

MAJOR WILDLIFE AREAS

Ten sites identified in this survey are important primarily for the value they hold for the region's wildlife. With the major exception of the North Jordan Wildlife Area, these sites are not significant for the rare species they contain. Many are, in fact, a patchwork of pine stands and young second-growth hardwoods. It is mainly their size, unfragmented by roads and housing developments, that gives them their significance. Studies of effective preserve design emphasize the need for large acreage of intact natural communities. Large preserves sustain a greater diversity of species for a number of reasons. The larger populations they contain show less drastic fluctuations in numbers than do smaller ones; they are thus buffered to a greater extent from chance extinctions. Many species of animals require the diversity of habitats that only a large preserve can provide. Individuals of large species, particularly carnivores, simply need large amounts of space per se. But even smaller species, such as box turtles and many species of birds, require conditions that exist only in the interiors of forests. When forests are opened up by roads, powerlines, and sewerlines, they begin to lose many of their most distinctive species of animals even where the actual reduction in forest acreage has been only slight.

The location of large wildlife reservoirs along major migratory routes further enhances their value. In Chatham County, most of the large wildlife refuges are linked to one another via river corridors. Broad forested connections also extend along the rivers to other important reserves located outside the county, including the Mason Farm Biological Reserve, Duke Forest, and Raven Rock State Park. Population losses in any one of these areas can thus be restored by immigration from the others, at least as long as intact habitat exists along the rivers. These areas should therefore all be viewed as integral parts of a much larger system.

NORTH JORDAN LAKE WILDLIFE AREAS

By far the richest wildlife area in the county, and, indeed, the entire Triangle Region, is the portion of Jordan Lake and surrounding gamelands located north of Farrington Road (SR 1008). Before the creation of Jordan Lake, this area was renowned for the vast bottomland forests that occurred within the floodplain of the New Hope River. These were once the most diverse forests in the Piedmont, harboring bear and large flocks of wild turkey. A century ago, they may have harbored Carolina parakeets and been visited by Ivory-bills and Passenger pigeons.

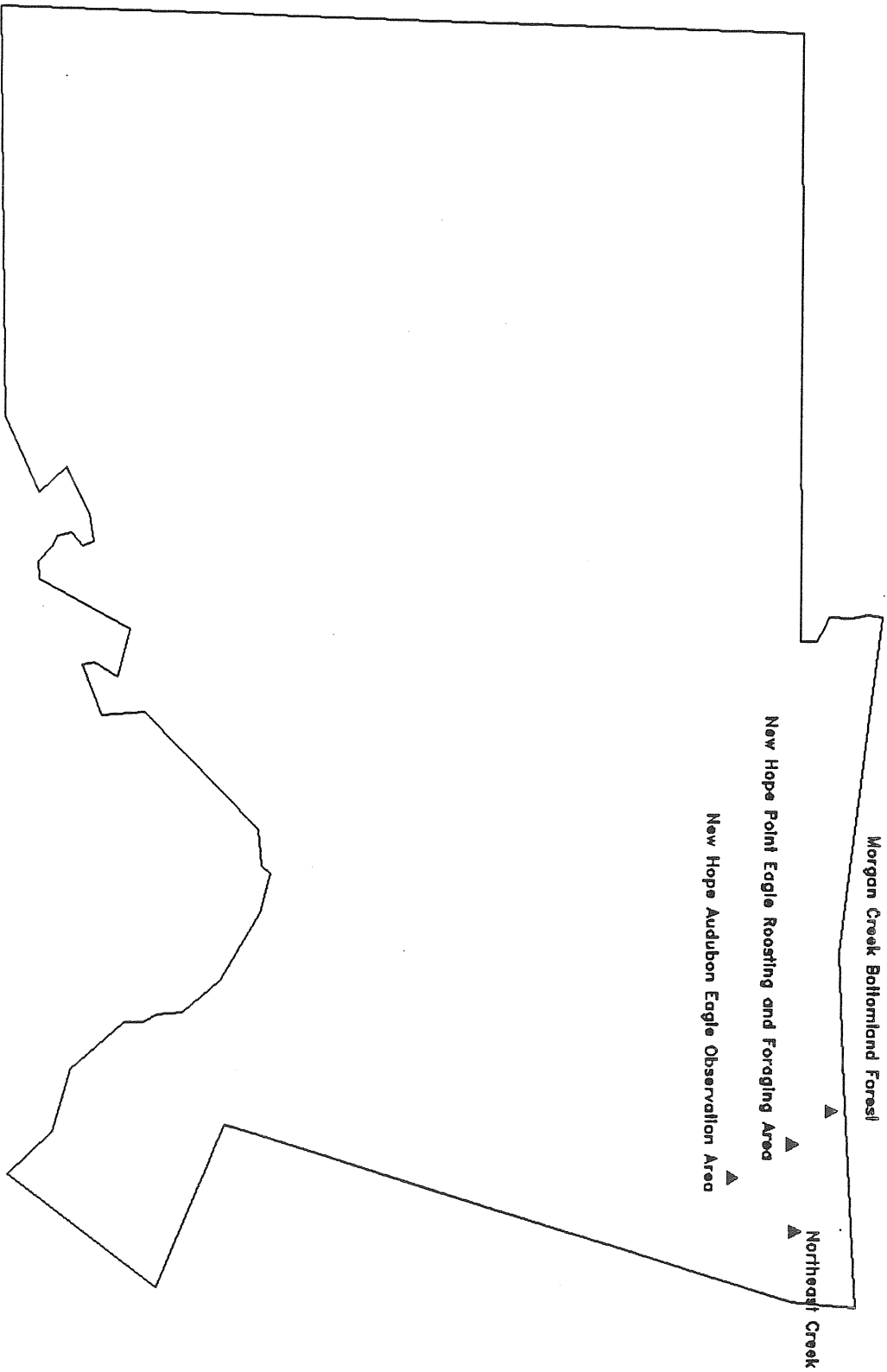
Swamp forests such as occurred in this basin were quite scarce in the Piedmont to begin with. Unlike the hilly Piedmont with its narrow stream valleys, the extensive flats of the Triassic Basin allowed the development of meandering stream courses, wide floodplains, old oxbow ponds, and other topographic features usually associated with the coastal plain. These forests have been made even scarcer by extensive timbering and the creation of impoundments. All that is left of the New Hope bottomlands today is the few remnants located along New Hope Creek, Morgan Creek, and Northeast Creek, above the points where they flow into Jordan Lake.

Although diminished, these remnant tracts still possess sufficient habitat diversity and abundant food resources to make them highly attractive to wildlife. There are still large trees scattered throughout the bottomlands and many species more typical of the coastal plain than the piedmont find suitable habitat there, including red-bellied watersnakes, Swainson's warblers, and marsh rabbits.

The large size and unbroken character of these forests also provide habitat for wide ranging and human-intolerant species such as bobcat and wild turkey. The high structural diversity of these forests, along with their abundant insect life, produces the highest diversity of breeding birds found in the piedmont; between 30 to 40 species have been recorded nesting here. Particularly noteworthy is the large number of warblers and other species characteristic of forest interiors.

Although an invaluable resource has been lost by the creation of Jordan Lake, it must also be pointed out that the presence of this new lacustrine habitat has attracted species that were formerly uncommon in the piedmont. The most noteworthy of these are the bald eagles, a species listed as endangered by the federal government. The population roosting at Jordan in the summer is one of the largest concentration of non-breeding eagles anywhere on the east coast. Recently, some of the birds have been setting up breeding territories and have begun attempts to nest, so far without success. Other significant species of water birds include ospreys and double-crested cormorants, both of which have successfully nested in good numbers.

Figure 43. North Jordan Lake Lowland Wildlife Areas



SITE NAME: New Hope Point Eagle Roost

SIGNIFICANCE: National

INTEGRITY: Good to fair

THREATS: Low

PROTECTION STATUS: Most of the peninsula is owned by the Army Corps of Engineers and leased to the NCWRC as gamelands; the northern area used as a roosting and nesting site is owned by North Carolina State University and managed for forestry. Two nest sites are given special protection from disturbance during the breeding season.

JURISDICTION: Williams

OWNERSHIP: US Army Corps of Engineers

SUMMARY OF SIGNIFICANT FEATURES:

1. The bald eagles (Haliaeetus leucocephalus) that roost on this peninsula form one of the largest summer concentrations of this endangered species anywhere in the Eastern United States. At least one pair has tried to nest at this site.
2. Also nesting in the dead trees at the end of the peninsula are ospreys (Pandion haliaetus) and Florida cormorants (Phalacrocorax auritus floridanus), both of which are rare away from the coast. The cormorant, in addition, is listed as significantly rare within the state.
3. Although the forest is fairly young second-growth, it is quite extensive. In addition to the other birds already mentioned, this tract also harbors red-shouldered hawks, great horned owls, and barred owls, all of which prefer large areas of forests for nesting and hunting. This tract is a key link between the even larger wildlife areas of the New Hope and Morgan Creek bottomlands.

GENERAL SITE DESCRIPTION:

The long peninsula that forms this site is typical of low elevation ridges that occur within the Triassic Basin; the underlying rock formation is most likely sandstone or some other series of the Sanford Formation. The soils weathering from this rock are usually acidic and fairly sandy, as is the case here.

These upland areas of the Triassic Basin were some of the first sites in the Piedmont to be settled by European colonists, and have undergone a cycle of clearing and reforestation over the past 250 years. New Hope Point follows this pattern. The vegetation of the peninsula is a patchwork of old fields, pine stands, and young- to moderate-aged second-growth hardwoods. Characteristic tree species include loblolly pine (Pinus taeda), sweet gum (Liquidambar styraciflua), tulip tree (Liriodendron tulipifera), and southern red oak (Quercus falcata). In drier areas grow blackjack oak (Q. marilandica) and post oak (Q. stellata), while

the poorly drained depressions which occur throughout the top of the ridge support willow oak (*Q. phellos*), cherrybark oak (*Q. pagoda*), and water oak (*Q. nigra*). Perhaps the most interesting components of the flora are certain herbaceous species that are more typical of the sandhills than the piedmont. These include yellow fringed orchid (*Habenaria ciliaris*), calliopsis (*Coreopsis tinctoria*), and wild flax (*Linum virginianum* var. *medium*). The depressions also harbor extensive growths of sphagnum, unusual for upland situations. The most significant elements of this community are its animals, particularly the bald eagles that have roosted here since the reservoir was first filled in the early 1980's. As many as 70 eagles have been observed roosting in an open pine grove located at the northern end of the peninsula. Although most of these are immature birds that only spend the summer months on Jordan Lake, there is a residual population even in the winter. There are also growing indications that nesting may soon take place at this site, and as the younger birds mature there is a high likelihood that several will take up permanent residence on the lake.

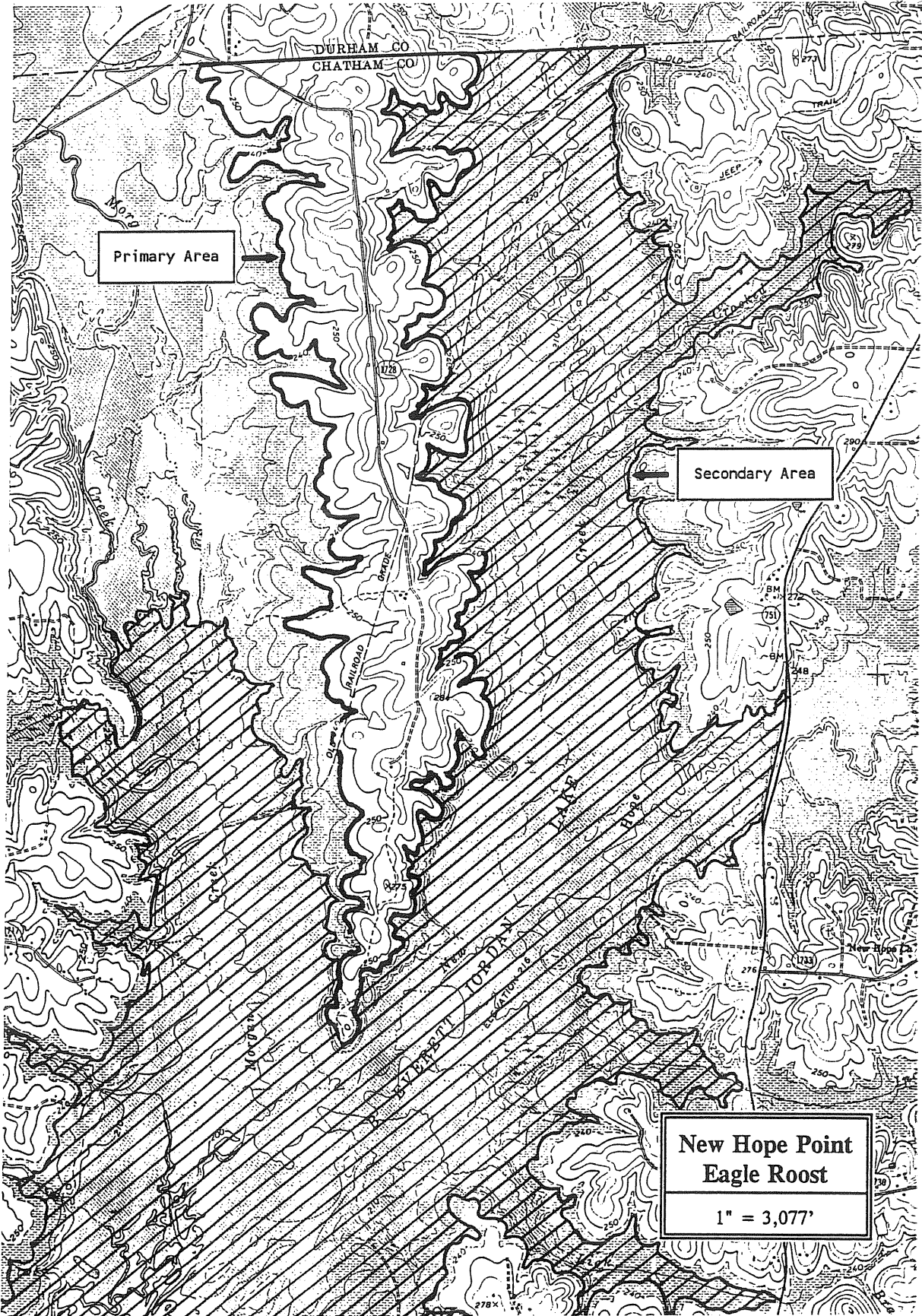
Other noteworthy species that are already nesting in the vicinity of New Hope Point are ospreys and Florida cormorants. The osprey is currently undergoing a resurgence after having been nearly exterminated by DDT. Although now found nesting at many places in the state, primarily along the coast, its presence at Jordan Lake adds a spectacular element to the wildlife that many of the reservoir's visitors come to enjoy watching. The Florida cormorant (a subspecies of the widespread double-crested cormorant) has always been rare in North Carolina, and until the population was established on Jordan Lake was only known to nest at two sites near the coast.

The peninsula also harbors a number of wildlife species that are more typical of large tracts of piedmont forest. These include several raptors, such as red-shouldered hawks, barred owls, and great horned owls. Other species that occur only locally in Chatham County are red-headed woodpeckers (*Melanerpes erythrocephalus*) and white-breasted nuthatches (*Sitta carolinensis*). One unusual invertebrate species is the harlequin darter (*Gomphaesha furcillata*), present at this site due to the large amount of sphagnaceous depressions.

As is well known to local hunters, this peninsula supports large populations of small game, such as bobwhite (*Colinus virginianus*), mourning dove (*Zenaida macroura*), and cottontail (*Sylvilagus floridanus*). Situated between the larger wildlife areas of the Morgan Creek and New Hope Creek bottomlands, it provides an important link in the system of wildlife reservoirs and connecting corridors situated around the north end of Jordan Lake.

CONSERVATION RECOMMENDATIONS:

The US Fish and Wildlife Service and Corps have developed a management plan that gives some degree of protection to the known nesting sites as well as the roost area. Boating and other human activities are prohibited in these areas during the nesting season.



Primary Area

Secondary Area

**New Hope Point
Eagle Roost**
1" = 3,077'

SITE SURVEY REPORT

Site name: New Hope Point Eagle Roost
County: Chatham

Date(s): 22/VI/89

Surveyors:

Stephen P. Hall, Ph.D
NC Natural Heritage Program
P.O. Box 27687
Raleigh, NC 27611-7687
(919) 733-7701

Marjorie Boyer
NC Plant Conservation Program
P.O. Box 27647
Raleigh, NC 27611
(919) 733-3610

Size: 1,232 acres

Quad: Green Level

Province: Piedmont

Watershed: Jordan Lake --> Haw River --> Cape Fear River

Location and directions: Peninsula located between confluence of Morgan Creek and New Hope Creek

Landowners and addresses:

Owners contacted and attitude:

General landscape description: See Site Description

Physical description

Aspect: Primarily east and west

Slope: 0-5

Topographic position: Crest to lower slopes

Hydrology: Terrestrial

Moisture: Dry

Elevation: 240 - 284'

Geology:

Soils: Altavista Fine Sandy Loam, Roanoke Silt Loam, White Store Fine Sandy Loam

Comments on physical description: A north-south running ridge that now forms a long peninsula at the north end of Jordan Lake

Biological description

Community # 1: Dry Oak-Hickory Forest

Vegetation structure: Forest and old field

Position in landscape and relation to other communities: Low ridge and slopes above lake

Quality and condition: Fair

Size:

Dominants (*) and important species:

Canopy:

Liquidambar styraciflua *
Liriodendron tulipifera
Pinus taeda *
Quercus alba
Quercus falcata *
Quercus falcata
 var. pagodaefolia
Quercus marilandica
Quercus nigra
Quercus phellos
Quercus stellata

Subcanopy:

Acer rubrum
Betula nigra
Cornus florida
Ilex decidua
Juniperus virginiana
Ulmus alata

Shrubs and vines:

Ligustrum sinense
Lonicera japonica
Smilax bona-nox
Sorbus arbutifolia
Vaccinium arboreum
Vaccinium corymbosum
Vaccinium stamineum

Herbs:

Andropogon virginicus
Aster paternus
Coreopsis tinctoria
Coreopsis verticillata
Echinochloa crusgalli
Habenaria ciliaris
Helianthus microcephalus
Lespedeza striata
Linum virginianum
 var. medium
Oenothera fruticosa
Polystichum acrostichoides
Pycnanthemum tenuifolium
Solidago sp.

Special status species

State-listed species:

Animals:

fe Haliaeetus leucocephalus
sr Phalacrocorax auritus floridanus

Potential for other special status species: Low

Other noteworthy species or features:

Animals:

rr Pandion haliaetus
rr Melanerpes erythrocephalus

Site condition

Site integrity: Good to fair

Average DBH of canopy trees: 20 cm

Maximum DBH of canopy trees: 52 cm

Fire regime: Natural

Logged: Within last 20 years

Evenness of canopy: Mixed-age

Ditched/drained: No

Stream channelized: No

Dredged/filled: No

Understory cleared: No

Grazed: No

ORV damaged: Yes; road down to point is heavily rutted

Other disturbances: Yes; area is part of heavily used gamelands

Adjacent Land Uses: Lake and agriculture

Significance of site: National

Discussion: See Site Description

Protection considerations and management needs: Owned by US Army Corps of Engineers and currently managed as gamelands by NC Wildlife Resources Commission; the presence of the large roost of bald eagles, a Federally Endangered species, mandates a federal level of protection.

Determination of survey boundaries: Encloses entire peninsula below the Durham/Chatham County line; includes forested slope down to the lakeshore (ca. 220' elevation)

Priority for further study: High; there is a strong likelihood that the eagles may begin to nest in this area and the roost site itself needs continual monitoring.

Specimens collected:

Photographs:

Others knowledgeable about the site: Julie Moore, Jim Keighton, Kathy Kuiper, Jim Frazier (VPI)

References: Frazier,

Topo map: Attached

Sketch map: None

Plant Species List: See Community # 1

List is: Cursory

ANIMAL SPECIES LIST

List is: Cursory

Vertebrates:

sr Phalacrocorax auritus
 Ardea herodias
 Butorides striatus
 rr Pandion haliaetus
 fe Haliaeetus leucocephalus
 i Buteo lineatus
 Colinus virginianus
 Zenaida macroura
 i Coccyzus erythrophthalmus
 Bubo virginianus
 i Strix varia
 rr Melanerpes erythrocephalus
 Melanerpes carolinus
 Empidonax virescens
 Sayornis phoebe
 Cyanocitta cristata
 Corvus brachyrhynchos
 Parus carolinensis
 Parus bicolor
 i Sitta carolinensis
 Thryothurus ludovicianus
 Polioptila caerulea
 Sturnus vulgaris
 Vireo olivaceus
 Dendroica pinus
 Dendroica discolor
 Geothlypis trichas
 Icteria virens
 Piranga rubra
 Piranga olivacea
 Cardinalis cardinalis
 Passerina cyanea
 Pipilo erythrophthalmus
 Spizella pusilla
 Agelaius phoeniceus
 Quiscalus quiscula
 Didelphis marsupialis
 Sylvilagus floridanus
 Sceloporus undulatus

Vertebrates (cont.):

Scincella lateralis
 Bufo woodhousei fowleri

Invertebrates:

- i Eurytides marcellus
- Celastrina ladon
- Phyciodes tharos
- i Gomphaeschna furcillata
- i Epiaeschna heros
- Perithemis tenera
- Celithemis elisa
- Libellula incesta
- Libellula luctuosa
- Libellula vibrans
- Plathemis lydia
- Pachydiplax longipennis

SITE NAME: Northeast Creek Wildlife Area

SIGNIFICANCE: County

INTEGRITY: Good to fair

THREATS: Lumbering

PROTECTION STATUS: Federally owned land included in New Hope Gamelands

JURISDICTION: Williams Township

OWNERSHIP: US Army Corps of Engineers

SUMMARY OF SIGNIFICANT FEATURES:

1. The forest present in this bottom includes one of the largest remaining tracts of piedmont swamp forest in North Carolina; this type of community is virtually restricted in its distribution to the triassic basins, and most of it has been lost due to impoundments.
2. Several species of coastal plain animals reach their westernmost limits in these bottomlands and this area is an important component of the wildlife reservoirs and corridors that exist around the north end of Jordan Lake. Two species of wildlife are particularly noteworthy: the river otter, which is just now re-colonizing the piedmont following the re-introduction of the beaver, and the bald eagle (Haliaeetus leucocephalus), which occasionally uses the lower reaches of this tract for feeding and roosting.

GENERAL SITE DESCRIPTION:

Like Morgan Creek and New Hope Creek, this former tributary of the New Hope River (now submerged beneath Jordan Lake) contains a large expanse of broad bottomlands, characteristic of floodplains in the Triassic Basin. The main channel of Northeast Creek meanders extensively and side channels and old oxbow ponds are frequent throughout the floodplain. Although commonly observed in the swamps of the coastal plain, these features are quite rare within the uplands of the piedmont and are virtually limited to the triassic basins.

The lower reaches of this tract are occasionally inundated by Jordan Lake, and this part of the site is still in a young, second-growth stage following the clearing that was done in preparation for filling the reservoir. The upper end, above SR 1731, has also been disturbed by the creation of a subimpoundment. Nonetheless, the majority of the tract is still forested, and like the Morgan Creek Bottomlands contains one of the largest tracts of swamp forest remaining in the piedmont. In addition to the loblollies (Pinus taeda) and tulip trees (Liriodendron tulipifera) that probably reflect past timbering, trees characteristic of this site include a number of species that are tolerant of long periods of flooding. These include

swamp chestnut oak (Quercus michauxii), willow oak (Q. phellos), cherrybark oak (Q. pagoda), water oak (Q. nigra), sweet gum (Liquidambar styraciflua), American elm (Ulmus americana), and red maple (Acer rubrum). There are also extensive stands of levee species, such as river birch (Betula nigra) and sycamore (Platanus occidentalis), and on better-drained sites are trees typical of rich bottomland soils, such as shagbark hickory (Carya ovata), bitternut hickory (C. cordiformis), sugar maple (Acer floridanum), pawpaw (Asimina triloba), ironwood (Carpinus caroliniana), and red mulberry (Morus rubra). On areas of slightly higher ground, American beech (Fagus grandifolia) is a conspicuous member of the canopy.

The shrub and herb layers are also quite diverse. Bluestar (Amsonia tabernaemontana), three-way sedge (Dulichium arundinaceum), and sweetleaf (Symplocos tinctoria) are the most noteworthy species, all of which are uncommon in the lower piedmont. Extensive patches of cane (Arundinaria gigantea) grow in some areas, and along with the numerous grape lianas (Vitis spp.) and thickets composed of viburnums (Viburnum spp.), hazelnuts (Corylus americana), and elderberries (Sambucus canadensis), provide both shelter and food for a wide variety of wildlife. Herbaceous species indicative of the rich bottomland conditions include wild ginger (Asarum canadense), river oats (Uniola latifolia), and lopseed (Phryma leptostachya). Wetter areas are covered with lizardtail (Saururus cernuus), clearweed (Pilea pumila), royal fern (Osmunda regalis), sensitive fern (Onoclea sensibilis), water hemlock (Cicuta maculata), and false nettle (Boehmeria cylindrica).

Our visits to this site were made during the late summer, outside the main breeding season for most birds and other animals; our species lists are thus not completely representative of the wildlife diversity of this site, which is probably similar to that of the Morgan Creek Bottomlands. Nonetheless, 26 species of birds were recorded, including redstarts (Setophaga ruticilla), which are restricted to wide areas of floodplain forests. Other species typical of bottomlands include green-backed herons (Butorides striatus), kingfishers (Megaceryle alcyon), Acadian flycatchers (Empidonax virescens), and parula warblers (Parula americana). Hooded warblers (Wilsonia citrina) are present due to the extensive thickets of shrubs, and white-breasted nuthatches (Sitta carolinensis) because of the large deciduous trees scattered throughout this forest. Red-shouldered hawks (Buteo lineatus) occur here as a consequence of the extensive bottomland habitat present at this site.

Although Northeast Creek itself is fairly turbid, probably due to the presence of extensive farmlands adjoining this tract, there is still a fairly diverse community of aquatic species present. A few freshwater mussels remain, at least the highly tolerant eastern elliptio (Elliptio complanata), and the community of stream and floodplain dragonflies includes such typical species as Dromogomphus spinosus, Nasiaesha pentacantha, Aeshna umbrosa, Macromia georgina, Perithemis tenera, and Libellula vibrans. Sixteen species of butterflies were also recorded, most of which were observed nectaring on buttonbush, one of the major nectar-producing species of bottomland habitats.

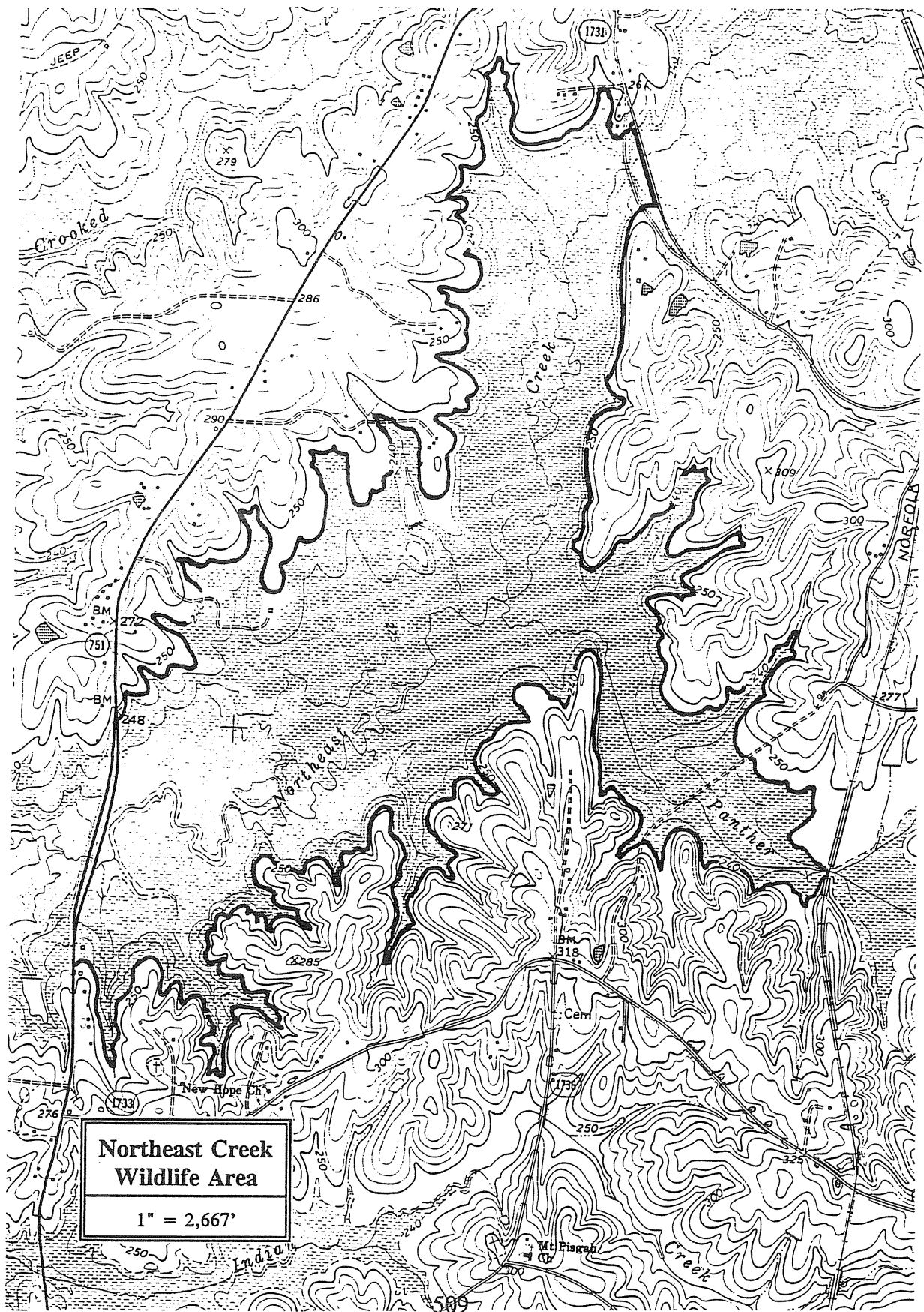
Although not observed in our brief visits to the site, there are a number of coastal plain animals that can be expected to be found in this tract, based on their occurrence in the nearby Morgan Creek bottomlands (see FARN3). The list of animal species in this area can

be also be expected to grow due the development of beaver ponds throughout these bottomlands. Two animals that have directly benefited from the creation of the beaver ponds are muskrat (*Ondatra zibethica*) and the especially the river otter (*Lutra canadensis*).

Also included within our delimitation of the natural area is the lower, usually inundated section located just east of the bridge on NC 751. Bald eagles are frequently seen fishing or roosting in this area, and it is also well-known to birders as one of the best sites on the lake for observing herons, egrets, ibis, and shorebirds during the post-breeding season. When flooded, this bay also attracts large numbers of waterfowl in the winter. As is true for the Morgan Creek Bottomlands, this entire tract is an essential component of the overall system of wildlife reservoirs and corridors that exist along the northern arm of Jordan Lake.

CONSERVATION RECOMMENDATIONS:

This area is given partial protection due to its inclusion in the New Hope Gamelands and its ownership by the Army Corps of Engineers. This protection does not preclude, however, further timbering, the construction of sub-impoundments, new road-cuts, powerlines and sewerlines. Given the significance this tract holds for the wildlife of the entire region, both the Corps and county government should formulate management plans that avoid any further alteration of this swamp.



**Northeast Creek
Wildlife Area**
1" = 2,667'

SITE SURVEY REPORT

Site name: Northeast Creek Wildlife Area
County: Chatham

Date(s): 25/VII/89, 29/X/89

Surveyors:

Stephen P. Hall, Ph.D
NC Natural Heritage Program
P.O. Box 27687
Raleigh, NC 27611-7687
(919) 733-7701

Marjorie Boyer
NC Plant Conservation Program
P.O. Box 27647
Raleigh, NC 27611
(919) 733-3610

Size: 2,053 acres

Quad: Green Level

Province: Piedmont

Watershed: Northeast Creek --> Jordan Lake --> Haw River --> Cape Fear River

Location and directions:

Landowners and addresses:

Owners contacted and attitude:

General landscape description: See Site Description

Physical description

Aspect: Flat

Slope: Flat

Topographic position: Alluvial flat

Hydrology: Palustrine

Moisture: Seasonally wet

Elevation: 220 -240'

Geology: Alluvial

Soils: Congaree Silt Loam, Altavista Fine Sandy Loam

Comments on physical description: Largest remaining tract of the New Hope bottomland forest located within Chatham County

Biological description

Community # 1: Piedmont Bottomland Forest

Vegetation structure: Forest

Position in landscape and relation to other communities: Bottomlands

Quality and condition: Good to fair

Size:

Dominants (*) and important species:

Canopy:

Acer floridanum
Acer rubrum
Betula nigra
Carya cordiformis
Carya ovata
Carya tomentosa
Fagus grandifolia *
Liquidambar styraciflua *
Liriodendron tulipifera *
Pinus taeda
Platanus occidentalis
Quercus alba
Quercus pagoda
Quercus michauxii
Quercus nigra
Quercus phellos
Ulmus americana

Subcanopy:

Asimina triloba
Carpinus caroliniana
Cornus florida
Ilex opaca
Juniperus virginiana
Morus rubra

Shrubs and vines:

Anisostichus capreolata
Arundinaria gigantea
Cephalanthus occidentalis
Corylus americana
Euonymus americanus
Hamamelis virginiana
Ilex decidua
Lonicera japonica
Rhus radicans
Rubus argutus
Sambucus canadensis
Smilax bona-nox
Smilax glauca
rr Symplocos tinctoria
Vaccinium sp.
Viburnum dentatum
var. lucidum
Viburnum nudum
Viburnum prunifolium
Vitis sp.

Herbs:

rr Amphicarpa bracteata
rr Amsonia tabernaemontana
Aristolochia serpentaria
Asarum canadense
Aster divaricatus
Aster lateriflorus
Athyrium asplenioides
Boehmeria cylindrica
Botrychium biternatum

Herbs (cont.):

Chrysogonum virginianum
Cicuta maculata
Dulichium arundinaceum
Elephantopus carolinianus
Epifagus virginiana
Geum canadense
Hepatica americana
Hexastylis arifolia
Hystrix patula
Impatiens capensis
Lobelia cardinalis
Matelea sp.
Microstegium vimineum
Mitchella repens
Onoclea sensibilis
Osmunda regalis
 var. spectabilis
Passiflora lutea
Phryma leptostachya
Pilea pumila
Polygonum hydropiperoides
Polygonum punctatum
Polystichum acrostichoides
Prenanthes altissima
Ranunculus recurvatus
Rudbeckia laciniata
Saururus cernuus
Solidago caesia
Thaspium trifoliatum
 var. flavum
Triosteum perfoliatum
Uniola latifolia
Viola papilionacea

Special status species

State-listed species:

Animals:

fe *Haliaeetus leucocephalus*

Potential for other special status species:

Other noteworthy species or features:

Plants:

rr *Amsonia tabernaemontana*

rr *Symplocos tinctorium*

Animals:

rr *Lutra canadensis*

Communities:

Piedmont Swamp Forest

Site condition

Site integrity: Good to fair

Average DBH of canopy trees: 25 cm

Maximum DBH of canopy trees: 39 cm

Fire regime: Natural

Logged: Within last 30-40 years

Evenness of canopy: Mixed-age

Ditched/drained: No

Stream channelized: No

Dredged/filled: No

Understory cleared: No

Grazed: No

ORV damaged: No

Other disturbances: Yes; area is used as gamelands

Adjacent Land Uses: Agriculture, forest, and lake

SITE NAME: New Hope Audubon Wildlife Observation Area

SIGNIFICANCE: State

INTEGRITY: Fair

THREATS: Low -- disturbance of wildlife by boaters

PROTECTION STATUS: Designated as future state parklands

JURISDICTION: Williams Township

OWNERSHIP: US Army Corps of Engineers

SUMMARY OF SIGNIFICANT FEATURES:

1. This site contains one of the only four populations of Lewis' heartleaf (Hexastylis lewisii) known to occur in the county. This species is a candidate for state-listing as threatened or endangered.
2. The cove at the mouth of Indian Creek and the surrounding waters of Jordan lake are important feeding and roosting areas for the federally endangered bald eagles (Haliaeetus leucocephalus), as well as for the significantly rare florida cormorants (Phalacrocorax auritus floridanus), and regionally rare ospreys (Pandion haliaetus).
3. Three regionally rare mammals have been observed from the wildlife observation platform: bobcat (Lynx rufus), striped skunk (Mephitus mephitus), and river otter (Lutra canadensis).
4. The wildlife observation platform is the sole site on Jordan Lake, and indeed in the entire Triangle region, designated for this purpose.

GENERAL SITE DESCRIPTION:

The gentle slopes present at this site are typical of the topography prevailing over most of the Durham Triassic Basin. The underlying rocks are sandstones, siltstones and other sedimentary series of the Sanford Formation. The soils weathered from these rocks are mostly fine silts and sands, and are usually poor in nutrients.

The vegetation reflects these soil conditions, as well as a long history of human disturbance. Old fields, maintained as dove hunting areas by the NC Wildlife Resources Commission, are scattered throughout the slopes, interspersed with second-growth forests. Near the top of the slope, a mixture of pines (Pinus taeda) and hardwoods predominates, but towards the lakeshore there are remnants of the bottomland community that once existed along the floodplain of the New Hope River. Species typical of that community include swamp chestnut oak (Quercus michauxii), Shumard's oak (Q. shumardii), cherrybark oak (Q. pagoda), water oak (Q. nigra), and willow oak (Q. phellos). The only noteworthy plant species growing at this site is Lewis's heartleaf, which is known to occur at only three other sites in Chatham County, all on similar slopes within the Triassic Basin.

The shore on which the wildlife observation platform is located sits directly opposite New Hope Point and has a good view of a stand of dead trees used for nesting by ospreys and the rare florida race of the double-crested cormorant. It also is a prime eagle-watching site, since many of the birds that roost on the New Hope Point spend much of their time fishing in the shallow waters just offshore of the platform. Since the platform was constructed in 1987 by the New Hope Chapter of the Audubon Society and the Non-game Program of the NC Wildlife Resources Commission, over 10,000 people have signed the register at the site. In addition to the eagles that are the main draw to the platform, 64 other species of birds, 12 species of mammals, 7 species of reptiles, and 3 species of amphibians have been recorded by visitors to the platform (Jim Keighton, pers. comm.). 15 species of butterflies have also been sighted.

Several species of animals are particularly noteworthy. The cove located at the mouth of Indian Creek is the only nesting location for tree swallows (Iridoprocne bicolor) known in the entire state (Harry LeGrand, pers. comm.). This cove also harbors a population of red-headed woodpeckers (Melanerpes erythrocephalus), which are declining in numbers throughout this region of the country. Four species of raptors, the great horned owl (Bubo virginina), barred owl (Strix varia), red-shouldered hawk (Buteo lineatus), and red-tailed hawk (B. jamaicensis), all indicate the relative lack of human disturbance in this arm of the lake, and the presence of pileated woodpeckers (Dryocopus pileatus), hairy woodpeckers (Picoides villosus), and white-breasted nuthatches (Sitta carolinensis) testifies to the unbroken character of the woodlands that surround the upper end of Jordan Lake. The same is true for the bobcats and otters that have been observed from the platform. One additional mammal that is quite rare within the Triangle region (but common elsewhere in the state) is the striped skunk.

CONSERVATION RECOMMENDATIONS:

This site is designated as future state parklands and is currently part of the New Hope Gamelands; as such, it already receives some degree of protection. Given the large number of visitors to the platform who come strictly to observe wildlife, not to hunt them, this area should be set aside for this purpose in planning for the future uses of this part of Jordan Lake. Incompatible uses, such as dove and duck hunting, water-skiing, and motorized boat traffic in general, should be curtailed in this arm of the lake. In order to minimize the disturbance to wildlife, this area should also not be developed for camping.

SITE SURVEY REPORT

Site name: New Hope Audubon Wildlife Observation Area
County: Chatham

Date(s): 10/X/89

Surveyors:

Stephen P. Hall, Ph.D
NC Natural Heritage Program
P.O. Box 27687
Raleigh, NC 27611-7687
(919) 733-7701

Marjorie Boyer
NC Plant Conservation Program
P.O. Box 27647
Raleigh, NC 27611
(919) 733-3610

Size: 31 primary acres + 129 secondary acres = 160 total acres

Quad: Green Level

Province: Piedmont

Watershed: Jordan Lake --> Haw River --> Cape Fear River

Location and directions: On Jordan Lake at mouth of Indian Creek

Landowners and addresses:

Owners contacted and attitude:

General landscape description: See Site Description

Physical description

Aspect: West

Slope: 0-5

Topographic position: Lower slope

Hydrology: Terrestrial and lacustrine

Moisture: Seasonally wet to dry

Elevation: 240 - 250'

Geology:

Soils: White Store Fine Sandy Loam (includes eroded phase)

Comments on physical description:

Biological description

Community # 1: Piedmont Alluvial Forest

Vegetation structure: Successional forest and old field

Position in landscape and relation to other communities: Slopes above lake

Quality and condition: Fair

Size:

Dominants (*) and important species:

Canopy:

Betula nigra
Liquidambar styraciflua
Liriodendron tulipifera
Pinus taeda *
Platanus occidentalis
Quercus alba
Quercus pagoda
Quercus michauxii
Quercus nigra
Quercus phellos

Subcanopy:

Acer rubrum
Carpinus caroliniana
Carya ovata
Fagus grandifolia
Ilex decidua
Ilex opaca
Ilex verticillata
Nyssa sylvatica
Oxydendrum arboreum
Salix nigra
Sassafras albidum
Ulmus alata

Shrubs and vines:

Arundinaria gigantea
Campsis radicans
Cephalanthus occidentalis
Euonymus americanus

Shrubs (cont.):

Gelsemium sempervirens
Lonicera japonica
Rubus sp.
Smilax bona-nox
Vaccinium stamineum
Viburnum rafinesquianum
Vitis rotundifolia

Herbs:

Asplenium platyneuron
Athyrium asplenioides
Bidens bipinnata
Boehmeria cylindrica
Botrychium biternatum
Hexastylis arifolia
c Hexastylis lewisii
Hypericum sp.
Impatiens capensis
Lycopodium flabelliforme
Microstegium vimineum
Mitchella repens
Onoclea sensibilis
Osmunda cinnamomea
Polystichum acrostichoides
Scutellaria integrifolia
Tipularia discolor
Uniola latifolia
Woodwardia areolata

Special status species

State-listed species:

Plants:

c Hexastylis lewisii

Animals:

fe Haliaeetus leucocephalus

sr Phalacrocorax auritus floridanus

Potential for other special status species: Low

Other noteworthy species or features:

Animals:

rr Pandion haliaetus
rr Melanerpes erythrocephalus
rr Mniotilta varia
rr Lutra canadensis
rr Mephitis mephitis
rr Lynx rufus
rr Nerodia erythrogaster

Special Use:

Wildlife observation platform

Site condition

Site integrity: Fair

Average DBH of canopy trees: 30 cm

Maximum DBH of canopy trees: 56 cm

Fire regime: Natural

Logged: Within last 30-40 years

Evenness of canopy: Successional

Ditched/drained: No

Stream channelized: No

Dredged/filled: No

Understory cleared: No

Grazed: No

ORV damaged: No

Other disturbances: Foot traffic to observation platform; jet-skiis and boat traffic

Adjacent Land Uses: Lake, gamelands, and agriculture

Significance of site: State

Discussion: See Site Description

Protection considerations and management needs: Located on future state park lands

Determination of survey boundaries: Encloses point of land containing the foot path to the observation platform; buffer area includes surrounding portions of the lake that contribute to the natural history activities conducted at the site.

Priority for further study: Low

Specimens collected:

Photographs:

Others knowledgeable about the site: Jim Keighton

References:

Topo map: Attached

Sketch map: None

Plant Species List: See Community # 1

List is: Medium-thorough

ANIMAL SPECIES LIST

List is: Nearly Complete

Vertebrates:

sr Phalacrocorax auritus *
 Ardea herodias *
 Butorides striatus *
 i Aix sponsa *
 Anas platyrhynchos *
 rr Pandion haliaetus *
 fe Haliaeetus leucocephalus *
 i Buteo lineatus *
 i Buteo jamaicensis *
 Colinus virginianus *
 Charadrius vociferus *
 Zenaida macroura *
 i Coccyzus erythrophthalmus *
 Otus asio *
 Bubo virginianus *
 i Strix varia *
 i Caprimulgus vociferus *
 Archilochus colubris *
 Megasceryle alcyon *
 rr Melanerpes erythrocephalus *
 Melanerpes carolinus *
 Picoides pubescens *
 i Picoides villosus *
 Colaptes auratus *
 i Dryocopus pileatus *
 Contopus virens *
 Empidonax virescens *
 Sayornis phoebe *
 Myiarchus crinitus *
 Tyrannis tyrannus *
 Iridoprocne bicolor **
 Cyanocitta cristata *
 Corvus brachyrhynchos *
 Parus carolinensis *
 Parus bicolor *
 i Sitta carolinensis *
 Thryothurus ludovicianus *
 Polioptila caerulea *
 Sialia sialis *

Vertebrates (cont.):

Hylocichla mustelina *
 Sturnus vulgaris *
 Vireo griseus *
 Vireo flavifrons *
 Vireo olivaceus *
 Parula americana *
 Dendroica dominica *
 Dendroica pinus *
 Dendroica discolor *
 rr Mniotilta varia *
 i Setophaga ruticilla *
 i Protonotaria citrea *
 i Seiurus aurocapillus *
 Geothlypis trichas *
 i Wilsonia citrina *
 Icteria virens *
 Piranga rubra *
 Cardinalis cardinalis *
 Guiraca caerulea *
 Passerina cyanea *
 Pipilo erythrophthalmus *
 Spizella pusilla *
 Agelaius phoeniceus *
 Quiscalus quiscula *
 Molothrus ater *
 Carduelis tristis *
 Didelphis marsupialis
 Scalopus aquaticus
 i Tamias striatus *
 Sciurus carolinensis
 Castor canadensis *
 Vulpes vulpes
 i Urocyon cinereoargenteus
 Procyon lotor *
 rr Lutra canadensis *
 rr Mephitis mephitis *
 rr Lynx rufus *
 Odocoileus virginianus *
 Chrysemys concinna

Vertebrates (cont.):

- i Terrapene carolina *
- Scincella lateralis
- Elaphe obsoleta *
- rr Nerodia erythrogaster *
- Nerodia sipedon *
- Opheodrys aestivus *
- i Ambystoma maculatum
- Acris crepitans
- Hyla crucifer
- Dorosoma cepedianum
- Cyprinus carpio

Invertebrates:

- i Eurytides marcellus *
- Phoebis sennae eubule
- Eurema nicippe
- Everes comyntas
- Libytheana bachmanii
- Phyciodes tharos
- Polygonia interrogationis
- Polygonia comma
- Nymphalis antiopa
- Vanessa atalanta rubria
- Junonia coenia
- Limenitis arthemis astyanax
- Megisto cymela *
- Danaus plexippus *
- Lerema accius
- Anax junius
- Anodonta cataracta
- Anodonta imbecilis

* Species recorded by visitors to the wildlife observation platform; list supplied by Jim Keighton of the New Hope Audubon Society

** Observed nesting by Harry LeGrand

SITE NAME: Morgan Creek Bottomland Forest

SIGNIFICANCE: County

INTEGRITY: Fair

THREATS: Medium -- timbering

PROTECTION STATUS: Included as part of the New Hope Gamelands but not protected from further timber harvests

JURISDICTION: Williams

OWNERSHIP: US Army Corps of Engineers

SUMMARY OF SIGNIFICANT FEATURES:

1. The population of Lewis's heartleaf (Hexastylis lewisii) is one of only four known in Chatham County. This species is a candidate for state-listing as threatened or endangered.
2. The forest present in this bottom is one of the largest remaining tracts of piedmont swamp forest in North Carolina; this type of community is virtually restricted in its distribution to the triassic basins, and most of it has been lost due to impoundments.
3. Several species of coastal plain animals reach their westernmost limits in this swamp, and this area is an important component of the wildlife reservoirs and corridors that exist around the north end of Jordan Lake. Two species of wildlife are particularly noteworthy: bobcat (Lynx rufus), the largest mammalian predator that still maintains permanent populations in the piedmont, and bald eagles (Haliaeetus leucocephalus), which occasionally use this area as an alternative roosting site to the one located on the adjacent uplands of New Hope Point.

GENERAL SITE DESCRIPTION:

The Morgan Creek Swamp represents only a small fraction of the extensive bottomland communities that once existed in this part of the Durham Triassic Basin; the rest have been submerged beneath the waters of Jordan Lake. Though just a remnant, this swamp is nonetheless one of the most extensive remaining in the piedmont; from the Mason Farm Biological Reserve in Orange County to the shoreline of Jordan Lake, this swamp extends three miles with only one significant break, the causeway on Old Farrington Road (SR 1726); there is also a powerline that crosses the swamp south of the causeway. Only the bottomlands of New Hope Creek in Durham County, and the similar tract along Northeast Creek in Chatham (GRLV2) are more extensive, but both of those areas have been much more disturbed by roadways, powerlines, sewerlines, and subimpoundments.

Characteristic of swamp forests, the canopy contains a diversity of trees tolerant of long periods of inundation, including box elder (Acer negundo), American elm (Ulmus

americana), overcup oak (Quercus lyrata), Shumard's oak (Q. shumardii), and swamp chestnut oak (Q. michauxii). Due to the richness of the alluvial soils, perhaps augmented by nearby diabase dikes, there are also a number of species that prefer basic to circumneutral soils, including southern sugar maple (Acer floridanum), shagbark hickory (Carya ovata), and black walnut (Juglans nigra). Similarly, the shrubs include pawpaw (Asimina triloba), bladdernut (Staphylea trifolia) and buckeye (Aesculus sylvatica), which favor richer soils, along with buttonbush (Cephalanthus occidentalis) and cane (Arundinaria gigantea), both of which are tolerant of flooding. As is typical of swamp forests, numerous species of vines occur here: moonseed (Menispermum canadense), greenbriers (Smilax spp.), crossvine (Anisostichus capreolata), muscadine grape (Vitis rotundifolia), poison ivy (Rhus radicans), and trumpet creeper (Campsis radicans). The herb layer is sparse and less diverse, as is again typical of swamplands, but includes scattered patches of wetland species such as green dragon (Arisaema draconitum), lizard's tail (Saururus cernuus), and green arrow-arum (Peltandra virginica).

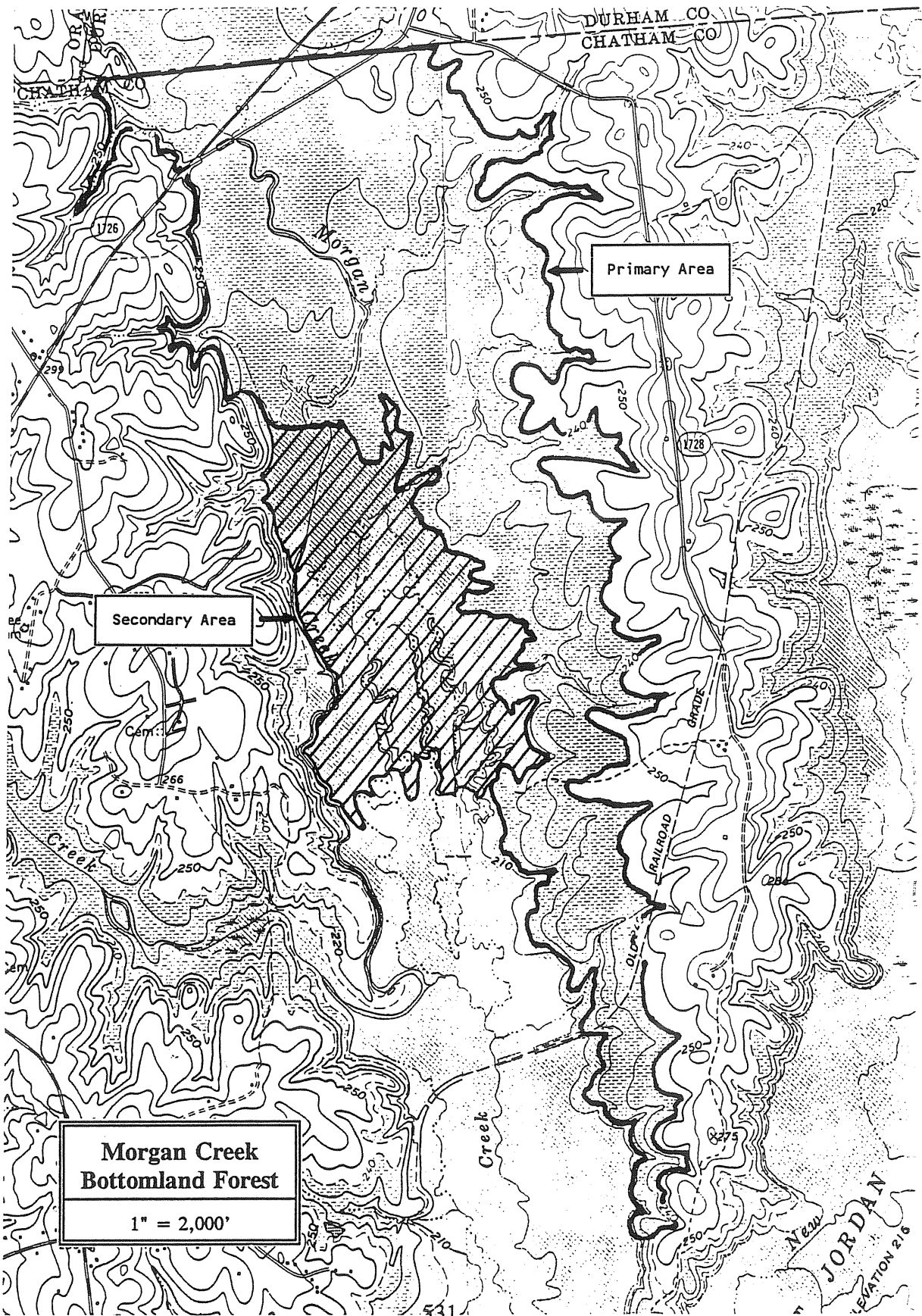
Although we did not record them during the course of our survey, the Morgan Creek Swamp has been documented to contain a number of coastal plain animals that penetrate only this far into the piedmont (Sather and Hall, 1988). These include marsh rabbit (Sylvalagus palustris), Carolina anole (Anolis carolinensis), red-bellied watersnake (Nerodia erythrogaster), blue-spotted sunfish (xx), and xx other species. This swamp is also one of the few places in the piedmont where Swainson's warbler (Limnothlypis swainsonii) is known to nest; in certain years as many as six nesting pairs have been observed (Wiley, pers. comm.).

This bottomland is also well-known to possess one of the highest diversities of breeding birds known for the entire Southeast. We recorded 30 species during the course of our survey, including such noteworthy bottomland inhabitants as the prothonotary warbler (Protonotaria citrea), redstart (Setophaga ruticilla), Kentucky warbler (Oporornis formosus), hooded warbler (Wilsonia citrina), northern parula warbler (Parula americana), yellow-throated warbler (Dendroica discolor), Acadian flycatcher (Empidonax virescens), and red-shouldered hawk (Buteo lineatus).

The hawk also typifies the number of species that occur here due to the extensive, unbroken character of this woodland. Other species characteristic of such tracts include the pileated woodpecker (Dryocopus pileatus) and most notable of all, the bobcat (Lynx rufus). Wild turkey (Meleagris gallopavo) are also known from the Orange and Durham County section of this swamp and can be expected to occur here as well.

CONSERVATION RECOMMENDATIONS:

This area is given partial protection due to its inclusion in the New Hope Gamelands and its ownership by the Army Corps of Engineers. This protection does not preclude, however, further timbering, the construction of sub-impoundments, new road-cuts, powerlines and sewerlines. Given the great significance this tract holds for the wildlife of the entire region, both the Corps and county government should formulate management plans that avoid any further alteration of this swamp.



**Morgan Creek
Bottomland Forest**
1" = 2,000'

Primary Area

Secondary Area

SITE SURVEY REPORT

Site name: Morgan Creek Bottomland Forest
County: Chatham

Date(s): 18/IV/89, 22/VI/89

Surveyors:

Stephen P. Hall, Ph.D
NC Natural Heritage Program
P.O. Box 27687
Raleigh, NC 27611-7687
(919) 733-7701

Marjorie Boyer
NC Plant Conservation Program
P.O. Box 27647
Raleigh, NC 27611
(919) 733-3610

Size: 901 primary acres + 277 secondary acres = 1,178 total acres

Quad: Farrington

Province: Piedmont

Watershed: Morgan Creek --> Haw River --> Cape Fear River

Location and directions: Bottomland on both sides of Morgan Creek, from the Durham County line south to Jordan Lake; crossed at the north end by SR 1726

Landowners and addresses:

Owners contacted and attitude:

General landscape description: See Site Description

Physical description

Aspect: Flat

Slope: Flat

Topographic position: Alluvial flat

Hydrology: Palustrine

Moisture: Frequently flooded to moist

Elevation: 230'

Geology: Alluvial

Soils: Congaree Silt Loam, Altavista Fine Sandy Loam, Wehadkee Silt Loam

Comments on physical description: A remnant of the once vast New Hope Bottomland Forest and still one of the widest remaining bottomlands left in Chatham County

Biological description

Site number: FARN3

Community # 1: Piedmont Swamp Forest

Vegetation structure: Forest

Position in landscape and relation to other communities: Floodplain

Quality and condition: Fair to good

Size:

Dominants (*) and important species:

Canopy:

Acer floridanum
Acer negundo
Acer rubrum
Carya ovata
Fagus grandifolia
Fraxinus sp.
Juglans nigra
Liriodendron tulipifera
Pinus taeda
Quercus pagoda
Quercus lyrata
Quercus michauxii
Quercus phellos
Quercus shumardii
Ulmus americana

Shrubs (cont.):

Lonicera japonica
Menispermum canadense
Parthenocissus quinquefolia
Rhus radicans
Sambucus canadensis
Smilax bona-nox
Smilax glauca
Staphylea trifolia
Styrax grandifolia
Viburnum dentatum
var. lucidum
Viburnum prunifolium
Vitis sp.

Herbs:

Subcanopy:

Carpinus caroliniana
Morus rubra

Arisaema draconitum
Arisaema triphyllum
Asarum canadense
Boehmeria cylindrica
Cryptotaenia canadensis
Galium obtusum
var. filifolium
Geum canadense
Hexastylis lewisii
(NHP records)
Hystrix patula
Impatiens capensis
Laportea canadensis
Lysimachia ciliata
Onoclea sensibilis
Passiflora lutea

Shrubs and vines:

Aesculus sylvatica
Anisostichus capreolata
Arundinaria gigantea
Asimina triloba
Campsis radicans
Cephalanthus occidentalis
Euonymus americanus
Ilex decidua
Ligustrum sinense

c

Herbs (cont.):

Peltandra virginica
Polygonum sp.
Rudbeckia laciniata
Saururus cernuus
Viola papilionacea

Special status species

State-listed species:

Plants:

c Hexastylis lewisii (NHP records)

Potential for other special status species: Low

Other noteworthy species or features:

Animals:

rr Lynx rufus

Community:

Piedmont Swamp Forest (rare within the region)

Site condition

Site integrity: Fair

Average DBH of canopy trees: 20 cm

Maximum DBH of canopy trees: 35 cm

Fire regime: Natural

Logged: Within last 20 years

Evenness of canopy: Natural

Ditched/drained: Old ditches present throughout but no longer maintained

Stream channelized: No

Dredged/filled: No

Understory cleared: No

Grazed: No

ORV damaged: No

Other disturbances: No

Adjacent Land Uses: Forest and agriculture

Significance of site: County

Discussion: See Site Description

Protection considerations and management needs: Currently receives some protection due to its status as Corps lands and its management as gamelands by the NC Wildlife Resources

Commission. Further timbering should be avoided in order for this tract to reach a mature state and no sub-impoundments should be constructed on this tract as has been done on other tracts of the New Hope bottomlands.

Determination of survey boundaries: Encloses entire area of swamp forest below the Durham/Chatham County line.

Priority for further study: Low

Specimens collected:

Photographs:

Others knowledgeable about the site:

References:

Topo map: Attached

Sketch map: None

Plant Species List: See Community # 1

List is: Medium-thorough

ANIMAL SPECIES LIST

List is: Medium-thorough

Vertebrates:

Ardea herodias
 Anas platyrhynchos
 i Buteo lineatus
 i Coccyzus erythrophthalmus
 Archilochus colubris
 Melanerpes carolinus
 Picoides pubescens
 i Dryocopus pileatus
 Empidonax virescens
 Sayornis phoebe
 Tyrannis tyrannis
 Corvus brachyrhynchos
 Parus carolinensis
 Parus bicolor
 Thryothurus ludovicianus
 Polioptila caerulea
 Vireo griseus
 Vireo flavifrons
 Vireo olivaceus
 Parula americana
 Dendroica dominica
 Dendroica discolor
 i Setophaga ruticilla
 rr Protonotaria citrea
 i Oporornis formosus
 i Wilsonia citrina
 Piranga olivacea
 Cardinalis cardinalis
 Quiscalus quiscula
 Molothrus ater
 Carduelis tristis
 Didelphis marsupialis
 Sylvilagus floridanus
 Sciurus carolinensis
 Castor canadensis
 Ondatra zibethica
 Procyon lotor
 rr Lynx rufus
 Odocoileus virginianus

Vertebrates (cont.):

Scincella lateralis
 Coluber constrictor
 Lampropeltis getulus
 Plethodon glutinosus
 Bufo americanus
 Bufo woodhousei fowleri
 Acris crepitans
 Hyla chrysoscelis
 Rana clamitans

Invertebrates:

Papilio glaucus
Feniseca tarquinius
Phyciodes tharos
Polygonia interrogationis
Polygonia comma
Erynnis juvenalis
Dromogomphus spinosus
i Nasiaeschna pentacantha
i Epiaeschna heros
Libellula luctuosa
Libellula vibrans
Plathemis lydia
Erythemis simplicicollis
Triodopsis fallax

