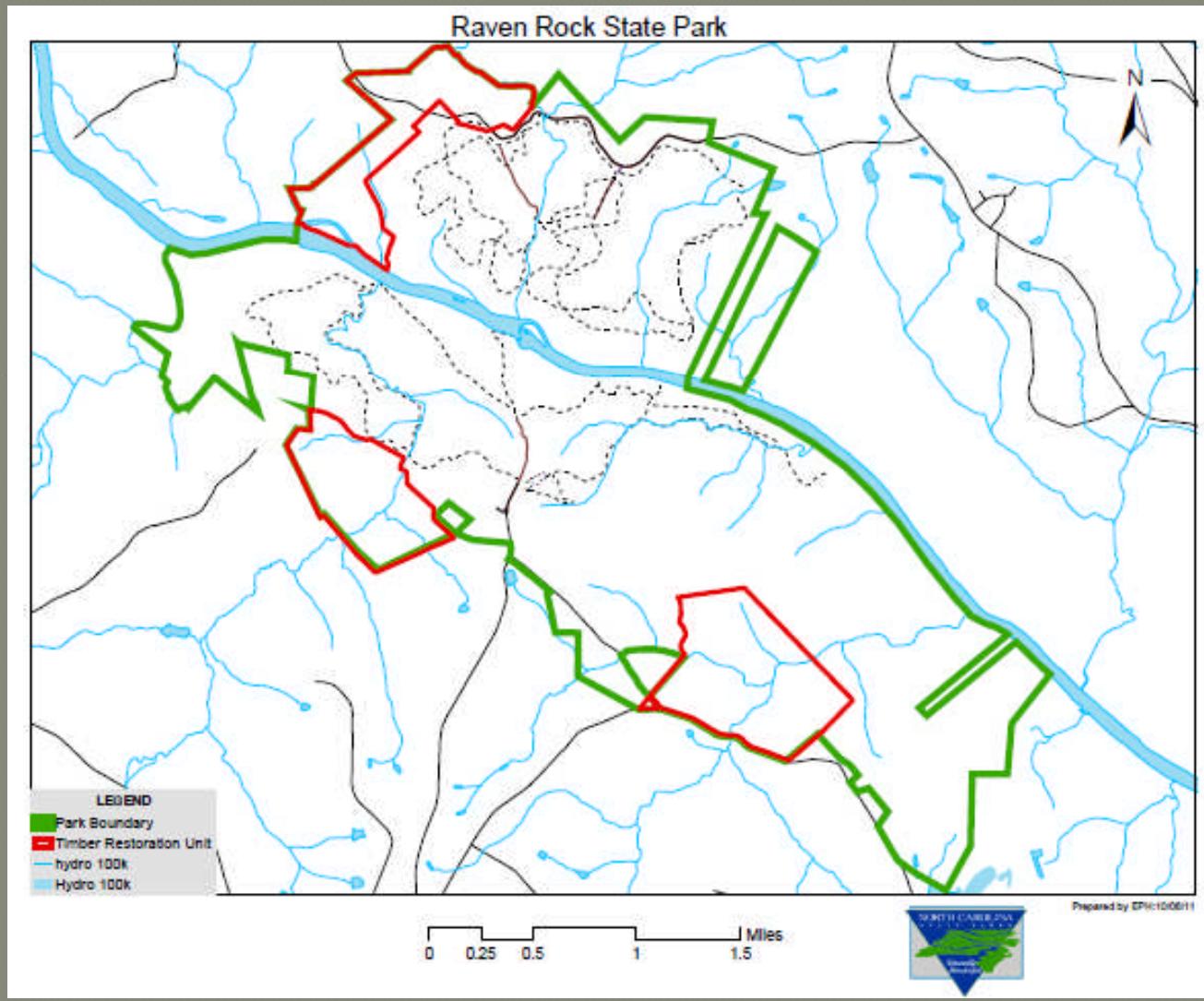


# From Plantation ... to Restoration

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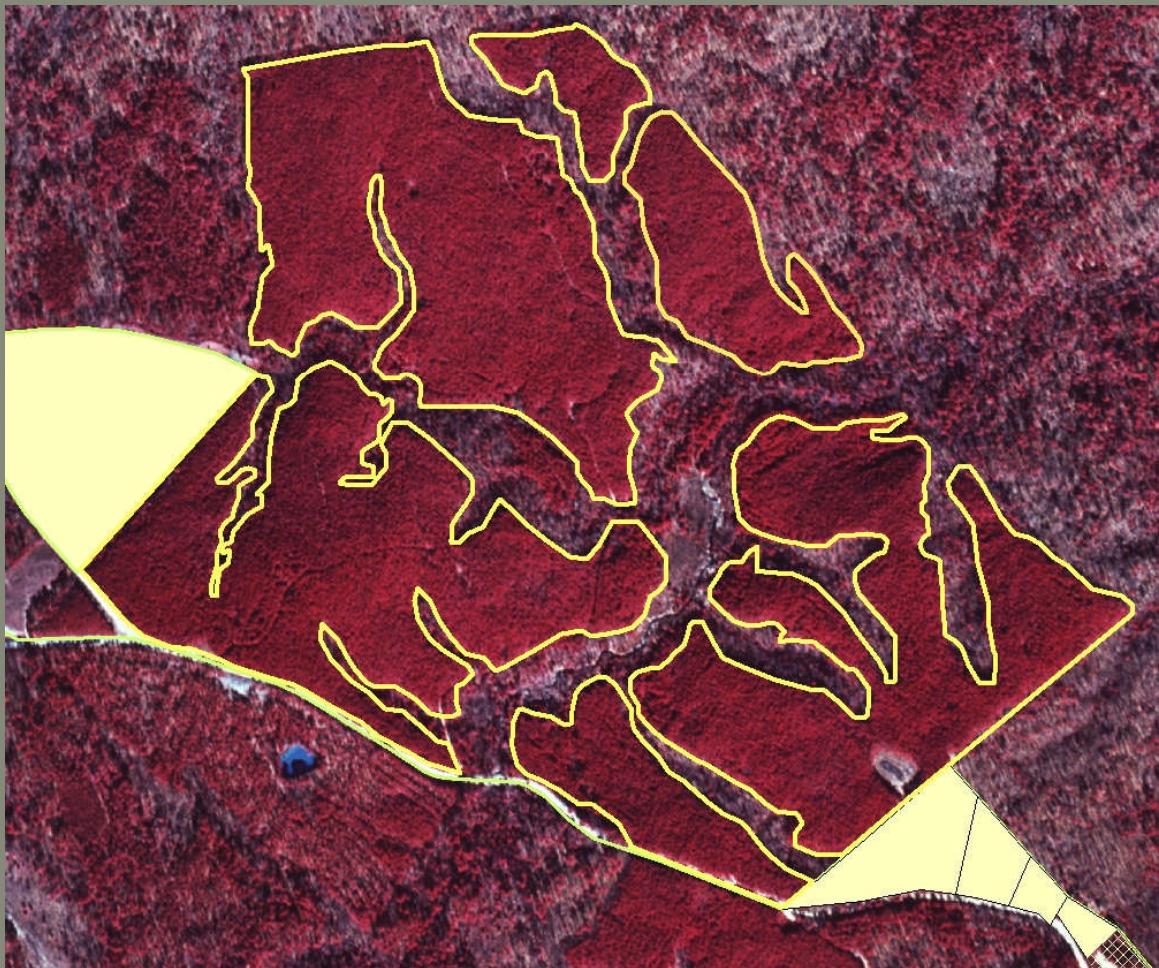


# RARO: South River Road Pine Plantation Restoration Project



# South River Road Tract

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# What's wrong with pine plantations?

- Monoculture – dominated by one tree species – no diversity
- Lack multilayered canopy, trees all same size and age, lack snags, logs – no structural heterogeneity, which negatively affects biodiversity (Hansen et al. 1991)



# What's wrong with pine plantations?

- Lower bird diversity, lower breeding bird densities, lower herb layer diversity, lower insect diversity  
(Helle and Monkkonen 1990; Baguette et al. 1994; Gjerde and Saetersdal 1997; Fischer and Goldney 1998; Twedt et al. 1999; Johnston and Odum 1956)
- Increased susceptibility to disease, pests (e.g. SPB), and uncontrollable wildfires



# Management Policies

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- DPR Resource Management Policy
- DPR Ecological Restoration Guidelines
- DPR Draft Pine Plantation Guidelines

# What Community Should Be There, and How Can We Restore It?

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- Adjacent reference site: Dry-Mesic-Oak Hickory Forest and Dry-Oak Hickory Forest (Schafale and Weakley 1990)
- Internal expertise, and consult partner agencies: assistance from Hardwood Silviculturist, NC Forest Service (formerly DFR)

# The Plan

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- Baseline Monitoring
- Mechanically thin loblollies, initially from 100-140 BA down to 70-80 BA



# The Plan (cont.)

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- Rx Burn ~2 years following initial thinning

- Reduce competition from maple, sweetgum, poplar
- Benefits to seedbed promote establishment of more oaks

- Ongoing Monitoring

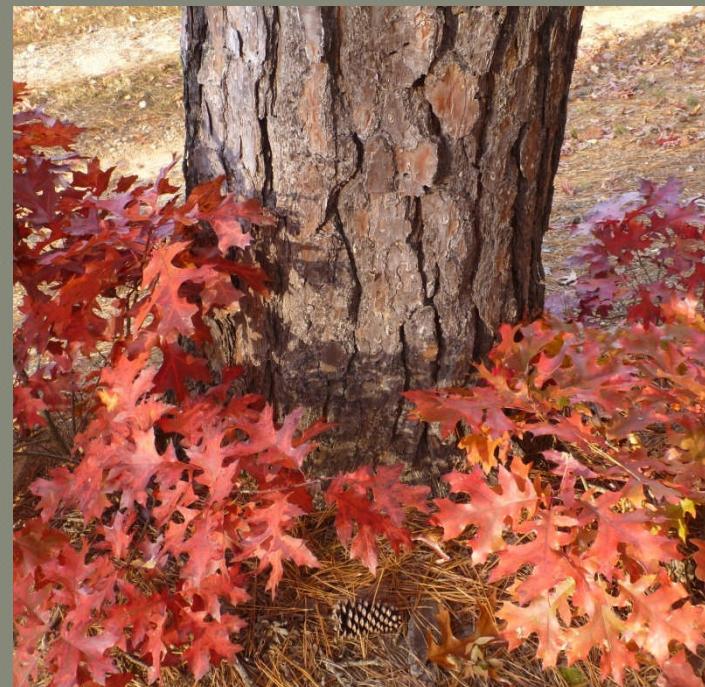
- Target Oak and Hickory Densities: 300-500 s/a and 100-250 s/a, respectively
- Invasive Plants

# The Plan (cont.)

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## ● Final Pine Canopy Removal

- Timing dependent on results of monitoring
- ~7-10 years
- Summer - minimize pine regeneration in resulting gaps (Loblolly seed-fall in fall)



# The Contract

- Written with assistance from NCFS, with NCFS and DPR oversight of contractor's work
- Purpose of Sale
- Specifies residual BA
- Oak timber of 10" or larger must remain
- Park notification prior to start
- Stay out of stream buffers (50')
- BMPs
- Use existing decks
- Fire lines around perimeter
- Repair roads



**North Carolina State Parks**  
**Raven Rock State Park**  
3009 Raven Rock Road  
Lillington, NC 27546  
(910) 893-4888

### **Invitation to bid on timber**

→ *The mission of the state parks system is to conserve and protect representative examples of the natural beauty, ecological features and recreational resources of statewide significance; to provide outdoor recreational opportunities in a safe and healthy environment; and to provide environmental education opportunities that promote stewardship of the state's natural heritage.*

#### **Purpose of Sale**

→ **To restore plantations to the naturally occurring oak-hickory hardwood forest**

#### **Timber being offered for sale herein is as follows:**

The timber being offered for sale is located in Harnett County on the property of Raven Rock State Park (35°26'40.81"N 78°53'38.03"W). The State Park in partnership with the North Carolina Forest Service wishes to conduct a "thinning from below" practice leaving a residual basal area of 70-80 square feet per acre. This practice will remove the smaller suppressed and intermediate trees from the understory and a few larger trees in the upper canopy. Oak timber of 10" or larger must be left. The timber to be harvested consists of Loblolly pine pulpwood and chip-n-saw in six (6) separate stands (see attached map). The timber in the stands are not marked and trees to remove will be operator selected. The sale boundaries are flagged in blue. The terrain is gently rolling to moderately steep towards the creeks.

→ It is the desire of Raven Rock State Park to allow regeneration of these areas to upland Oak/Hickory stands. The purpose of this harvest is to open up the forest canopy to enhance the regeneration of understory oaks through this thinning and a series of burns.

#### **Volume Estimates:**

The following volumes should be considered estimates only. Buyers are encouraged to make their own inspection and determination of timber volume. The timber will be sold on lump-sum sealed bid basis through the NC State Surplus agency. All sawtimber volumes have been estimated utilizing International 1/4 Inch log scale. A form class of 78 was utilized to determine pine sawlog volume. Topwood volumes are included in the pulpwood estimate.

#### **Thinning Totals on 205 Acres**

Total Loblolly Chip-N-Saw	157,049 board feet
Total Pine Pulpwood	2,659 Cords (approx. 7,126 tons)
Total Hardwood Pulpwood	120 Cords (approx. 322 tons)

# Questions???

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