

Environmental Consultants

Red-cockaded woodpecker (RCW) habitat assessment requires intimate knowledge of species biology, interactions with associated species, pine stand conditions that promote/inhibit conservation, and the ecology to which the species is adapted. RCWs are non-migratory, social and territorial. Conservation guidance (e.g., the **Recovery Plan for the Red-cockaded Woodpecker, Second Revision, Fish and Wildlife Service 2003; Recovery Plan**) delineates habitat use by a family group of RCWs extending out to approximately 0.5 mile from the territory center (foraging habitat partition) and outlines minimum habitat quantity/quality needed to meet an RCW group's needs within their territory.

Within the project area, territory centers are often closer than 0.5 mile apart. The Fish and Wildlife Service recommends use of Thiessen polygons (Lipscomb and Williams 1995) in a Geographic Information System (GIS) to delineate 0.25- and 0.5-mile radius partitions to approximate the extent of each RCW family group's territory. Additional information about delineating foraging habitat can be found the Recovery Plan.

The territory center is determined by identifying the cluster center. The cluster center is determined by calculating the average x and y coordinates for each cavity tree associated with the cluster.

Consultant needs to be able to:

- determine the position of the involved property in relation to the closest RCW cluster
- find all relevant RCW cavity trees comprising the closest cluster and neighboring clusters
- calculate the geometric center of the closest RCW cluster as well as neighboring clusters
- use appropriate stand mapping and forest mensuration techniques to delineate foraging habitat (see "Procedures for Determining Foraging Habitat Availability")

To be considered qualified to conduct red-cockaded woodpecker assessments in the North Carolina Sandhills you must meet the following qualifications/ criteria:

Must possess a minimum of a baccalaureate degree in biological sciences from an accredited university.

Must have experience, under supervision carrying out the following tasks:

- identifying, documenting and recording status and condition of red-cockaded woodpecker cavity resources.
- mapping cavity trees involving multiple RCW territories.
- delimiting the cavity tree cluster+
- delimiting the 0.25-mile and 0.50-mile radius foraging partitions for multiple RCW clusters within a population.

Tasks that a red-cockaded woodpecker consultant might perform:

- Survey for red-cockaded woodpecker cavity trees in typical and atypical habitat
- Document the status (record the stage, shape and describe activity state) of known RCW cavities
- Identify areas that contain suitable RCW habitat on aerial imagery
- Use field optics (spotting scope) to read color bands on individual RCWs
- Attach (and possibly remove) auxiliary color markers (leg bands) on newly hatched and adult RCWs
- Provision and maintain artificial cavities and cavity restrictors
- Conduct a foraging habitat analysis based on user-gathered and available information about an identified cluster and its neighbors. Available information may range in detail from no institutional, pre-existing knowledge of habitat use of the project site, to Service knowledge that the project site falls within 0.5-mile of one or more RCW cluster centers.
- Conduct on-site, pre-project habitat inventory for future habitat removal

Knowledge, skills, and abilities for fully effective consultants

- Identify and recognize pine tree species within the survey area
- Possess familiarity with outer Piedmont, Sandhills and Coastal Plain forest types, flora and fauna. Need to be able to identify most secondary users of RCW cavities
- Identify all eight woodpecker species native to the survey area
- Possess familiarity with basic forest mensuration techniques used to measure RCW habitat suitability

- Be able to use GIS to record and show cavity tree clusters, foraging partitions and forest stand information.
- Demonstrate knowledge of RCW ecology and natural processes that promote essential habitat conditions.
- Demonstrate familiarity and experience conducting RCW cavity tree surveys in accordance with the Service's Survey Protocol (Recovery Plan for the Red-cockaded Woodpecker, 2nd Revision, Appendix 4).

Lipscomb, D.J. & Williams, T.M. 1995. Use of geographic information systems for determination of Red-cockaded Woodpecker management areas. In Kulhavy, D.L., Hooper, R.G. & Costa, R. (eds) Red-Cockaded Woodpecker: Recovery, Ecology, and Management: 137–143. Nacogdoches, TX: Center for Applied Studies, College of Forestry, Stephen F. Austin State University.

Required Capabilities

Surveys – must be able to follow the Service's Survey Protocol, contained in Appendix 4 of the Recovery Plan. Cavity trees may be distributed on properties with different ownerships. Surveys need to be done wherever indicated, regardless of understory/midstory conditions. This process requires the surveyor to be able to recognize pine tree growth forms that are used by RCWs for cavities and intimate knowledge of most sources of injury to pine trees that might resemble cavities/cavity starts created by RCWs.

Determining cluster status – Consultant must be able to detect and visually inspect all cavity trees that comprise clusters/territories involved with the project under their review. Practitioner must have the skills to accurately identify the stage and activity level for all cavity trees in the project area. Cavity height, direction, tree species, DBH and growth characteristics must also be recorded for all involved cavities.

Assigning cavity trees into clusters – Requires that the practitioner knows or can determine how to allocate cavity trees into aggregations (clusters) based on spatial distribution and RCW group behavior. Requires generation and interpretation of spatial information. May also require field work to count RCWs, read color bands of individual birds, observe birds using cavities for roosting. Field component may require a Recovery Permit.

Forest mensuration – Ability to recognize native pine and hardwood overstory and midstory species. Be able to utilize tools used to measure timber volume (10-factor BA prism), tree height (clinometer), group pine and hardwood trees into diameter classes (diameter tape or calipers) and determine tree ages (increment borer). Use orthophotography to delineate timber stands. Skill at using a compass and chain or other means of distance measurement to navigate to selected representative data collection points.

Cluster management – cavity provisioning, identifying potentially suitable trees. Restrictor plate installation. Monitoring to ensure RCWs can use new/modified cavities safely. Requires the consultant to have the necessary Recovery Permit.

Tasks and their related experience and permitting:

Task	Experience/Permitting			
	1	2	3	4
Survey for red-cockaded woodpecker cavity trees in typical and atypical habitat		X		
Document the status (record the stage, shape and describe activity state) of known RCW cavities		X		
Identify areas that contain suitable RCW habitat using aerial imagery		X		
Conduct foraging habitat analyses		X		
Read auxiliary color markers (colored leg bands) on RCWs			X	
Conduct on-site, pre-project habitat inventories for future habitat removal (tree counts)				X
Attach (and possibly remove) auxiliary color markers (leg bands) on newly hatched and adult RCWs	X			
Provision artificial cavities/apply cavity restrictors	X			

1 - involved sufficient risk to resource - requires the participant to obtain/hold an Endangered or Threatened Species Recovery Permit.

2 - takes months or years of supervised experience; requires detailed knowledge of RCW behavior and ecology; involves a high skill level

3 - takes weeks or months of supervised experience to be able to perform effectively

4 - takes a few days or a week of supervised experience

+The aggregation of cavity trees previously and currently used and defended by a group of woodpeckers, or this same aggregation of cavity trees and a 61 m (200 foot) wide buffer of continuous forest. Here, the second definition is used. For management purposes, the minimum area encompassing the cluster is 4 ha (10 ac).