

# Red-cockaded Woodpecker

*Dryobates (=Picoides) borealis*

## I. Species Summary

The Red-cockaded Woodpecker (RCW) is currently listed by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act (ESA) as “endangered” across its range (USFWS, 1970). On October 8, 2020, the USFWS proposed to reclassify the RCW to “threatened” status (USFWS, 2020a). Major threats to the species include deforestation and loss of long-leaf pine forest habitats. The USFWS species profile for the RCW can be found at <https://ecos.fws.gov/ecp/species/7614>. A summary of the ecology of this species can be found in the USFWS Red-cockaded Woodpecker recovery plan (USFWS, 2003) and the Species Status Assessment (SSA) (USFWS, 2020b). No critical habitat has been designated for this species.

## II. Biological Information

The RCW is a nonmigratory bird species endemic to open, mature and old growth pine ecosystems in the southeastern United States. The birds are typically 7 inches (18 to 20 centimeters [cm]) long with black and white feathers that are barred. The head has a black crown and a white neck. This species can be identified by voice (squeaky or raspy peeps and chatter) and by the black and white barring pattern on their backs and large white cheek patches (**Figure 1**). Adult male woodpeckers have several red feathers, or *cockades* located on each side of his head between the black crown and white cheek (**Figure 2**). The cockades are not usually visible except when the bird is agitated such as in a territorial conflict.



**Figure 1.** Red-cockaded Woodpecker (Audubon Society)



**Figure 2.** Male with red feathers or red cockade (Carlton Ward, Jr.)

The RCW is the only woodpecker species that excavates cavities exclusively in living pine trees. The RCW often prefer older pines that suffer from a fungus called red heart disease, which attacks the center of the trunk causing the inner wood—the heartwood—to become soft. Excavation of a cavity generally takes from 1 to 3 years. Cavity trees are used for nesting and roosting; trees being actively used by woodpeckers have numerous small resin wells that exude sap and give the tree a waxy candle appearance (**Figure 3**). These birds prefer to eat insects found near pine trees. Males tend to hunt on tree limbs and upper trunks while females hunt lower on the trunk. RCW breeding season is April 1 through July 31.



**Figure 3.** Active, natural Red-cockaded Woodpecker nest cavity (Bob Hooper, USFS)

RCWs are cooperative breeders. A breeding group consists of the breeding male and female with 0 to 6 nonbreeding adult helpers. Most helpers are males that remain and assist the breeders, who typically are their parents or other close kin, on their natal territory (Ligon, 1970) (Lennartz & Harlow, 1979) (Lennartz, Hooper, & Harlow, 1987) (Walters, Doerr, & Carter, 1988). Some females become helpers on their natal territories as well, and a few individuals of each sex disperse to become helpers of unrelated breeders in other groups (Lennartz, Hooper, & Harlow, 1987); (Walters, Doerr, & Carter, 1988) (Walters & Garcia, 2016). Each group defends its territory of cavity trees and foraging habitat from other groups. A single group territory and home range where birds forage for invertebrates on and under the bark of larger and older living pines may be upwards of 162 hectares (400 acres), although the size could be much less depending on habitat quality and neighboring group density. In the North Carolina Sandhills, (Trainor, Walters, Morris, Sexton, & Moody, 2013) found that most juvenile females prospecting for new territories and during dispersal from natal territories tended to move 1 to 6 kilometers (0.6 to 3.7 miles) through habitat similar to that for foraging, but not for longer distances (USFWS, 2020b).

### III. Suitable habitat

In North Carolina, RCW often inhabit Sandhills (**Figure 4**) and the northeast (**Figure 5**) and southeast coastal plain (see county list below). In the Sandhills, RCW require open pine woodlands and savannahs with large mature pines for nesting, roosting, and foraging habitat. Longleaf, loblolly, pond, slash, and shortleaf pine trees that are older (60 years or more) and have a minimum 10-inch diameter at breast height (dbh) are preferred cavity trees. Nesting and roosting pine trees are typically found in open stands with little or no hardwood mid-story and few or no overstory hardwoods (**Figure 6**). RCWs will abandon otherwise suitable nesting/roosting areas when the mid-story approaches cavity height; therefore, mid-story height should generally be less than 12 feet. Ideally there should be enough suitable cavity trees for the entire family group to roost year-round. The typical territory for a group includes nesting and foraging pine habitat and ranges from about 75 to over 500 acres depending on habitat quality and RCW population density. Hardwood encroachment resulting from fire suppression is a well-known cause of cluster/territory abandonment. Suitable foraging habitat generally consists of greater than 50% mature pines (30 years in age or older and equal to or greater than  $\geq$  8 inches dbh) in an open canopy, less densities of small pines, little or no hardwood or pine mid-story, few or no overstory hardwoods, and abundant native bunchgrasses and forb groundcovers (**Figure 7**). Foraging habitat should be within 0.5 miles of nesting habitat.



**Figure 4.** RCW cluster habitat in Sandhills longleaf ecosystem (Susan Miller, USFWS)



**Figure 5.** RCW cluster habitat in Palmetto Peartree Preserve, Northeast Outer Coastal Plain (John Hammond, USFWS)



**Figure 6.** RCW cluster in longleaf pine habitat (Bob Hooper, USFS)

In North Carolina, RCW is known or believed to occur in 39 counties, which include: *Anson, Beaufort, Bertie, Bladen, Brunswick, Camden\*, Carteret, Chatham, Columbus, Craven, Cumberland, Currituck\*, Dare\*, Duplin, Gates, Halifax, Harnett, Hertford, Hoke, Hyde\*, Johnston, Jones, Montgomery, Moore, Nash, New Hanover, Northampton, Onslow, Pamlico, Pender, Pitt, Richmond, Robeson, Sampson, Scotland, Tyrrell\*, Washington\*, Wayne and Wilson*. Those counties shown with a \* symbol are located in the northeastern coastal plain.



**Figure 7.** Suitable RCW foraging habitat (John Hammond, USFWS)

Within southeastern and northeastern North Carolina, RCWs use a diversity of habitat types that may not conform with forest conditions known to support the species through most of its range. In southeastern North Carolina (Brunswick, Carteret, Craven, Jones, New Hanover, Onslow, and Pender counties), RCWs forage and nest in both xeric and pocosin communities with low site productivity. In the southern coastal plain, pines used for foraging and nesting may be smaller and shorter than in other populations. Groups will use wet pine flatwoods, pond pine woodland, and high pocosin for foraging and nesting.

Several RCW subpopulations reside in northeast North Carolina (Camden, Currituck, Dare, Hyde, Tyrrell and Washington counties), especially in the Albemarle-Pamlico Peninsula, despite the absence of open pine forest and savannahs typical of the species range. RCWs use forest communities that may not feature pines as the dominant species (**Figure 8**). RCWs occur in 7 natural or man-altered community types in northeastern North Carolina, including pond pine woodland, high pocosin, nonriverine swamp forest (gum-cypress and mixed subtypes), peatland Atlantic white cedar forest, coastal fringe evergreen forest, wet successional pine/pine-hardwood forest, and pine plantations. Although no RCW clusters have been found in pine plantation habitats (likely due to insufficient tree age), the habitat type is used for foraging habitat once trees approach 30 years of age. Within this portion of the species range, any forested acreage containing pine trees 30 years or older should be considered as potentially suitable RCW habitat. The size of the pines typically utilized by RCWs in northeastern North Carolina varies by pine species and by community type. See **Table 1** for the minimum pine dbh associated with RCW suitable habitat in northeastern North Carolina.



**Figure 8.** Alligator River Game Land habitat, Tyrrell County, North Carolina (J.H. Carter III and Associates)

**Table 1.** Minimum pine tree dbh associated with RCW suitable habitat in northeastern North Carolina (Carter, 2014).

Habitat type	Pond pine woodland	High pocosin	Nonriverine swamp forest	Peatland AWC* forest	Estuarine fringe pine forest	WSPF and WSPHF**	Pine plantation or uplands
Minimum dbh of pine trees	8 inches	4 inches	14 inches	14 inches	10 inches	10 inches	10 inches

\*AWC = Atlantic white cedar

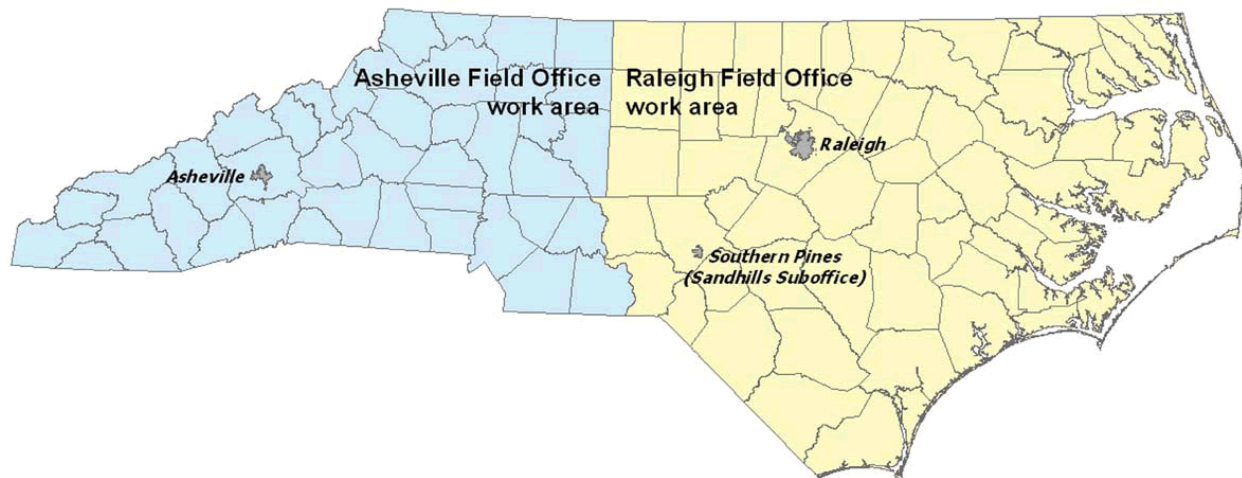
\*\*WSPHF = Wet successional pine forest and wet successional pine-hardwood forest

#### IV. Agency Authority

This Standard Local Operating Procedures for Endangered Species (SLOPES) details how the U.S. Army Corps of Engineers (USACE), Wilmington District, will make determinations of effect to the RCW when the USACE is the lead federal agency for a project, and it is applicable to activities regulated pursuant to Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act in the state of North Carolina. Note that if another federal agency is the lead for a project, procedures for satisfying the requirements of Section 7(a)(2) of the ESA will be dictated by that agency and will not be applicable for consideration under this SLOPES.

Two USFWS offices are responsible for ESA Section 7(a)(2) compliance in North Carolina: the Asheville Ecological Services Field Office is responsible for the western 41 counties and the Raleigh Ecological Services Field Office is responsible for the eastern 59 counties (**Figure 9**). This SLOPES formalizes the

coordination between the USACE and the Asheville/Raleigh Ecological Services field offices for effect determinations and the need for further consultation.



**Figure 9.** USFWS Ecological Services Field Office work areas in North Carolina

**Endangered Species Act (ESA) (16 USC § 1531 et seq.)**, Section 7(a)(2), requires that federal agencies, in consultation with the USFWS and the National Marine Fisheries Service, take such actions as necessary to ensure that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of such endangered or threatened species or result in the destruction or adverse modification of habitat of such species, which is determined by the Secretary of the Interior or Secretary of Commerce, as appropriate, to be critical.

**Section 404 Clean Water Act (CWA) (33 USC § 1344)** requires authorization from the Secretary of the Army, acting through the USACE, for the discharge of dredged or fill material into all waters of the U.S., including wetlands. Discharges of fill material generally include, without limitation, placement of fill that is necessary for the construction of any structure or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; dams and dikes; artificial islands; property protection or reclamation devices such as riprap, groins, seawalls, breakwaters, and revetments; beach nourishment; levees; fill for intake and outfall pipes and sub-aqueous utility lines; fill associated with the creation of ponds; and any other work involving the discharge of fill or dredged material. A USACE permit is required whether the work is permanent or temporary.

**Section 10 of the Rivers and Harbors Act (RHA) of 1899 (33 USC § 403)** requires authorization from the Secretary of the Army, acting through the USACE, for the construction of any structure in or over navigable waters of the U.S., and to conduct certain activities under navigable waters of the U.S. Work or structures outside the limits defined for navigable waters of the U.S. require a Section 10 permit if the work or structure affects the course, location, or condition of the water body. The law applies to any dredging or disposal of dredged materials, excavation, filling, re-channelization, or any other modification of a navigable waters of the U.S., and it applies to all structures, from the smallest floating dock to the largest commercial undertaking. It further includes, without limitation, any wharf, dolphin, weir, boom breakwater, jetty, groin, bank protection (e.g., riprap, revetment, bulkhead), mooring structure such as a piling, aerial or sub-aqueous power transmission line, intake or outfall pipe, permanently moored floating

vessel, tunnel, artificial canal, boat ramp, aid to navigation, and any other permanent or semi-permanent obstacle or obstruction.

#### **V. Determinations of Effect to the Red-cockaded Woodpecker**

See **Appendix A** for the RCW’s consultation area in North Carolina.

The USACE will make determinations of effect for the RCW in accordance with the procedures in **Appendix B – Red-cockaded Woodpecker Effects Determination Key**.

#### Species Guidance

For this document, “percussive activities” are defined as activities that result from “the striking of one body against another with some sharpness; impact.” Percussive activities refer to (1) blasting and (2) activities that are conducted by machines, such as jackhammers and mechanized pile drivers used to drive piles into soil to provide foundational support for buildings or other structures such as bridges. Activities that are conducted by hand-powered tools (e.g., hammer, sledgehammer) are not included in the definition of percussive activities for this SLOPES.

This SLOPES addresses effects to the RCW only. Effects to other federally listed species and/or to federally designated critical habitat will be processed via traditional consultation methods, unless separate SLOPES or other agreements with the USFWS have been reached for those species and/or critical habitat.

#### **VI. Conservation Recommendations**

Conservation recommendations for the RCW can be found in **Appendix C**. These recommendations are optional and, if implemented, would support the agency’s goals toward recovery. These recommendations are to be used at the discretion of the permittee.

#### **VII. Geographic Information System Data**

The USFWS Raleigh Ecological Services Field Office maintains geographic information system (GIS) data for the RCW. The USACE will review all Pre-construction Notifications and permit applications via an internal GIS system (Regulatory Viewer), which uses this data.

#### **VIII. Emergency Situations**

Regional General Permit 199200297 (RGP 297) authorizes the discharge of dredged or fill material in nontidal waters of the U.S. in North Carolina associated with forest management and wildfire control and suppression when performed by the U.S. Forest Service (USFS), the North Carolina Forest Service (NCFS), or when conducted on federal or state-owned property.

One of the activities authorized by this RGP is the discharge of dredged or fill material associated with the installation and maintenance of firebreaks for the purpose of wildfire control during emergency wild-firefighting situations; it is anticipated that these situations will involve tree removal to some degree.

The USFWS acknowledges that the USFS, the NCFS, or others may conduct emergency wild firefighting. ESA Section 7 provides for emergency consultation procedures (found at <https://www.fws.gov/southeast/endangered-species-act/emergency-consultation/>), which should be followed during emergency situations. Any activities should be avoided within 200 feet of cavity trees to the extent possible. Every attempt should be made to contact North Carolina Wildlife Resource Commission and USFWS as soon as possible to assist in minimizing habitat disturbance.



**VIII. Administration of this SLOPES**

- A. This SLOPES may be modified or amended only by written mutual agreement of the parties.
- B. This SLOPES may be terminated, in its entirety, by written mutual agreement of the parties. An individual party to this agreement may withdraw from the agreement after providing 30 days written notice of such intent to withdraw to the other participating signatories.
- C. Acknowledgement that the authority and responsibilities of the parties under their respective jurisdictions are not altered by this SLOPES.
- D. This SLOPES is intended only to improve the working relationships of the participating parties in connection with decisions regarding compliance with Section 7(a)(2) of the ESA for the federally listed Red-cockaded Woodpecker, and it pertains to permitting actions in North Carolina pursuant to Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbor Act of 1899 when the USACE is the lead federal agency for a project.
- E. The terms of this SLOPES are not intended to be enforceable by any party other than the signatories hereto.
- F. The participating parties intend to fully carry out the terms of this SLOPES.

ACCORDINGLY, the parties have signed this SLOPES on the dates set forth below and it shall be effective as of the date last signed.

\_\_\_\_\_  
Tyler Crumbley, Acting Chief  
Regulatory Division  
U.S. Army Corps of Engineers  
Wilmington District

Date: \_\_\_\_\_

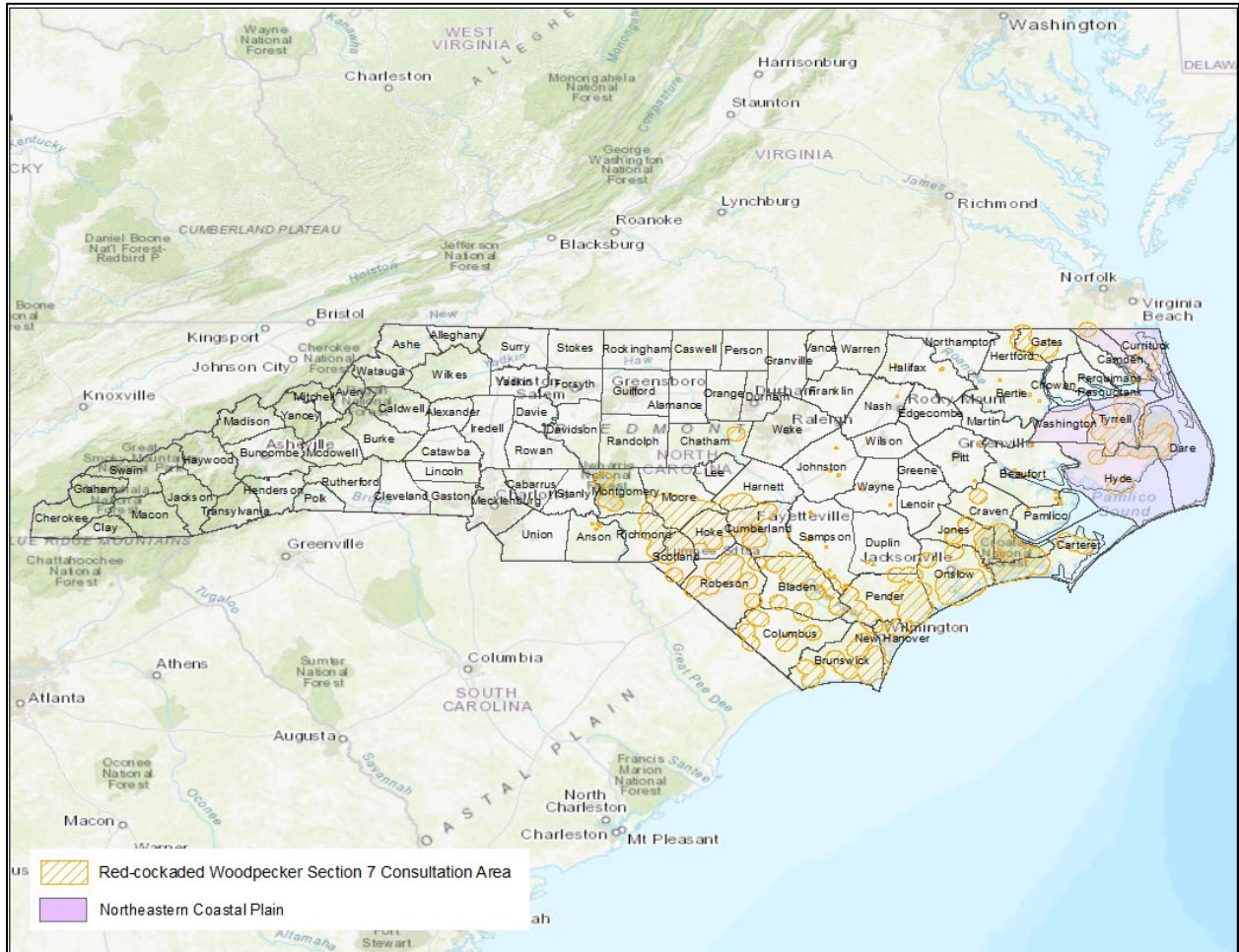
\_\_\_\_\_  
Pete Benjamin, Field Supervisor  
Raleigh Ecological Services Field Office  
U.S. Fish and Wildlife Service

Date: 3/11/2022

## BIBLIOGRAPHY

- Carter, J. H. (2014). *Revised red-cockaded woodpecker standard for managed stability foraging habitat guidelines for northeastern North Carolina*. Appendix to the March 25, 2014 NCDOT Final Draft Biological Assessment for U.S.
- Lennartz, M., & Harlow, R. (1979). The role of parent and helper red-cockaded woodpeckers at the nest. *Wilson Bulletin*, 91:331-335.
- Lennartz, M., Hooper, R., & Harlow, R. (1987). Sociality and cooperative breeding of red-cockaded woodpeckers (*Picoides borealis*). *Behavioral Ecology and Sociobiology*, 20:77-88.
- Ligon, J. D. (1970). *Behavior and breeding biology of the red-cockaded woodpecker*.
- Suboffice, U. N. (2018, January). Red-Cockaded Woodpecker.
- Trainor, A., Walters, J., Morris, W., Sexton, J., & Moody, A. (2013). Empirical estimation of dispersal resistance surfaces: a case study of red-cockaded woodpeckers. *Landscape Ecology*, 28:755-767.
- USFWS. (1970, October 13). *USFWS Federal Register*. Retrieved from Appendix D - United States List of Endangered Native Fish and Wildlife: [https://ecos.fws.gov/docs/federal\\_register/fr27.pdf](https://ecos.fws.gov/docs/federal_register/fr27.pdf)
- USFWS. (2003, January 27). *USFWS ECOS*. Retrieved from Recovery Plan for the Red-cockaded Woodpecker (*Picoides borealis*): [https://ecos.fws.gov/docs/recovery\\_plan/030320\\_2.pdf](https://ecos.fws.gov/docs/recovery_plan/030320_2.pdf)
- USFWS. (2006). *USFWS ECOS 5-Year Review*. Retrieved from USFWS ECOS: [https://ecos.fws.gov/docs/five\\_year\\_review/doc787.pdf](https://ecos.fws.gov/docs/five_year_review/doc787.pdf)
- USFWS. (2020a, October 8). *US Federal Register*. Retrieved from Endangered and Threatened Wildlife and Plants; Reclassification of the Red-Cockaded Woodpecker From Endangered to Threatened With a Section 4(d) Rule: <https://www.govinfo.gov/content/pkg/FR-2020-10-08/pdf/2020-21510.pdf>
- USFWS. (2020b, April 1). *USFWS ECOS*. Retrieved from Species Status Assessment: <https://ecos.fws.gov/ServCat/DownloadFile/187135>
- Walters, J. R., & Garcia, V. (2016). Red-cockaded woodpeckers: alternative pathways to breeding success. In W. Koenig, & J. Dickison, *Cooperative breeding in vertebrates* (pp. 58-76). Cambridge University Press.
- Walters, J. R., Doerr, P. D., & Carter, J. H. (1988). The cooperative breeding system of the red-cockaded woodpecker. *Ethology*, 78:275-305.

### Appendix A – Red-cockaded Woodpecker Consultation Area



Source: USFWS, 2020



US Army Corps  
of Engineers®

### Appendix B – Red-cockaded Woodpecker Effects Determination Key

ORM2 No.: \_\_\_\_\_

Date \_\_\_\_\_

USFWS Reference No. (if applicable): \_\_\_\_\_

- 1) Is the action area<sup>1</sup> located within the RCW consultation area (see **Appendix A** and project-specific results from a project-specific IPaC or internal USACE GIS review)?
  - a) Yes.....go to 2
  - b) No.....No effect<sup>2</sup>
  
- 2) Is the action area<sup>1</sup> located in the northeastern coastal plain (see **Appendix A**)?
  - a) Yes.....go to 3
  - b) No (the project is located in piedmont, sandhills, or southeastern coastal plain).....go to 4
  
- 3) Is the action area<sup>1</sup> located in a forested area with pine trees present in northeast North Carolina (e.g., high pocosin, Atlantic white cedar, nonriverine swamp forests, pond pine woodland, coastal fringe evergreen forest, wet successional pine/pine-hardwood forest, or pine plantation or uplands)? If yes, are the pine trees greater than 30 years of age (if stand age is not readily determined, refer to **Table 1** for a description of the minimum dbh of 30-year-old pines associated with each community type). If the answer to both of these questions is yes, choose Yes below. If the answer to one or both questions is no, then choose No below.
  - a) Yes.....go to 8
  - b) No.....No effect<sup>2</sup>
  
- 4) Is the action area<sup>1</sup> located within suitable RCW foraging or nesting habitat (pine or pine/hardwood stands in which 50% or more of the dominant trees are pines and the dominant pine trees are 30 years of age or older or  $\geq 8$ -inches dbh<sup>5</sup>)?
  - a) Yes.....go to 5
  - b) No.....No effect<sup>2</sup>
  
- 5) Will any activity in the action area<sup>1</sup> remove trees equal to or greater than 8 inches dbh; or will any activity occur within 200 feet of known RCW cavity trees? If unable to determine the location of a cavity tree with confidence, contact the USFWS Raleigh Ecological Services Field Office.
  - a) Yes (to one or both).....go to 6
  - b) No.....NLAA<sup>3</sup>

- 6) Is the action area<sup>1</sup> located in suitable RCW nesting habitat (in the sandhills and piedmont: pine or pine/hardwood stands that contain pines 60 years in age or older or  $\geq 10$  inches dbh; in the southeastern coastal plain: pine or pine/hardwood stands that contain pines  $\geq 8$  inches dbh, including but not limited to pine flatwoods, pocosin, pine savannah, upland pine/hardwood)?
- a) Yes.....go to 9
- b) No.....go to 7
- 7) Does suitable nesting habitat occur within 0.5 miles of suitable foraging habitat that would be impacted by any activity in the action area<sup>1</sup>?
- a) Yes.....go to 9
- b) No.....NLAA<sup>3</sup>
- 8) Refer to **Table 1** in the SLOPES for the northeastern North Carolina habitat type in the action area<sup>1</sup>. Are pine trees with a dbh equal to or greater than that shown in **Table 1** proposed to be removed in the action area<sup>1</sup>, or is the action area<sup>1</sup> within 200 feet of a cavity tree? If the answer to either of these questions is yes, choose Yes below. If unable to determine the location of a cavity tree with confidence, then contact the USFWS Raleigh Field Office.
- a) Yes.....go to 9
- b) No.....NLAA<sup>3</sup>
- 9) Contact the appropriate USACE representative for a pre-application meeting to determine if a survey is necessary (for a list of USACE representatives please see the contact list at <http://saw-reg.usace.army.mil/FO/PMList.pdf>). Note that project-specific information, such as a delineation of waters of the U.S., project plans, and details concerning certain activities or disturbances that would occur in the action area<sup>1</sup> (e.g. percussive activities, forest management, or similar disturbances), may be needed for the USACE to determine the action area(s)<sup>1</sup> of the project. If a survey is required and agreed to by the applicant, all suitable RCW nesting habitat within 0.5 miles of the action area<sup>1</sup> should be surveyed according to USFWS protocol for the presence of RCW cavity trees<sup>4</sup>. If the applicant is unwilling or unable to conduct the survey, standard consultation with the USFWS should begin. Such surveys are conducted by running line transects through stands and visually inspecting all medium-sized and large pines for evidence of cavity excavation by RCWs. Transects must be spaced so that all trees are inspected and are run north-south.
- Was a survey performed?
- a) Yes, a survey was performed, and RCW cavity trees were observed.....go to 10
- b) Yes, the survey was submitted to the USFWS for concurrence, and the USFWS concurred with the results (no RCW cavity trees were observed) .....NLAA<sup>3</sup>
- c) No, the USACE determined that a survey was not required and the USFWS concurred.....NLAA<sup>3</sup>
- d) No, a survey was not performed.....Consultation required<sup>5</sup>
- 10) Does the project involve activities or disturbances in the action area<sup>1</sup> (e.g., percussive activities, forest management, or similar disturbances) within the 200-foot cavity tree buffer, and/or cause removal or damage to RCW cavity trees (e.g., via root compaction, soil compaction)? If yes to either or both then consultation is required.
- a) Yes.....Consultation required<sup>5</sup>
- b) No.....go to 11

- 11) Has a foraging habitat analysis (FHA)<sup>6</sup> been conducted to determine whether enough foraging habitat would remain for each RCW group post-project? For information on how to conduct an FHA<sup>6</sup>, refer to the “Procedures for Determining Foraging Habitat Availability” and the Private Land Guidelines.<sup>7</sup>
- a) Yes, the FHA<sup>6</sup> has been submitted to the USFWS for concurrence<sup>8</sup> and the USFWS concurred that **adequate** amounts of foraging habitat would remain post-project.....NLAA<sup>3</sup>
  - b) Yes, and review of the FHA<sup>6</sup> by the USACE along with concurrence from USFWS determined **inadequate** amounts of foraging habitat would remain post-project.....Consultation required<sup>5</sup>
  - c) No, an FHA<sup>6</sup> has not been conducted.....Consultation required<sup>5</sup>

<sup>1</sup>Action Area means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. Please contact the appropriate USACE representative for any questions as to the action area for the Federal action. For a list of USACE representatives, please see the contact list at: <http://saw-reg.usace.army.mil/FO/PMList.pdf>.

<sup>2</sup>No effect – The proposed project would result in no effect to this species and/or its federally designated critical habitat (if applicable). Further consultation with the USFWS Raleigh and Asheville Ecological Services field offices is not necessary for the project as described.

<sup>3</sup>NLAA – The proposed project may affect but is not likely to adversely affect this species and/or its designated critical habitat (if applicable). NLAA determinations for projects made pursuant to this key require no further consultation with the USFWS Raleigh and Asheville Ecological Services field offices, therefore, consultation is considered complete for this species. For General Permits, submittal of a Pre-Construction Notification to the USACE will be required for all NLAA determinations.

<sup>4</sup>Follow link to USFWS RCW Recovery Plan, Appendix 4 for additional information on nesting and foraging habitats, and survey protocol ([https://www.fws.gov/rcwrecovery/files/RecoveryPlan/survey\\_protocol.pdf](https://www.fws.gov/rcwrecovery/files/RecoveryPlan/survey_protocol.pdf))

<sup>5</sup>Consultation required – Contact the USACE to begin this consultation process. For a list of USACE representatives please see the contact list at <http://saw-reg.usace.army.mil/FO/PMList.pdf>. Further consultation with the USFWS Raleigh and Asheville Ecological Services field offices is necessary to discern if the activity would result in a “no effect,” “not likely to adversely affect,” or “likely to adversely affect” determination.

<sup>6</sup>Follow links for additional information on conducting FHA (<https://www.fws.gov/rcwrecovery/matrix.html>) and for determining foraging habitat availability ([https://www.fws.gov/ncsandhills/files/fha\\_data\\_collection\\_procedures.pdf](https://www.fws.gov/ncsandhills/files/fha_data_collection_procedures.pdf)).

<sup>7</sup>Follow link for additional information regarding determination for adequate amount of foraging habitat ([https://www.fws.gov/rcwrecovery/files/RecoveryPlan/private\\_lands\\_guidelines.pdf](https://www.fws.gov/rcwrecovery/files/RecoveryPlan/private_lands_guidelines.pdf)).

<sup>8</sup> FHA – When an FHA is conducted, the USACE must provide the FHA to USFWS for review and concurrence.

Additional Information \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### **Appendix C – Conservation Recommendations**

*These recommendations are optional and, if implemented, would support the agency's goals toward recovery. These recommendations are to be used at the discretion of the permittee, but any measures that avoid and minimize effects to the species are highly encouraged by the USFWS.*

1. Minimize project impacts within clusters and foraging habitat whenever possible (i.e., conduct large pine removal outside of nesting season [April 1 to July 31], trim branches instead of complete tree removal, switch building plans to retain large pines).
2. The USFWS strongly recommends that occupied habitats be avoided and preserved. The first measure is to modify the project footprint to avoid direct impacts to RCW habitat. This habitat could be designated as an environmentally sensitive area and set aside by deed restriction, easement, or another protective covenant. If the occupied habitat on the property exceeds 5 acres (2 hectares), then a habitat management plan is also recommended. Incorporating these recommendations into the project design and documenting them in the habitat management plan might result in the project being not likely to adversely affect the RCW.
3. On-site habitat enhancements are recommended by the USFWS in situations where a project proposes to impact occupied RCW habitat. If the site has been physically altered by exotic species invasion, lack of fire, or other anthropogenic actions, these alterations have produced on-site habitat conditions that have resulted in marginally suitable habitats for RCW's survival and propagation. The planned action, through project redesign, has avoided impacting a substantial portion of the habitat; however, some habitat loss will still occur. The project proposes on-site habitat enhancements and management actions that provide habitat quality improvements that balance losses of small amounts of marginally suitable habitats. Incorporating these recommendations into the project and documenting them in a habitat management plan can result in the project being not likely to adversely affect the RCW.
4. Remove vines and thick underbrush/mid-story to improve site suitability.
5. Provision starts and/or completed cavities in suitable large pines to provide additional housing opportunities to an RCW cluster.