

**AN INVENTORY OF THE SIGNIFICANT NATURAL AREAS  
OF SCOTLAND COUNTY, NORTH CAROLINA**

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Office of Conservation and Community Affairs  
Department of Environment and Natural Resources  
Raleigh, NC

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## Scotland County Natural Areas Inventory

### McINTOSH BAY COMPLEX

**Site Number:** 21

**Size:** 498 acres

**Site Significance:** National

**Quadrangle:** Laurinburg

**Ownership:** The Nature Conservancy (47%), private

**SIGNIFICANT FEATURES:** The site contains a series of four clay-based Carolina bays of high biological significance. Two have high-quality examples of the rare Cypress Savanna (Typic variant) natural community. Another bay is essentially treeless and is an unusual Depression Meadow variant of Cypress Savanna. The state's only location for the Federally Endangered Canby's dropwort (*Oxypolis canbyi*) occurs in one of the bays. At least 10 other rare plants are present. The bays are also critical breeding habitat for rare amphibians, such as for Eastern tiger salamander (*Ambystoma tigrinum*) and Carolina gopher frog (*Rana capito*).

**LANDSCAPE RELATIONSHIPS:** The natural area is somewhat remote from other significant clay-based bays in the state, being at least 5 miles from any others. The nearest significant sites are Little Juniper Creek Bay about 1.5 miles to the west, the downstream end of Juniper Creek Cedar Swamps about 1.5 miles to the northwest, and Shoe Heel Creek Floodplain, whose northern terminus is about 2 miles to the southeast.

**SITE DESCRIPTION:** This natural area consists of four contiguous Carolina bays. The northernmost – Laurinburg Pond (also known to biologists by the private owner's name) – is one of the most unusual of the clay-based bays in the state, being considered by the NC NHP as a Cypress Savanna (Depression Meadow variant). This 40-acre bay is treeless, apparently never having been forested (no tree stumps have been noted), and consists of open water after heavy rainfall or at times in winter and early spring. For most of the year, the pond is marshy, varying from nearly dry to containing some water. Southern cutgrass (*Leersia hexandra*) dominates the bay, but many rare plants are present, with the most significant being a large population of the State Threatened and Federal Species of Concern awned meadow-beauty (*Rhexia aristosa*). This bay is highly important to breeding amphibians, in particular to two State Threatened species – eastern tiger salamander (*Ambystoma tigrinum*) and Carolina gopher frog (*Rana capito*).

The bay just south of Laurinburg Pond – Big Cypress Meadow – is also highly significant. This is one of the best examples of a Cypress Savanna (Typic variant) in the state. Water is present in the bay for most of the year, but never to the ponded extent in Laurinburg Pond. Pond-cypress (*Taxodium ascendens*) dominates the canopy, though some loblolly pine (*Pinus taeda*) is present. The small tree/shrub layers are poorly represented, so the bay has the aspect of scattered trees over a dense and diverse herb layer, of much diversity. A wide variety of grasses and sedges are present. Of most significance is the once fairly large population of Canby's dropwort (*Oxypolis canbyi*), which is restricted to only a handful of Carolina bays or other similar depressions in its range; this is the only known site for it in North Carolina. However, it has seemingly vanished in

the past year or two, probably owing to lowered water levels (drought and other factors). As with Laurinburg Pond, this bay is a very important breeding site for salamanders and frogs.

The other two bays – generally called 401 Bay and Backside Bay – are much less significant. The former bay, also called Rabbit Run Bay, is bisected by US 401 and contains a rather unusual form of Cypress Savanna (Typic variant). It consists of a rather dense forest, composed mainly of pond-cypress and pond pine (*Pinus serotina*) in the canopy, and a moderate zone of “pocosin” shrubs beneath the trees, with shining fetterbush (*Lyonia lucida*) being common. Backside Bay is the smallest bay of the four, lying just east of 401 Bay. It is mainly dry and contains “weedy” native trees such as loblolly pine, sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), and water oak (*Quercus nigra*). Nonetheless, each of these two bays is also significant for breeding by amphibians.

The matrix between the bays has mostly been cut-over sandhills. Cropland lies between Big Cypress Meadow and 401 Bay. A few remnants of sandhills vegetation is present along the eastern side of 401 Bay.

**PROTECTION AND MANAGEMENT:** The Nature Conservancy owns and protects nearly 235 acres of the site, of which 128 acres are a Dedicated State Nature Preserve. Their ownership includes the eastern 35% of Big Cypress Meadow, the eastern 30-35% of 401 Bay, nearly all of Backside Bay, and some cut-over sandhills, but just the southern tip of Laurinburg Pond. Fortunately, the private owner of the remainder of Laurinburg Pond has protected the bay as a Registered Natural Heritage Area. Thus, sizable portions of all four bays are protected, but the majority of Big Cypress Meadow and 401 Bay are not protected, nor is Laurinburg Pond protected in perpetuity. Thus, continued acquisition or permanent private conservation agreements of the bays and surrounding habitat by The Nature Conservancy and other conservation entities are very important.

Some fire management has been done by TNC in the bays, at least in Big Cypress Meadow, to control the spread of loblolly pines. A drainage ditch in Laurinburg Pond is a bit of a concern, especially as trees such as loblolly pines have grown up along the drier banks of the ditch (at least at the southeastern end of the bay). TNC has planted seedling longleaf pines in former fields surrounding Backside Bay in order to restore the former sandhills community present there.

**NATURAL COMMUNITIES:** Cypress Savanna (Typic and Depression Meadow variants)

**RARE PLANTS:** Florida goober grass (*Amphicarpum muehlenbergianum*), small-headed marsh elder (*Iva microcephala*), Boykin’s lobelia (*Lobelia boykinii*), shrubby seedbox (*Ludwigia suffruticosa*), Canby’s dropwort (*Oxypolis canbyi*), southeastern panic grass (*Panicum tenerum*), mudbank crown grass (*Paspalum dissectum*), awned meadow-beauty (*Rhexia aristosa*), Tracy’s beaksedge (*Rhynchospora tracyi*), quillwort arrowhead (*Sagittaria isoetiformis*), netted nutrush (*Scleria reticularis*)

**RARE ANIMALS:** Mabee's salamander (*Ambystoma mabeei*), eastern tiger salamander (*Ambystoma tigrinum*), chicken turtle (*Deirochelys reticularia*), dwarf salamander - silver morph (*Eurycea quadridigitata* pop 1), ornate chorus frog (*Pseudacris ornata*), Carolina gopher frog (*Rana capito*), King's hairstreak (*Satyrium kingi*)

**REFERENCES:**

- LeGrand, H.E., Jr. 2003. Site report: McIntosh Bay Complex. N.C. Natural Heritage Program, Office of Conservation and Community Affairs, DENR, Raleigh.
- N.C. Natural Heritage Program. 1980. Laurinburg Pond. N. C. Natural Heritage Program report.
- Nifong, T.D. 1982. The "Clay Subsoil" Carolina Bays of North Carolina. The Nature Conservancy.
- Roe, C., and J. Moore. 1983. Big Cypress Meadow Carolina Bay (Laurinburg 401 Bay Complex). N.C. Natural Heritage Program, registry proposal.

For the protection of sensitive species this map has been deleted from this document and is viewable only on the DoD side of the Denix website.

THE "CLAY SUBSOIL" CAROLINA BAYS OF NORTH CAROLINA

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Prepared for the  
Proposed Natural Heritage of North Carolina Project  
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and the  
North Carolina Nature Conservancy  
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NORTH CAROLINA NATURAL HERITAGE  
SITE INFORMATION SUMMARY

I. GENERAL INFORMATION

- A. Name: Big Cypress Meadow (401 Bay, Laurinburg Bay) = *McIntosh Bay*  
B. Province: Coastal Plain C. County: Scotland  
D. USGS Quad: Laurinburg (1957) E. Coordinates: 34°51'00"N, 79°24'00"W  
F. Location: West of highway US 401 ca. 0.7 mi. south of its jct. with Co.  
Rd. 1416  
G. Elevation: 70 m (230 ft.) H. Size: 61.6 ha (152 a.)  
I. Land Use Status:  
1. Site Usage Category - 2i (logging access roads)  
2. Site Integrity - 4  
3. % Use of Surrounding Land - 50-50-0  
J. Ownership:  
1. Ed Monroe, c/o Eddie Monroe, 57 Lena Ave., Freeport, NY 11520  
2. Archibald M. & John M. McLean, Rt. 1, Wagram, NC 28396  
3. Margaret Tunstall, 241 Decatur Dr., Fayetteville, NC 28301  
4.  
5.

II. SIGNIFICANCE STATUS

- A. National B. Regional C. State D. Provincial E. Local

III. PRESERVE TYPE

- A. Natural Heritage B. Multiple Use C. Rare Population Habitat  
D. Geologic E. Educational

IV. ABIOTIC FEATURES

- A. Geologic Stratigraphy: Coharie/Black Creek (Stephenson 1912/Stuckey 1958)  
B. Rock - Sediment Type: interbedded sandy clays, sands, & gravels (Stephenson 1912)  
C. Soil Type: clayey, kaolinitic, thermic Typic Paleaquult (Horton 1967)  
D. Hydrologic Site Type: wet-mesic to wet-hydric  
E. Topographic Site Type: open, variously exposed, nearly level to gently sloping  
basin of a Carolina bay

V. BIOTIC FEATURES

- A. Plant Community Cover Class: Cypress savannah  
1. Plant Community Type(s) -  
a. Mixed forbs and graminoids  
b. Taxodium ascendens/Liquidambar styraciflua/Mixed graminoids  
c. Taxodium ascendens/Mixed forbs and graminoids  
d. Taxodium ascendens/Panicum hemitomon  
e. Taxodium ascendens/Pinus taeda/Sphagnum sp.  
f. Taxodium ascendens/Rhynchospora tracyi—Rhynchospora corniculata  
g. Mixed forbs and graminoids/Centella asiatica  
h.  
i.  
j.

2. Special Plant Population(s) -
  - a. Manisuris rugosa
  - b. Oxypolis filiformis → *canbyi*
  - c. Rhynchospora tracyi - 4 (Cooper et al. 1977)
  - d.
  - e.

B. Significant Animal Breeding Habitat: 2,3

C. Endangered and Threatened Species:

- 1.
- 2.
- 3.
- 4.
- 5.

## VI. HUMANISTIC FEATURES

- A. Aesthetic Value: 4
- B. Scenic Value:
- C. Scientific Value: 5
- D. Historical Value:

## VII. ADDITIONAL SITE DESCRIPTION OR COMMENTS

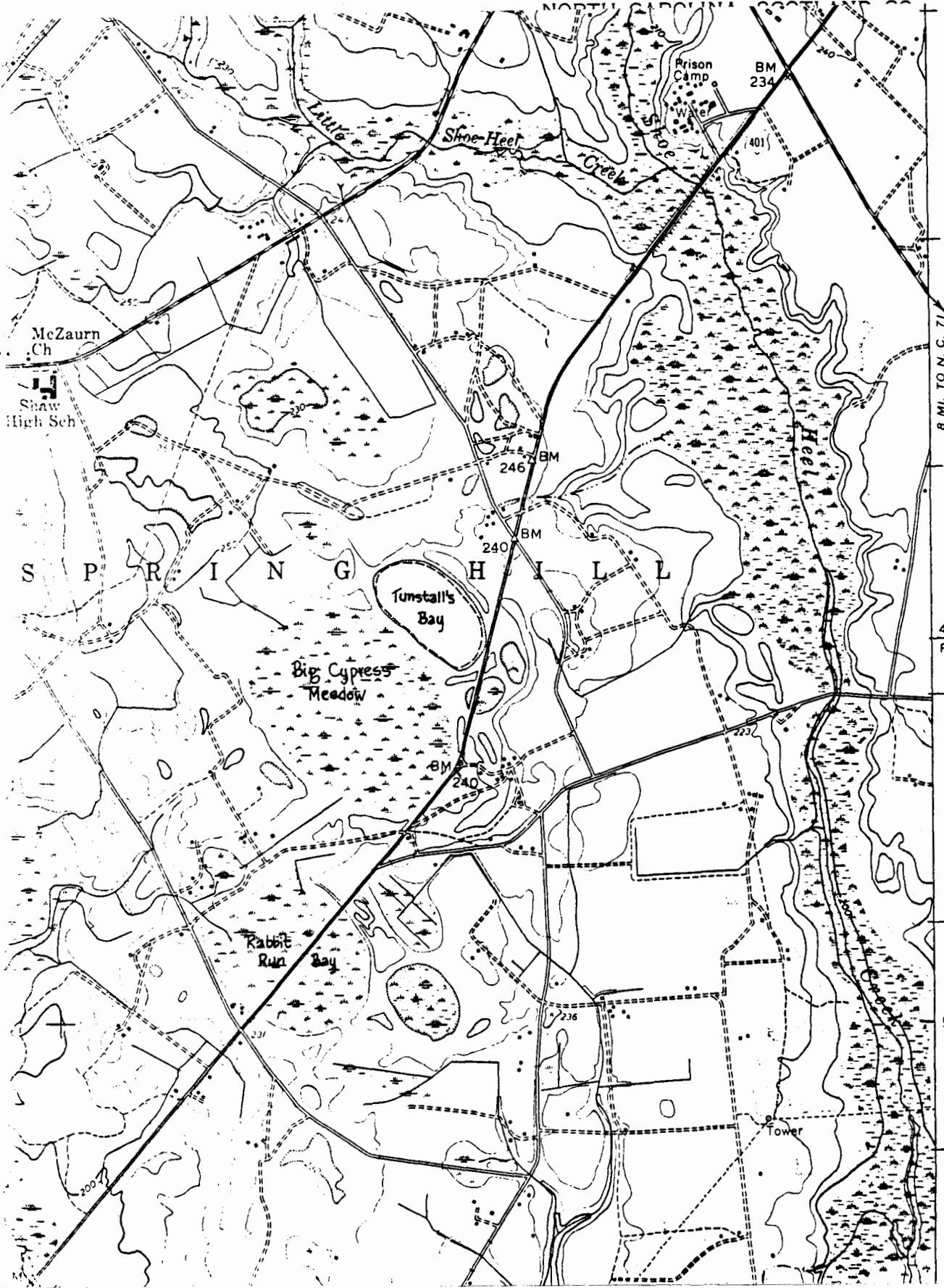
This is the highest quality cypress savannah known within the state in the true sense of a savannah as a grassland.

All of the loblolly pines (*Pinus taeda*) were cut from the site, except at its very center where the water was apparently too deep to allow access of the logging equipment, during the winter of 1981 - 1982. Consequently, some damage to the site resulted from the cutting of several timber drag lanes, minor ditching, and the cutting of canopy pond cypresses (*Taxodium ascendens*) which interfered with timbering of the pines. However, as a savannah site, the bay may actually benefit from the overall effect of this intrusion in the long run.



BOTANY LIBRARY  
LAURINBURG QUADRANGLE

NORTH CAROLINA



8 MI. T. O. N. C. 71

400 000  
FEET

50'