Red Cockaded Woodpecker Habitat at Oak Mountain State Park

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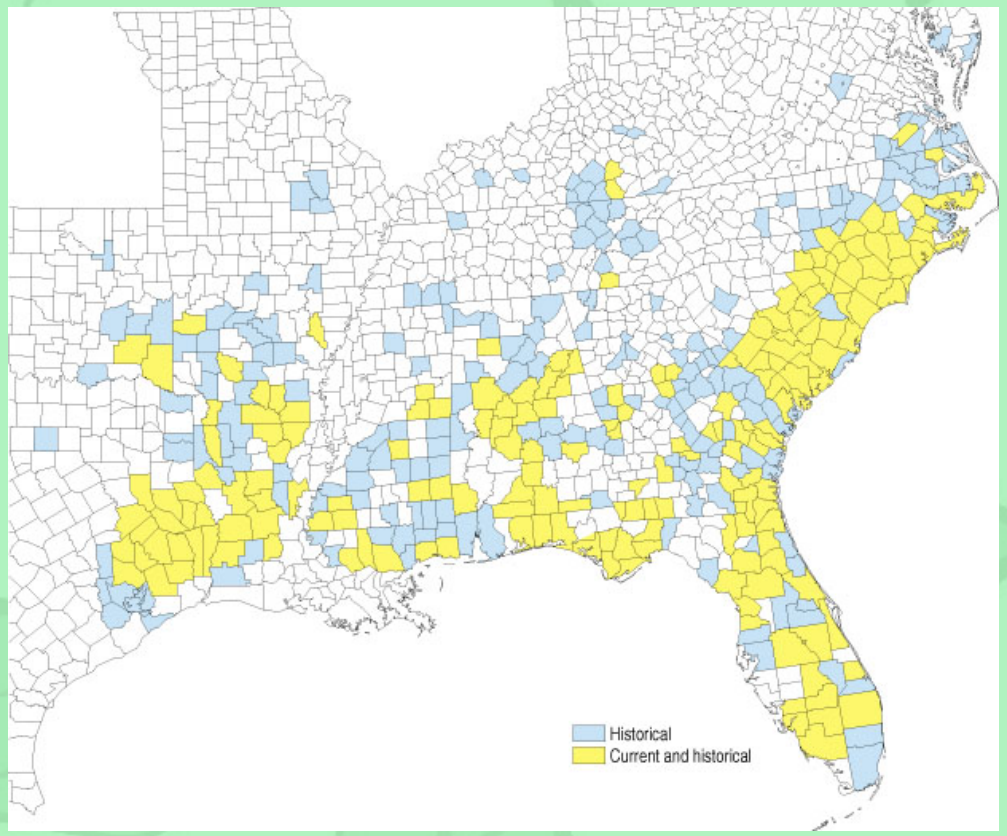
Introduction to RCWs

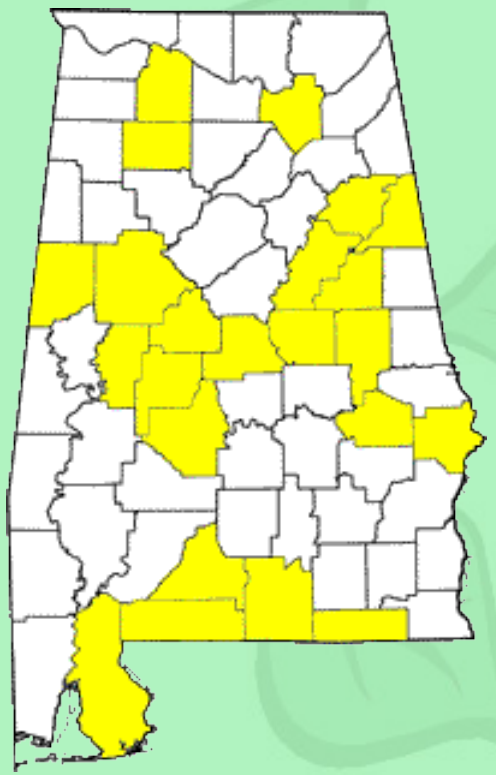
- Endangered insectivore

- Main cause of decline: Habitat loss

Introduction to RCWs



- (1971 & 1980)



- (2003)

Introduction to Long Leaf Pine

- Long Leaf Pine
  - Fire dependent ecosystem
- Oak Mountain has some of the best Long Leaf Pine forest left

Introduction

- Healthy Long Leaf Forest

- Fire Suppressed “Long Leaf Forest”

Goal

- To examine the cavity trees and surrounding foraging area in an effort to manage the habitat for the re-colonization by Red-Cockaded Woodpeckers

RCW Cavity Trees

• Lennartz et al. (1983) found cavity tree DBH between 23-64 cm

•Conner and Locke (1982) found that RCWs mostly nest in living, mature pine trees infected with Red Heart Fungus, which makes them easier to excavate.

• Locke and Conner (1983) found that mean cavity rotation was 271 degrees ± 65.7 degrees.

RCW Cavity Trees

• Wood (1983) found **cavity tree dbh** between 27.4-77.5 cm; mean = 43.8 cm.
cavity tree height between 16.5 – 33.8 m; mean = 24.8 m
cavity height between 4.9 – 24.1 m; mean = 13.1 m
cavity orientation – 75.3% were between NNW and SSW

Foraging Habitat

- RCWs prefer to forage for arthropods on pines with ≥ 22.9 cm DBHs.

- Hardwood trees should be no more than 4.6 meters tall. (Hooper et al.)

Methods

- 7 abandoned cavity trees and their surrounding habitat were studied.

- DBH, height, cavity height, and cavity orientation were recorded for each of the 7 trees.

- A plot began from the cavity tree in a randomly determined degree and continued for 61 meters. All trees within two meters perpendicular to this transect line were studied.

- DBH, height, and tree type were recorded for these trees.

Results

- Cavity Tree Results:

	bearing of cavity (dg)	cavity height (m)	tree height (m)	tree DBH (cm)
Mean	248.89	7.78	12.14	32.68
Standard Deviation	41.74	2.35	3.04	5.46

- Foraging Area Tree Results:

Hardwood	height (m)	DBH (cm)	**Pines**	height (m)	DBH (cm)
Mean	4.97	4.98	Mean	8.25	11.79
Standard Deviation	3.28	4.44	Standard Deviation	5.37	8.56

Complications

- ALEX VARNER. We finally found the abandoned colony in late October.

- Lightning-rain interfered with collecting data.

- Rattlesnake Incident. . .

Discussion

• Cavities: All cavities were oriented in a western direction, consistent with previous findings. Also, our mean cavity height was consistent with previous studies, although on the low end of the range.

• Cavity Trees: Our mean cavity tree height was below the minimum reported cavity tree height from previous findings. Our mean cavity tree DBH was within the range from previous studies, but again on the low side.

Discussion

- Foraging Habitat (Hardwood): Our hardwood mean height is slightly above suggested maximum tolerated height, however, the standard deviation is over half of the mean itself.

- Foraging Habitat (Pines): Our pine mean DBH is severely under the suggested minimum needed for foraging.

Discussion

- We believe that the area at Oak Mountain State Park would be suitable for the re-colonization of Red-Cockaded Woodpeckers once the hardwoods are reduced and the pines greater in diameter.

Management Plan

- Prescribed burning the long-leaf pine forest at Oak Mountain State Park

• Recommendations by Stamps et al. (1983) for protecting the cavity trees during prescribed burning include:

1) Constructing a fire break 60 meters from the colony edge and burning separately.

2) Raking fuel 3 meters away from cavity trees

Management Plan

3) Suppressing the fire around the cavity trees if needed.

4) Continuing to use prescribed burns every 3 years to prevent fuel buildup.

• In the future, loblolly pines that meet the height and DBH specifications, the red heart fungus could be artificially injected, in order to produce more potential cavity trees (Conner and Locke, 1983).

Management Plan

- Also in the future, artificial cavities could be placed in the area in the event that there are not enough pines suitable for nesting.

Future Experiment

•We hope that future students will continue to study the abandoned RCW habitat at Oak Mountain.

• Further studies could consist of a GPS study including a topography map of the area or a follow up study after prescribed burns

• Another study of great interest would be to investigate the recent activity on one of the cavity trees. (We think we've seen him)

Acknowledgements

• Thanks to Dr. Duncan and Keener for helping us find the cavities.

• Thanks to Oak Mountain State Park for allowing us entrance to conduct our research.

• Thanks to Alex Varner for placing a Corona bottle at the base to mark the tree with recent activity.

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