

Biological Opinion

US 64 Alligator River Bridge Replacement, Tyrrell and Dare Counties, NC (STIP #HB-0001)

FWS Log #: 04EN2000-2021-F-0473



Prepared by:

U.S. Fish and Wildlife Service
Raleigh Field Office
P.O. Box 33726
Raleigh, NC 27636-3726

November 5, 2021

Pete Benjamin, Field Supervisor

Date

TABLE OF CONTENTS

CONSULTATION HISTORY iii

BIOLOGICAL OPINION 1

1. INTRODUCTION 1

2. PROPOSED ACTION 2

 2.1. *Bridge Replacement*.....2

 2.2. *Conservation Measures*2

 2.3. *Other Activities Caused by the Action*.....3

 2.4. *Action Area*3

3. SOURCES OF CUMULATIVE EFFECTS..... 5

4. STATUS OF SPECIES..... 5

 4.1. *Species Description*5

 4.2. *Life History*.....5

 4.3. *Numbers, Reproduction, and Distribution*5

 4.4. *Conservation Needs and Threats*6

5. ENVIRONMENTAL BASELINE 6

 5.1. *Action Area Numbers, Reproduction, and Distribution*6

 5.2. *Action Area Conservation Needs and Threats*6

6. EFFECTS OF THE ACTION 7

 6.1. *Cavity Tree Analysis*.....7

 6.2. *Foraging Habitat Analysis (Cluster-Level Analysis)*.....7

 6.3. *Group-Level Analysis*.....8

 6.4. *Neighborhood-Level Analysis*.....8

 6.5. *Population-Level and Recovery Unit-Level Analysis*.....8

7. CUMULATIVE EFFECTS 8

8. CONCLUSION 9

9. INCIDENTAL TAKE STATEMENT 9

 9.1. *Amount or Extent of Take*.....10

 9.2. *Reasonable and Prudent Measures*10

 9.3. *Terms and Conditions*10

 9.4. *Monitoring and Reporting Requirements*.....10

10. CONSERVATION RECOMMENDATIONS 11

11. REINITIATION NOTICE 11

12. LITERATURE CITED 11

CONSULTATION HISTORY

This section lists key events and correspondence during the course of this consultation. A complete administrative record of this consultation is on file in the Service's Raleigh Field Office.

2021-01-07 – The North Carolina Department of Transportation (NCDOT) and U.S. Fish and Wildlife Service (Service) begin telephone and email discussions on the need for Section 7 consultation.

2021-05-20 – The Service received a draft Biological Assessment (BA) from NCDOT.

2021-05-24 – The Service provided comments on the draft BA to NCDOT.

2021-08-06 – The Service received the final BA (dated 2021-07-12) and a letter (dated 2021-08-05) from the Federal Highway Administration (FHWA) requesting formal Section 7 consultation for the red-cockaded woodpecker.

2021-08-26 – The Service provided a letter to FHWA stating that all information required for initiation of formal consultation was either included with their 2021-08-05 letter or was otherwise available.

2021-09-07 – The Service provided the FHWA and NCDOT with a draft Biological Opinion.

BIOLOGICAL OPINION

1. INTRODUCTION

A Biological Opinion (BO) is the document that states the findings of the U.S. Fish and Wildlife Service (Service) required under section 7 of the Endangered Species Act of 1973, as amended (ESA), as to whether a Federal action is likely to:

- jeopardize the continued existence of species listed as endangered or threatened; or
- result in the destruction or adverse modification of designated critical habitat.

The Federal action addressed in this BO is the Federal Highway Administration's (FHWA) and North Carolina Department of Transportation's (NCDOT) proposed US 64 Alligator River Bridge Replacement in Tyrrell and Dare Counties, NC, STIP #HB-0001 (the Action). This BO considers the effects of the Action on the red-cockaded woodpecker (RCW). The Action does not affect designated critical habitat; therefore, this BO does not address critical habitat.

BO Analytical Framework

A BO that concludes a proposed Federal action is *not* likely to *jeopardize the continued existence* of listed species and is *not* likely to result in the *destruction or adverse modification* of critical habitat fulfills the Federal agency's responsibilities under §7(a)(2) of the ESA.

"Jeopardize the continued existence means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR §402.02).

"Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species" (50 CFR §402.02).

The Service determines in a BO whether we expect an action to satisfy these definitions using the best available relevant data in the following analytical framework (see 50 CFR §402.02 for the regulatory definitions of *action*, *action area*, *environmental baseline*, *effects of the action*, and *cumulative effects*).

- a. *Proposed Action*. Review the proposed Federal action and describe the environmental changes its implementation would cause, which defines the action area.
- b. *Status*. Review and describe the current range-wide status of the species or critical habitat.
- c. *Environmental Baseline*. Describe the condition of the species or critical habitat in the action area, without the consequences to the listed species caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early consultation, and the impacts of State or private actions which are contemporaneous with the consultation.
- d. *Effects of the Action*. Predict all consequences to species or critical habitat caused by the proposed action, including the consequences of other activities caused by the proposed action, which are reasonably certain to occur. Activities caused by the proposed action

would not occur but for the proposed action. Effects of the action may occur later in time and may include consequences that occur outside the action area.

- e. *Cumulative Effects*. Predict all consequences to listed species or critical habitat caused by future non-Federal activities that are reasonably certain to occur within the action area.
- f. *Conclusion*. Add the effects of the action and cumulative effects to the environmental baseline, and in light of the status of the species, formulate the Service's opinion as to whether the action is likely to jeopardize species or adversely modify critical habitat.

2. PROPOSED ACTION

2.1. Bridge Replacement

The FHWA and NCDOT propose to construct a new fixed-span, high-rise bridge to replace the existing 2.83 mile long US 64 bridge over the Alligator River in Tyrrell and Dare Counties. The new bridge will have two lanes 12 feet wide with 8-foot paved shoulders, and the bridge approaches will have two lanes 12 feet wide with 10-foot shoulders (5 feet of the shoulders will be paved). The centerline of the new bridge will be approximately 1,380 feet north of the current centerline at its farthest point. Total project length is 4.64 miles. The old bridge will be removed. The tentative let date for construction is July 2023.

2.2. Conservation Measures

In April 1999, the Service, NCDOT, and The Conservation Fund entered into a Memorandum of Understanding (MOU) for the protection and recruitment of RCWs through the establishment of a wildlife management area in Tyrrell County, North Carolina known as the Palmetto-Peartree Preserve (P3). P3 consists of approximately 10,000 acres and was created with the primary purpose of protecting the existing RCW population, improving habitat to increase the population, and to provide NCDOT with credits to offset unavoidable impacts to RCWs from transportation projects in the Coastal Plain.

A subsequent MOU between the NCDOT and the Service concerning the status and future of RCW monitoring and conservation credits on P3 (Appendix A) was signed in December 2017. Agreements in the MOU include:

- 23 conservation credits could be used by NCDOT to offset unavoidable impacts to RCWs from future NCDOT projects.
- The 23 credits could be used at a 1:1 ratio whether the impacts were direct, indirect or cumulative.
- The 23 credits would remain available regardless of the status of the RCW population.
- The credits would not expire and would remain available to the NCDOT until debited.

In order to compensate for the potential loss of one RCW group at TYR Cluster 63, the NCDOT will debit one credit from its conservation credits at P3. Post-project, NCDOT will have 22 conservation credits remaining at P3.

2.3. Other Activities Caused by the Action

A BO evaluates all consequences to species or critical habitat caused by the proposed Federal action, including the consequences of other activities caused by the proposed action, that are reasonably certain to occur (see definition of “effects of the action” at 50 CFR §402.02). Additional regulations at 50 CFR §402.17(a) identify factors to consider when determining whether activities caused by the proposed action (but not part of the proposed action) are reasonably certain to occur. These factors include, but are not limited to:

- (1) past experiences with activities that have resulted from actions that are similar in scope, nature, and magnitude to the proposed action;
- (2) existing plans for the activity; and
- (3) any remaining economic, administrative, and legal requirements necessary for the activity to go forward.

In its request for consultation, the FHWA did not describe, and the Service is not aware of, any additional activities caused by the Action that are not included in the previous description of the proposed Action. Therefore, this BO does not address further the topic of “other activities” caused by the Action.

2.4. Action Area

The action area is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR §402.02). Delineating the action area is necessary for the Federal action agency to obtain a list of species and critical habitats that may occur in that area, which necessarily precedes any subsequent analyses of the effects of the action to particular species or critical habitats.

It is practical to treat the action area for a proposed Federal action as the spatial extent of its direct and indirect “modifications to the land, water, or air” (a key phrase from the definition of “action” at 50 CFR §402.02). Indirect modifications include those caused by other activities that would not occur but for the action under consultation. The action area determines any overlap with critical habitat and the physical and biological features therein that we defined as essential to the species’ conservation in the designation final rule. For species, the action area establishes the bounds for an analysis of individuals’ exposure to action-caused changes, but the subsequent consequences of such exposure to those individuals are not necessarily limited to the action area.

Figure 2.4 shows the locations of all activities that the proposed Action would cause and the spatial extent of reasonably certain changes to land, water, or air caused by these activities, based on the descriptions and analyses of these activities in Section 2.1. The action area for this BO includes the existing US 64 bridge over the Alligator River, the footprint of the new proposed bridge (located up to 1,380 feet north of the existing bridge), and a 2.55 mile radius around the existing and new bridges. The 2.55 mile radius is based upon the average dispersal distance of RCWs studied at the adjacent P3 from 1999-2014 (NCDOT 2014). This average dispersal distance is utilized in the “neighborhood” analysis (USFWS 2005) of RCW groups which may be indirectly affected.

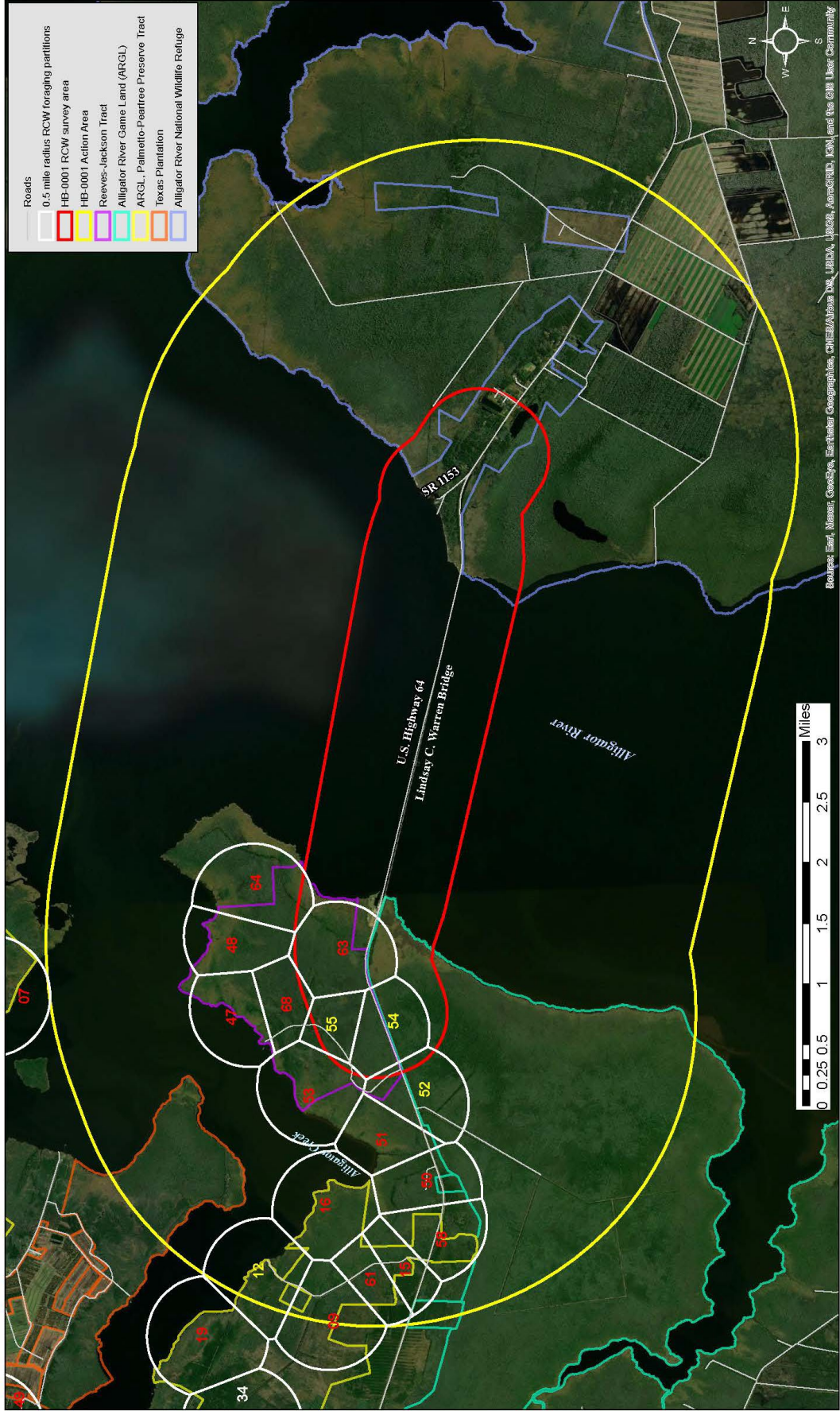


Figure 2.4. Action Area for the proposed replacement of the US 64 bridge over the Alligator River (HB-0001). Tyrrell and Dare Counties, North Carolina. The Action Area includes the red-cockaded woodpecker (RCW) "neighborhood," defined as the population's average dispersal distance (2.55 miles). RCW partitions with red labels were active when last updated and those with yellow labels were inactive or abandoned.

3. SOURCES OF CUMULATIVE EFFECTS

A BO must predict the consequences to species caused by future non-Federal activities within the action area, *i.e.*, cumulative effects. “Cumulative effects are those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation” (50 CFR §402.02). Additional regulations at 50 CFR §402.17(a) identify factors to consider when determining whether activities are reasonably certain to occur. These factors include, but are not limited to: existing plans for the activity; and any remaining economic, administrative, and legal requirements necessary for the activity to go forward.

In its request for consultation, the FHWA did not describe, and the Service is not aware of, any future non-Federal activities that are reasonably certain to occur within the action area. Therefore, we anticipate no cumulative effects that we must consider in formulating our opinion for the Action.

4. STATUS OF SPECIES

This section summarizes best available data about the biology and condition of the red-cockaded woodpecker [*Dryobates (=Picoides) borealis*, RCW] throughout its range that are relevant to formulating an opinion about the Action. The Service published its decision to list the RCW as endangered on October 13, 1970 (35 FR 16047–16048). No critical habitat has been designated for the RCW. The most recent recovery plan was published in 2003 (USFWS 2003).

4.1. Species Description

The RCW is a small bird measuring about eight inches in length, identifiable by its white cheek patch and black and white barred back. The males have a few red feathers, called a cockade. These red feathers usually remain hidden underneath black feathers between the black crown and white cheek patch unless the male is disturbed or excited. Females lack the red cockade. Juvenile males have a red patch in the center of their black crown. This patch disappears during the fall of their first year at which time their cockades appear (USFWS 2020a).

4.2. Life History

A detailed life history of the RCW can be found in Chapter 2 (pages 16-72) of the Species Status Assessment Report (USFWS 2020b).

4.3. Numbers, Reproduction, and Distribution

Detailed information on the numbers, reproduction, and distribution of the RCW can be found in Chapters 3 and 4 (pages 72-118) of the Species Status Assessment Report (USFWS 2020b).

4.4. Conservation Needs and Threats

Detailed information on the conservation needs of and the threats to the RCW can be found in Chapter 3 (pages 72-103) and Chapter 5 (pages 119-129) of the Species Status Assessment Report (USFWS 2020b).

5. ENVIRONMENTAL BASELINE

This section describes the best available data about the condition of the RCW in the action area without the consequences caused by the proposed Action.

5.1. Action Area Numbers, Reproduction, and Distribution

There are currently 13 active RCW clusters and 4 inactive RCW clusters that occur within the action area defined in Section 2.4. However, from the analysis of the potential effects of the Action, it was determined that only 6 active RCW clusters had the potential to be directly or indirectly affected. No data was obtained for the other clusters, and the remainder of this BO will only address these 6 clusters.

Table 5.1. Potentially affected active RCW clusters within action area.

Cluster ID	Cluster/Partition Location	Partition Protected Status
TYR 47	Reeves-Jackson Tract	All on protected land
TYR 48	Reeves-Jackson Tract	All on protected land
TYR 53	Reeves-Jackson Tract / private land	Partially protected
TYR 63	Reeves-Jackson Tract / Alligator River Game Land / private land	Mostly on protected land
TYR 64	Reeves-Jackson Tract / private land	Partially protected
TYR 68	Reeves-Jackson Tract	All on protected land

5.2. Action Area Conservation Needs and Threats

Although the RCW clusters located on the Reeves-Jackson Tract (owned by The Conservation Fund) and the Alligator River Game Land (owned by North Carolina Wildlife Resources Commission) are mostly protected, none of the clusters in Table 5.1 are part of an RCW Recovery Unit. However, RCW clusters located within the adjacent P3 (owned by North Carolina Wildlife Resources Commission) are designated as part of the Northeast North Carolina/Southeast Virginia Essential Support Population, which is within the Mid-Atlantic Coastal Plain Recovery Unit. The RCWs within the action area are demographically connected to this Essential Support Population.

Suitable habitat, as described by the Recovery Plan (USFWS 2003), is essentially nonexistent in the action area, yet several RCW groups are surviving within it. RCWs nest and forage in a much wider range of habitat conditions in northeastern North Carolina than elsewhere in the species range (Carter and Brust 2004). Carter (2014) describes eight natural or man-altered vegetative communities in northeastern North Carolina that RCWs utilize for nesting and foraging. Some of these communities are dominated by non-pine species, and pines may compose less than 20% of

the canopy. Due to the use of atypical habitat, the Recovery Plan's Standard for Managed Stability (SMS) guidelines and Recovery Standard Guidelines (RSG) for foraging habitat does not apply to northeastern North Carolina (Carter and Campbell 2012, Carter 2014). Pre-project, none of the six active RCW clusters analyzed would meet the SMS guidelines or RSG outlined in the Recovery Plan. Therefore, regional SMS foraging habitat guidelines were developed for northeastern North Carolina (Carter 2014). These regional guidelines are an attempt to approximate as closely as possible the actual habitat conditions observed in northeastern North Carolina where RCWs naturally occur.

There is limited opportunity to actively manage the RCW habitat within the action area. Due to extreme wetness, lack of access, and the presence of peat soils (which can be consumed by fire), traditional RCW management activities such as prescribed burning and mechanical midstory control are severely limited (Carter and Campbell 2012, Carter 2014). Even with management, the habitat would never resemble suitable habitat as defined by the Recovery Plan. However, RCWs appear to be surviving with little to no management in most of the action area.

The action area is subject to frequent tropical storm activity, and RCWs are vulnerable to storm damage, flooding, and sea level rise. Tropical storms can kill RCWs and destroy their cavity trees. The action area is only 0-2 feet above sea level, with much of the area subject to saltwater intrusion and land subsidence due to deterioration of peat soils (USACE and NCDOT 2012). Even a modest amount of sea level rise (6 cm) would inundate most of the forest habitat within the action area (U.S. Department of Transportation 2008) thus converting it to marsh habitat. Given these conditions, RCW habitat within the action area appears transitory.

Southern pine beetle infestations of various sizes have historically affected this area over the years. The infestations can degrade foraging habitat and kill cavity trees. Combined with other stochastic events (e.g. tropical storms) and ever-present stressors such as saltwater intrusion and land subsidence, RCW clusters are at risk of being eliminated from the landscape.

6. EFFECTS OF THE ACTION

In a BO for a listed species, the effects of the proposed action are all reasonably certain consequences to the species caused by the action, including the consequences of other activities caused by the action. Activities caused by the action would not occur but for the action. Consequences to species may occur later in time and may occur outside the action area. Our analyses of the consequences caused by these activities follows.

6.1. Cavity Tree Analysis

No RCW cavity trees will be removed, and no portion of the Action is located within 200 feet of any cavity tree.

6.2. Foraging Habitat Analysis (Cluster Level Analysis)

One active RCW cluster, TYR 63, will have habitat removed from its half-mile foraging partition. The pre-project foraging habitat totals for TYR 63 are 701.7 ft² of pine basal area (BA)

on 54.7 acres of suitable habitat and 266.0 ft² pine BA on 13.2 acres of potentially suitable (i.e. deficient) habitat. Pre-project, this partition is deficient in pine BA and acreage and does not meet the Regional SMS Guidelines for Northeast North Carolina (Carter 2014). Therefore the removal of any suitable or potentially suitable habitat constitutes a take of the cluster. The Action will remove 14.4 ft² of pine BA on 0.9 acre of suitable habitat. Although this habitat removal constitutes a take of the cluster as per the Regional SMS Guidelines, it is not possible to know if the RCWs will abandon the cluster or not. RCWs in other clusters in the area are persisting on less suitable and potentially suitable habitat than occurs in TYR 63.

6.3. Group-Level Analysis

The group-level analysis evaluates the effects of changes in group density on RCW groups which have habitat removed from their partition, but which are not “taken” at the cluster level (USFWS 2005). No other active clusters will have foraging habitat removed from their foraging partition, so no group-level analysis is necessary.

6.4. Neighborhood-Level Analysis

The neighborhood-level analysis addresses potential effects on the RCW groups within the action area but which are not directly affected by habitat loss within their partitions. These neighborhood effects result from demographic isolation and habitat fragmentation and are related to group density, similar to the group-level analysis. For purposes of this BO, the “neighborhood” is the same as the action area, both being based on the 2.55 mile average dispersal distance of RCWs within the adjacent P3 (NCDOT 2014). If the post-project analysis demonstrated that < 2.5 RCW groups remained within a 1.25 mile radius of the subject cluster, it is considered to be an incidental take.

The cluster-level take of active TYR 63 will reduce the RCW group density within a 1.25 mile radius of 5 active clusters (TYR 47, 48, 53, 64, and 68), but all would retain a moderate density (2.6 – 4.6 clusters within 1.25 miles) post-project based on the most current data. Therefore, no take will occur at the neighborhood level. However, it must be noted that if any active clusters around TYR 48 or 64 become inactive in the future, take would occur at the neighborhood level.

6.5. Population-Level and Recovery Unit-Level Analysis

No RCW clusters within the action area are part of a defined population or recovery unit, and thus their numbers are not counted towards the RCW recovery goals. Therefore, no population-level or recovery unit-level analysis is necessary.

7. CUMULATIVE EFFECTS

In Section 3, we did not identify any activities that satisfy the regulatory criteria for sources of cumulative effects. Therefore, cumulative effects to the RCW are not relevant to formulating our opinion for the Action.

8. CONCLUSION

In this section, we summarize and interpret the findings of the previous sections (status, baseline, effects, and cumulative effects) relative to the purpose of the BO for the RCW, which is to determine whether the Action is likely to jeopardize its continued existence.

Thirteen active RCW clusters occur within the defined action area. Only one cluster, TYR 63, will be taken as the result of removing habitat from its foraging partition. Cluster TYR 63 does not meet the Regional SMS Guidelines for Northeast North Carolina either pre-project or post-project, therefore even the removal of a relatively small amount of foraging habitat constitutes a take of the cluster. Since other RCW clusters in the area persist on less suitable/potentially suitable habitat than TYR 63, the Action may or may not result in abandonment of the cluster. However, given the cluster's vulnerability to salt water intrusion, subsidence, and tropical storm damage, the cluster's persistence appears transitory. Cluster TYR 63 is not part of a defined population or recovery unit and thus it is not counted towards the recovery goals of the species. As compensation for take of TYR 63, one credit will be debited from NCDOT's conservation credits at P3, thus leaving 22 credits available for future debit.

After reviewing the status of the species, the environmental baseline for the action area, the effects of the Action and the cumulative effects, it is the Service's Biological Opinion that the Action is not likely to jeopardize the continued existence of the RCW.

9. INCIDENTAL TAKE STATEMENT

ESA §9(a)(1) and regulations issued under §4(d) prohibit the take of endangered and threatened fish and wildlife species without special exemption. The term "take" in the ESA means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (ESA §3(19)). In regulations, the Service further defines:

- "harm" as "an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering;" (50 CFR §17.3) and
- "incidental take" as "takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant" (50 CFR §402.02).

Under the terms of ESA §7(b)(4) and §7(o)(2), taking that is incidental to a Federal agency action that would not violate ESA §7(a)(2) is not considered prohibited, provided that such taking is in compliance with the terms and conditions of an incidental take statement (ITS).

For the exemption in ESA §7(o)(2) to apply to the Action considered in this BO, the FHWA must undertake the non-discretionary measures described in this ITS, and these measures must become binding conditions of any permit, contract, or grant issued for implementing the Action. The FHWA has a continuing duty to regulate the activity covered by this ITS. The protective coverage of §7(o)(2) may lapse if the FHWA fails to:

- assume and implement the terms and conditions; or

- require a permittee, contractor, or grantee to adhere to the terms and conditions of the ITS through enforceable terms that are added to the permit, contract, or grant document.

In order to monitor the impact of incidental take, the FHWA must report the progress of the Action and its impact on the species to the Service as specified in this ITS.

9.1. Amount or Extent of Take

This section specifies the amount or extent of take of listed wildlife species that the Action is reasonably certain to cause, which we estimated in the “Effects of the Action” section of this BO. The Service anticipates that the Action is reasonably certain to cause incidental take of one active cluster of RCW (TYR 63). This incidental take will be non-lethal and indirect in nature.

9.2. Reasonable and Prudent Measures

The Service believes that no reasonable and prudent measures (RPMs) are necessary or appropriate to minimize the impact (*i.e.*, amount or extent) of incidental take of the RCW caused by the Action. Avoidance and minimization of RCW foraging habitat removal previously occurred during the routine project development and design process. No additional changes in design, location, scope, duration, or timing of the Action would reduce incidental take below the amount or extent anticipated for the Action as proposed. Therefore, this ITS does not provide RPMs for this species.

9.3. Terms and Conditions

No RPMs to minimize the impacts of incidental take caused by the Action are provided in this ITS; therefore, no terms and conditions for carrying out such measures are necessary.

9.4. Monitoring and Reporting Requirements

In order to monitor the impacts of incidental take, the FHWA must report the progress of the Action and its impact on the species to the Service as specified in the ITS (50 CFR §402.14(i)(3)). This section provides the specific instructions for such monitoring and reporting (M&R). These M&R requirements are mandatory. As necessary and appropriate to fulfill this responsibility, the FHWA must require any permittee, contractor, or grantee to accomplish the M&R through enforceable terms that the FHWA includes in the permit, contract, or grant document. Such enforceable terms must include a requirement to immediately notify the FHWA and the Service if the amount or extent of incidental take specified in this ITS is exceeded during Action implementation.

M&R 1. Cavity Tree Update and Neighborhood-Level Analysis Reevaluation. If the project construction has not been let by the end 2023, an updated cavity tree survey within 0.5 mile of the project footprint must be conducted, and the status of all clusters evaluated for the neighborhood-level analysis must be reevaluated (*i.e.*, inactive vs. active). The acquired data must be submitted to the Service to confirm if the level of incidental take authorized is still appropriate.

10. CONSERVATION RECOMMENDATIONS

§7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by conducting conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary activities that an action agency may undertake to avoid or minimize the adverse effects of a proposed action, implement recovery plans, or develop information that is useful for the conservation of listed species. The Service offers the following recommendations that are relevant to the RCW addressed in this BO and that we believe are consistent with the authorities of the FHWA.

1. NCDOT and/or FHWA could contribute funding to conduct additional RCW surveys within the previously unsurveyed portions of the Northeast North Carolina/Southeast Virginia Essential Support Population and adjacent state and private properties which may support additional RCW clusters. Data obtained from more comprehensive surveys would assist in the future status review and revision of the Essential Support Population.
2. NCDOT and/or FHWA could conduct or provide funding for a study of the hydrology of the adjacent P3 with the intent to reduce saltwater intrusion to help maintain RCW habitat. The feasibility of water control structure use to prevent saltwater intrusion could be assessed.

11. REINITIATION NOTICE

Formal consultation for the Action considered in this BO is concluded. Reinitiating consultation is required if the FHWA retains discretionary involvement or control over the Action (or is authorized by law) when:

- a. the amount or extent of incidental take is exceeded;
- b. new information reveals that the Action may affect listed species or designated critical habitat in a manner or to an extent not considered in this BO;
- c. the Action is modified in a manner that causes effects to listed species or designated critical habitat not considered in this BO; or
- d. a new species is listed or critical habitat designated that the Action may affect.

In instances where the amount or extent of incidental take is exceeded, the FHWA is required to immediately request a reinitiation of formal consultation.

12. LITERATURE CITED

Carter, J.H. III. 2014. Revised Red-cockaded Woodpecker Standard for Managed Stability Foraging Habitat Guidelines for Northeastern North Carolina. Unpublished white paper. Dr. J.H. Carter III & Associates, Inc., Southern Pines, NC.

Carter, J.H. III and K. Brust. 2004. The red-cockaded woodpecker in the northeastern Coastal Plain of North Carolina. Pages 268-277 *in* R. Costa and S.J. Daniels, eds. Red-cockaded Woodpecker: Road to Recovery. Hancock House, Blaine, WA.

- Carter, J.H. III and V. Campbell. 2012. Red-cockaded Woodpecker Distribution in Northeast North Carolina. PowerPoint presentation at information meeting on RCWs in northeastern North Carolina on November 6-7, 2012. Eastern 4-H Environmental Education Conference Center, Columbia, NC.
- NCDOT. 2014. Red-cockaded woodpecker biological assessment for the widening of US Highway 64 from Columbia to near Mann's Harbor, Dare and Tyrrell Counties, North Carolina. T.I.P. Number R-2544/R-2545. North Carolina Department of Transportation, Raleigh, NC.
- USACE and NCDOT. 2012. US 64 Improvements Project, Tyrrell and Dare Counties, TIP No. R-2544 & R-2545. Draft Environmental Impact Statement. Raleigh, NC. Available online at <https://www.ncdot.gov/projects/us-64-dare-tyrrell/Documents/Forms/AllItems.aspx> . Accessed on August 26, 2021.
- USDOT. 2008. The Potential Impacts of Global Sea Level Rise on Transportation Infrastructure, Part 1: Methodology. U.S. Department of Transportation Center for Climate Change and Environmental Forecasting. Washington, DC. Available online at <https://www.transportation.gov/sites/dot.gov/files/docs/sea-level-rise-entire-report.pdf>. Accessed on August 26, 2021.
- USFWS. 2003. Recovery Plan for the Red-cockaded Woodpecker (*Picoides borealis*): Second Revision. U.S. Fish and Wildlife Service. Atlanta, GA.
- USFWS. 2005. Implementation Procedures for Use of Foraging Habitat Guidelines and Analysis of Project Impacts under the Red-cockaded Woodpecker (*Picoides borealis*) Recovery Plan: Second Addition. Memo from Noreen Walsh on May 4, 2005. U.S. Fish and Wildlife Service. Atlanta, GA.
- USFWS. 2020a. Red-cockaded woodpecker *Picoides borealis*. U.S. Fish and Wildlife Service. Atlanta, GA. Available online at <https://www.fws.gov/southeast/wildlife/birds/red-cockaded-woodpecker/> . Accessed on August 26, 2021.
- USFWS. 2020b. Species Status Assessment Report for the Red-cockaded Woodpecker (*Picoides borealis*), Version 1.3. U.S. Fish and Wildlife Service. Atlanta, GA. Available online at <https://ecos.fws.gov/ServCat/DownloadFile/188805>. Accessed on August 26, 2021.

Memorandum of Understanding
between
North Carolina Department of Transportation
and U.S. Fish and Wildlife Service

THIS AGREEMENT (the "MOU") is made and entered into on the date herein below last written, by and between the **STATE OF NORTH CAROLINA, acting through the DEPARTMENT OF TRANSPORTATION** (NCDOT) and the **UNITED STATES OF AMERICA, ACTING THROUGH THE U.S. FISH AND WILDLIFE SERVICE** (USFWS) (hereinafter "the Parties").

WITNESSETH:

WHEREAS, the USFWS is authorized to enter into agreements with NCDOT in accordance with the Endangered Species Act (18 U.S.C. 1531, et seq.; as amended) (ESA), and

WHEREAS, NCDOT is authorized to enter into agreements with USFWS, and

WHEREAS, NCDOT implements transportation improvements across the state of North Carolina (the "Projects") which may impact the red-cockaded woodpecker (RCW) which is listed as a federally endangered species, and

WHEREAS, NCDOT desires to minimize the impacts of the Projects on RCW populations, and

WHEREAS, NCDOT and USFWS (along with The Conservation Fund, a non-profit corporation) previously entered into a Memorandum of Understanding in April, 1999 (1999 MOU) (FWS Agreement No. 1448-40181-99-K-005) with Addendum 1 entered in October 2001 and Addendum 2 in June 2003 (collectively herein referred to as the "1999 MOU"). The 1999 MOU established the Palmetto Peartree Wildlife Management Area ("WMA") in Tyrrell County, NC, which consisted of approximately 9,732 +/- acres and cost approximately \$16,300,000.00. The primary purpose of the WMA is to protect, enhance and/or preserve RCW populations to offset the loss of RCWs or their habitat associated with NCDOT Projects in the Coastal Plain.

WHEREAS, in addition to the 1999 MOU, a conservation easement dated April 28, 1999 was imposed on the WMA to further protect, enhance and/or preserve RCW populations and habitat and to preserve the natural environmental characteristics of the WMA.

WHEREAS, since its inception, the WMA has generated twenty-three (23) RCW conservation credits and ten (10) RCW creation credits which are available to NCDOT to offset RCW impacts from NCDOT Projects.

WHEREAS, since the establishment of the twenty-three (23) RCW conservation credits, NCDOT has avoided and minimized all potential effects and had no takes to RCW populations for all

projects constructed over the last 18 years within the WMA service area.

WHEREAS, pursuant to the 1999 MOU, annual monitoring of RCW populations has been performed. However, the 1999 MOU and Conservation Easement were terminated on July 7, 2015 at the agreement of the Parties (including The Conservation Fund). The WMA is currently owned by NCDOT and NCDOT is seeking a qualified entity to take over ownership and management of the WMA that is consistent with the goal of preserving the natural environmental characteristics of the WMA.

WHEREAS, the Parties agree that due to sea level rise, land subsidence, and other causes of cavity tree loss such as pine beetle infestations, the RCW population within the WMA is likely not sustainable over the long term.

WHEREAS, the Parties agree that preserving the genetic diversity of the RCW population and expanding the range is beneficial for the species. WHEREAS, the Parties agree that translocations of RCW donor birds for the augmentation of eligible populations and recipient clusters is beneficial for the species.

WHEREAS, the Parties agree to the translocation of RCW from within the WMA to locations approved by USFWS and agreed upon by both parties.

WHEREAS, the Parties agree that the clusters located within the current corridor for NCDOT's Alligator River Bridge and US Highway 64 widening are first priorities for translocation if they meet the criteria per the RCW Recovery Plan.

NOW THEREFORE, the parties hereto agree as follows:

- (1) The RCW credits can be used to offset unavoidable impacts to RCWs from NCDOT Projects.
- (2) The RCW credits will be utilized only to offset unavoidable impacts of the RCW when the NCDOT can demonstrate to the satisfaction of the USFWS that there are no available or practical avoidance and minimization alternatives.
- (3) It is understood that NCDOT will consult with the USFWS concerning any Project which would affect RCWs. RCW credits from the WMA will be considered for application against those Projects which would impact RCWs and determined by USFWS not to jeopardize the continued existence of the species.
- (4) The WMA has generated twenty-three (23) RCW conservation credits for the benefit of NCDOT to offset possible future RCW impacts from NCDOT Projects. These RCW credits cannot expire, or be revoked, and will be available to NCDOT until debited. The success of the translocations will in no way affect these RCW credits.

FURTHERMORE, the specific obligations of the respective parties to the Memorandum of Understanding are set forth below:

- (A) The USFWS will:
 - (1) Grant NCDOT 23 RCW conservation credits from the establishment of the WMA.

These credits cannot expire, or be revoked, and will remain available to NCDOT until debited regardless of the status of the WMA RCW population.

- (2) Agree that NCDOT may use the 23 RCW conservation credits at a 1:1 ratio regardless of whether the RCW impacts are direct, indirect, or cumulative for any future RCW consultations for NCDOT projects.
- (3) Agree that if future NCDOT Projects, requiring compensation, occur within the boundaries of the WMA, then the WMA may be utilized to off-set those losses, with the available credits reduced by the number of incidental takes by the project.
- (4) Agree to coordinate and assist with any translocation of RCWs from within the WMA.

(B) NCDOT will:

- (1) Continue to provide RCW ground monitoring for 2017 and 2018 as provided in previous years.
- (2) Fund the translocation of RCWs by an approved third party under the direction and guidance of the USFWS.
- (3) Provide annual data collection reports of RCW activity in the WMA to the USFWS for two years.
- (4) In any event, NCDOT will provide funding of no more than a total of One Million Dollars (\$1,000,000.00) for ground monitoring and translocation efforts.

Amendment or modification of this Memorandum of Agreement may be proposed at any time but will not be adopted unless agreed to by all parties in writing.

IN WITNESS WHEREOF, the parties hereto have caused this Memorandum of Understanding to be executed as of the date below last written.

**STATE OF NORTH CAROLINA,
acting through the DEPARTMENT OF TRANSPORTATION**

By:  _____

Date: 12-12-17

Its: _____, **Duly Authorized.**

**UNITED STATES OF AMERICA,
acting through the U. S FISH AND WILDLIFE SERVICE**

By:  _____

Date: 12.4.17

Its: _____, Duly Authorized.