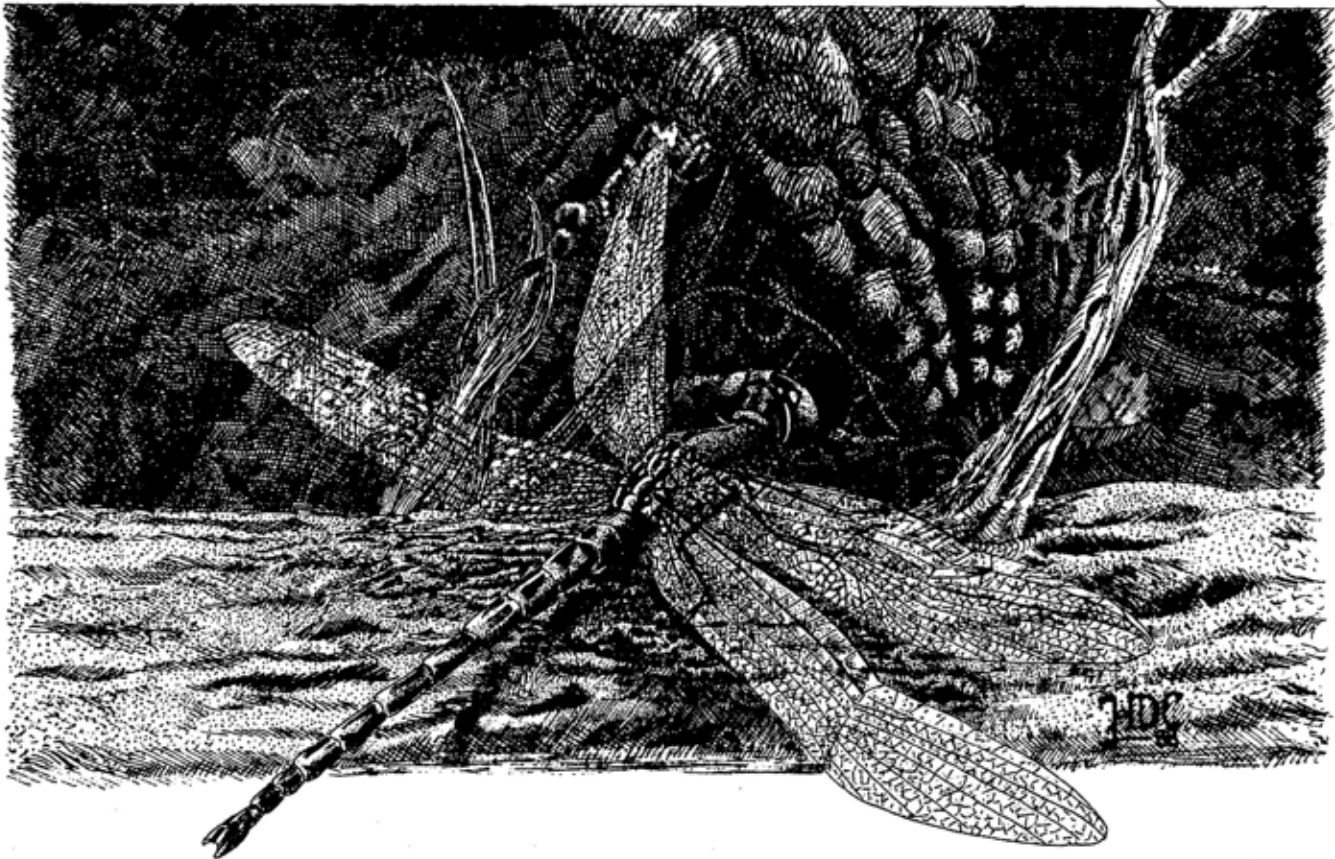


INVENTORY OF THE NATURAL AREAS AND WILDLIFE HABITATS OF ORANGE COUNTY, NORTH CAROLINA



GRAYBACK DRAGONFLY

Table 1. Natural Communities in Orange County and the Natural Areas in which they occur. Names of the communities from Schafale and Weakley (1985). Page 2 of 2.

PALUSTRINE COMMUNITIES

| | |
|--|---|
| Rocky Bar and Shore Uncommon in small streams; mainly in Eno River | E13 |
| Piedmont Levee Forest Rare due to absence of large streams | C02 |
| Piedmont Swamp Forest Rare; found here only in Triassic Basin areas | B03, M17, M18 |
| Piedmont Bottomland Forest Common in broad stream valleys | E05, E08, M18, N16 |
| Piedmont Alluvial Forest Common in stream valleys | C03, E07, E11, E13, E15, E16, M15, N16 |
| Upland Depression Swamp Forest Uncommon; in flat, poorly drained upland areas | E10, N02, N03 |
| Semipermanent Impoundment Uncommon; mostly beaver ponds | L01, L02, M05 |

Plant species characteristic of this unusual formation include Virginia pine (Pinus virginiana), mountain laurel (Kalmia latifolia), various heath species, and bracken fern (Pteridium aquilinum). In positions where steep, nutrient poor slopes are facing north and are thus relatively cool and moist, rhododendron slopes (part of the Acidic Cliff community) can occur. Rhododendron catawbiense, common in the mountains, is restricted in the Piedmont to these steep sites. There are nine such rhododendron slopes in Orange County, more than in any other of the Triangle counties surveyed to date.

Several other terrestrial forest communities are found on soils that are circumneutral in pH. Natural areas containing such forests are very rare in Orange County. The Basic Mesic Forest at Sevenmile Creek, with a large number of sugar maples and other woody species that thrive in circumneutral soils, is the only example of this forest type that we located in this survey. The Basic Oak--Hickory Forest is likewise rarely found in good condition in the county. The best examples are located on the few undisturbed large formations of diabase rock. A tree species found at these sites is the southern shagbark hickory (Carya carolinae-septentrionalis). Where circumneutral clay soils such as Enon or Iredell series develop an impermeable hardpan, the Montmorillonite Forest may develop. Quite rare and restricted to the Piedmont, these forests have a stunted canopy and are dominated by post oak (Quercus stellata) and blackjack oak (Quercus marilandica). The Montmorillonite Forest in the Blackwood Division of Duke Forest (N04) is one of the best examples of this natural community in the state.

There are several types of palustrine (wetland) communities in Orange County. The most common of these are the Piedmont Alluvial Forest and the Piedmont Bottomland Forest, which are common in stream valleys of various sizes. Standing water is absent most of the time, but regular seasonal inundation and deposition of sediments are characteristic. Many of the streamside natural areas we have identified in this report contain at least a small representative area of these natural communities.

Much more uncommon is the Piedmont Swamp Forest, which is restricted to the Triassic Basin areas found only on the easternmost edge of the county. A superlative example of this natural community, indeed one of the best remaining representatives in the eastern Piedmont, is the old growth swamp forest of the Big Oak Woods (M17).

Since Orange County is a headwater region, large streams are lacking. Only at the southwestern corner, where the Haw River forms several miles of the county border, is there a large enough river system to deposit the amount of sediments needed for the development of the Piedmont Levee Forest community. This community, dominated by river birch, box elder and ash, occurs only along a narrow portion of the Haw River that has been, until recently, protected as a part of the NC Wildlife Commission

ORANGE COUNTY NATURAL AREAS SURVEY. SITE DESCRIPTION.

Site name: Cedar Terrace Bottoms
Site number: B03

Significance: 4 - County Medium Integrity: 1 - Prime
Threat Status: 3 - Moderate

Location: South of I-40 and north of Providence Road.
USGS Quad: Chapel Hill
Approx. acreage: 85

Jurisdiction: Chapel Hill

Reasons for significance: This area includes a large tract of relatively mature bottomland swamp forest located on the westernmost limits of the Durham Triassic Basin. One state-listed animal of special concern, the Thorey's grayback dragonfly (Tachopteryx thoreyi), breeds in seepage areas at the margins of this forest.

General description: The wide and gentle bottoms of the Triassic Basin touch only the easternmost portion of Orange County. Except for the Big Oak Woods and Morgan Creek Swamp (M17 and M18), this is the best example of swamp forest in the county. Along the unnamed tributary of New Hope Creek which flows through this site, the forest cover is composed mostly of red maple (Acer rubrum), white ash (Fraxinus americanus), and sweet gum (Liquidambar styraciflua). Other important trees are willow oak (Quercus phellos), Shumard's oak (Q. shumardii), overcup oak (Q. lyrata), sycamore (Platanus occidentalis), and tulip poplar (Liriodendron tulipifera), with hop hornbeam (Ostrya virginiana) and ironwood (Carpinus caroliniana) occurring in the subcanopy. Many of the herbaceous species are those restricted to wet bottomlands, and include water hemlock (Cicuta maculata), lizard's tail (Saururus cernuus), false nettle (Boehmeria cylindrica), aneilema (Aneilema keisak), lycopodium (Lycopodium virginicum), and jewelweed (Impatiens capensis).

These bottomland forests are often prime nesting sites for birds, and 33 species were recorded here over only two brief visits in 1988. Some of the typical bottomland species include the green-backed heron (Butorides striatus), acadian flycatcher (Empidonax virescens), and parula warbler (Parula americana), while the hooded warbler (Wilsonia citrina) and scarlet tanager (Piranga olivacea) represent species that simply prefer extensive hardwood forests, especially where the cover is fairly dense. The tracks of deer (Odocoileus virginianus), raccoon (Procyon lotor), red fox (Vulpes vulpes), and groundhog (Marmota monax) are also conspicuous, while large pools provide breeding habitat for marbled salamanders (Ambystoma opacum) and other amphibians. The most noteworthy animal is the rare Thorey's grayback dragonfly (Tachopteryx thoreyi), which breeds in the shallow seeps located where the crystalline rock of the Piedmont meets the flat sediments of the Triassic Basin.

Protection Status: None known.

Surrounding land use:

N: Powerline, forest
E: I-40
S: Business development
W: Residential

Threats:

Immediate: Construction of apartments and offices on adjacent uplands; timbering
Potential: Same

Recommendations for management or protection: These bottomlands should be protected from development under the Floodplain Protection Ordinance of the Town of Chapel Hill; care needs to be taken, however, that development on the adjoining slopes does not spill over, especially where the grayback seeps occur; a conservation easement should be negotiated with the landowners for the protection of the forest.

Ownership: See Appendix A

Documentation References: None

NATURAL AREA RECONNAISSANCE

County: Orange **Quad:** Chapel Hill
Elevation: 260'-290' **Physiographic province:** Piedmont

Surveyors: Dawson Sather **Steve Hall**
Biology Department **Biology Department**
UNC-CH **UNC-CH**
Chapel Hill, NC **Chapel Hill, NC**
967-9306 **942-8451**

Site name: Cedar Terrace Bottoms
Site number: B03

Significance: 4 - County Medium **Integrity:** 1 - Prime
Threat Status: 3 - Moderate

Date(s): 1/7/87; 2/3/88; 5/6/88, 7/7/88; 25/7/88, 15/9/88

Summary list of Special Status Plant Species: None

Summary list of Special Status Animal Species:
SC Tachopteryx thoreyi

Other significant features: None

Priority for further investigation: Low

Specific needs for further investigation: The area was examined for the presence of four-toed salamanders during March, 1988; although none were found, a more thorough search could still turn them up.

Discussion of natural area: See general description.

NATURAL COMMUNITIES

Name (by NCNHP system): Piedmont Swamp Forest

Nat. Area name: Cedar Terrace Bottoms

County: Orange

Quad: Chapel Hill

Acreage: 85

General description of community: Same as for natural area.

Includes the following Plant Community types:

Natural Community quality and integrity: Prime

Topography

Slope: None

Steepness (in degrees): Flat

Topo position: Bottom along stream.

Hydrology: Intermittantly saturated

Watershed: New Hope Creek --> Haw River --> Cape Fear River

Natural Community significance and reasons: Same as for natural area.

PLANT SPECIES LIST

CANOPY:

Acer floridanum
Acer rubrum
Fraxinus americana
Liquidambar styraciflua
Liriodendron tulipifera
Platanus occidentalis
Quercus lyrata
Quercus phellos
Quercus rubra
Quercus shumardii

SUBCANOPY:

Carpinus caroliniana
Ostrya virginiana

SHRUBS:

Chionanthus virginicus
Cornus florida
Ilex decidua
Itea virginica
Prunus serotina
Rubus argutus
Viburnum rafinesquianum

HERBS:

Aneilema keisak
Aster paternus
Boehmeria cylindrica
Carex louisianica
Cicuta maculata
Eupatorium sp.
Impatiens capensis
Leersia virginica
Lycopus virginicus
Peltandra virginica
Polygala senega
Polystichum acrostichoides
Rudbeckia laciniata
Saururus cernuus
Smilax rotundifolia

VINES:

Campsis radicans
Lonicera japonica
Parthenocissus quinquefolia
Rhus radicans
Vitis rotundifolia

ANIMAL SPECIES LIST

Vertebrates:

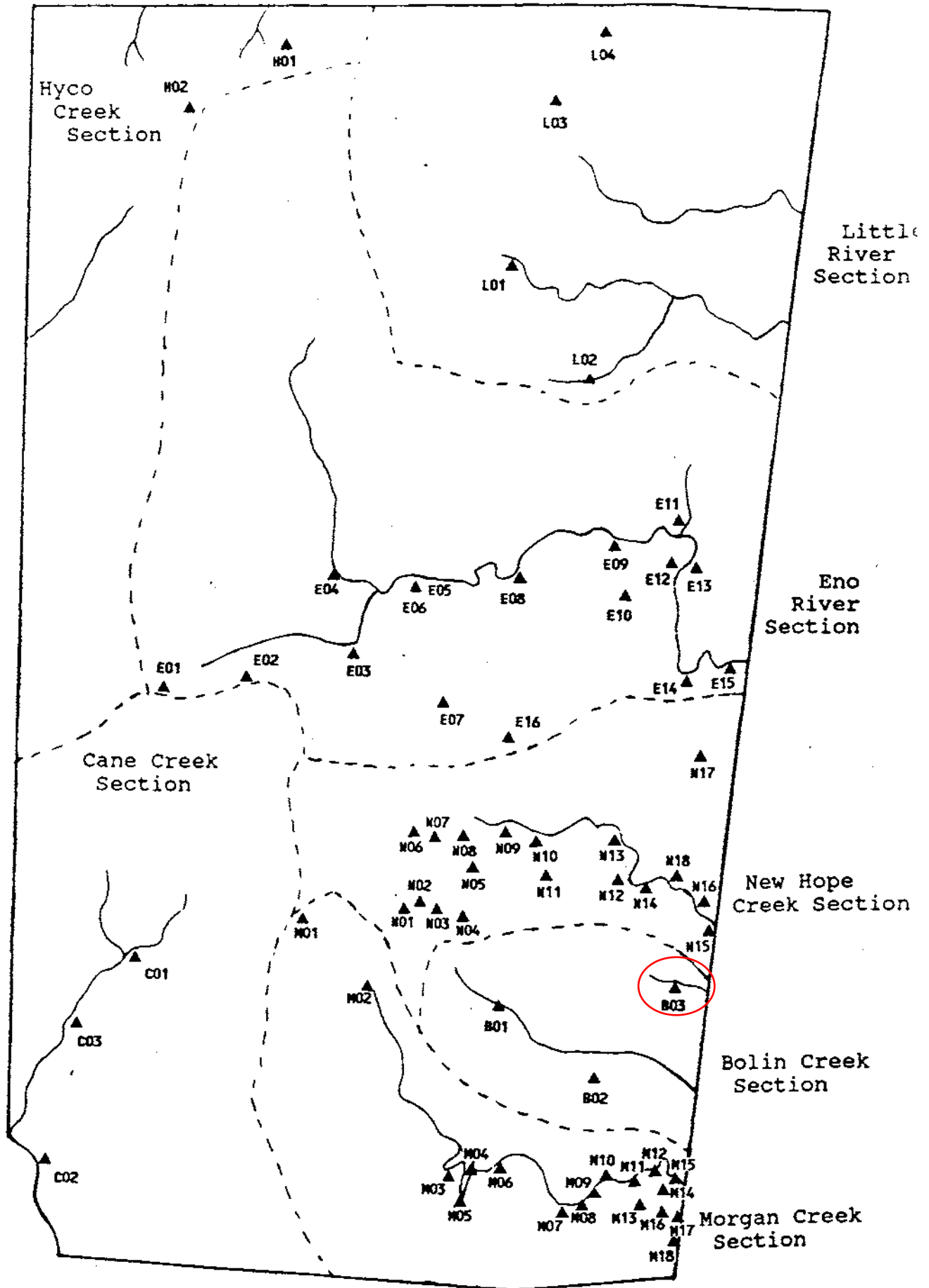
| | | |
|---|-------------|--------------------|
| | Butorides | striatus |
| | Zenaida | macroura |
| i | Coccyzus | erythroptalmus |
| | Melanerpes | carolinus |
| | Picoides | pubescens |
| i | Picoides | villosus |
| | Colaptes | auratus |
| | Empidonax | virescens |
| | Cyanocitta | cristata |
| | Corvus | brachyrhynchus |
| | Parus | carolinensis |
| | Parus | bicolor |
| i | Sitta | carolinensis |
| | Sitta | pusilla |
| | Thryothurus | ludovicianus |
| | Polioptila | caerulea |
| | Sialia | sialis |
| | Hylocichla | mustelina |
| | Vireo | olivaceus |
| | Parula | americana |
| | Dendroica | pinus |
| i | Seiurus | aurocapillus |
| | Geothlypis | trichas |
| i | Wilsonia | citrina |
| | Icteria | virens |
| | Piranga | rubra |
| i | Piranga | olivacea |
| | Cardinalis | cardinalis |
| | Guiraca | caerulea |
| | Passerina | cyanea |
| | Pipilo | erythroptalamus |
| | Quiscalus | quiscala |
| | Carduelis | tristis |
| | Marmota | monax |
| | Sciurus | carolinensis |
| | Vulpes | vulpes |
| i | Urocyon | cinereoargenteus |
| | Procyon | lotor |
| | Odocoileus | virginianus |
| | Coluber | constrictor |
| | Ambystoma | opacum |
| | Bufo | americanus |
| | Bufo | woodhousei fowleri |
| | Hyla | chrysoscelis |
| | Pseudacris | triseriata |
| | Rana | clamitans |

Invertebrates:

| | |
|-----------|---------|
| Papilio | glaucus |
| Satyrrium | calanus |

| | | |
|----|--------------|-------------------|
| | Satyrium | liparops |
| | Everes | comyntas |
| | Polygonia | interrogationis |
| | Nymphalis | antiopa |
| | Limenitis | arthemis astyanax |
| i | Asterocampa | celtis |
| | Satyrodes | appalachia |
| | Megisto | cymela |
| | Epargyreus | clarus |
| | Thorybes | bathyllus |
| | Nastra | lherminier |
| | Poanes | zabulon |
| sc | Tachopteryx | thoreyi |
| | Antrodiaetus | unicolor |

Overall Map of Natural Areas in Orange County



Map 3. Sites B01 - B03
 1 inch = 4,000 feet
 (Or. Cty. Pln. Dept. 1985)

