


# Red-cockaded Woodpecker Survey Protocol

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|--|---|-----------------------------------|
| Environmental Analysis Unit  |  | Approved: 5/31/18<br>Version: 1.4 |
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## ***Purpose***

The purpose of this procedure is to guide biologists through the protocol for surveying for red-cockaded woodpecker (RCW).

## ***Background***

Surveys are used to determine whether the nesting and/or foraging habitat of a red-cockaded woodpecker group will be adversely affected by the proposed project. This is an important part of the conservation and management of this endangered species, and therefore, the U.S. Fish and Wildlife Service has developed standard survey and analysis procedures for such determinations. These determinations must be undertaken prior to the initiation of any project within the southeastern United States if 1) RCW's are listed for that particular county, and 2) if the project calls for removal of pine trees 30 years or older (typically such trees will be at least 10 in. dbh or larger). Activities taking place near cavity trees, or those that could indirectly alter RCW habitat must also be considered, regardless of whether trees are removed or not.

## ***Responsibility***

It is the responsibility of the biologist either conducting the actual survey or managing the private firm conducting the survey to be familiar with this protocol and to make sure it is followed.

It is the responsibility of the person requesting the survey to do so in a timely manner and to give all pertinent project data to the biologist conducting the survey.

## ***Procedures***

The following four procedures are based on the U.S. Fish and Wildlife Service's RCW Recovery Plan 2003. The procedures are also based on EAU biologists' prior project experience and past project coordination with USFWS.

## General Survey Procedure

- Step 1.** Consult the Natural Heritage Database for information on known populations of RCW or known locations of suitable nesting or foraging habitat for RCW. For projects on or adjacent to large public lands (e.g. Fort Bragg, Croatan National Forest, Pocosin Lakes National Wildlife Refuge, Sandhills Gamelands, Holly Shelter Gamelands), check with local biologists as well.
- Step 2.** Surveys can be done year round but optimal time to survey is when the leaves have fallen off the trees, generally November to early March.
- Step 3.** Obtain most recent available aerial photography. Prepare map using aerial photography with study area. Also include a half mile boundary from study area. (ArcMap is a good resource to use for this)
- Step 4.** Assess through field reconnaissance if there is [suitable foraging habitat](#) within study area.
- Step 5.** If there is no suitable foraging habitat within the study area then no further surveys are needed.
- Step 6.** Also, assess if there is [suitable nesting habitat](#) within study area. If found, follow [Surveying for RCW Cavity Trees](#).
- Step 7.** If suitable foraging habitat is found within study area, then biologist must survey for suitable nesting habitat within a half mile of all foraging habitat within study area.
- Step 8.** For nesting and foraging habitat surveys within the project study area and within 0.5 mi of the project site, potential habitat is assessed at the level of the stand. A stand is a term often used to refer to a wooded area receiving past or current silvicultural treatment as a single management unit. For the purposes of these procedures, the term includes any subset of a tract of wooded land, divided by biological community type, management history, or any other reasonable approach. A small tract of land may be considered a single stand.
- Step 9.** For large projects with several stands, see [RCW Survey Form](#) as a resource to organize field notes for each stand.
- Step 10.** Surveys should not be conducted after a hard rain. This makes it difficult to see sap and cavities.
- Step 11.** In habitat that is too thick to walk through (usually in pocosin habitat) surveys may be done by helicopter. Helicopter surveys must be done during leaf out. See your supervisor to determine if helicopter surveys are needed.

## Biological Determination Procedure

This procedure outlines the general steps in determining a Biological Conclusion. If you have a project with an unusual situation that does not fall into the categories described below, alert your immediate supervisor and/or coordinate with USFWS.

- Step 1.** If no suitable foraging or nesting habitat is present, the biological conclusion is “No Effect.”
- Step 2.** If there is either suitable foraging habitat or suitable nesting habitat but surveys did not find any RCW cavity trees and there are no known RCW trees or clusters within 1.0 mile of study area then the biological conclusion is “No Effect”
- Step 3.** If the above is true but project is near a large population of RCWs (i.e. Sandhills area) consult with supervisor and/or USFWS for appropriate biological conclusion.
- Step 4.** If RCW cavity trees are found within the study area or a half mile from study area, then the biologist needs to discuss this with supervisor and/or USFWS on the degree of consultation. If active RCW trees are found, then most likely a foraging habitat analysis (FHA) needs to be conducted.

### **Identification of Suitable Foraging Habitat<sup>1</sup>**

During field surveys in the project study area, look for the following characteristics of suitable foraging habitat:

- Pine or pine/hardwood stand of forest, woodland or savanna
- Dominant trees in the stand are pines (50% or more in composition)
- Dominant pine trees in the stand are 30 years in age or older

These characteristics do not necessarily describe good quality foraging habitat (see 2E, 8I in RCW Recovery Plan 2003); rather, this is a conservative description of potentially suitable foraging habitat.

The age of stands can be determined by aging representative dominant pines using an increment-borer and counting annual growth rings. Stand data describing size classes may be substituted for aging representative pines if the average size of 30 year-old pines is known for the local area and habitat (i.e., at least 10 in dbh or larger).

### **Identification of Suitable Nesting Habitat<sup>1</sup>**

During field surveys, look for the following characteristics of suitable nesting habitat:

- Pine or pine/hardwood stand forest, woodland, or savanna
- Dominant trees in the stand are pines (50% or more in composition)
- Stands 60 years in age or older

Younger stands may contain 60 year old or older pine trees scattered or clumped within the stand. These older trees within younger stands must also be examined for the presence of RCW cavities.

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<sup>1</sup>For projects east of the Suffolk Scarp (see [Figure](#)), RCWs are known to nest and forage in wet loblolly and/or pond pine stands. Additionally, they may occur in wet hardwood or cypress stands with as few as three mature pines per acre. Midstory conditions in these occupied RCW habitats are often composed of tall, dense hardwoods. RCW cavities occur only in mature pines; however, such pines may be short, stunted trees.

All stands and trees 60 yrs or older need to be surveyed for presence of RCW cavities.

The age of stands can be determined by aging representative dominant pines using an increment-borer and counting annual growth rings.

### **Surveying for RCW Cavity Trees**

- Step 1.** All surveys for RCW cavity trees must be conducted by personnel experienced in management and/or monitoring of the species.
- Step 2.** All potential nesting habitat should be surveyed by running line transects through stands and visually inspecting all medium and large sized pine for evidence of RCW cavity excavation.
- Step 3.** Whenever possible, walk transects north-south because many cavity entrances are oriented in a westerly direction. Transects must be spaced so that all trees are inspected. The necessary spacing will vary with habitat structure and season from a maximum of 100 yards between transects in very open pine stands to 50 yards or less in areas with a dense midstory.
- Step 4.** Trees with flat tops (usually loblolly and longleaf pines) are indicative of older trees and must be closely inspected.
- Step 5.** If RCW cavity trees are found within the study area or half mile, mark the tree by putting several rings of flagging tape on the tree (make sure flagging is highly visible).
- Step 6.** Record the location of all cavity trees in the field using a Global Positioning System (GPS) unit, aerial photograph, and/or field map. Activity status, cavity stage (start, advanced start, or complete cavity), and any entrance enlargement are assessed and recorded at this time.
- Step 7.** Taking photos can be useful to verify that they are RCW cavities.
- Step 8.** If cavity trees are found, more intense surveying within 1500 feet of each cavity tree is conducted to locate all cavity trees in the area.
- Step 9.** If active completed cavities are found, then the RCW trees need to be observed at dusk or dawn to determine if cavities are being used by RCWs. **This should only be done with supervision of experienced RCW biologist.**
- Step 10.** Cavity trees are later assigned into clusters based on observations of RCW as described in 3A, RCW Recovery Plan 2003.
- Step 11.** Report any cavity trees or other evidence of RCW activity to the U.S. Fish and Wildlife Service and the NC Natural Heritage Program.
- Step 12.** Once surveys for cavity trees are complete, the need for a FHA must be determined and a biological conclusion rendered. If a FHA is needed, a biological assessment will be required along with consultation with SFWS. Consult with your supervisor to determine whether the FHA will be done in-house or outsourced to an on-call consultant.

## **Resources and Tools**

[U.S. Fish and Wildlife Service – Red-cockaded Woodpecker Recovery Plan 2003](#)

[U.S. Fish and Wildlife Service – RCW Homepage](#)

[U.S. Fish and Wildlife Service – Red-cockaded woodpeckers in North Carolina](#)

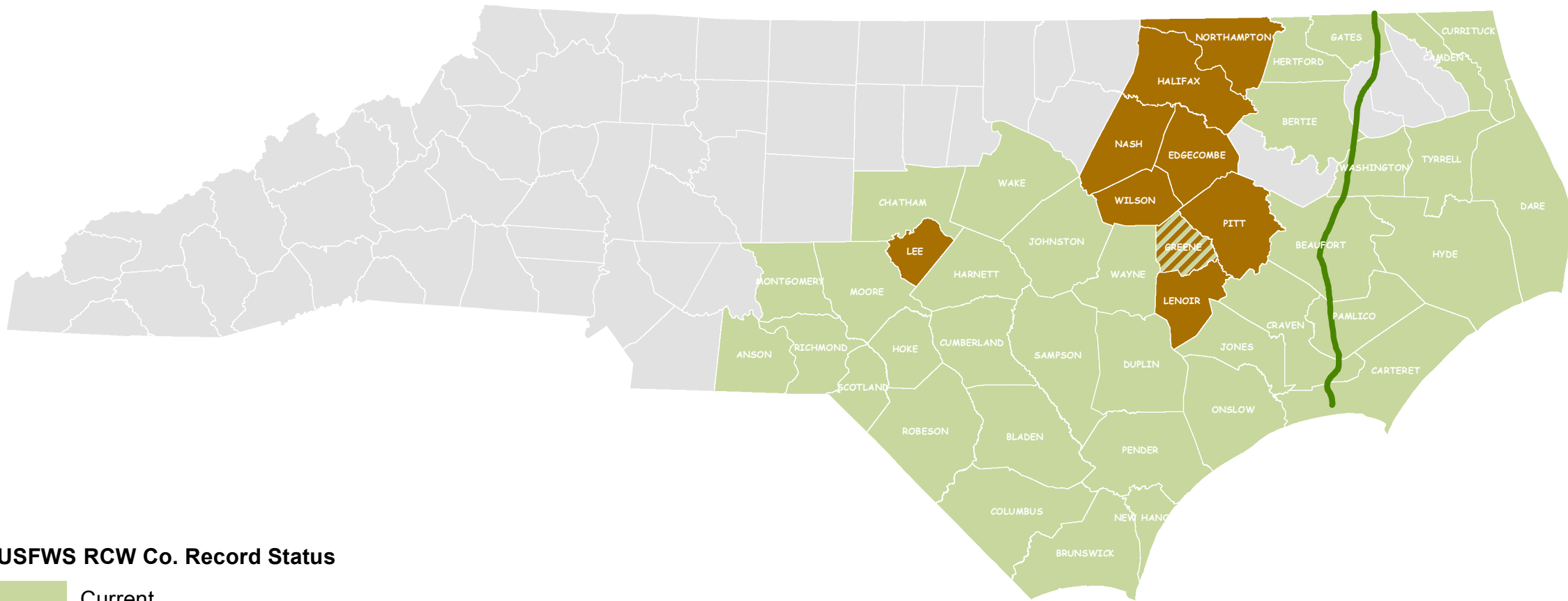
[U.S. Fish and Wildlife Service – RCW Most Recent Federal Documents](#)

[RCW Survey Form](#)

## **Contacts**

- For suggestions to change this procedure contact: Marissa Cox [mrcox@ncdot.gov](mailto:mrcox@ncdot.gov)
- For questions about performing this procedure contact: Tyler Stanton [tstanton@ncdot.gov](mailto:tstanton@ncdot.gov)

| <b>Record of Revision</b> |  |                      |
|---------------------------|--|----------------------|
| <b>Version #</b>          | <b>Reason for Revision</b>                                   | <b>Revision Date</b> |
| 1.1                       | Revised to current template                                  | 10/06/2015           |
|                           | Corrected broken links                                       |                      |
|                           | Revised Contact Information                                  |                      |
| 1.2                       | Revised sentence under Identifying Suitable Nesting Habitat. | 7/01/2011            |
| 1.3                       | Revised Contact Information                                  | 10/06/2015           |
| 1.4                       | Added footnote on Page 3                                     | 5/31/2018            |
|                           | Revised Contact Information                                  |                      |
|                           | Corrected broken links                                       |                      |



**USFWS RCW Co. Record Status**

- Current
- Historic
- Probable/potential

# Red-Cockaded Woodpecker (RCW) Survey Form

NCDOT  
1/18/08

## Section A: General

Project \_\_\_\_\_ Survey Section ID \_\_\_\_\_ Date \_\_\_\_\_  
Investigators \_\_\_\_\_  
Landuse:  Agricultural  Residential  Commercial  Forested\*  Other \_\_\_\_\_  
\*Continue to Section B

## Section B: Habitat Presence

Stand<sup>1</sup> Composition: <50% Hardwood  Yes  No Stand Age<sup>2</sup>: ≥ 30 Year old Pines  Yes  No  
If yes to all, continue to Section C

## Section C: Foraging Habitat

Stand Composition >50% Pines  Yes  No, \_\_\_\_\_% \_\_\_\_\_% Species composition \_\_\_\_\_  
Stand Age > 30 Year Pines  Yes  No, \_\_\_\_\_ Foraging Habitat Present  Yes  No  
Dominant Understory species \_\_\_\_\_  
Understory species height \_\_\_\_\_ Understory species density  sparse  moderate  dense  
If Foraging Habitat is present, delineate this area on the map.

NOTES: \_\_\_\_\_  
\_\_\_\_\_

Cavity Trees Found within Foraging Habitat  Yes  No  
**If yes, GPS the tree, mark it on the map and continue to Section E**

## Section D: Nesting Habitat

Stand Composition >50% Pines  Yes  No, \_\_\_\_\_% \_\_\_\_\_% Species composition \_\_\_\_\_  
Dominant Understory species \_\_\_\_\_  
Understory species height \_\_\_\_\_ Understory species density  sparse  moderate  dense  
Stand Age > 60 Year Pines  Yes  No, \_\_\_\_\_ Nesting Habitat Present  Yes  No  
If Nesting Habitat is present, delineate this area on the map.

NOTES: \_\_\_\_\_  
\_\_\_\_\_

Cavity Trees Found within Nesting Habitat  Yes  No  
**If yes, GPS the tree, mark it on the map and continue to Section E**

## Section E: Cavity Tress Assessment

### Cavity Trees

Cavity Stage  Start  Advanced Start  Complete Cavity  Relic  
Entrance Enlargement Observed  Yes  No

### Active Trees

Active Trees Found  Yes  No

### Inactive Trees

Inactive Trees Found  Yes  No

NOTES: \_\_\_\_\_  
\_\_\_\_\_

<sup>1</sup> A stand includes any subset of a tract of wooded land, divided by biological community type, management history, or any other reasonable approach. A small tract of land may be considered a single stand.

<sup>2</sup> Age of stands can be determined by aging representative dominant pines in the stands using an increment borer and counting annual growth rings. Increment boring all trees is not necessary. Once age is determined per habitat type measure the dbh