MEMORANDUM

TO: Chris Rivenbark
FROM: Matt Smith
DATE: 27 July 2017
RE: Red-cockaded Woodpecker Habitat Evaluation Report
Mid-Currituck Bridge (R-2576)
Currituck County, North Carolina
Consulting P.O. No. 6300042934
ESI Project No. ER15052.07

Introduction
The North Carolina Department of Transportation (NCDOT) proposes to construct a new bridge crossing of the Currituck Sound to connect US 158 south of Coinjock, North Carolina and NC 12 south of Corolla, North Carolina (R-2576), including additional improvements to sections of NC 12 and US 158 outside of the project study area for the bridge (Figure 1a-b). The RCW was previously assessed as part of the December 2011 Natural Resources Technical Report and the June 2011 Biological Assessment Report.

The following update to the RCW Evaluation has been prepared to assist in complying with U. S. Fish and Wildlife Service (USFWS) Section 7 Consultation requirements for the proposed project.

Methodology and Qualifications
The assessment consisted of a stand evaluation within the project study area to determine if suitable foraging or nesting habitat is present within the project study area. The assessment was based on the review of the previous evaluations completed in 2011 and 2012, available recent and historic aerial photos, and site reconnaissance. The approximate age for pine or pine/hardwood stands was determined and these stands were identified as unsuitable (pines less than 30 years in age or hardwoods greater than 50% in composition of stand), suitable foraging habitat (pines 30 years in age or older, hardwoods less than 50% in composition of the stand) or suitable nesting habitat (pines 60 years in age or older, hardwoods less than 50% in composition of the stand). Pines 60 years in age or older within the project study area, if present, were surveyed for the
presence of RCW cavities. Surveys outside the project study area are not included within the present scope of services.

All work was conducted in accordance with the NCDOT Natural Environment Section Red-cockaded Woodpecker Survey Protocol, Version 1.2. Field work was conducted by Environmental Services, Inc. (ESI) staff on 16-17 March 2016.

The principal personnel contributing to this document were:

Principal Investigator: Matt Smith  
Education: B.S. in Marine Biology, 1994  
Experience: Project Manager, Environmental Services, Inc., 1998-Present  
Environmental Biologist, NCDOT, 1996-1998  
Responsibilities: Protected species habitat evaluations, document preparation

Investigator: Stuart Bryan  
Education: A.A.S. Marine Technology, 1996  
B.S. Natural Resources, 2000  
Experience: Project Manager, Environmental Services, Inc. 2000-Present  
Responsibilities: Protected species habitat evaluations

Stands Evaluated

Pine Stands evaluated within the project study area are depicted on Figure 2 and are described below.

Stand 1
The canopy in this stand is composed predominately of black gun (*Nyssa biflora*) and red maple (*Acer rubrum*) with loblolly pine (*Pinus taeda*). A dense understory and midstory of mostly hardwood species was observed in this stand. A few scattered loblolly pine individuals estimated at approximately 40-60 years were observed within the stand. The coverage of loblolly pine is estimated at approximately 20%. Because the percentage of pines was less than 50%, this stand was determined not to be suitable foraging or nesting habitat. Older pines within this predominantly hardwood stand were examined for the presence of RCW cavities. No RCW cavity trees were observed.

Stand 2
The canopy in this stand includes loblolly pine, sweetgum (*Liquidambar styraciflua*), and red maple. A dense understory and midstory of mostly hardwood species was observed in this stand. A few scattered loblolly pine individuals estimated at approximately 20-40 years were observed within the stand. The coverage of loblolly pine is estimated at approximately 20%. Because the percentage of pines was less than 50%, this stand was determined not to be suitable foraging habitat.
Stand 3
The canopy in this stand includes loblolly pine, sweetgum, and red maple. A dense understory and midstory of mostly hardwood species was observed in this stand. A few scattered loblolly pine individuals estimated at approximately 10-40 years were observed within the stand. The coverage of loblolly pine is estimated at approximately 20%. Because the percentage of pines was less than 50%, this stand was determined not to be suitable foraging habitat.

Stand 4
This stand is a narrow fringe between a maintained powerline corridor and a recent clearcut. The canopy in this stand includes loblolly pine, sweetgum, and red maple. A few scattered loblolly pine individuals estimated at approximately 30-40 years were observed within the stand. The coverage of loblolly pine is estimated at approximately 40%. Because the percentage of pines was less than 50%, this stand was determined not to be suitable foraging habitat.

Stand 5
The canopy in this stand includes loblolly pine, sweetgum, and red maple. A dense understory and midstory of mostly hardwood species was observed in this stand. The age of the stand was estimated to be approximately 15-20 years. The coverage of loblolly pine is estimated at approximately 80%. Because the pine age is less than 30 years the stand was determined not to be suitable foraging habitat.

Stand 6
The canopy in this stand includes loblolly pine, sweetgum, and red maple. A dense understory and midstory of mostly hardwood species was observed in this stand. The age of the stand was estimated to be approximately 20-40 years with a few scattered loblolly pine individuals estimated at approximately 60 years. The coverage of loblolly pine is estimated at approximately 40%. Because the percentage of pines was less than 50%, this stand was determined not to be suitable foraging or nesting habitat. Older pines within this predominantly hardwood stand were examined for the presence of RCW cavities. No RCW cavity trees were observed.

Stand 7
The canopy in this stand includes loblolly pine, sweetgum, and red maple. A dense understory and midstory of mostly hardwood species was observed in this stand. The age of the stand was estimated to be approximately 20-40 years. The coverage of loblolly pine is estimated at approximately 20%. Because the percentage of pines was less than 50%, this stand was determined not to be suitable foraging habitat.

Stand 8
The canopy in this stand includes loblolly pine, sweetgum, and red maple. A dense understory and midstory of mostly hardwood species was observed in this stand. The age of the stand was estimated to be approximately 20 years. The coverage of loblolly pine is estimated at approximately 80%. Because the pine age is less than 30 years the stand was determined not to be suitable foraging habitat.
Stand 9
The canopy in this stand includes loblolly pine, sweetgum, and red maple. A dense understory and midstory of mostly hardwood species was observed in this stand. The age of the stand was estimated to be approximately 30-40 years. The coverage of loblolly pine is estimated at approximately 20%. Because the percentage of pines was less than 50%, this stand was determined not to be suitable foraging habitat.

Stand 10
This stand is estimated to have been clearcut approximately 7 years ago and is regenerating in predominately red bay and red maple. The age of the stand was estimated to be approximately 7 years. Scattered loblolly pine was observed along the edges of this stand estimated to be approximately 20 years old. The coverage of loblolly pine is estimated at approximately 10%. Because the percentage of pines was less than 50%, and the pine age is less than 30 years the stand was determined not to be suitable foraging habitat.

Stand 11
The canopy in this stand is dominated by loblolly pine. The age of the stand was estimated to be approximately 20 years. The coverage of loblolly pine is estimated at approximately 50%. Because the pine age is less than 30 years the stand was determined not to be suitable foraging habitat.

Stand 12
This stand is estimated to have been clearcut approximately 1 year ago and has regenerated in predominately young loblolly pine with scattered red bay, sweetgum, and red maple also present. The age of the stand was estimated to be approximately 1 year. The coverage of loblolly pine is estimated at approximately 50%. Because the pine age is less than 30 years the stand was determined not to be suitable foraging habitat.

Stand 13
The canopy in this stand includes loblolly pine, sweetgum, and red maple. A dense understory and midstory of mostly hardwood species was observed in this stand. The age of the stand was estimated to be approximately 30-40 years. The coverage of loblolly pine is estimated at approximately 40%. Because the percentage of pines was less than 50%, this stand was determined not to be suitable foraging habitat.

Stand 14
The canopy in this stand is composed predominately of red maple and white oak (*Quercus alba*) with loblolly pine (*Pinus taeda*). A dense understory and midstory of mostly hardwood species was observed in this stand. The age of the pines in this stand were estimated to be approximately 30-60 years. A few scattered loblolly pine individuals estimated at approximately 60 years were observed within the stand. The coverage of loblolly pine is estimated at approximately 30%. Because the percentage of pines was less than 50%, this stand was determined not to be suitable foraging or nesting habitat.
habitat. Older pines within this predominantly hardwood stand were examined for the presence of RCW cavities. No RCW cavity trees were observed.

**Stand 15**
The canopy in this stand includes loblolly pine, sweetgum, and red maple. A dense understory and midstory of mostly hardwood species was observed in this stand. The age of the stand was estimated to be approximately 15-25 years. The coverage of loblolly pine is estimated at approximately 40%. Because the percentage of pines was less than 50%, this stand was determined not to be suitable foraging habitat.

**Stand 16**
The canopy in this stand includes loblolly pine, sweetgum, and red maple. A dense understory and midstory of mostly hardwood species was observed in this stand. The age of the stand was estimated to be approximately 30-50 years. The coverage of loblolly pine is estimated at approximately 20%. Because the percentage of pines was less than 50%, this stand was determined not to be suitable foraging habitat.

**Stand 17**
The canopy in this stand includes loblolly pine, sweetgum, and red maple. A dense understory and midstory of mostly hardwood species was observed in this stand. The age of the stand was estimated to be approximately 30-60 years. The coverage of loblolly pine is estimated at approximately 30%. Because the percentage of pines was less than 50%, this stand was determined not to be suitable foraging or nesting habitat. Older pines within this predominantly hardwood stand were examined for the presence of RCW cavities. No RCW cavity trees were observed.

Table 1. Summary of Stands Evaluated.

<table>
<thead>
<tr>
<th>Stand No.</th>
<th>Figure No.</th>
<th>Age of Pines (Yrs.)</th>
<th>% Pine</th>
<th>Suitable Foraging Habitat Present</th>
<th>Suitable Nesting Habitat Present</th>
<th>Cavity Tree Survey Completed</th>
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Survey Results

A review of NCNHP records, updated March 2016, indicates no known RCW occurrence within 1.0 mile of the project study area.

Forested stands in the project study area consisted primarily of hardwood vegetation with a minor pine component. Loblolly pine was the dominant pine species observed in the project study area. The majority of the stands evaluated included a dense understory and midstory. Suitable foraging and nesting habitat is not present in the project study area based on pine dominance and age of appropriate pine species. Older pines within several predominantly hardwood stands were examined for the presence of RCW cavities. No RCW cavity trees were observed.

Biological Conclusion: No Effect

No suitable foraging or nesting habitat was identified within the project study area and there are no known RCW trees or clusters located within 1.0 mile of the project study area.

References

Project Location
Mid-Currituck Bridge RCW Evaluation
Currituck County, North Carolina

Source: 2011 National Geographic Society/ESRI, i-cubed seamless USGS quadrangles (Coinjock, Camden Point, Jarvisburg, Mossey Islands, Martin Point, Point Harbor, Kitty Hawk, NC); Project Study Area approximated by ESI.

Disclaimer: The information depicted on this figure is for informational purposes only and was not prepared for, and is not suitable for legal or engineering purposes.
Red-cockaded Woodpecker Habitat Evaluation

Mid-Currituck Bridge RCW Evaluation

Currituck County, North Carolina

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Source: High Resolution NC Statewide Orthoimagery, CGIA, 2016; Project Study Area approximated by ESI.

June 2017

Figure:

Project: ER 15052.07
Date: July 2017
Drwn/Chkd: KT/R
Figure: 2a
Red-cockaded Woodpecker Habitat Evaluation

Mid-Currituck Bridge RCW Evaluation

Currituck County, North Carolina
Red-cockaded Woodpecker Habitat Evaluation

Mid-Currituck Bridge RCW Evaluation

Currituck County, North Carolina

Project: ER 15052.07
Date: July 2017
Drwn/Chkd: KT/R
Figure: 2c

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Red-cockaded Woodpecker Habitat Evaluation

Mid-Currituck Bridge RCW Evaluation
Currituck County, North Carolina

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Project Study Area
Evaluation Stand

0 200 400 Feet

Project: ER 15052.07
Date: July 2017
Drwn/Chkd: KT/RT
Figure: 2e
Red-cockaded Woodpecker Habitat Evaluation
Mid-Currituck Bridge RCW Evaluation
Currituck County, North Carolina

Source: High Resolution NC Statewide Orthoimagery, CGIA, 2016; Project Study Area approximated by ESI.
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Red-cockaded Woodpecker Habitat Evaluation

**Mid-Currituck Bridge RCW Evaluation**

Currituck County, North Carolina

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**Project:** ER 15052.07

**Date:** July 2017

**Drwn/Chkd:** KT/R T

**Figure:** 2h
Red-cockaded Woodpecker Habitat Evaluation
Mid-Currituck Bridge RCW Evaluation
Currituck County, North Carolina

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Project: ER 15052.07
Date: July 2017
Drwn/Chkd: KT/RT
Figure: 2i
Red-cockaded Woodpecker Habitat Evaluation

Mid-Currituck Bridge RCW Evaluation

Currituck County, North Carolina

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Red-cockaded Woodpecker Habitat Evaluation

Mid-Currituck Bridge RCW Evaluation

Currituck County, North Carolina

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