010, approximately 130 wild red wolves live in northeastern North Carolina.

Return of the Howlers



BILL LEA

The Pasquotank River Basin boasts many treasures, all connected to its diverse aquatic resources. The basin is characterized by low-lying lands and vast, open waters; in fact, 41 percent of the basin’s land is submerged by rivers, streams and estuaries. Although the basin is named for the Pasquotank River, it contains other major rivers, including the Alligator, Perquimans, Little, Yeopim, Scuppernong and North rivers. All of these rivers empty into Albemarle, Currituck, Roanoke or Croatan sounds.

Another outstanding water resource is Lake Phelps, the second largest natural lake in the state at 16,600 acres. Contained within Pettigrew State Park, Lake Phelps holds acidic waters typical of Coastal Plain lakes. Unlike those lakes, however, which are stained by tannic acid, Lake Phelps is crystal-clear. It was through this lens that someone first spied an ancient dugout canoe outlined on the lake bottom. Thirty canoes have been found to date—the longest one 37 feet and the oldest 4,390 years old. Archaeologists believe that Native Americans split cypress logs and alternately burned and scraped their interiors to make the canoes. Two are displayed at the park’s visitor center.

Dugout canoe



PETTIGREW STATE PARK

Perhaps the most venerable tract of wetlands in the basin is the Great Dismal Swamp, from which the Pasquotank River originates. Once covering 2,000 square miles, the entire swamp has been logged at one time or another. George Washington formed a company in 1763 to drain the swamp. Reduced to 166 square miles today, it remains the largest protected swamp wilderness in the eastern United States—the

Great Dismal Swamp National Wildlife Refuge. A shared resource of two states, the refuge contains 38,000 acres in North Carolina and 82,000 acres in Virginia. Slaves dug a 22-mile-long canal through the Dismal Swamp to connect the Pasquotank River and the Albemarle Sound with Norfolk and the Chesapeake Bay. Opened in 1805, this passage provided a reliable alternative to navigating the harrowing shoals and inlets of the Outer Banks, where at least 400 ships wrecked between 1526 and 1940. The completed canal became the foundation of today's Atlantic Intracoastal Waterway.



GEORGE HUMPHRIES

Atamasco lilies, Pettigrew State Park

Adjacent to Dismal Swamp National Wildlife Refuge is the Dismal Swamp State Park. With more than 20 miles of hiking and biking trails, there are plenty of opportunities to explore the majestic swampy forest. The 22 square mile park helps to protect this pristine habitat as well as some of its special inhabitants that include snakes, turtles and bobcats.



American alligator

BILL LEA

Two rare sea turtle species come ashore to lay eggs on ocean beaches of the Pasquotank River Basin: loggerhead and green turtles, which are both federally listed as threatened species. The Kemp's ridley sea turtle, which is federally listed as endangered, is occasionally seen in sounds. The federally endangered hawksbill and leatherback sea turtles are rare visitors to the sounds. The West Indian manatee, an aquatic mammal federally listed as endangered, typically lives in the warmer waters of Florida and other Gulf states, but this migratory mammal can be seen occasionally in North Carolina's inlets, estuaries and rivers between June and October. Manatees' tendency to rest near the surface of the water makes them vulnerable to injury from boat propellers.



KEVIN ADAMS

Nags Head Woods Nature Preserve



Loggerhead sea turtle

U.S. FISH AND WILDLIFE SERVICE



Manatee

BILL LEA



GEORGE HUMPHRIES



GEORGE HUMPHRIES

GORDON KREPLIN



Cypress trees along the shore of Lake Phelps (above left); live oak at Cape Hatteras Lighthouse, Cape Hatteras National Seashore (above right); sunset over the Pasquotank River (left)

Water quality is generally good in the Pasquotank River Basin. The state has designated many water bodies as Outstanding Resource Waters, meaning they have excellent water quality or other unique features. The Alligator River and many of its tributaries are designated in part because they are major spawning areas for anadromous fish, those species that live as adults in the ocean but migrate back to the freshwater streams of their birth to breed. Particularly important anadromous species in the Alligator include blueback herring and alewife. Lake Phelps is another of the basin's Outstanding Resource Waters.

Some threats to water quality exist in the basin. Habitat destruction—including the loss of riparian (streamside or shoreline) vegetation, straightening of streams and erosion of banks—is the primary water quality issue in the basin. Declines in aquatic vegetation such as submerged seagrasses and intertidal marsh grasses are a problem throughout the basin, particularly in Currituck Sound. An important source of food and shelter for fish, birds and other wildlife, this vegetation is sensitive to chemical pollution as well as smothering by soil runoff. Also, some shellfish beds in the basin are closed to harvest due to high levels of fecal coliform, an indicator of possible pollution from animal or human wastes.

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.



GEORGE HUMPHRIES

Sea oats and cumulus clouds at Hatteras Island (above); sunrise over pier at Nags Head (below)



CHARLES BRASWELL JR.

As population increases in the beach communities, wastewater treatment will be a critical issue. The most densely populated and highest growth areas of the basin are the Outer Banks towns of Nags Head, Kitty Hawk and Kill Devil Hills. Individuals can help ease development pressures by learning more about the value of urban planning and stormwater management and by getting involved in water quality protection efforts.

Thanks to work by the Albemarle-Pamlico National Estuary Program, stakeholders in Virginia and North Carolina have pledged to work together to protect shared water resources. Publicly and privately supported projects to improve and protect water quality in the basin include planted shoreline buffers, greenways, restored wetlands and improved wastewater treatment. For more information about initiatives in the Pasquotank River Basin, see the contact list on the back page.

State of North Carolina: Governor Pat McCrory • **North Carolina Department of Environment and Natural Resources:** Secretary John E. Skvarla, III • **Office of Environmental Education and Public Affairs:** Program Manager Lisa Tolley; Project Manager Ian Brown • Editor Carla Burgess • Designer Kimberly KC Schott, Red Gate Design • *Special Thanks* North Carolina Wildlife Resources Commission, North Carolina Division of Water Quality and North Carolina Natural Heritage Program • **Date:** 2013 • 5,500 copies of this public document were printed at a cost of \$1,324.12 or 0.241 per copy. • **This publication was funded through a Walmart Stormwater Compliance Grant.**

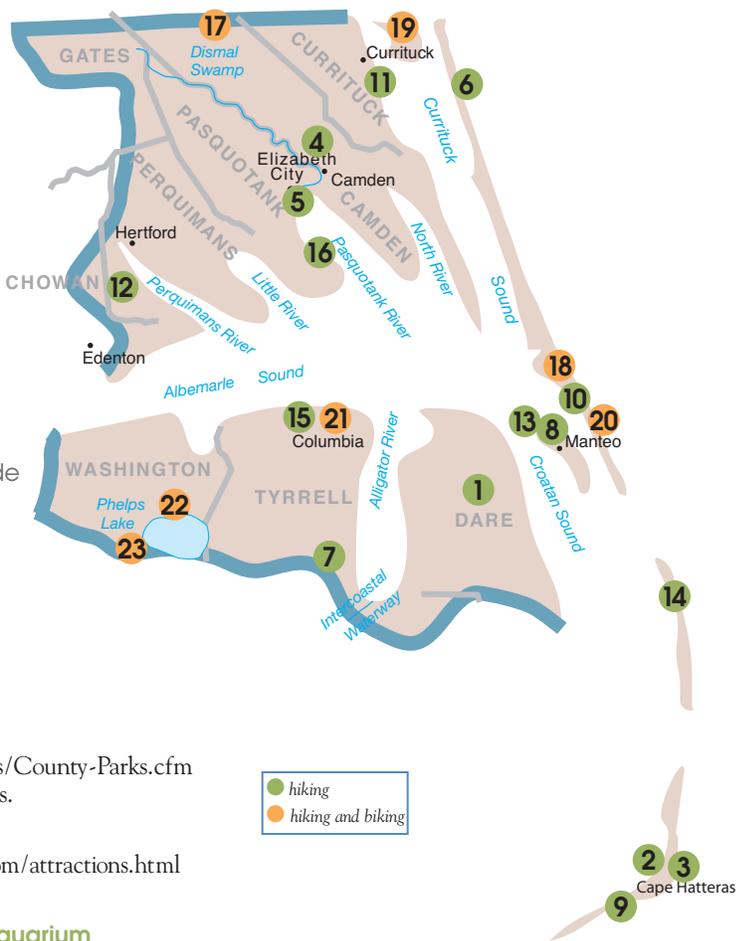
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HIKING & BIKING



in the Pasquotank River Basin

The Pasquotank River Basin offers many opportunities to enjoy and explore nature through walking, hiking and biking. This list includes places for easy to moderate activity. Many sites include views of streams, rivers, creeks, lakes, wetlands and estuaries.



● HIKING ●

1 Alligator River National Wildlife Refuge

www.fws.gov/alligatorriver/ ● Two .5-mile, wheelchair-accessible trails with marsh and creek views.

2 Buxton Woods Coastal Reserve

www.nccoastalreserve.net/ ● 1,007 acres ● 5 miles of trails within maritime forest bordering Cape Hatteras National Seashore.

3 Cape Hatteras Lighthouse

www.nps.gov/caha/ ● .6-mile nature trail loop.

4 Causeway Park

www.cityofec.com/ ● 300-yard, wheelchair-accessible boardwalk into marsh and along Pasquotank River.

5 College of the Albemarle Fenwick-Hollowell Wetlands Trail

www.discoverelizabethcity.com/thingstodo/thingstodo-outdoor.html ● .5-mile wheelchair-accessible boardwalk along Pasquotank River.

6 Currituck Banks National Estuarine Research Reserve

www.nccoastalreserve.net ● 965 acres ● .3-mile wheelchair-accessible boardwalk, with a 1.5-mile primitive trail beyond.

7 Emily and Richardson Preyer Buckridge Reserve

www.nccoastalreserve.net ● 27,372 acres ● Hiking on old logging roads.

8 Fort Raleigh National Historic Site

www.nps.gov/fora/ ● 143 acres ● .3-mile looped nature trail to Roanoke Sound and 1.25-mile hiking trail.

9 Frisco Native American Museum

<http://nativeamericanmuseum.org/naturetrail.html> ● Nature trails wind through several acres of maritime forest with a stream crossing and pond overlook.

10 Jockey's Ridge State Park

www.ncparks.gov ● 2.5 miles of trails, plus a 360-foot boardwalk.

11 Maple Park

www.co.currituck.nc.us/County-Parks.cfm ● 3 miles of hiking trails.

12 Missing Mill Park

www.visitperquimans.com/attractions.html ● .25-mile nature trail.

13 North Carolina Aquarium on Roanoke Island

www.ncaquariums.com/roanoke-island ● .25-mile wooded nature trail along Croatan Sound.

14 Pea Island National Wildlife Refuge

www.fws.gov/peaisland/ ● 5,834 acres ● Two .5-mile, wheelchair-accessible trails with waterfowl-observation platforms. Hiking on several miles of service roads.

15 Scuppernong River Interpretive Boardwalk

www.fws.gov/pocosinlakes/public.html ● .75-mile wheelchair-accessible loop trail meanders along the Scuppernong River through a cypress swamp.

16 Weeksville Boardwalk

www.discoverelizabethcity.com/things-todo/thingstodo-outdoor.html ● 300-foot-long, wheelchair-accessible boardwalk on Newbegun Creek.

● HIKING and BIKING ●

17 Dismal Swamp Canal Trail

www.dismalswamp.com ● 3-mile paved, wheelchair-accessible trail. Free bike rentals at Welcome Center.

18 Kitty Hawk Woods Coastal Reserve

www.nccoastalreserve.net ● 1,824 acres ● 4 miles of trails; biking allowed on designated trails.

● hiking
● hiking and biking

19 Mackay Island National Wildlife Refuge

www.fws.gov/mackayisland/ ● 8,219 acres ● 10.3 miles of trails, including .3-mile loop with overlook.

20 Nags Head Woods

www.nature.org/ourinitiatives/regions/north-america/unitedstates/northcarolina/placeswe-protect/index.htm ● 1,092 acres ● 5 miles of hiking trails through rare maritime forest; biking allowed on 2 miles of access road.

21 Palmetto Peartree Preserve

www.conservationfund.org/projects/palmetto-peartree-preserve/ ● 10,000 acres ● .25-mile boardwalk trail to Albemarle Sound and .75-mile boardwalk trail through pine forest; dirt logging roads for additional hiking.

22 Pettigrew State Park

www.ncparks.gov ● 5,000 acres ● 8.7 miles of trails, plus short wheelchair-accessible boardwalk; 5.6 miles open to biking.

23 Pocosin Lakes National Wildlife Refuge

www.fws.gov/pocosinlakes/ ● 110,000 acres ● Hiking and biking on refuge access roads.

PADDLING



in the Pasquotank River Basin

The Pasquotank River Basin offers many opportunities for paddling creeks, ponds, streams, rivers, lakes and estuaries. The places included here offer public access areas maintained by state, federal or local governments. Privately operated marinas and boat docks may also be available. These trails and lakes are suitable for easy to moderate paddling.

1 Big Flatty Creek Trail*

www.ncsu.edu/paddletails/albemarle/a9.html

● 2-mile paddle trail.

2 Dismal Swamp State Park

www.ncparks.gov ● 6-mile paddle trail.

3 Kendrick/Mackeys Creek

www.ncsu.edu/paddletails/ ● 6.6-mile paddle trail.

4 Lake Phelps Canoe Trail/Pettigrew State Park

www.ncparks.gov ● 7-mile paddle trail.

5 Little River Trail*

www.ncsu.edu/paddletails/ ● 4-mile paddle trail.

6 Milltail Creek Trail (Alligator River National Wildlife Refuge)

www.fws.gov/alligatorriver/paddle.html ● 10-mile paddle trail.

7 Missing Mill Park and Herford Municipal Park

www.visitperquimans.com/attractions.html ● Access to the Perquimans River

8 Palmetto Peartree Preserve

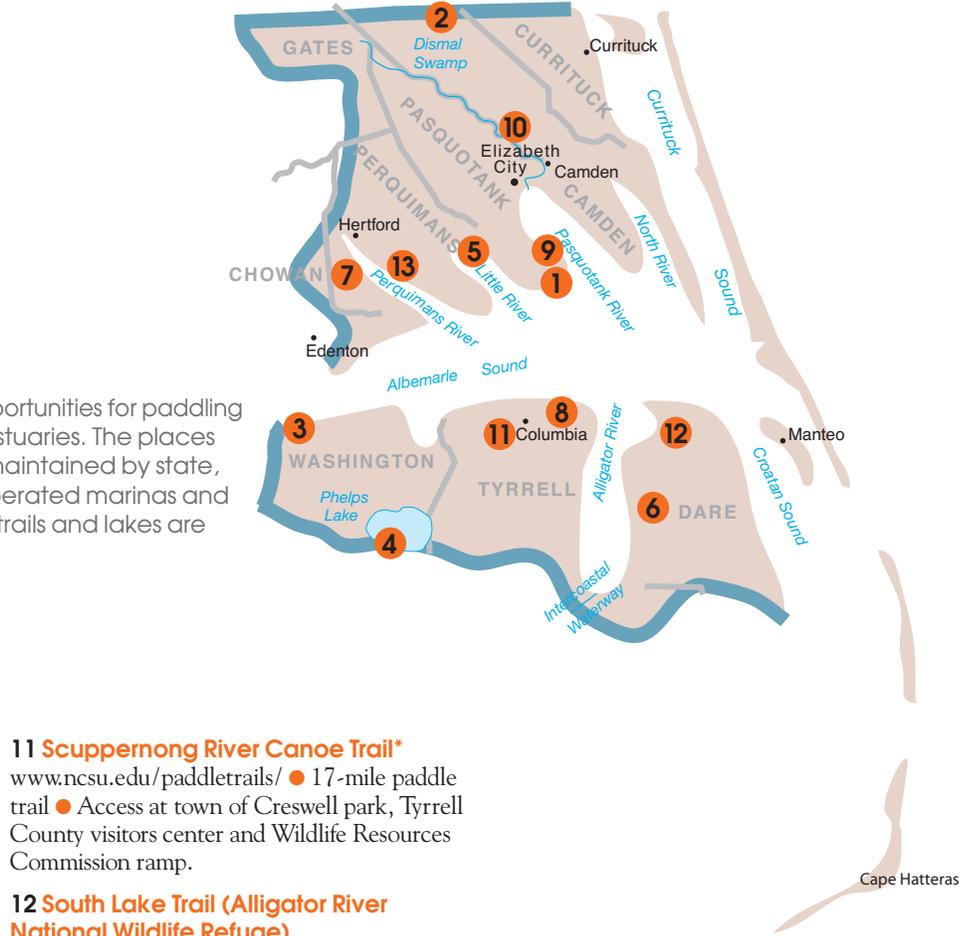
www.conservationfund.org/projects/palmetto-peartree-preserve/ ● Access to secluded lake and 14 miles of Albemarle Sound shoreline via the preserve's paddle trail.

9 Sawmill Park

www.cityofec.com/index.asp?Type=B_BASIC&SEC=%7B79C84DBC-CAC5-4B5A-A915-91FD3E620A24%7D ● Boat launch on Pasquotank River.

10 Sawyers Creek Trail (tributary of Pasquotank)*

www.ncsu.edu/paddletails/ ● 3-mile paddle trail.



11 Scuppernong River Canoe Trail*

www.ncsu.edu/paddletails/ ● 17-mile paddle trail ● Access at town of Creswell park, Tyrrell County visitors center and Wildlife Resources Commission ramp.

12 South Lake Trail (Alligator River National Wildlife Refuge)

www.fws.gov/alligatorriver/paddle.html ● 14-mile paddle trail.

13 Winfall Landing Park

www.pathsofperquimans.org/maps.html ● Access to Perquimans River.

*Denotes site with public access areas maintained by the N.C. Wildlife Resources Commission. For directions to boat ramps, visit www.ncwildlife.org and click on Boating/Waterways, then Maps/Location.

► For more information about coastal plain paddle trails, visit www.ncpaddletails.info/.

BETH CRANFORD



Boardwalk along the College of the Albemarle / Albemarle Hospital Regional Fitness Trail

WHERE SHOULD I GO



CHARLES BRASWELL JR.

Windsurfing

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

- Alligator River National Wildlife Refuge
- Columbia Theater Cultural Resources Center
- Dismal Swamp State Park
- Eastern 4-H Environmental Education Center
- Frisco Native American Museum and Natural History Center
- Jockey's Ridge State Park
- North Carolina Aquarium on Roanoke Island
- Outer Banks Center for Wildlife Education
- Pea Island National Wildlife Refuge
- Pettigrew State Park
- Pocosin Arts Folk School
- Pocosin Lakes National Wildlife Refuge
- Walter B. Jones Sr. Center for the Sounds

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 Pasquotank 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. To find out about how you can get involved in local waterway and other litter cleanups, contact North Carolina Big Sweep.

Albemarle-Pamlico National Estuary Program

<http://portal.ncdenr.org/web/apnep>

North Carolina Big Sweep

www.ncbigssweep.org/

Clean Water Management Trust Fund

www.cwmtf.net/

North Carolina Stream Watch

www.ncwater.org/Education_and_Technical_Assistance/Stream_Watch

Division of Water Quality, Stormwater and Runoff Pollution

www.ncstormwater.org/

North Carolina Water Science Center

<http://nc.water.usgs.gov/>

N.C. National Estuarine Research Reserve/ N.C. Coastal Reserve

www.nccoastalreserve.net

Pasquotank River Basinwide Planning

<http://portal.ncdenr.org/web/wq/ps/bpu/basin/pasquotank>

North Carolina Association of Soil & Water Conservation Districts

www.ncaswcd.org

**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 Quality 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.