

Executive Summary

**An Inventory of Significant Natural
Areas in Wake County,
North Carolina**

North Carolina Natural Heritage Program

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SIGNIFICANT NATURAL HERITAGE SITES OF WAKE COUNTY

Wake County is located in east-central North Carolina in the Piedmont ecoregion, though the extreme southern tip is often considered to be in the Coastal Plain. The diversity of community types found within Wake County can partly be attributed to its highly varied geology. The terrain is gently rolling, with steeper areas along creeks, where the banks can rise up to 100 feet above the stream channel. The elevation in Wake County ranges from 160 feet above sea level along the southeast border to 540 feet in the northwest portion of the county. Raleigh is situated in the geographic center of the county, at an average elevation of approximately 350 feet.

Eighty-five percent of Wake County lies within the Neuse River Basin; however, the southwestern corner of the county lies within the Cape Fear River Basin. Most of the waterways that cross the county flow in a southeasterly direction; this includes the Neuse River and its tributaries. There are no natural lakes in Wake County, but there are several large reservoirs, notably Harris Lake on Buckthorn Creek and Falls Lake on the Neuse River. Falls Lake provides drinking water for local communities and recreational opportunities for area residents. There are also several smaller, artificially created lakes and ponds throughout the county.

Wake County is the second most populous in North Carolina and is decidedly urban in character. From 1992 to 2002, the population of Wake County increased by 45.8%, making it the fastest-growing county in the state. Raleigh is the county seat as well as the state capital. In the past, much of the county was cleared for agriculture, but as the economy of the area changed from an agrarian one to a largely high-tech one, previously cultivated land was allowed to revert to forest. As recently as 1990, approximately half of the land area in Wake County was forested. However, within the last decade explosive development around Raleigh, Cary, and along the I-40 and US 70 corridors has resulted in the increasing conversion of these forested areas, as well as the remaining agricultural land, to commercial and residential developments. This expansion has been fueled by the growing concentration of biotechnology, biomedical, and computer and software companies in Wake County and neighboring Durham County. Today, only 17% of the land area of Wake County is used for agriculture.

Wake County has a fairly large number of high-quality Significant Natural Heritage Areas. This high number of significant sites attests to the great diversity of habitats still remaining in the county which include granitic flatrocks, steep slopes and bluffs, and “coastal plain” features such as longleaf pine stands and a stream with bald-cypress. A good number of these significant sites are already in conservation ownership in the county, in part due to the active land trust and conservation community.

Conducted by Harry LeGrand, Jr., with assistance from Christine Wiecek, and published in 2003, the Wake County inventory identified 48 Significant Natural Heritage Areas. As of 2008, a total of 47 Significant Natural Heritage Areas are documented in the county, with significance levels ranging from National to County.

For more information on the Wake County Inventory please contact the North Carolina Natural Heritage Program at 1601 MSC, Raleigh, N.C. 27699, (919) 715-8687 or visit our website at <http://www.ncnhp.org>.

Additional References

Oakley, S.C., H.E. LeGrand, Jr., and M.P. Schafale. 1995. An Inventory of Mafic Natural Areas in the North Carolina Piedmont. N.C. Natural Heritage Program, Division of Parks and Recreation, Raleigh, N.C.

LeGrand, H.E., Jr. 1987. Inventory of the Natural Areas of Wake County. Report prepared for Triangle Land Conservancy and N.C. Natural Heritage Program. Raleigh, N.C.

SIGNIFICANT NATURAL HERITAGE AREAS OF WAKE COUNTY

Aquatic Habitats

All Aquatic Habitats fall within North Carolina Public Waters.

Crabtree Creek Aquatic Habitat contains habitat for the following rare species: Atlantic pigtoe (*Fusconaia masoni*), creeper (*Strophitus undulatus*), notched rainbow (*Villosa constricta*). City of Raleigh's Crabtree Creek Greenway follows portions of this creek.

Little River Aquatic Habitat. The Little River is one of the largest tributaries of the Neuse River, and it supports an outstanding population of the Federal and State Endangered Dwarf wedgemussel (*Alasmidonta heterodon*), as well as a small population of the Federal and State Endangered Tar River spiny mussel (*Elliptio steinstansana*). Other rare mussel species include the Federal Species of Concern/State Endangered Green Floater (*Lasmigona subviridis*), Atlantic Pigtoe (*Fusconaia masoni*), and Yellow Lampmussel (*Lampsilis cariosa*); the Federal Species of Concern/State Threatened Yellow Lance (*Elliptio lanceolata*); the State Threatened Triangle Floater (*Alasmidonta undulata*); and the State Special Concern Notched Rainbow (*Villosa constricta*). Other rare animals include the Neuse River Waterdog (*Necturus lewisi*), Least Brook Lamprey (*Lamoptera aepyptera*), Carolina Madtom (*Noturus furiosus*), and Roanoke Bass (*Ambloplites cavifrons*).

Middle Creek Aquatic Habitat supports several rare animal species, including Atlantic Pigtoe, Yellow Lance, Triangle Floater, Eastern Lampmussel (*Lampsilis radiata radiata*), Roanoke Slabshell (*Elliptio roanokensis*), Carolina Madtom and the North Carolina Spiny Crayfish (*Orconectes carolinensis*).

Moccasin Creek Aquatic Habitat is significant due to its rare freshwater mollusks. Rare animals found here include the Dwarf Wedgemussel, Atlantic Pigtoe, Triangle Floater, the Creeper (*Strophitus undulata*), the Notched Rainbow, and the Neuse River Waterdog.

Swift Creek Aquatic Habitat is significant because it supports a number of rare mussel species. Rare mussels include the Dwarf Wedgemussel, Green Floater, Triangle Floater, Yellow Lance, Creeper, Atlantic Pigtoe, and Notched Rainbow, as well as the State Threatened Cape Fear Spike (*Elliptio marsupiobesa*) and Roanoke Slabshell (*Elliptio roanokensis*) and the uncommon Eastern Lampmussel (*Lampsilis radiata radiata*). Rare fish found here include the Carolina Madtom.

Granitic Flatrocks

Barham Granitic Flatrocks contains moderately extensive granitic flatrocks, on both east and west sides of the Little River, which passes over a rock in the site. Patches of Small's Portulaca (*Portulaca smallii*) are present in the natural area. This site is privately owned.

Fowlers Mill Creek Granitic Flatrocks consists of 6-7 granitic flatrocks, none of which is larger than 200 square feet. Typical flatrock vegetation can be found on this site. Part of this site is owned by Wake County (Little River Reservoir), the rest is privately owned.

Hodges Mill Creek Granitic Flatrocks is a somewhat linear series of granitic flatrocks on south and west facing slopes above Hodges Mill Creek. One flatrock is 2-3 acres in size, one of the larger rocks in the county. A considerable amount of Fragrant sumac (*Rhus aromatica*) occurs in woods adjacent to several flatrocks. This site is privately owned.

Lake Mirl Granitic Flatrocks support an important population of the rare Small's Portulaca (*Portulaca smallii*). This site is privately owned.

Mitchells Mill State Natural Area contains what may be the largest expanse of excellent quality Granitic Flatrock natural communities in North Carolina. These support the State Threatened Small's portulaca (*Portulaca smallii*) and Piedmont quillwort (*Isoetes piedmontana*). Most of the site is owned by the North Carolina Division of Parks and Recreation; this is a Registered Heritage Area. The remainder is owned by Wake County or is privately owned.

Old US 64 Granitic Flatrock is a granitic flatrock perhaps 200 yards long by 50 feet wide. Several hundred individuals of Small's Portulaca (*Portulaca smallii*) are present. Other typical flatrock flora are also present. This site is privately-owned.

Pulleytown Road Granitic Flatrocks and Beaver Pond lies near Mitchells Mill State Natural Area and contains a very significant population of Small's portulaca (*Portulaca smallii*). A beaver pond is also present on the site. This site is owned by Wake County.

Southwest Rolesville Granitic Outcrops is significant, as it is one of the largest clusters of flatrocks in the eastern Piedmont. This site is privately owned.

Temple Rock (or Temple Flat Rock) contains a good quality Granitic Flatrock natural community. The rare Small's portulaca (*Portulaca smallii*) grows at this site. The Triangle Land Conservancy owns this site.

The Rocks has one of the largest extents of a good quality Granitic Flatrock natural community in the state. The rare plant, Small's Portulaca (*Portulaca smallii*), occurs here. Part of the site is owned by Wake County; the remainder is owned by Triangle Land Conservancy and is a Registered Heritage Area.

Mafic Areas

Adam Mountain has significance due to its Ultramafic Outcrop Barren natural community. While this is a only marginally-developed example, it is the only example known from the North Carolina Piedmont. The State Threatened Low wild-petunia (*Ruellia humilis*) occurs here. The site is a Registered Heritage Area owned by the U.S. Army Corps of Engineers at Falls Lake.

Crabtree Creek/Ebenezer Church Road Slopes likely contains circumneutral soils derived from the underlying amphibolite. Natural Communities at this locale are Basic Mesic Forest, Mesic Mixed Hardwoods, Piedmont/Mountain Alluvial Forest, and Piedmont/Coastal Plain Heath Bluff community types. Uncommon species include Catawba rhododendron (*Rhododendron catawbiense*) and chinquapin oak (*Quercus muhlenbergii*). The rare glade milkvine (*Matelea decipiens*) is also present. This site is privately owned.

Swift Creek Bluffs contains a very mature Basic Mesic Forest natural community, as well as good quality Piedmont/Low Mountain Alluvial Forest and Floodplain Pool natural communities. Most of the site is by the Triangle Land Conservancy; the rest is privately owned.

Upper Barton Creek Bluffs and Ravine is significant because its soapstone outcrops help support an extensive and mature Basic Mesic Forest natural community. This is a Registered Heritage Area owned by the U.S. Army Corps of Engineers at Falls Lake.

Floodplains, Bluffs, and Uplands

Beaver Creek Floodplain contains three natural communities, with the Piedmont/Low Mountain Alluvial Forest being most extensive. There is a rather rare Mesic Mixed Hardwood Forest, Floodplain variant along the southern edge of the floodplain, and this stand contains the Significantly Rare Lewis' Heartleaf (*Hexastylis lewisii*). This site is owned by the U.S. Army Corps of Engineers and the American Tobacco Trail crosses the site.

Blue Pond Salamander Site (Sunset Lake) consists of two small wooded ponds that are seasonally inundated and are one of the most important amphibian breeding sites in the county, despite their location in the middle of a residential development. Seventeen amphibian species were encountered during the inventory, but their long-term population viability is unknown. A portion of the site is protected by the North Carolina Museum of Natural Sciences; the remainder is privately owned.

Great Bend of the Neuse Natural Area. The slopes above Falls Lake support a variety of Piedmont habitat types which provide many opportunities for nature interpretation and study. The natural area contains a Piedmont/Coastal Plain Acidic Cliff at and near Ziegler's Rock. Mesic Mixed Hardwood Forest is present in coves to the east, and there are a few very small Piedmont/Coastal Plain Heath Bluffs featuring *Kalmia latifolia*. This is a Registered Heritage Area owned by the U.S. Army Corps of Engineers.

Hemlock Bluffs State Natural Area contains steep, 80-foot-high, north-facing bluffs that support a disjunct population of eastern hemlock (*Tsuga canadensis*) 200 miles from its normal range in the mountains. The natural communities are small but good quality Piedmont/Coastal Plain Acidic Cliff and Piedmont Monadnock Forest types. Part of the site is owned by the North Carolina Division of Parks and Recreation; this is a Registered Heritage Area. The rest of the site is owned by the Town of Cary.

Hollemans Crossroads Salamander Pools consists of two small vernal pools that serve as breeding habitat for several species of amphibians, including four-toed salamander. This site is privately owned.

Hollemans Crossroads Slopes consists of many rather narrow ridges and ravines, including some steep slopes overlooking Harris Lake. Most of the slopes contain mature hardwood forests, over slightly acidic to nearly circumneutral soils in the Triassic Basin. The site contains a rare Wake County example of Basic Oak-Hickory Forest, as well as areas leaning more toward Dry Oak-Hickory Forest. This site is privately owned.

Jim Branch/Buckhorn Creek Forests consists of two nearly separate portions -- slopes along Buckhorn Creek (south of the road) and slopes and creek, with a heronry, along Jim Branch (north of the road). Both areas have fairly rich hardwood slopes. Along Jim Branch is a moderate-sized nesting colony of great blue herons. This site is privately owned.

Lake Johnson Nature Park contains hilly topography just south of the lake. Several specimens of bigleaf magnolia (*Magnolia macrophylla*) are present, as are 15-20 mature longleaf pines (*Pinus palustris*). A small creek in the site contains a Piedmont Boggy Streamhead community, featuring typical Coastal Plain species. This site is owned by the City of Raleigh.

Lake Raleigh Hardwood Forest contains Mesic Mixed Hardwood Forest with a rich herbaceous layer on north-facing slopes. A bottomland forest occurs at the upper end of lake. Umbrella magnolia is common with other rich herbaceous flora, including ten species of ferns. This site is owned by North Carolina State University.

Little Beaverdam Creek Slopes is a mature hardwood forest, mostly of good-quality Mesic Mixed Hardwoods. Many species of spring wildflowers are present on this site, some of which are rare. Part of this site is owned by the U.S. Army Corps of Engineers, the rest is privately owned.

Marks Creek Floodplain. Much of the site consists of beaver ponds, and a portion has been dammed to form Lake Myra. The State Special Concern least brook lamprey (*Lampetra aepyptera*) has been found in Marks Creek. The Federal and State Endangered Michaux's sumac (*Rhus michauxii*) occurs within this site, and a series of Granitic Flatrocks have been found within the more upland portions. Part of this site is owned by Wake County; the rest is privately owned.

Middle Creek Bluffs and Floodplain is a segment of wide floodplain and slopes that support extensive mature Mesic Mixed Hardwood Forest natural community and areas of good quality Piedmont/Low Mountain Alluvial Forest communities. This site is privately owned.

Neuse River (Clayton) Forests contains several natural communities along the river. A few Piedmont/Mountain Levee Forests are present, though they are impacted by weedy species such as Chinese privet. Piedmont/Mountain Bottomland Forest, Mesic Mixed Hardwood Forest, Dry-Mesic Oak-Hickory Forest, and Piedmont/Coastal Plain Heath Bluff are also present. Mountain laurel is present along this stretch of river. Portions of this site are owned by Wake County, City of Raleigh, and Town of Knightdale; the rest is privately owned.

New Light Creek Slopes consists of west-facing and north-facing slopes overlooking the flooded portion of the New Light Creek arm of Falls Lake. Many of the slopes are quite rich in herbaceous plants. This site is owned by the U.S. Army Corps of Engineers.

Old Still Creek Natural Area contains steep slopes and ravines above the lake that support a band of mature Mesic Mixed Hardwood Forest dominated by beech, oaks, and hickories. Magnolia is common in the understory. Parts of the site have rich herbaceous flora and walking fern grows on a boulder in the stream bed. Portions of the site are a Registered Heritage Area owned by the U.S. Army Corps of Engineers at Falls Lake, the rest is privately owned.

Old Weaver Trail Slopes contains a variety of hardwood slopes and ridges, over acidic rock. One ridge is very rocky, being likely composed of slightly felsic to circumneutral volcanic rock. This latter ridge contains a Basic Oak-Hickory Forest, whereas Dry Oak-Hickory Forest is present on another dry ridge. This site is owned by the U.S. Army Corps of Engineers.

Richland Creek Hardwood Forest is a very mature hardwood forest, mostly Dry-Mesic Oak-Hickory Forest, with a small amount of Mesic Mixed Hardwood Forest. Nearly the entire stand has a strange near-absence of tall shrubs and small trees. This site is owned by N.C. State University, N.C. Department of Transportation, and private owners.

Robertson's Pond and Buffalo Creek Floodplain is significant because of its Coastal Plain Semipermanent Impoundment natural community, which features an abundance of the locally rare bald-cypress (*Taxodium distichum*). A portion of this site is owned by the Town of Wendell, the rest is privately owned.

Shearon Harris Longleaf Pine Forest has a remnant Piedmont Longleaf Pine Forest natural community. This is the only example of this community in the region. The privately owned site is leased for research by the N.C. State University Forestry School.

Six Forks Longleaf Pine Forest consists of mostly fire-suppressed Piedmont Longleaf Pine Forest on uplands, with tiny areas of Piedmont Boggy Streamhead along a stream or two. This site is privately owned.

Upper Neuse River Floodplain Floodplain contains well-developed natural levee with an associated Piedmont/Mountain Levee Forest natural community and a few floodplain pools. An abandoned oxbow is also present. The City of Raleigh and Town of Wake Forest own portions of this site; the remainder is privately owned.

Utley Creek Slopes contains an extensive Dry Oak-Hickory Forest natural community. Other notable features include rock outcrops, with "caves" along Utley Creek, exposing sedimentary rock. The rare Virginia spiderwort (*Tradescantia virginiana*) is found here. This site is privately owned.

Walnut Creek Bottomland Forests contains a number of moderate to large beaver ponds. Parts of this site are owned by the City of Raleigh and Wake County (greenway); the rest is privately owned.

Walnut Creek Sumac Site is significant, as its mowed roadbanks support one of the state's best known populations of the Federal and State Endangered Michaux's sumac (*Rhus michauxii*). Parts of the site are owned by the North Carolina Department of Transportation, private landowners, and the City of Raleigh. A portion of the site is a Registered Heritage Area.

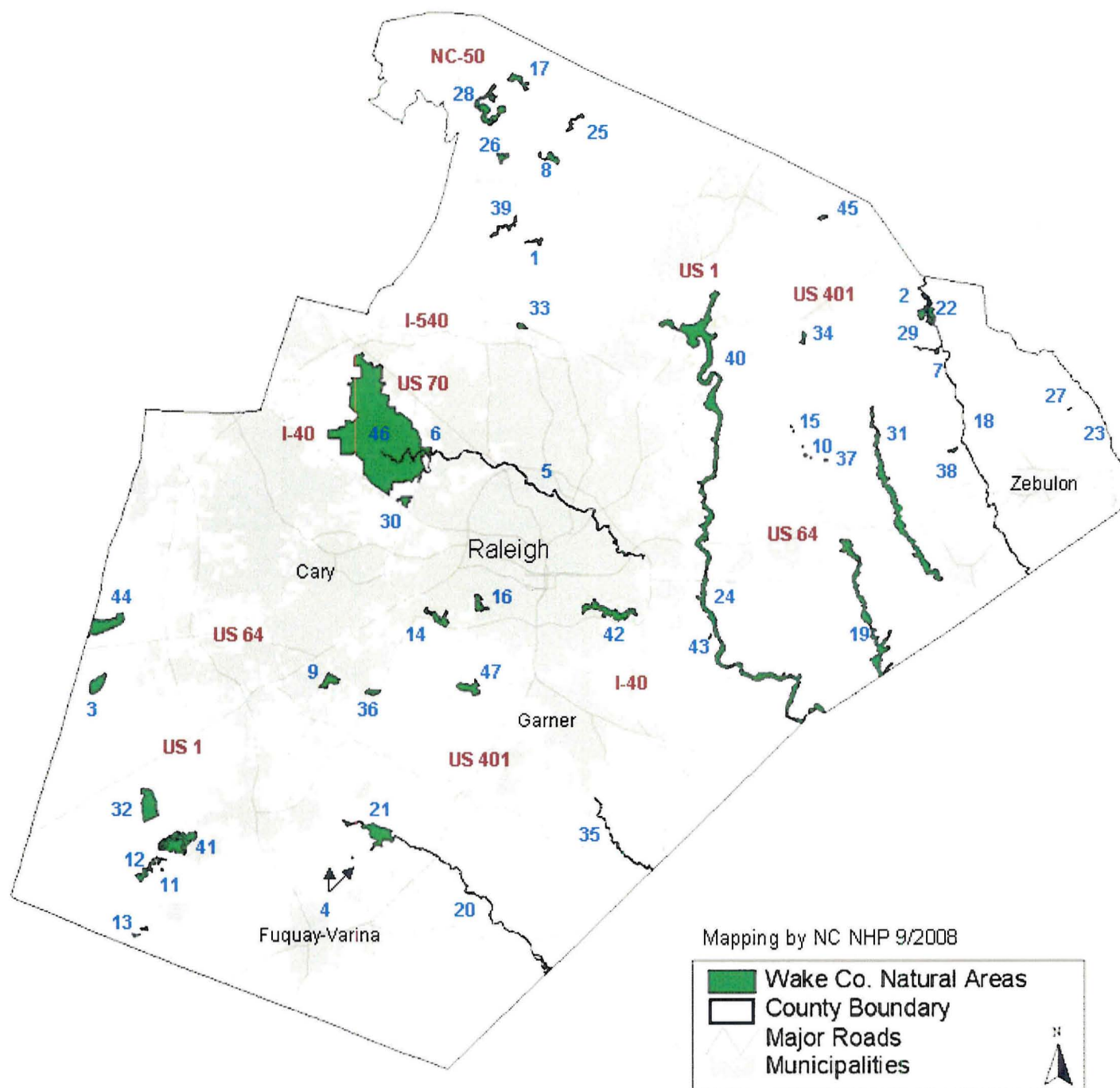
White Oak Creek Floodplain is a fairly broad floodplain, with a good quality hardwood forest and the Piedmont/Low Mountain Alluvial Forest natural community, dominated by white oak (*Quercus alba*). The site also has one of the best examples in the region of the Floodplain Pools natural community. The rare Lewis's heartleaf (*Hexastylis lewisii*) is found within this site. This site is owned by the U.S. Army Corps of Engineers.

Wild Cat Hollow contains small caves in the openings of weathered granite boulders. Such a feature is quite rare in eastern North Carolina. Part of this privately owned site is a Registered Heritage Area.

William B. Umstead State Park is a 5400-acre, unbroken expanse of diverse forests that provide important wildlife habitat. Rare plants found here include Michaux's sumac (*Rhus michauxii*). Rare animals include the State Special Concern Neuse River Waterdog (*Necturus lewisi*) and Four-toed Salamander (*Hemidactylium scutatum*). The park is owned by the North Carolina Division of Parks and Recreation.

Yates Millpond is an old millpond with a floodplain above it, and some of the floodplain has been impounded by beavers. A large population of the rare Carolina least trillium (*Trillium pusillum* var. *pusillum*) is found here. This site is partly owned by Wake County and N.C. State University; the remainder is privately owned.

Significant Natural Heritage Areas in Wake County, North Carolina.



- 1 Adam Mountain
- 2 Barham Granitic Flatrocks
- 3 Beaver Creek Floodplain
- 4 Blue Pond (Sunset Lake)
- 5 Crabtree Creek Aquatic Habitat
- 6 Crabtree Creek/Ebenezer Creek Slopes
- 7 Fowlers Mill Granitic Flatrocks
- 8 Great Bend of the Neuse Natural Area
- 9 Hemlock Bluffs State Natural Area
- 10 Hodges Mill Creek Granitic Flatrocks
- 11 Hollemans Crossroads Salamander Pools
- 12 Hollemans Crossroads Slopes
- 13 Jim Branch/Buckhorn Creek Forests
- 14 Lake Johnson Nature Park
- 15 Lake Miri Granitic Flatrocks
- 16 Lake Raleigh Hardwood Forest
- 17 Little Beaverdam Creek Slopes
- 18 Little River Aquatic Habitat
- 19 Marks Creek Floodplain
- 20 Middle Creek Aquatic Habitat
- 21 Middle Creek Bluffs and Floodplain
- 22 Mitchells Mill State Natural Area
- 23 Moccasin Creek Aquatic Habitat
- 24 Neuse River (Clayton) Forests
- 25 New Light Creek Slopes
- 26 Old Still Creek Natural Area
- 27 Old US 64 Granitic Flatrock
- 28 Old Weaver Trail Slopes
- 29 Pulleytown Road Granitic Flatrocks and Beaver Pond
- 30 Richland Creek Hardwood Forest
- 31 Robertsons Pond and Buffalo Creek Floodplain
- 32 Shearon Harris Longleaf Pine Forest
- 33 Six Forks Longleaf Pine Forest
- 34 Southwest Rolesville Granitic Outcrops
- 35 Swift Creek Aquatic Habitat
- 36 Swift Creek Bluffs
- 37 Temple Rock
- 38 The Rocks
- 39 Upper Barton Creek Bluffs and Ravine
- 40 Upper Neuse River Floodplain
- 41 Utley Creek Slopes
- 42 Walnut Creek Bottomland Forests
- 43 Walnut Creek Sumac Site
- 44 White Oak Creek Floodplain
- 45 Wild Cat Hollow
- 46 William B Umstead State Park
- 47 Yates Millpond