

Managing for Species of Concern in the Longleaf Pine Ecosystem

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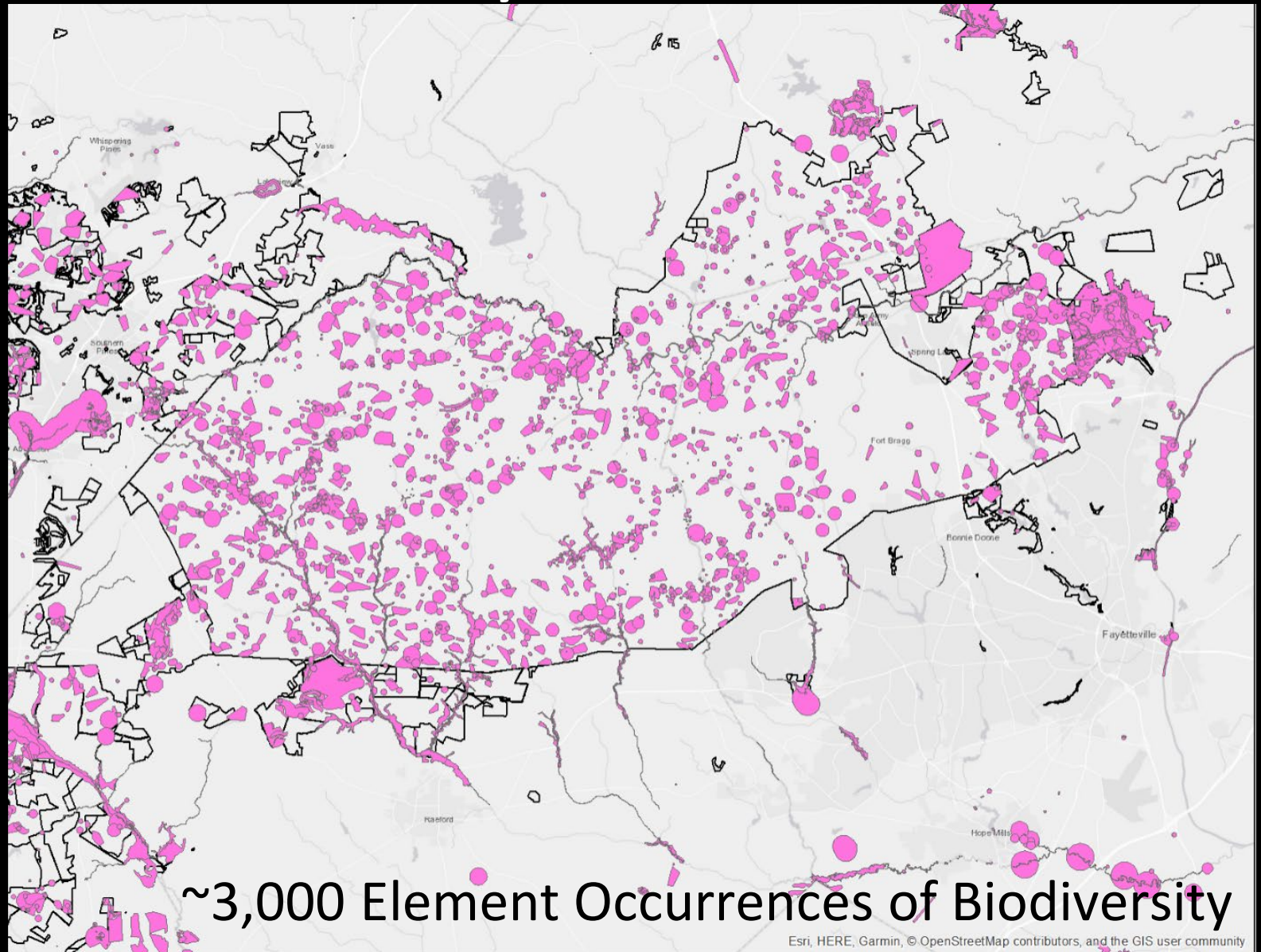




Species of Concern

- Plants and animals that are believed to be declining/threatened
- Receive no legal protection and the use of the term does not necessarily mean that the species will eventually be proposed for listing as a threatened or endangered species
- 193 plant, fish, and other wildlife species of concern in the Sandhills

Biodiversity in the Sandhills



Database for Rare Species Management Recommendations

- Need for management recommendations for rare species of concern
- Information compiled by Lynn Richardson, TNC Volunteer
- Key management activities:
 - Prescribed fire: frequency and timing
 - Mechanical and chemical application consideration
 - Timber harvest activities

Sandhills Pyxie-moss

Pyxidantha brevifolia



Sandhills Pyxie-moss

Pyxidantha brevifolia

NC Status: SR-L

Federal Status: FSC

G rank: G3 - Vulnerable

Habitat: Found on dry, thinly wooded, sand-clays near the summits or on the upper slopes of sandhills.

Fire Seasonality: If there is heavy litter accumulation due to lack of fire, the first burn can be a winter fire. Spring or early summer burns are preferred

Fire Frequency: 3-5 year burns.

Mechanical: Avoid use of heavy equipment, especially mechanical site-prepping. Can tolerate some logging but not mechanical substrate disturbance. pine straw raking. Use natural fire breaks when possible.

Chemical: Avoid hardwood control via herbicides

Boykin's Lobelia

Lobelia boykinii



Boykin's Lobelia

Lobelia boykinii

NC Status: E

Federal Status: FSC

G rank: G2 – Imperiled

Habitat: Cypress-gum depressions or ponds, wet pine savannas and flatwoods. Some sites have continuous, shallow, standing water; others are only seasonally very moist or inundated.

Fire Frequency: Allow fires in adjacent uplands to periodically burn into and across wetlands.

Chemical: Establish pesticide-free buffers around populations to prevent reduction of insect pollinators by pesticide spraying in fields.

Mechanical: Protect depression wetlands from clearing, draining, and filling. Protect natural water table levels from excessive drawdown. Avoid placing roads and firebreaks in the transition zones between uplands and wetlands.

Dusky Roadside-Skipper

Amblyscirtes alternata



Dusky Roadside-Skipper

Amblyscirtes alternata

NC Status: SR

Federal Status: n/a

G rank: G2

Habitat: Open, grassy pine woods ranging from moist to dry, including moist flatwoods, savannas, and sandhill ridges.

Fire Frequency: All life stages are above ground and at least most of the year is spent on the food plant, the grass *Gymnopogon ambiguus*, and possibly other grasses. Prescribed burns that consume or scorch the standing dry grass and litter will kill most or all larvae except in skips, unless perhaps if substrate is wet. Since there are two or three broods, recovery from unburned refugia should occur quickly, but a given food plant patch should not be burned every year or two.

Timber: Clear cutting would probably eliminate an occurrence for many years, but impact from selective harvest is difficult to predict and might be beneficial. Hardwood invasion is detrimental to the species.

Chemical: The relatively late first brood peak suggests larvae overwinter in an earlier instar than most skippers, which could make them more sensitive to BTK applications aimed at gypsy moth.

Frosted Elfin

Callophrys irus





Frosted Elfin

Callophrys irus

NC Status: SR

Federal Status: N/A

G rank: G3

Habitat: Open woods, forest edges, fields, and scrub in which their larval hostplants grow. Increasingly found in powerlines and along railroads.

Mechanical: Avoid disking

Fire: Fire is directly lethal to the Indigo feeding ecotype at any season, and apparently causes adults of the lupine feeder to leave the burned area even though pupal mortality is low

Chemical: Minimize exposure to BTK , avoid broadcast herbiciding

Other: In most of the range the most immediate needs include reducing threats from out of control deer and/or restoring sufficient habitat to connect now isolated small remnant colonies.

Pinewoods darter

Etheostoma mariae



Pinewoods darter

Etheostoma mariae

NC Status: SC

Federal Status: FSC

G rank: G3

Habitat: Clear or tannin-brown water of shallow creeks with moderate current; occurs in gravel or rubble riffles (adults mainly) and in quiet or flowing sandy or silty pools (especially when aquatic vegetation present) (young mainly)

EO occurrences: Found in the Lumbee River Drainage, including Drowning Creek and tributaries

Timber: Prevent stream siltation resulting from timbering.

Chemical: Prevent water pollution from pesticide use.

Mechanical: Discourage damming of stream headwaters to create ponds for golf courses and for their irrigation, and agriculture and road management practices that result in stream siltation. Impoundments are highly detrimental, favor competitive and predaceous species such as the redbreast sunfish, bluegill, and largemouth bass.

Eastern Pondmussel

Ligumia nasuta





Eastern Pondmussel

Ligumia nasuta

NC Status: T

Federal Status: N/A

G rank: Secure

Habitat: Fine sand to mud substrates in lakes and ponds, as well as slack-water areas of canals, rivers, and streams

Chemical: Avoid treating lake areas with herbicides and pesticides containing copper.

Mechanical: Where dredging, impoundments, construction and dam removal occur, monitor to assess impact. Mitigation measures such as relocation of potentially affected specimens should be carried out.

Other: Zebra mussels are biggest threat

Mabee's Salamander

Ambystoma mabeei





Mabee's Salamander

Ambystoma mabeei

NC Status: SR

Federal Status: n/a

G rank: G4

Habitat: Tupelo and cypress bottoms in pine woods, open fields, and lowland deciduous forest. Pine savannas, low wet woods, and swamps. Usually in burrows near breeding ponds. Eggs are attached to submerged plant material or bottom debris of acidic, fishless ponds in or near pine stands.

Fire: Moves to breeding sites in fall and winter, avoid winter burns

Timber Harvesting: Avoid clearcutting and intensive mechanical site preparation. Maintain forested buffer of 250m

Mechanical: Breeding ponds should not be dredged or stocked with fishes.

Summary

- The Sandhills area is a biodiversity hotspot
- There is lack of fundamental knowledge on how to best manage some of these species
- Many plants and animals benefit from key management activities such as prescribed fire

