

### **Attachments**

**Attachment A- Cultural Resources Project Screening Form**

**Attachment B- Natural Resources Technical Memorandum**

**Attachment C- Bridge Replacement Scoping Risk Assessment Form**

**Attachment D- Floodplain Checklist**

**Attachment E - Public Involvement**

**Attachment A- Cultural Resources Project Screening Form**



# Cultural Resources Project Screening Form

File Number:  PIN:  Route:  County:

Project Name:

Type 1: Resurfacing, installation of fencing, signs, pavement markings, traffic signals, passenger shelters, railroad warning devices, installation of rumble strips, and landscaping

Project Type

Type 2: Bridge replacements on alignment, construction of bicycle/pedestrian facilities, and intersection improvements

Type 3: Projects that do not fall into Type 1 and Type 2 categories (e.g. road widening)

## Comments

This project replaces the bridge carrying S-531 (Henry Funderburk Road) over Mangum Creek. The bridge will be replaced on alignment and it is anticipated that minor amounts of new right-of-way (ROW) will be required. The archaeological project area is 75 feet from the road centerline (150 feet total) and extends 1,500 feet from either side of the bridge. The architectural survey examined all above-ground resources with sightlines to the bridge. New South Associates conducted background research and a cultural resources field survey in May 2023 and created a short form report detailing the project. The survey consisted of a pedestrian reconnaissance of the entire archaeological APE augmented by the excavation of shovel test pits (STPs). A total of 63 STP locations were investigated. Twelve STPs were not excavated due to waterlogged soils, driveways, or landscaping. The remaining 51 STPs were negative for cultural material. Three above ground resources were recorded. SHPO Site No. 0721 is a circa 1900 residence. Two outbuildings were associated with this house, SHPO Site No. 0721.01, a circa 1920 barn, and SHPO Site No. 0721.02, a circa 1950 agricultural building. All were assessed as not eligible for the National Register of Historic Places (NRHP). The current bridge to be replaced (Asset ID 04978) is a three-span, concrete slab bridge constructed in 1967. Although it is over 50 years of age, it was not formally recorded and evaluated for inclusion on the NRHP because it qualifies for streamlined review under the Federal Highway Administration's Post-1945 Bridges Program Comment. No other above ground resources are located within the APE. No historic properties will be affected by this project. No additional cultural resources investigations are recommended.

Effect Determination:

\*SHPO consultation is required for all Type 3 projects and any project with a No Adverse or Adverse Effect Determination.

This screening form was developed to satisfy documentation requirements for Type I and Type II projects under a Programmatic Agreement between the Federal Highway Administration, the South Carolina State Historic Preservation Office, the US Army Corps of Engineers, and the South Carolina Department of Transportation. For Type I and Type II projects that have no effect on historic properties, the completion of this screening form with supporting documentation (e.g. ArchSite Map) provides evidence of FHWA and SCDOT's compliance with Section 106 of the National Historic Preservation Act.

Prepared by:

Review Date:

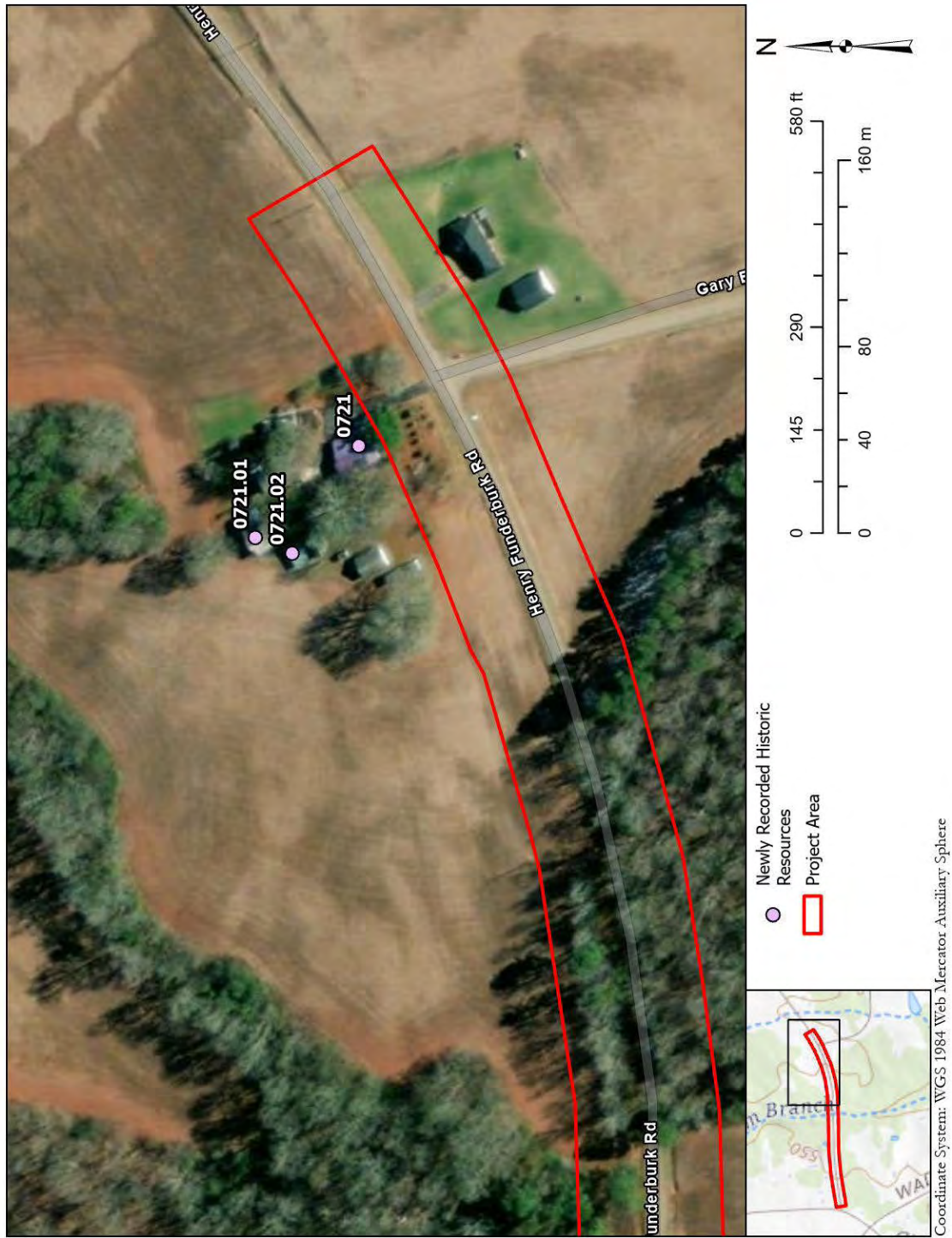


Figure 5.  
Newly Identified Cultural Resources within the Project Area Viewshed

Basemap: ESRI Resource Data



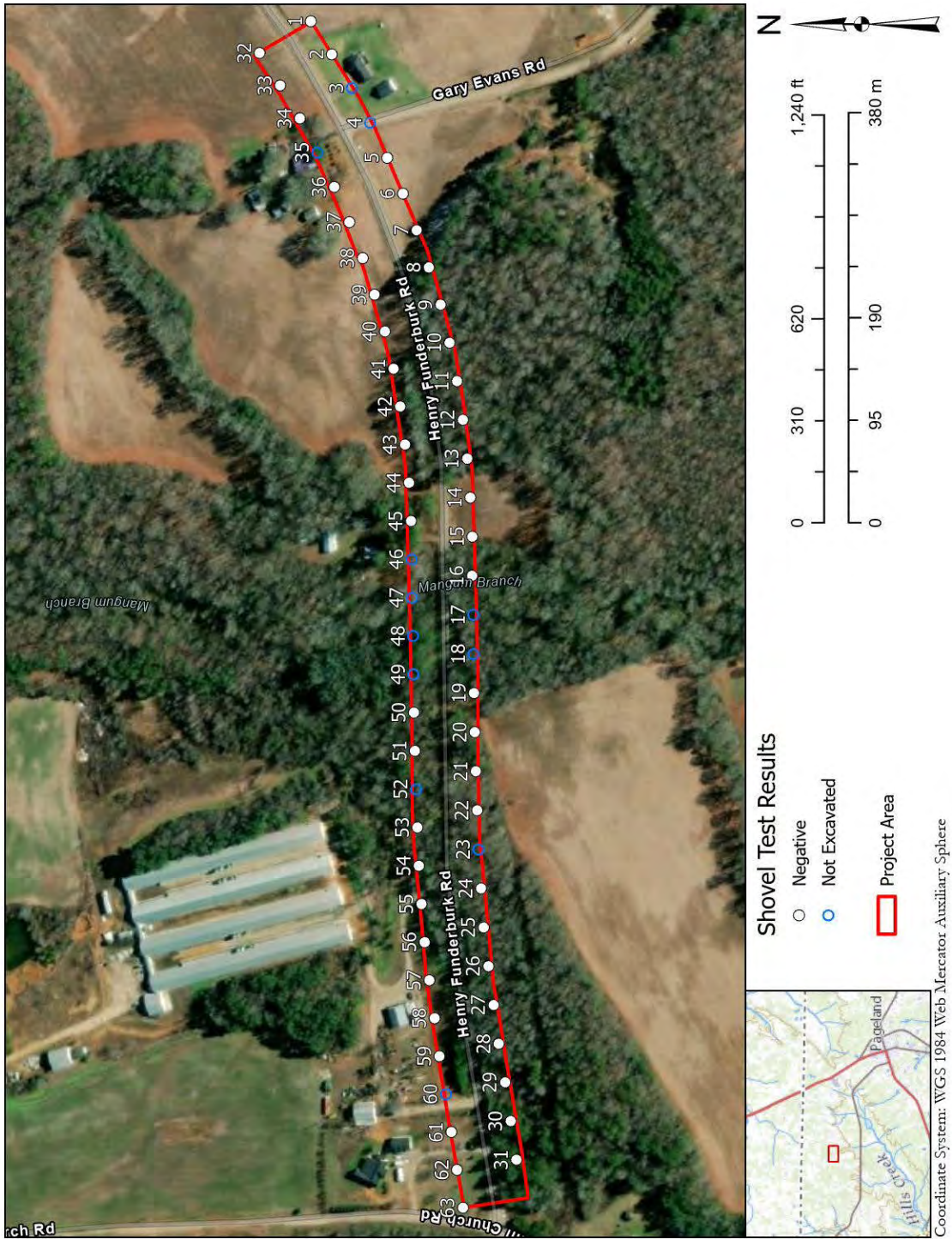


Figure 6.  
Shovel Test Map

Basemap: ESRI Resource Data

**CULTURAL RESOURCE FIELD REPORT  
SCDOT ENVIRONMENTAL SECTION**



**TITLE:** Phase I Cultural Resource Survey of Proposed Improvements to the S-531 Bridge over Mangum Creek

**DATE OF RESEARCH:** 5/12/23

**ARCHAEOLOGIST:** Kelly Higgins, MA, RPA

**ARCHITECTURAL HISTORIAN:** Sean Stucker, MHP, and Katie Dykens Quinn, MSHP

**COUNTY:** Chesterfield

**PROJECT:** Closed and Load Restricted Bridge Replacements- Package 20

**F. A. No.:**

**File No.**

**PIN:** P041959

**DESCRIPTION:**

The South Carolina Department of Transportation (SCDOT) proposes to replace various closed or load-restricted bridges including the S-531 (Henry Funderburk Road) bridge over Mangum Creek in Chesterfield County, South Carolina. The project area is defined as that area within 75 feet of either side of the proposed roadway centerline and extending 1,500 feet from the bridge. The archaeological survey covered the entire project area, while the architectural survey examined all above-ground resources with sightlines to the bridge. This cultural resource survey was performed under contract with HNTB.

**LOCATION:**

The project is located approximately four miles northwest of the town of Pageland in northwestern Chesterfield County, South Carolina (Figure 1).

**USGS QUADRANGLE:** Pageland, SC

**DATE:** 1971

**SCALE:** 1:24000

**UTM:** NAD83

**ZONE:** 17N

**EASTING:** 549601

**NORTHING:** 3850922

**ENVIRONMENTAL SETTING:**

Chesterfield County is located within the Piedmont and Coastal Plain physiographic regions. However, the project area is located within the Piedmont, which is characterized by gently rolling hills formed from extensive weathering of ancient mountain ranges. Elevations within the project area range from 510 feet above mean sea level (amsl) along Mangum Creek to 560 feet amsl at both ends of the project. The surrounding environment is rural, with less than 10 single family residences in the vicinity.

**NEAREST RIVER/STREAM AND DISTANCE:**

Mangum Creek bisects the project area as an intermittent stream terminating approximately 0.60-mile (1 km) north of the survey tract. Mangum Creek is a tributary of Hills Creek, with its confluence approximately two miles (3 km) south of the project area. Hills Creek joins the Lynches River approximately 4.5 miles (7 km) southwest of the project area.

**SOIL TYPE:**

Soils in the project area consist of well drained silty clay loams formed from clayey residuum weathered from slate. **Badin silty clay loam** is present in the project area with 2–6 percent slopes and 6–10 percent slopes and accounts for 63 percent of the project area. The remaining 37 percent contains **Georgeville silty clay loam** with 2–6 percent slopes. By the early twentieth century, continuous row cropping destroyed soil nutrients and large tracts of land were rendered

unsuitable for cultivation. Today, the Natural Resource Conservation Service considers the entire project area to have eroded soils.

#### **REFERENCE FOR SOILS INFORMATION:**

USDA-NCRS Soil Survey Division, Custom Soil Resource Report ([websoilsurvey.sc.egov.usda.gov](http://websoilsurvey.sc.egov.usda.gov))

**GROUND SURFACE VISIBILITY:** 0% ☐ 1-25% ☐ 26-50% ☒ 51-75% ☐ 76-100% ☐

#### **CURRENT VEGETATION:**

Vegetation in the project area consists of mixed hardwoods lining Henry Funderburk Road with pine trees scattered throughout the tract. The understory is moderately dense in most of the wooded areas; however, it is very dense around Mangum Creek. Agricultural fields planted in wheat are present in the eastern portion of the project area. Manicured lawn and landscaping are present surrounding the three residences in the project area (Figures 2–4).

#### **INVESTIGATION:**

#### **BACKGROUND RESEARCH**

New South Associates, Inc. (NSA) conducted background research prior to fieldwork using the ArchSite GIS database maintained by the South Carolina Institute of Archaeology and Anthropology (SCIAA) and the South Carolina Department of Archives and History (SCDAH). A review of ArchSite did not identify any previously recorded cultural resources or surveys within the 0.5-mile search radius.

#### **SURVEY RESULTS**

The cultural resources survey did not identify any new or previously recorded archaeological sites or isolated finds within the project area. The architectural survey recorded one new resource with two sub-resources. These resources are listed in Table 2 and shown in relation to the project area in Figure 5.

#### **ARCHAEOLOGY**

The Phase I Archaeological Survey was conducted on May 12, 2023. Kelly Higgins, MA, RPA, served as Field Director and was assisted in the field by Archaeological Technicians John Tomko and Derrick Westfall. The archaeological investigation included a pedestrian walkover of the entire project area and the excavation of 30-centimeter shovel tests at 30-meter (100-foot) intervals within the project area. Shovel tests were placed along a single transect parallel to either side of Henry Funderburk Road. Soil profiles were recorded for all excavated shovel tests, and location data was recorded for all investigated shovel tests using handheld GPS instruments.

Sixty-three shovel test locations were investigated across the project area, of which 51 were negative for cultural material. The remaining 12 shovel tests were not excavated due to very dense vegetation, gravel or paved driveways, landscaping, or waterlogged soils (Figure 6). One general soil profile was noted across the project area, consisting of approximately 15 centimeters of strong brown (7.5YR 5/6) silty loam Ap horizon overlying a yellowish red (5YR 4/6) silty clay subsoil (Figure 7). The Ap horizon contained small, angular rocks and soils throughout the project area were compacted.

#### **ARCHITECTURAL SURVEY**

The architectural survey was conducted on May 24, 2023, by Architectural Historian Sean Stucker, MHP. One resource with two sub-resources was recorded. Each was documented with South Carolina State Survey forms and photography and assessed for NRHP eligibility in accordance with the *South Carolina State Historic Preservation Office (SHPO) Survey Manual: South Carolina Statewide Survey of Historic Places*. The bridge itself, constructed in 1967, was not evaluated per the FHWA's Post-1945 Bridges Program Comment (U.S. Department of Transportation,

Federal Highway Administration 2012). This bridge (ID 04978) is of a common type, with flat concrete stringers and wood piers with concrete caps and footings (Figure 8). Newly identified resources are discussed in detail below.

*Table 2. Newly Recorded Architectural Resources*

Site No.	Address	Style/Type	Build Date	NRHP Recommendation
0721	House 402 Henry Funderburk Road	Modified Front-Gabled House	Circa 1900	Not Eligible
0721.01	Barn 402 Henry Funkderburk Road	Front-Gabled Barn	Circa 1920	Not Eligible
0721.02	Agricultural Outbuilding 402 Henry Funderburk Road	Agricultural Outbuilding	Circa 1950	Not Eligible

#### RESOURCES 0721 through 0721.02 – Baker Hicks House (402 Henry Funderburk Road)

Facing east towards its driveway, Resource 0721 is a heavily modified front-gabled house that is located to the north of the intersection of Henry Funderburk Road and State Road S-13-579. The house is visible on the earliest aerial photograph that could be located, dating to 1956, and also appears on a 1914 Chesterfield County soil survey map (Figures 9 and 10) (United States Department of Agriculture 1914; United States Geological Survey 1956). Due to its presence on the 1914 soil survey map and its architectural style, it is assumed to have been constructed circa 1900. The house is one story tall. It has a rectangular historic core with a front-gabled modern V-crimp metal roof and synthetic siding (Figure 11). The original main entrance is symmetrical, with a central wood panel door flanked by two vertical four-over-one wood frame sash windows, each with a single shutter. A hipped roof porch with wrought iron supports shelters the original front elevation. Multiple additions have been made to the house, including a laterally gabled section that has been added to the northeast side of the building and a shed-roofed enclosed porch on the southeast corner. Additionally, the entrance has been shifted to the south elevation, where a second wood panel door is located under a gabled porch with wrought iron supports. Windows throughout the building are varied, and include modern vinyl windows, horizontal two-over-two wood frame sashes, and the four-over-ones located on the east elevation. A chimney flue rises from near the front of the east elevation and appears to have been an external chimney prior to the addition. The foundation is concealed.

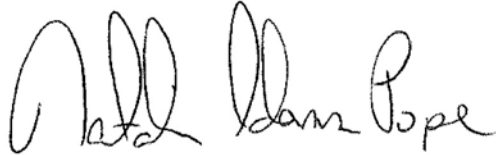
Resource 0721.01 is located roughly 100 feet northwest of Resource 0721 (Figure 12). This front-gabled barn is visible on the 1956 aerial photograph and is consistent with a circa 1950 construction date in type and materials. The barn is simple in design with corrugated metal walls and roofing material. The roofline is broken but does not form a full monitor; it is unclear whether this is due to venting at the roofline or additions to the building. A shed roofed porch has been added to the east side of the building. Resource 0721.02 is located approximately 20 feet southwest of Resource 0721.01 (Figure 13). The historic core of this agricultural outbuilding is visible in a 1956 aerial photograph. It is a frame building clad in corrugated metal siding with a corrugated metal shed roof. The building has exposed rafter tails. A large gabled addition has been made to it, more than doubling its size.

Resources 0721 through 0721.02 are located on Henry Funderburk Road, a rural one-lane street. Many other streets in the vicinity are named for Funderburks. The Funderburk family settled in the Lynches Creek area in the mid-eighteenth century after Devauld Funderburgh emigrated from Germany by way of Charleston (Funderburk 1967:91). His grandson, Henry Franklin Funderburk (1799-1862) is possibly the Henry Funderburk for whom the road is named. The last listed owner is the Alean B. Hicks Life Estate, and Alean B. Hicks is Henry Franklin's great-great-great-granddaughter (Funderburk 2022). The surrounding development is predominately farmland. The house is located on a 28-acre parcel and the Alean B. Hicks estate owns roughly 17 additional adjacent acres (Chesterfield County 2023). A lack of modern farming infrastructure on the property suggests that Mrs. Hicks, who died in 2022, may have leased out the land (Baumgartner Funeral Home 2022). Her husband, James, is listed as an electrician in his obituary (Baumgartner Funeral Home 2012). Resource 0721 is a front-gabled house that has been heavily modified, including with additions that dramatically alter its appearance, replacement siding, a replacement roof, and replacement windows. The extant outbuildings are not remarkable architecturally. Neither the house nor outbuildings are recommended eligible for the NRHP under Criterion C, either individually or collectively. The property was also considered for the NRHP under Criterion A for its association with broad patterns of history, including the agricultural development of Chesterfield County. The property retains

two outbuildings that are directly related to agriculture but neither presents a noteworthy example of the type. The resources are recommended not eligible under Criterion A, both individually and collectively. It is possible that this property is associated with Henry Franklin Funderburk, a relatively early settler in the area and a member of a locally prominent family. However, this association is not represented by any of the extant resources on the property, all of which date to the turn of the twentieth century or later. Therefore, the resources are recommended as not eligible for the NRHP under Criterion B.

**REMARKS AND RECOMMENDATIONS:**

While the survey did not identify any new or previously recorded archaeological sites or isolated finds, the architectural survey recorded one individual resource with two sub-resources. None of the surveyed resources are recommended eligible for the NRHP. The proposed project, as currently defined, would have no effects to historic properties.

A handwritten signature in black ink, appearing to read "Nathaniel Lane Pope". The signature is fluid and cursive, with the first name "Nathaniel" and last name "Pope" being more legible than the middle name "Lane".

**SIGNATURE:**

**DATE:** May 30, 2023

**BIBLIOGRAPHY:**

Baumgartner Funeral Home

- 2012           Obituary for James Hicks. Baumgartner Funeral Home.  
<https://www.baumgartnerfh.com/obituaries/James-Hicks-35366/#!/Obituary>.  
2022           Obituary for Alean Baker Hicks. Baumgartner Funeral Home.  
<https://www.baumgartnerfh.com/obituaries/Alean-Hicks/#!/Obituary>.

Chesterfield County

- 2023           Chesterfield County GIS Mapping. ThinkGIS. <https://chesterfieldsc.wthgis.com/>.

Funderburk, Guy B.

- 1967           *Funderburk History and Heritage*. Salem Press, Inc., Salem, West Virginia.

Funderburk, Robert

- 2013           Henry Franklin Funderburk (1799 - 1862). *WikiTree*. <https://www.wikitree.com/wiki/Funderburk-456>.

United States Department of Agriculture

- 1914           Chesterfield County, 1914. United States Department of Agriculture. USDA Historical Soil Survey Maps of South Carolina Digital Collection. University of South Carolina.

United States Geological Survey

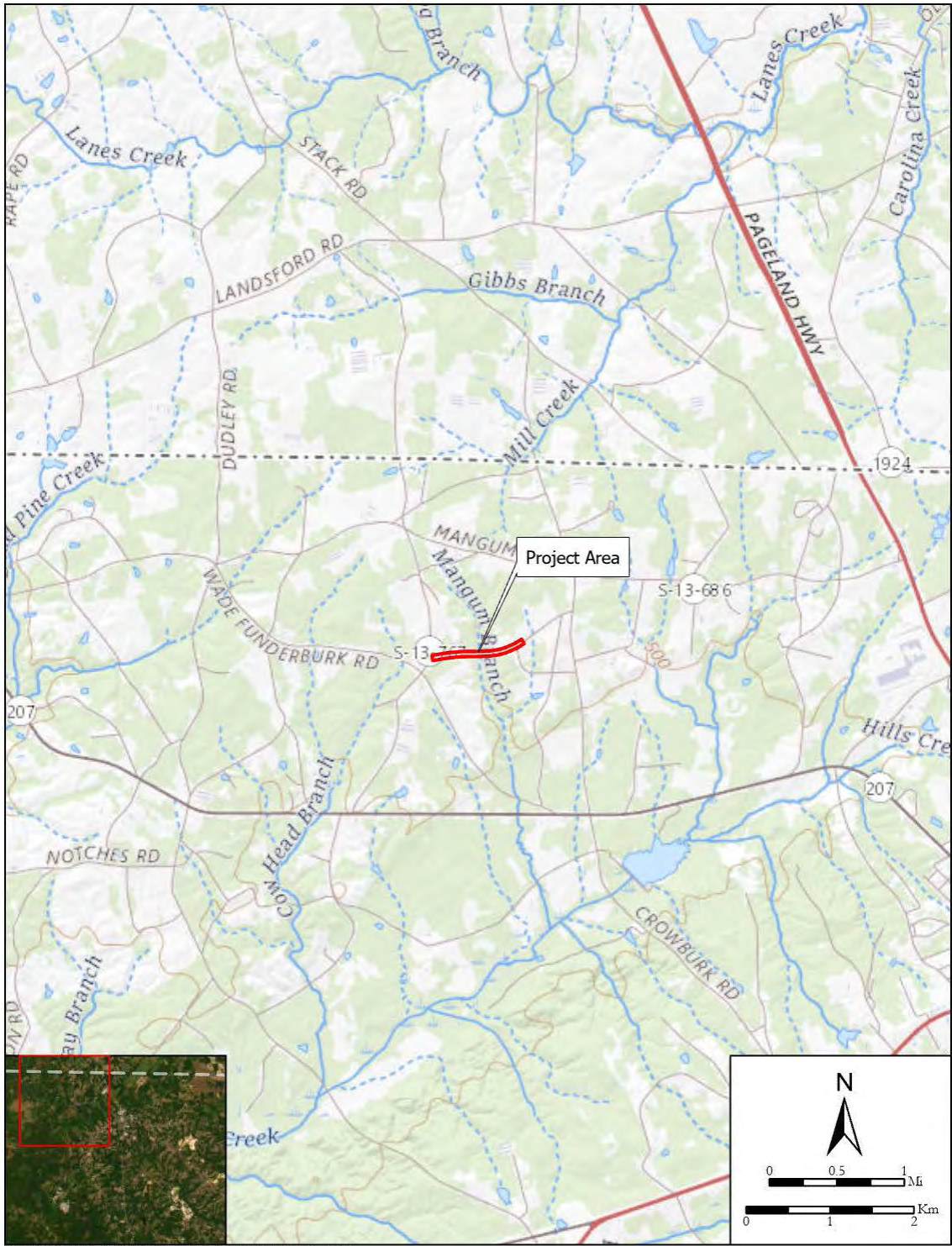
- 1956           *Aerial Imagery of Chesterfield County, South Carolina*. Photograph. USGS EarthExplorer.

U.S. Department of Transportation, Federal Highway Administration

- 2012           Program Comment for Actions Affecting Post-1945 Concrete and Steel Bridges. Advisory Council on Historic Preservation, Washington, D.C.



Figure 1.  
Project Location Map



Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

Basemap: United States Geological Survey Topo



Figure 2.  
Typical Vegetation, Facing West





Figure 3.  
Very Dense Vegetation, Facing West



Figure 4.  
Manicured Lawn and Agricultural Fields Planted in Wheat, Facing East





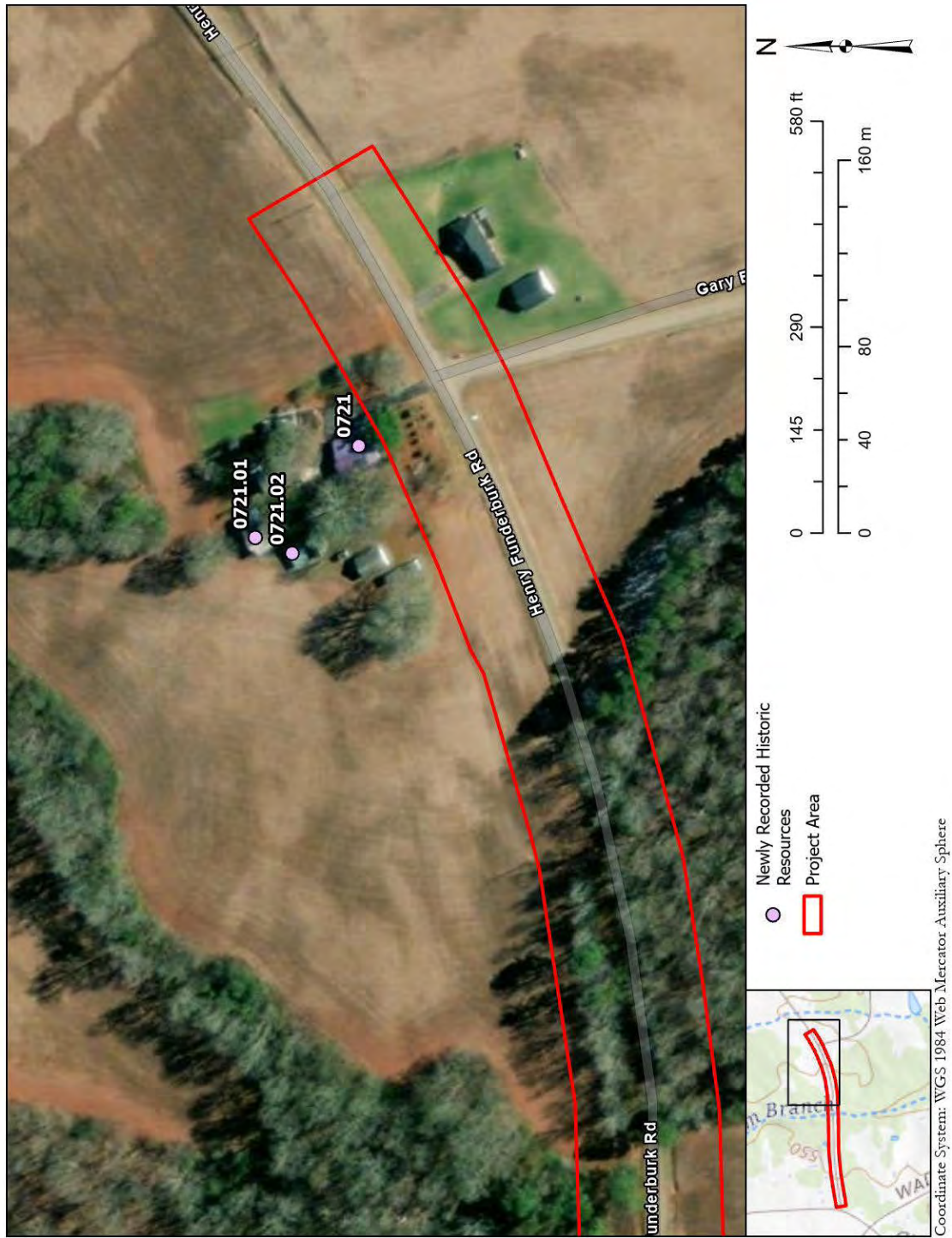


Figure 5.  
Newly Identified Cultural Resources within the Project Area Viewshed

Basemap: ESRI Resource Data

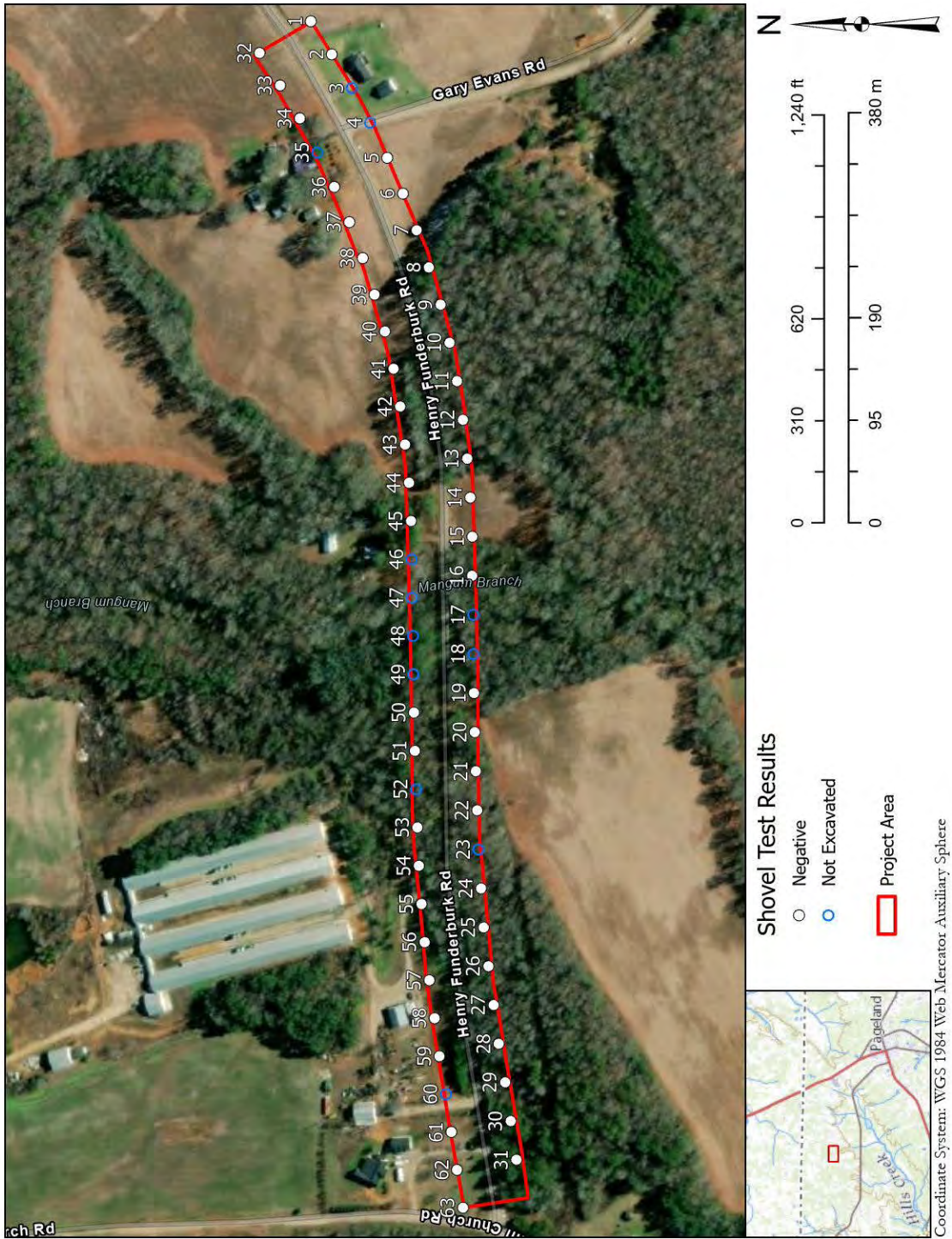


Figure 6.  
Shovel Test Map

Basemap: ESRI Resource Data



Figure 7.  
Typical Shovel Test Profile





Figure 8.  
Bridge Carrying S-531 over Mangum Branch



A. Superstructure and Decking



B. Contextual



Figure 9.  
Project Area on 1914 Chesterfield County Soil Survey Map

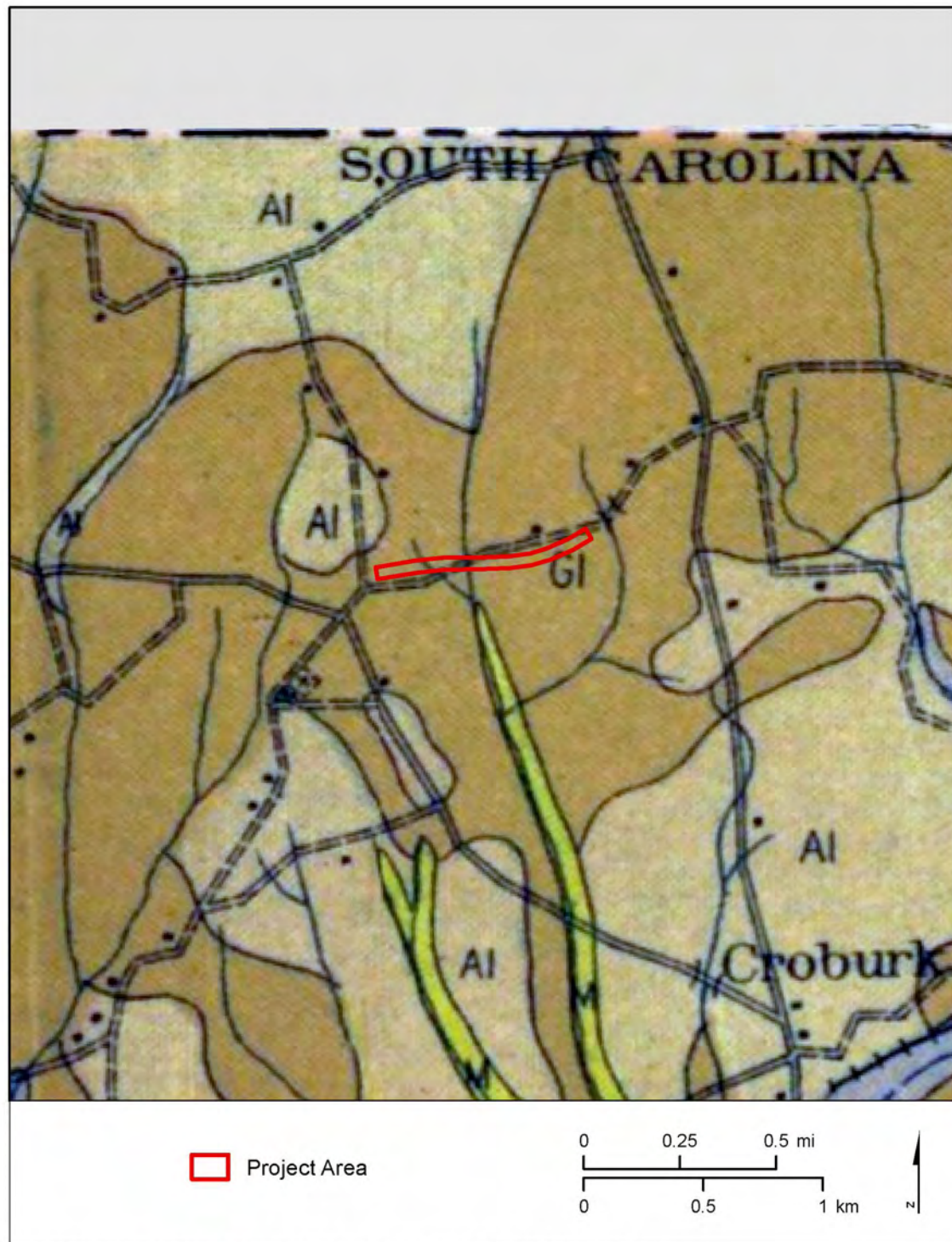


Figure 10.  
Resources 0721 through 0721.02 on 1956 Aerial Photograph



Source: USGS Earth Explorer



Figure 11.  
Resource 0721 (402 Henry Funderburk Road)

A. Facing West



B. Facing Northwest



C. Facing North





Figure 12.  
Resource 0721.01 (402 Henry Funderburk Road - Barn)

A. Facing North



B. Facing North



C. Contextual





Figure 13.  
Resource 0721.02 (402 Henry Funderburk Road - Agricultural Outbuilding)



A. Facing Northwest



B. Contextual, Facing Northwest

## **Attachment B- Natural Resources Technical Memorandum**





# Natural Resources Technical Memorandum

S-531 (Henry Funderburk Road) Bridge Replacement over Mangum Branch

SCDOT Project ID: P041959

June 22, 2023



**ROBBINS  
& DEWITT**

## Introduction

The South Carolina Department of Transportation (SCDOT) proposes to replace the S-531 (Henry Funderburk Road) bridge over Mangum Branch in Chesterfield County, South Carolina. Specifically, the project is approximately 4.18 miles northwest of the town of Pageland. The project is located in the Lynches River Watershed (03040202 8-digit Hydrologic Unit Code) and the Carolina Slate Belt (45c) Level IV Ecoregion. Please see Attachment A, Figure 1 for a Site Location Map.

A Project Study Area (PSA) has been established, based on preliminary design, to encompass all potential impacts of the project. The PSA encompasses an area approximately 11.3 acres in size and approximately 3,005 feet (0.57 mile) in total length, generally centered on Mangum Branch in either direction. Furthermore, the PSA is 165 feet in total width, generally centered on the centerline of Henry Funderburk Road.

Robbins & DeWitt conducted a desktop analysis, scientific literature review, and field surveys for natural resources associated with the proposed bridge replacement. This technical memorandum provides a summary of methods and findings related to natural resources and potential project related impacts. Attached to this memorandum are supporting figures, a SCDOT Permit Determination Form, South Carolina Department of Health and Environmental Control (SCDHEC) Watershed and Water Quality Information Report, and a biological evaluation for federally protected species.

## Desktop Analysis Methods

A desktop analysis was completed as part of an initial evaluation of the PSA to identify key environmental resources to be considered for permitting and/or avoidance and minimization by the design team. The potential resources identified in the desktop evaluation were field verified by Robbins & DeWitt to ensure that critical regulatory items would not be adversely impacted by the project. The following resources were consulted during the desktop analysis:

- Federal Emergency Management Agency (FEMA) Map Service Center (<https://msc.fema.gov/portal>)
- SCDHEC Watershed Atlas (<https://gis.dhec.sc.gov/watersheds>)
- South Carolina Department of Natural Resources (SCDNR) and South Carolina Natural Heritage Program (SCNHP) (<https://sclportal.dnr.sc.gov/portal/apps/sites/#/natural-heritage-program>)
- SCDNR Digital Elevation Mapping (DEM) and Light Detection and Ranging (LiDAR) (<https://www.dnr.sc.gov/GIS/lidar.html>)
- SCDNR Open Source Geospatial Data (<https://data-scdnr.opendata.arcgis.com/>)
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (<https://websoilsurvey.nrcs.usda.gov/app/>)
- U.S. Fish and Wildlife Services (USFWS) Environmental Conservation Online System (ECOS) (<https://ecos.fws.gov/ecp/>)
- USFWS Information for Planning and Consultation (IPaC) (<https://ecos.fws.gov/ipac/>)
- USFWS National Wetland Inventory (NWI) (<http://www.fws.gov/wetlands>)
- U.S. Geological Survey (USGS) National Hydrography Dataset (NHD) (<http://nhd.usgs.gov/>)
- USGS Topographic Quadrangle Maps (1:24,000-scale) – Pageland, SC Quadrangle

## Jurisdictional Waters of the U.S.

After completing the desktop analysis, Robbins & DeWitt performed field reviews to determine the boundaries of jurisdictional waters of the U.S., including wetlands, in the PSA. Field reviews were conducted on May 10<sup>th</sup>, 2023. A summary of jurisdictional features identified in the PSA is provided in Table 1.

*Table 1 - Summary of Delineated Streams and Non-Wetland Waters in the Project Study Area*

Stream	Latitude	Longitude	Centerline Length (feet)	Area (acre)
Stream A	34.7992933	80.4576972	182	0.04
<b>Total</b>			<b>182 feet</b>	<b>0.04 acres</b>

## Permitting Considerations

Based on the conceptual bridge design, impacts to jurisdictional waters may occur during construction but are expected to remain below the SCDOT U.S. Army Corps of Engineers General Permit impact thresholds. A completed SCDOT Permit Determination Form and SCDHEC Watershed and Water Quality Information Report are provided in Attachment B.

## Federally Protected Species

Environmental scientists performed literature and field reviews to determine the likelihood of protected species within the PSA and the potential for project-related impacts. Field reviews were conducted on May 10<sup>th</sup> and 25<sup>th</sup>, 2023. The SCDNR South Carolina Natural Heritage Species Viewer was also reviewed to determine the presence of known populations of protected species within the vicinity of the project. Based on the literature and field reviews it is determined that the proposed project will have a biological conclusion of 'no effect' on red-cockaded woodpecker, Atlantic sturgeon, shortnose sturgeon, and Carolina heelsplitter. Surveys for the Schweinitz's sunflower will be conducted during the 2023 survey window to confirm absence or presence of the species. If the species is observed in the PSA where construction activities are proposed coordination with USFWS would be initiated. A Biological Evaluation is provided in Attachment C.

## Migratory Birds

Certain bird species are protected under the Migratory Bird Treaty Act of 1918. The USFWS IPaC online database was reviewed for information pertaining to migratory bird species. Migratory birds were observed nesting on the existing bridge.

## Vegetation

Land use in the PSA includes agriculture and low-density residential housing. Natural communities observed within the PSA consist of small stream forest. Refer to the Biotic Communities section in Attachment C for a detailed description of vegetation observed in the PSA.



## Soils

According to the (USDA-NRCS) Soil Survey Geographic (SSURGO) data, three Soil Map Units (SMU) and water (W) are mapped within the PSA. Each SMU IS included in Table 2 below.

*Table 2 - Soil Map Units (SMU) in the Project Study Area*

SMU	SMU Name	Area (acres)	Percentage of PSA
BdB2	Badin silty clay loam, 2 to 6 percent slopes, eroded	3.1	27.1%
BdC2	Badin silty clay loam, 6 to 10 percent slopes, eroded	4.1	35.9%
GgB2	Georgeville silty clay loam, 2 to 6 percent slopes, eroded	4.2	37.1%

If you have any questions, or if Robbins & DeWitt can be of additional assistance, please feel free to contact Matt DeWitt at (864) 201-8446 or [matt.dewitt@robbins-dewitt.com](mailto:matt.dewitt@robbins-dewitt.com).

Respectfully Submitted



Matt DeWitt, AICP  
Robbins & DeWitt, LLC

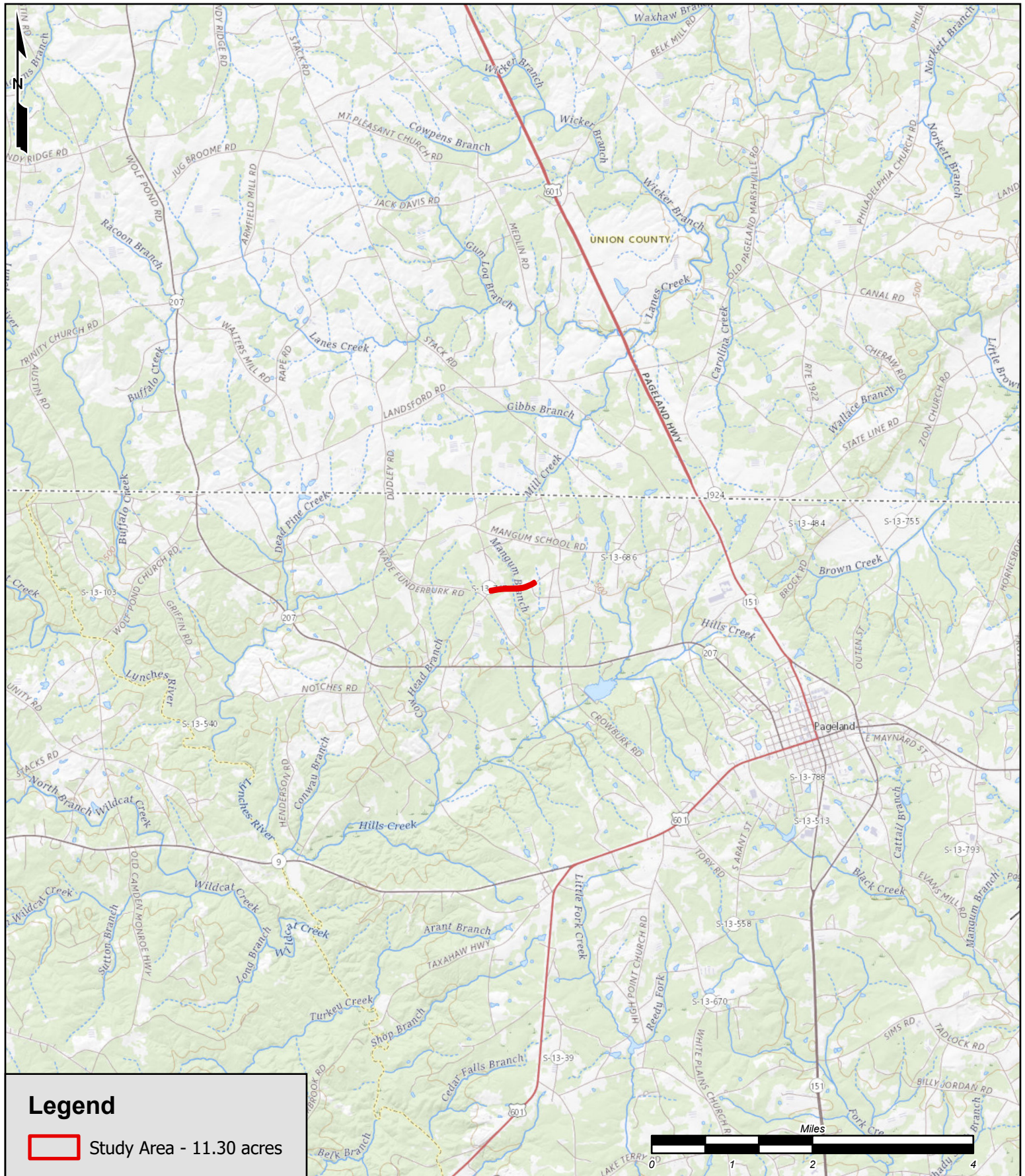


# Attachment A

## Figures



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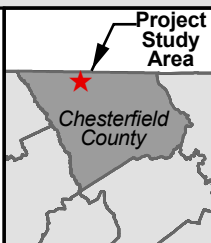
## Legend

Study Area - 11.30 acres



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## S-531 BRIDGE REPLACEMENT OVER MANGUM BRANCH PROJECT ID: P041959

**CHESTERFIELD COUNTY, SOUTH CAROLINA**

Source: USGS National Map (2023); USGS Pageland, SC Quadrangle (2020)



South Carolina Department of Transportation

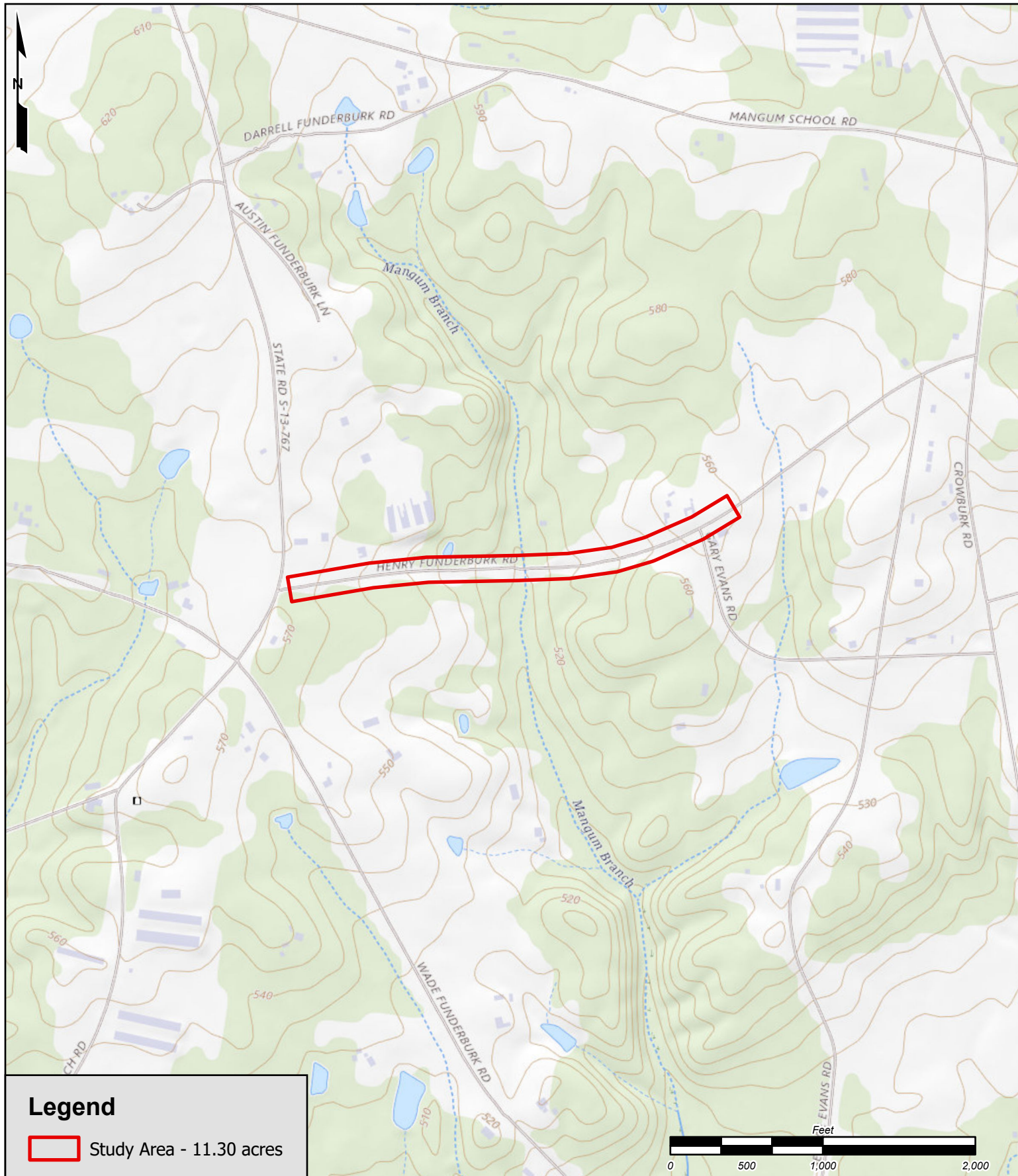
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DATE: 06/07/2023

**PROJECT VICINITY**

**FIGURE 1**





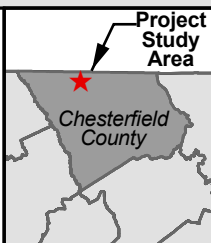
## Legend

Study Area - 11.30 acres



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**S-531 BRIDGE REPLACEMENT  
OVER MANGUM BRANCH  
PROJECT ID: P041959**

**CHESTERFIELD COUNTY, SOUTH CAROLINA**

Source: USGS National Map (2023); USGS Pageland, SC Quadrangle (2020)



South Carolina Department of Transportation

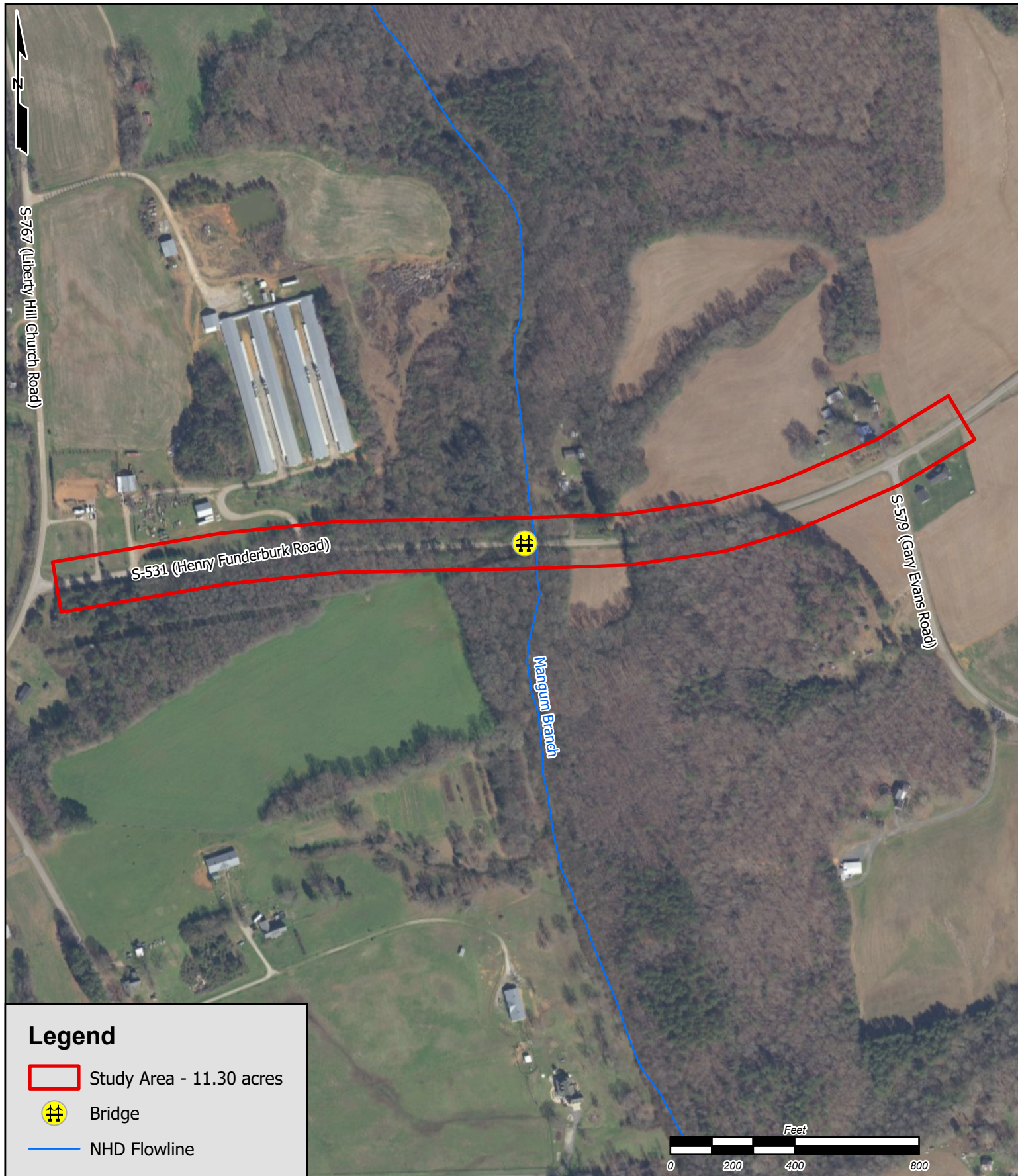
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DATE: 06/07/2023

**USGS TOPOGRAPHIC MAPPING**

**FIGURE 2**





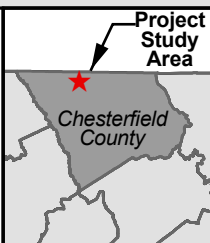
## Legend

- Study Area - 11.30 acres
- ⚙ Bridge
- NHD Flowline



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## S-531 BRIDGE REPLACEMENT OVER MANGUM BRANCH PROJECT ID: P041959

**CHESTERFIELD COUNTY, SOUTH CAROLINA**

Source: USGS NHD Flowlines (2018); SC Geodetic High Resolution 6-inch, RGB Aerial Imagery [Statewide, South Carolina (2020)]



South Carolina Department of Transportation

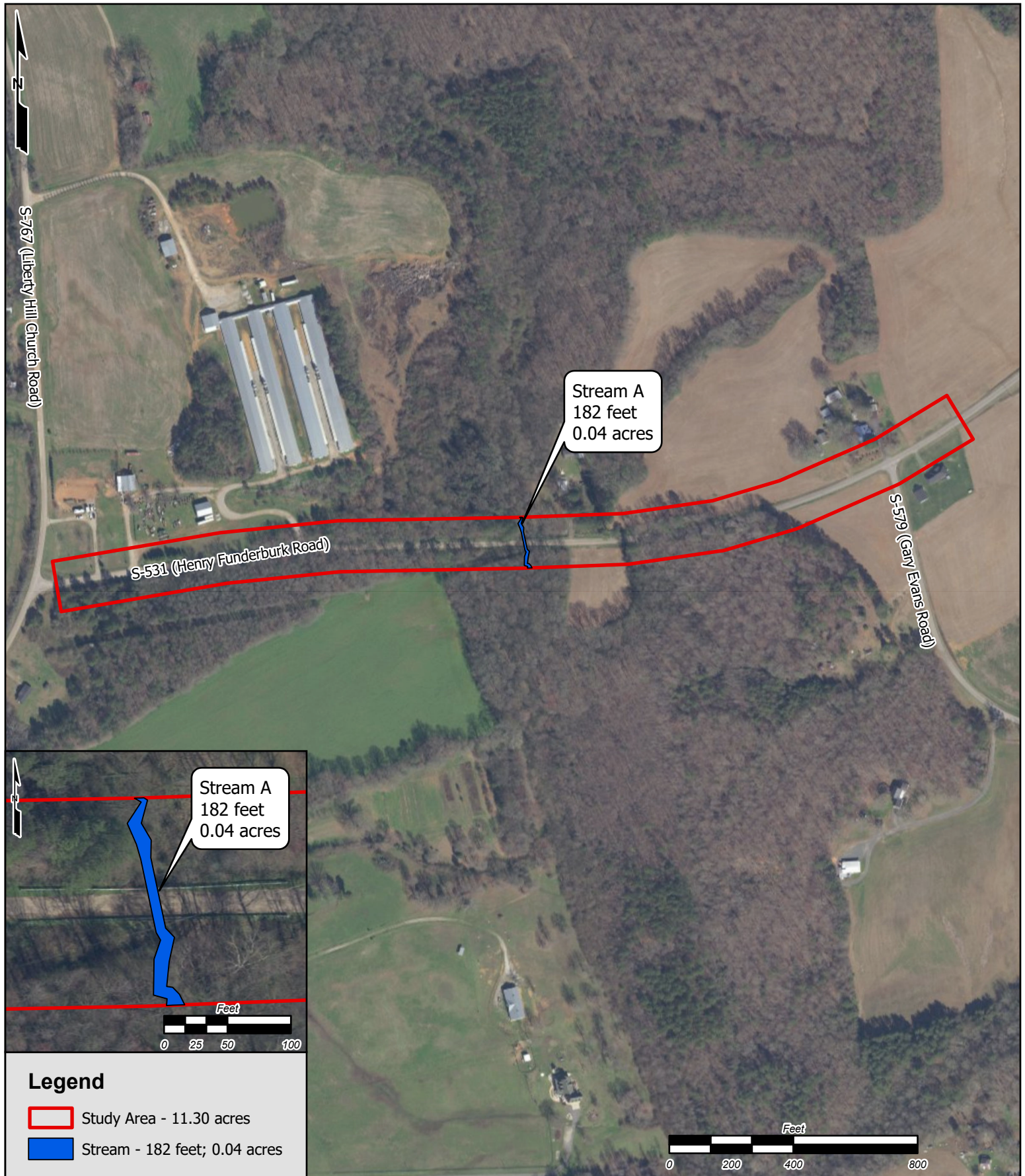
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DATE: 06/07/2023

**AERIAL IMAGERY**

**FIGURE 3**





### Legend

- Study Area - 11.30 acres
- Stream - 182 feet; 0.04 acres



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### S-531 BRIDGE REPLACEMENT OVER MANGUM BRANCH PROJECT ID: P041959

**CHESTERFIELD COUNTY, SOUTH CAROLINA**

Source: Approximate boundaries of WOTUS were delineated on May 10, 2023; SC Geodetic High Resolution 6-inch, RGB Aerial Imagery [Statewide, South Carolina (2020)]



DRAWN BY: TRC

DATE: 06/07/2023

**APPROXIMATE BOUNDARY OF WOTUS**

**FIGURE 4**

## **Attachment B**

# **SCDOT Permit Determination Form & Water Quality Information Report**



**ROBBINS  
& DEWITT**



Date: 6/21/2023

## PERMIT DETERMINATION

FROM Russell Chandler COMPANY Robbins & DeWitt

CONTACT INFO (phone and/or email) russell.chandler@robbins-dewitt.com

SCDOT PROJECT ENGINEER Michael Pitts

TO Will McGoldrick - Design Build Coordinator

Project Description S-531 over Magnum Branch

Route or Road No. S-531 County Chesterfield

CONST. PIN P041959 OTHER PINS or STRUCTURE # \_\_\_\_\_

RESPONSE:

☒ It has been determined that no permits are required because:

Preliminary design avoids impacts to WOTUS

☐ The following permit(s) is/are necessary:

(Please check which type(s) of permit the project will need)

USACE Permit ☐ GP ☐ IP ☐ 401 ☐ JD

OCRM Permit ☐ CAP ☐ CZC

Navigable ☐ SCDHEC NAVGP — if checked a USCG and/or USACE navigable permit may also be required, but will be determined during the NEPA and Permitting stages.

Other \_\_\_\_\_

Water Classification: FW

*Print and attach the SCDHEC water quality report*

303(d) listed ☐ no ☒ yes, for \* BIO

TMDL developed ☐ no ☒ yes, for \* ECOLI

\*List all that apply using the SCDHEC abbreviations

Comments: \_\_\_\_\_

The determination above was based on the most recently available information at the time. This is a preliminary determination and is subject to change if the design of the project is modified.

T Russell Chandler  
Biologist, SCDOT/Consultant

06/21/2023  
Date



# Watershed and Water Quality Information

## General Information

**Applicant Name:** SCDOT

**Permit Type:** Construction

**Address:** 608 HENRY FUNDERBURK RD,  
PAGELAND, SC, 29728

**Latitude/Longitude:** 34.799308 / -80.457586

**MS4 Designation:** Not in designated area

**Monitoring Station:** PD-333

**Within Coastal Critical Area:** No

**Water Classification (Provisional):** FW

**Waterbody Name:** Unnamed Trib

**Entered Waterbody Name:** Mangum Branch

## Parameter Description

NH3N	Ammonia	CD	Cadmium	CR	Chromium
CU	Copper	HG	Mercury	NI	Nickel
PB	Lead	ZN	Zinc	DO	Dissolved Oxygen
PH	pH	TURBIDITY	Turbidity	ECOLI	Escherichia coli (Freshwaters)
FC	Fecal Coliform (Shellfish)	BIO	Macroinvertebrates (Bio)	TP	(Lakes) Phosphorus
TN	(Lakes) Nitrogen	CHLA	(Lakes) Chlorophyll a	ENTERO	Enterococcus (Coastal Waters)
HGF	Mercury (Fish Tissue)	PCB	PCB (Fish)		

## Impaired Status (downstream sites)

Station	NH3N	CD	CR	CU	HG	NI	PB	ZN	DO	PH	TURBIDITY	ECOLI	FC	BIO	TP	TN	CHLA	ENTERO	HGF	PCB
PD-333	X	X	X	X	X	X	X	X	X	X	X	InTN	X	N	X	X	X	X	X	X

F = Standards full supported  
N = Standards not supported

A = Assessed at upstream station  
X = Parameter not assessed at station

WnTN = Within TMDL, parameter not supported  
InTN = In TMDL, parameter not supported

WnTF = Within TMDL, parameter full supported  
InTF = In TMDL, parameter full supported

## Parameters to be addressed (those not supporting standards)

**ECOLI** - Escherichia coli (Freshwaters)

**BIO** - Macroinvertebrates (Bio)

## Fish Consumption Advisory

## Waters of Concern (WOC)

## TMDL Information - TMDL Parameters to be addressed

**In TMDL Watershed:** Yes

**TMDL Site:** PD-333

**TMDL Report No:** 029-05

**TMDL Parameter:** Fecal

**TMDL Document Link:** [https://www.scdhec.gov/sites/default/files/docs/HomeAndEnvironment/Docs/tmdl\\_pd\\_fc.pdf](https://www.scdhec.gov/sites/default/files/docs/HomeAndEnvironment/Docs/tmdl_pd_fc.pdf)

Report Date: May 30, 2023

# **Attachment C**

## **Biological Evaluation - Section 7 of the Endangered Species Act**



**ROBBINS  
& DEWITT**

## Introduction

The proposed project consists of replacing the S-531 (Henry Funderburk Road) bridge over Mangum Branch, and associated road work, in Chesterfield County, South Carolina.

Pursuant to Section 7 of the Endangered Species Act (ESA), a field survey was conducted within the Project Study Area (PSA) for the project. A review of the USFWS South Carolina List of At-Risk, Candidate, Endangered, and Threatened Species, dated March 29, 2022, identifies five (5) federally protected species known to occur or to have formerly occurred in Chesterfield County. A Resource List was also requested from the USFWS Information for Planning and Consultation (IPaC) in June, 2023 to detail protected species under USFWS jurisdiction that are known or expected to be on or near the project area. Table 1 below includes the species that appear on at least one of these resources.

## Federally Protected Species

Species with the federal classification of Endangered (E) or Threatened (T) or Threatened due to Similarity of Appearance (T [S/A]) are protected under the ESA of 1973, as amended (16 U.S.C. 1531 et seq.). Although Section 7 of the ESA does not provide protections for Candidate species, they are listed in Table 1 in the event of a status changes prior to completion of the project. Additionally, species that are proposed for listing are not subject to Section 7 compliance until the time they are formally listed. The bald eagle is protected by the Bald and Golden Eagle Protection Act (BGEPA) and is included in this evaluation.

*Table 1: Threatened and Endangered Species*

Category	Common Name	Scientific Name	Protection Status
Bird	Bald eagle	<i>Haliaeetus leucocephalus</i>	BGEPA
Bird	Red-cockaded woodpecker	<i>Picoides borealis</i>	Endangered
Fish	Atlantic sturgeon	<i>Acipenser oxyrinchus</i>	Endangered
Fish	Shortnose sturgeon	<i>Acipenser brevirostrum</i>	Endangered
Insect	Monarch butterfly	<i>Danaus plexippus</i>	Candidate
Mammal	Tri-colored bat	<i>Perimyotis subflavus</i>	Proposed Endangered
Mollusk	Carolina heelsplitter	<i>Lasmigona decorata</i>	Endangered, Critical Habitat
Plant	Schweinitz's sunflower	<i>Helianthus schweinitzii</i>	Endangered

## Methodology

Environmental scientists performed literature and field reviews to determine the likelihood of protected species within the PSA and the potential for project-related impacts. Field reviews were conducted on May 10 and 25, 2023. The SCDNR South Carolina Natural Heritage Species Viewer was also reviewed to determine the presence of known populations of protected species within the vicinity of the project.



## Biotic Communities

Land use in the PSA includes agriculture and low-density residential housing. Natural communities observed within the PSA consist of small stream forest.

The small stream forest consists of an open to dense understory or shrub layer and a sparse to dense herb layer. The canopy has a mixture of bottomland and mesophytic trees including river birch (*Betula nigra*), sycamore (*Platanus occidentalis*), sweetgum (*Liquidambar styraciflua*), tulip poplar (*Liriodendron tulipifera*), American elm (*Ulmus americana*), hackberry (*Celtis laevigata*), green ash (*Fraxinus pennsylvanica*), and red maple (*Acer rubrum*). Vine species are typically common and can include poison ivy (*Toxicodendron radicans*), summer grape (*Vitis aestivalis*), and crossvine (*Bignonia capreolata*). The subcanopy consists of young canopy species and many tall shrubs including pawpaw (*Asimina triloba*), blackhaw (*V. prunifolium*) and invasive Chinese privet (*Ligustrum sinense*). The herb layer contains cardinal flower (*Lobelia cardinalis*), longleaf lobelia (*L. elongata*), Nepalese browntop (*Microstegium vimineum*), netted chainfern (*Woodwardia areolata*), royal fern (*Osmunda regalis*), and invasive English ivy (*Hedera helix*).

## Results

The SCDNR South Carolina Natural Heritage Species Viewer does not identify any protected species within the PSA or within a one-mile radius of the PSA.

Field reviews of the PSA found no suitable habitat for bald eagle, red-cockaded woodpecker, Atlantic sturgeon, or shortnose sturgeon.

Suitable habitat for tri-colored bat exists in the PSA. Roosting habitat exists under the existing Mangum Branch bridge and in cavities and crevices of trees within the PSA. A structure survey of the existing Mangum Branch bridge found no evidence of bat roosting. Additionally, a visual inspection and borescope review of cavities and crevices in trees within the PSA did not indicate the presence of any bat species. A Structures Survey Data Sheet and Habitat Assessment Data Sheet are included in Attachment D.

The Carolina heelsplitter was not observed within Mangum Branch. Low quality habitat, likely caused by the surrounding agricultural land use and small size of the stream, was present throughout the survey. Debris jams impeded water flow and lead to relatively stagnant pools. No other species of live mussels or relic shells were observed during the survey.

Limited suitable habitat for Schweinitz's sunflower exists in the PSA. The existing, maintained right-of-way of Henry Funderburk Road and a maintained overhead powerline represent the most suitable habitat for the species. The natural community near Mangum Branch consists of small stream forest with damp soils and a dense overstory. Based on the conceptual design for the project, the bridge would be replaced on its existing alignment and roadway approach work would be contained within 500 feet of the existing bridge where no suitable habitat for the species is present.

## Conclusions

Based on the literature and field reviews, it is determined that the proposed project will have a biological conclusion of 'no effect' on federally protected species.

The project team will re-evaluate the project's effect on tri-colored bats at the time the species is formally listed under the ESA, and, if necessary, initiate consultation at that time.

If you have any questions, or if Robbins & DeWitt can be of additional assistance, please feel free to contact Russell Chandler at (803) 360-5197 or [russell.chandler@robbins-dewitt.com](mailto:russell.chandler@robbins-dewitt.com).

Respectfully Submitted

A handwritten signature in blue ink that reads "T. Russell Chandler, II". The signature is written in a cursive style with a small circular mark at the end.

T. Russell Chandler, II  
Robbins & DeWitt, LLC



# **Attachment D**

## **Biological Evaluation Attachments**



**ROBBINS  
& DEWITT**

## CHESTERFIELD COUNTY

CATEGORY	COMMON NAME/STATUS	SCIENTIFIC NAME	SURVEY WINDOW/ TIME PERIOD	COMMENTS
<b>Amphibian</b>	Gopher frog (ARS)	<i>Lithobates capito</i>	Breeding: October-March	Call survey: February-April
<b>Bird</b>	Bald eagle (BGEPA)	<i>Haliaeetus leucocephalus</i>	October 1-May 15	Nesting season
<b>Bird</b>	Red-cockaded woodpecker (E)	<i>Picoides borealis</i>	March 1-July 31	Nesting season
<b>Fish</b>	Atlantic sturgeon* (E)	<i>Acipenser oxyrinchus*</i>	February 1-April 30	Spawning migration
<b>Fish</b>	Robust redhorse (ARS)	<i>Moxostoma robustum</i>	Late April-early May	Temperature dependent: 16-24°C
<b>Fish</b>	Shortnose sturgeon* (E)	<i>Acipenser brevirostrum*</i>	February 1-April 30	Spawning migration
<b>Insect</b>	Frosted elfin (ARS)	<i>Callophrys irus</i>	March - June	
<b>Insect</b>	Monarch butterfly (C)	<i>Danaus plexippus</i>	August-December	Overwinter population departs; March-April
<b>Insect</b>	Septima's clubtail (ARS)	<i>Gomphus septima</i>	Year round	Active: May-August
<b>Mammal</b>	Tri-colored bat (ARS)	<i>Perimyotis subflavus</i>	Year round	Found in mines and caves in the winter
<b>Mollusk</b>	Carolina heelsplitter (E, CH)	<i>Lasmigona decorata</i>	March 1-September 30	Optimal survey window
<b>Plant</b>	Boykin's lobelia (ARS)	<i>Lobelia boykinii</i>	May-August	
<b>Plant</b>	Carolina-birds-in-a-nest (ARS)	<i>Macbridea caroliniana</i>	July-November	
<b>Plant</b>	Georgia aster (ARS*)	<i>Symphyotrichum georgianum</i>	Early October-mid November	
<b>Plant</b>	Wire-leaved dropseed (ARS)	<i>Sporobolus teretifolius</i>	August-September	Following fire
<b>Reptile</b>	Spotted turtle (ARS)	<i>Clemmys guttata</i>	February-mid April	

**Note: There are no federally protected species found in this county in the crustacean family category.**



# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Chesterfield County, South Carolina



## Local office

South Carolina Ecological Services

☎ (843) 727-4707

📠 (843) 727-4218

176 Croghan Spur Road, Suite 200  
Charleston, SC 29407-7558

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

## Mammals

NAME	STATUS
<b>Tricolored Bat</b> <i>Perimyotis subflavus</i> Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/10515">https://ecos.fws.gov/ecp/species/10515</a>	Proposed Endangered

## Birds

NAME	STATUS
<b>Red-cockaded Woodpecker</b> <i>Picoides borealis</i> Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/7614">https://ecos.fws.gov/ecp/species/7614</a>	Endangered

## Clams

NAME	STATUS
<b>Carolina Heelsplitter</b> <i>Lasmigona decorata</i> Wherever found There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat. <a href="https://ecos.fws.gov/ecp/species/3534">https://ecos.fws.gov/ecp/species/3534</a>	Endangered

## Insects

NAME	STATUS
<b>Monarch Butterfly</b> <i>Danaus plexippus</i> Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate

## Flowering Plants

NAME	STATUS
<b>Schweinitz's Sunflower</b> <i>Helianthus schweinitzii</i> Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/3849">https://ecos.fws.gov/ecp/species/3849</a>	Endangered



# Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
<b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31
<b>Chimney Swift</b> <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
<b>Eastern Whip-poor-will</b> <i>Antrostomus vociferus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20
<b>Kentucky Warbler</b> <i>Oporornis formosus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
<b>Prairie Warbler</b> <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
<b>Red-headed Woodpecker</b> <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
<b>Wood Thrush</b> <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

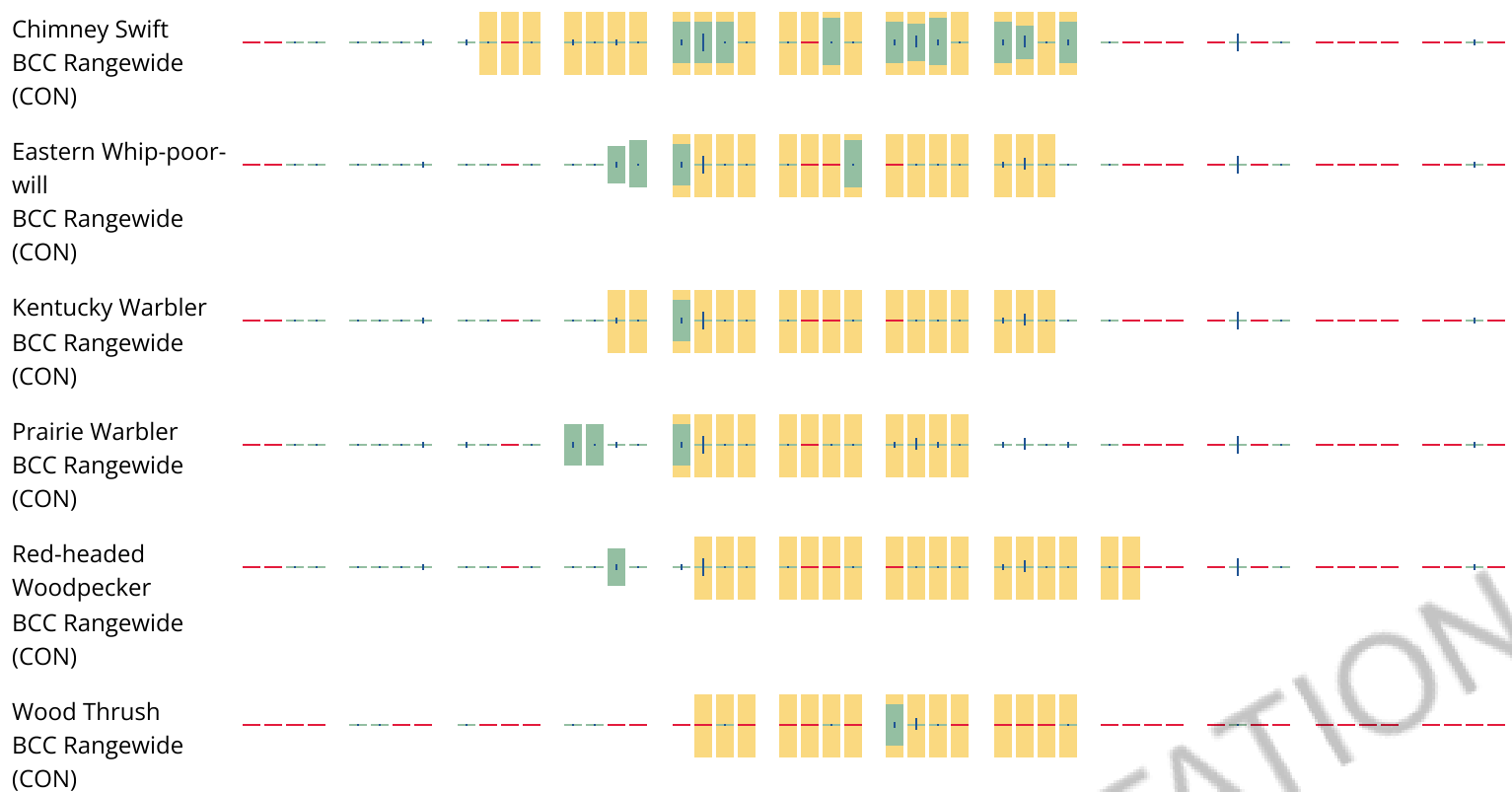
## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)







**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

**What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey

effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

### Fish hatcheries

There are no fish hatcheries at this location.

### Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

RIVERINE

[R4SBC](#)



A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

**NOTE:** This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

### Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

### Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

### Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

# STRUCTURES SURVEY DATA SHEET

Investigator Names(s): A. CHANDLER

Date: 5/25/2023





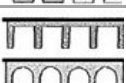
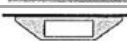
County: CHESTERFIELD

Lat Long/w3w: 34.799290, -80.457725

Project Name: S-531 (HENRY FUNDERBURK RD) OVER MANGUM BRANCH

SCDOT Structure ID: 04978

SCDOT Project No.: P041959

Structure Type:			Underdeck Material:	
<input type="checkbox"/> Parallel Box Beam		<input type="checkbox"/> Steel I-Beam		<input checked="" type="checkbox"/> Concrete
<input type="checkbox"/> Pre-Stressed Girder		<input checked="" type="checkbox"/> Flat Slab / Box		<input type="checkbox"/> Corrugated Steel
<input type="checkbox"/> Cast in Place		<input type="checkbox"/> Trapezoidal Box		<input type="checkbox"/> Other:
Note:				
<input type="checkbox"/> Culvert - Box				
<input type="checkbox"/> Culvert - Pipe/Round				

Road Type:			
<input type="checkbox"/> Interstate	<input type="checkbox"/> US Highway	<input checked="" type="checkbox"/> State Road	<input type="checkbox"/> County Road
		S-531	

Surrounding Habitat (check all that apply):				
<input checked="" type="checkbox"/> Residential	<input checked="" type="checkbox"/> Agricultural	<input type="checkbox"/> Commercial	<input type="checkbox"/> Pine Forest	<input type="checkbox"/> Grassland
<input checked="" type="checkbox"/> Riparian	<input type="checkbox"/> Wetland	<input checked="" type="checkbox"/> Mixed Forest	<input type="checkbox"/> Bottomland Hardwood	
<input type="checkbox"/> Other:				

Conditions Under Bridge (check all that apply):			
<input type="checkbox"/> Bare Ground/Sediment	<input type="checkbox"/> Concrete	<input checked="" type="checkbox"/> Rip Rap	<input checked="" type="checkbox"/> Flowing Water
<input type="checkbox"/> Standing Water	<input type="checkbox"/> Open Vegetation (not obstructing flight path)	<input type="checkbox"/> Closed Vegetation (may obstruct flight path)	<input type="checkbox"/> Two Lanes
<input type="checkbox"/> Four (+) Lanes	<input type="checkbox"/> Unpaved Road	<input type="checkbox"/> Railroad	<input type="checkbox"/> Other:

Bats Present:	
<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO

Bat Indicators (check all that apply):				
<input type="checkbox"/> Visual	<input type="checkbox"/> Smell	<input type="checkbox"/> Sound	<input type="checkbox"/> Staining	<input type="checkbox"/> Guano

Species Present:	
<input type="checkbox"/> Big brown ( <i>Eptesicus fuscus</i> )	<input type="checkbox"/> Northern long-eared ( <i>Myotis septentrionalis</i> )
<input type="checkbox"/> Brazilian free-tailed ( <i>Tadarida brasiliensis</i> )	<input type="checkbox"/> Northern yellow ( <i>Lasiurus intermedius</i> )
<input type="checkbox"/> Eastern red ( <i>Lasiurus borealis</i> )	<input type="checkbox"/> Rafinesque's big-eared ( <i>Corynorhinus rafinesquii</i> )
<input type="checkbox"/> Eastern small-footed ( <i>Myotis leibii</i> )	<input type="checkbox"/> Silver-haired ( <i>Lasionycteris noctivagans</i> )
<input type="checkbox"/> Evening ( <i>Nycticeius humeralis</i> )	<input type="checkbox"/> Southeastern ( <i>Myotis austroriparius</i> )
<input type="checkbox"/> Hoary ( <i>Lasiurus cinereus</i> )	<input type="checkbox"/> Seminole ( <i>Lasiurus seminolus</i> )
<input type="checkbox"/> Little brown ( <i>Myotis lucifugus</i> )	<input type="checkbox"/> Tri-colored ( <i>Perimyotis subflavus</i> )
	<input type="checkbox"/> UNKNOWN

Roost Description (if known, check all that apply):			
<input type="checkbox"/> Day Roost	<input type="checkbox"/> Nursery Roost	<input type="checkbox"/> Night Roost	<input type="checkbox"/> UNKNOWN
Number of Roosts:			

Roost Design (check all that apply):			
<input type="checkbox"/> Crack/Crevice/Expansion Joint: Under Bridge		<input type="checkbox"/> Crack/Crevice/Expansion Joint: Top of Bridge	
<input type="checkbox"/> Plugged Drain	<input type="checkbox"/> Under/Along Main Bridge Structure	<input type="checkbox"/> Rail	<input type="checkbox"/> Other:

Human Disturbance or Traffic Under Bridge or at Structure?		
<input type="checkbox"/> High	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> None

Areas Inspected (check all that apply):			
<input type="checkbox"/> Vertical Surfaces on I-Beams	<input checked="" type="checkbox"/> Vertical Surfaces between Concrete End Walls and Bridge Deck		
<input checked="" type="checkbox"/> Expansion Joints	<input checked="" type="checkbox"/> Rough Surfaces	<input checked="" type="checkbox"/> Guardrails	<input checked="" type="checkbox"/> Services
<input type="checkbox"/> Other:			
Areas NOT Inspected because of Safety or Inaccessibility:			

Evidence of Migratory Birds Using the Structure?	
<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO

Additional Information:



# BAT HABITAT ASSESSMENT DATA SHEET

Project Name: S-531 (HENRY FUNDERBURK RD) OVER MANGUM BRANCH

Date: 5/25/2023

County: CHESTERFIELD

Lat Long: 34.799290, -80.457725

Surveyor: A. CHANDLER

## Brief Project Description

Replacing the S-531 bridge over Mangum Branch and associated roadway approach work.

## Project Area

	Total Acres	Forest Acres	Open Acres
Project	11.3 acres	4.54 acres	6.76 acres
Proposed Tree Removal	Completely Cleared	Partially Cleared (Will Leave Trees)	Preserve Acres – No Clearing
	< 0.25 acre (anticipated)	None	> 4.29 acres (anticipated)

## Vegetation Cover Types

Pre-Project	Post-Project
Mixed Forest, Agricultural Fields, Maintained right-of-way, Utility Easement	Mixed Forest, Agricultural Fields, Maintained right-of-way, Utility Easement

## Landscape within 5-mile Radius

### Flight corridors to other forested areas?

Yes

### Describe Adjacent Properties (e.g., forested, grassland, commercial or residential development, water sources)

Forested, Agricultural, Commercial and Residential Development, Mangum Branch

## Proximity to Public Land

What is the distance from the project area to forested public lands (e.g., national or state forests, national or state parks, conservation areas, wildlife management areas)?

None within 5 miles, Forty Acre Rock Heritage Preserve/WMA ~ 10 miles southwest of PSA

## Sample Site Description

Sample Site No. (s): Project Study Area (11.3 acres)

Water Resources at Sample Site			
Stream Type (# and length)	Ephemeral	Intermittent	Perennial
			Stream A – 182 lf

Pools/Ponds (# and size)	N/A	Open and accessible to bats?

Wetland (approx. acres)	Permanent	Seasonal
	N/A	N/A

Describe existing condition of water sources: Mangum Branch

Forest Resources at Sample Site			
Closure/Density	Canopy (> 50')	Midstory (20-50')	Understory (< 20')
	1 (1-10%)	3 (21-40%)	2 (11-20%)

Dominant Species of Mature Trees	Oak spp., Red maple, Sweetgum, Hickory spp., Loblolly pine
----------------------------------	--

Exfoliating Bark (%)	5%
----------------------	----

Size of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (> 15 in)
	2 (11-20%)	3 (21-40%)	1 (1-10%)

No. of Suitable Snags	5%
-----------------------	----

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable.

1 = 1-10%, 2 = 11-20%, 3 = 21-40%, 4 = 41-60%, 5 = 61-80%, 6 = 81-100%

IS THE HABITAT SUITABLE FOR NORTHERN LONG-EARED BATS?

PSA is outside known range

IS THE HABITAT SUITABLE FOR TRI-COLORED BATS?

YES

Additional Comments:
See Attachment A, Figure 3 for an Aerial Photography Map, and Attachment C for description of forested habitat.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat.

Photographic Documentation: habitat shots at edge and interior from multiple locations; understory/midstory/canopy; examples of potential suitable snags and live trees; water sources



Photograph 1

Date: 5/25/2023

Taken by: M. DeWitt

From S-531



Photograph 2

Date: 5/25/2023

Taken by: A. Chandler

Under S-531 bridge



# **Protected Aquatic Species Survey Report**

## **Chesterfield County**

### **S-531 over Mangum Branch**

**Under Contract With:**

HNTB Corporation  
343 E. Six Forks Road  
Raleigh, NC 27609

**Prepared By:**

Edwards-Pitman Environmental, Inc.  
2700 Cumberland Parkway  
Suite 300  
Atlanta, Georgia 30339

June 2023

Report Author: Kevin Thomas  
Senior Aquatic Ecologist

Co-Author: Nicole Riddle  
Ecologist/ Project Manager

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Appendix A	References
Appendix B	Protected Species Information
Appendix C	USFWS Site Condition Data Forms
Appendix D	USGS Stream Gage Information
Appendix E	Site Photographs

## 1.0 INTRODUCTION

### 1.1 Study Location and Purpose

The South Carolina Department of Transportation (SCDOT) proposes to replace the existing bridge on S-531 over Mangum Branch in Chesterfield County, South Carolina. The proposed plans are to span the entire creek with a 60-foot single span bridge using 24-inch-deep cored slabs.

The proposed project is located within a rural area of Chesterfield County, South Carolina, within the Carolina Slate Belt (45c) Level 4 Ecoregion of South Carolina. The proposed project is located in the Lynches River (03040202) United States Geological Survey (USGS) Hydrologic Unit Code (HUC) 8 watershed which is a part of the Greater Pee Dee River watershed.

As part of the federal permitting process that requires an evaluation of potential project related impacts, a freshwater mussel survey was requested. Edwards-Pitman Environmental Inc. (EPEI) was contracted through HNTB Corporation to conduct a freshwater mussel survey, targeting the Carolina heelsplitter (*Lasmigona decorata*), within the project area.

### 1.2 Background Information

The United States Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System website (IPaC) (USFWS 2023) and South Carolina Department of Natural Resources (SCDNR) SC Rare, Threatened, and Endangered Species Inventory (SCDNR 2023) list the federally protected Carolina heelsplitter as potentially occurring in Chesterfield County (Appendix B – Protected Species Information). The Carolina heelsplitter is endemic to the slate belt geologic province in North and South Carolina. (USFWS 2023) The project is located within the Carolina Slate Belt (45c) Level 4 Ecoregion of South Carolina; therefore, a freshwater mussel survey was conducted within the proposed project corridor for the Carolina heelsplitter. Species' name, legal status (federal), habitat requirements, species range (historical and present), and element occurrence data for the target species are presented below.

#### Carolina heelsplitter (*Lasmigona decorata*) – Federally Endangered and State Endangered

The Carolina heelsplitter is a medium-sized freshwater mussel with a maximum length of 11.8 centimeters (4.7 inches). The shell is an ovate trapezoid, and the periostracum can vary from yellowish, greenish, or brownish coloration and may have black to green rays. The nacre can also vary from an iridescent white to a pale orange. The Carolina heelsplitter is found in large rivers and streams, but is restricted to cool, clean,



shallow, heavily shaded streams with moderate gradient. The Carolina heelsplitter requires stable stream banks and channels, with clean well oxygenated water and little or no fine sediment (LeGrand et. al. 2010).

The Carolina heelsplitter's historic range included several locations within the Catawba and Pee Dee River systems in North Carolina and the Catawba, Pee Dee, Saluda, and Savanna River systems in South Carolina. Currently the Carolina heelsplitter is known from six populations in South Carolina and two in North Carolina (SCDNR 2023). The entire historic range is not known, but evidence indicates that this species was once more widely distributed (USFWS 1996).

Additional resources were used for background information on the distribution, ecology, and identification of freshwater mollusks. These resources included the Workbook and Key to the Freshwater Bivalves of South Carolina (Bogan et al. 2004); Freshwater Unionacean Clams (Mollusca: Pelecypoda) of North America (Burch 1975); Draft Carolina Heelsplitter Recovery Plan (USFWS 1996); Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Carolina Heelsplitter (USFWS 2002); and NatureServe (2023).

## **2.0 SURVEY PROTOCOLS/METHODOLOGY**

The aquatic survey for presence/absence of the Carolina heelsplitter was conducted on May 9, 2023, by EPEI aquatic ecologists Kevin Thomas, Austin Haney, and Nicole Riddle. The proposed project is located within a rural area of Chesterfield County, South Carolina. The project is located within the Carolina Slate Belt (45c) Level 4 Ecoregion of South Carolina. Lynches River (03040202) United States Geological Survey (USGS) Hydrologic Unit Code (HUC) 8 watershed which is a part of the Greater Pee Dee River watershed. The primary land use in the watershed was agriculture. The elevation at the project site was 508 feet above mean sea level (msl). As part of the state and federal permit conditions both USFWS and SCDNR were notified of the field work.

### **Survey Area**

This survey was conducted using the 2008 final aquatic survey protocol (USFWS 2008) for streams and rivers with water depths that are conducive to wading using tactile and visual search with view buckets. The recommended distance for such streams is 300 Meters (M) downstream and 100 M upstream of the road crossings for wadable streams. 3 aquatic staff completed the survey but the stream was not wide enough for 3 people to survey across at the same time.

### Site Conditions and Water Quality

Habitat characteristics (i.e., sediment, riparian condition, and water condition, etc.) were assessed through visual inspection and recorded on USFWS Site Conditions Field Data Forms (Appendix C). A sketch was made of the surveyed stream to illustrate important stream characteristics, the locations of protected species, and other pertinent information. Photographs of Mangum Branch are in Appendix E – Site Photographs.

Water quality was assessed using the Thermo Scientific Eutech Elite PCTS to test pH, water temperature, and specific conductivity, and the Amtast dissolved oxygen (DO) meter and a LaMotte 2020 turbidity meter to measure DO and turbidity respectively. Water quality data were collected in-stream and used to assess potential impacts to habitat quality and determine if the water was within the state water quality standards.

### Mollusk Survey

The survey was conducted in accordance with the Freshwater Mussel Survey Protocol for the Southeastern Atlantic Slope and Northeastern Gulf drainages in Florida and Georgia (USFWS 2008). The area was surveyed from downstream to upstream in a zigzag pattern. The visibility within the stream allowed for only tactile techniques to be employed. The shoreline, exposed sand bars, and dry portions of the stream were visually searched for relic shells deposited by high flows or animals.

## **3.0 RESULTS/DISCUSSION**

### **3.1 Site Conditions and Water Quality**

The water quality data recorded during the survey of Mangum Branch are as follows:

<b>Water Temperature</b>	<b>Dissolved Oxygen</b>	<b>Conductivity</b>	<b>pH</b>	<b>Turbidity</b>
16.3°C	7.03 mg/L	99.1 µS	7.14 standard units	40 NTU

The stream had low quality habitat with heavily eroded banks and high siltation. There were also several pockets of knee-deep substrate behind various debris jams that impeded water flow. With about 5 feet of wetted width the water level is likely not conducive to enough water during drought periods to support freshwater mussels.

The most pertinent gaging station for the project is the US Geological Survey (USGS) gaging station on the Lynches River (02131500) near Bishopville, South Carolina. This gaging station indicated that the water level was typical for the site on the date of the survey (Appendix D – USGS Stream Gage Information) (USGS 2023).

### **3.2 Biological Survey**

#### Mollusk Survey

No live or relict shells of mussels were observed in Mangum Branch. Additionally, there was no presence of any other live or relict invasive clam species.

### **3.3 Summary**

The federally protected Carolina heelsplitter was the target species for the proposed project. Generally, this species inhabits cool, clean waterways with silt free bottoms and stable stream banks. The Carolina heelsplitter was not observed within Mangum Branch. Low quality habitat, likely caused by the surrounding agricultural land use and small size of the stream, was present throughout the survey. Debris jams impeded water flow and lead to relatively stagnant pools. Additionally, with the lack of other freshwater mussels live or relict shells and the proposed concept design is proposed to completely span the channel it is determined that the proposed project will have “no effect” to the Carolina heelsplitter.

## **4.0 QUALIFICATIONS STATEMENT**

### **4.1 Qualifications**

Nicole Riddle, Kevin Thomas, and Austin Haney conducted the field surveys. Mrs. Riddle was the lead ecologist on this survey. She holds the appropriate state (F-23-038) and federal (ES43264B-1) permits for sampling in South Carolina.

Nicole Riddle was responsible for the field species identifications. Mrs. Riddle has approximately 10 years of experience as a field biologist with over 5 years of freshwater mussel experience plus 3 years of training for identification and surveys for freshwater mussels. Mrs. Riddle has a Bachelor of Science in Marine Science from Coastal Carolina University.

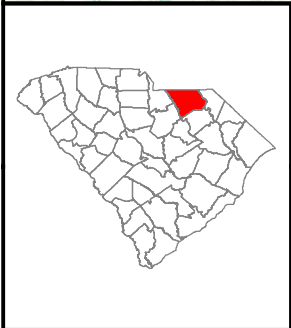
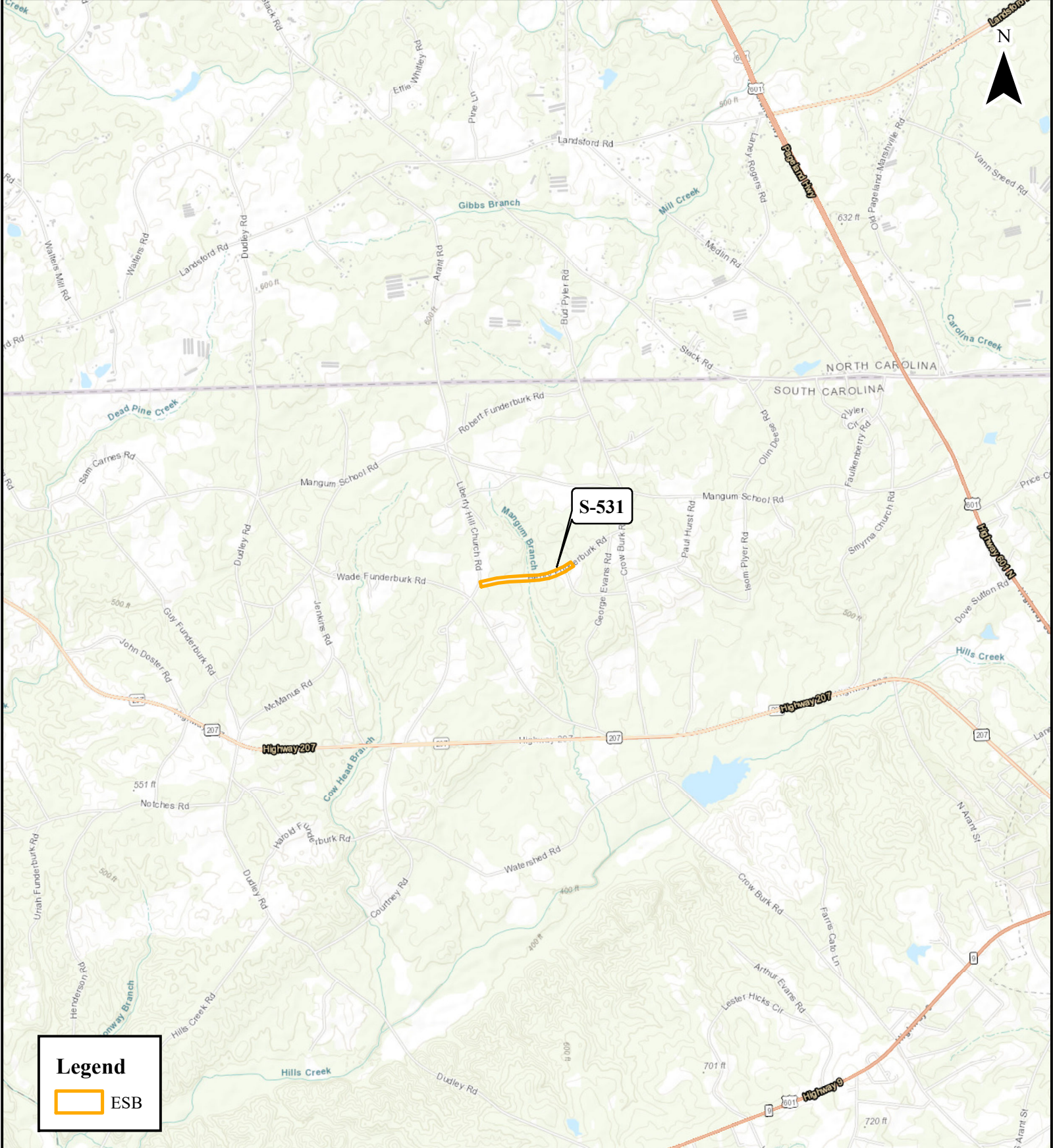
Kevin Thomas is a Senior Aquatic Ecologist with Edwards-Pitman Environmental, Inc. Mr. Thomas has approximately 23 years of experience working in the ecological and environmental sciences. He has



approximately 22 years environmental consulting experience. He has conducted surveys for state and federal waters, state and federal protected plants and animals within Georgia for approximately 18 years. Mr. Thomas has a Bachelor of Science in Biology from Kennesaw State University.

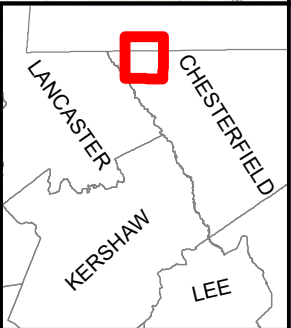
Austin Haney is an Aquatic Ecologist with Edwards-Pitman Environmental, Inc. Mr. Haney has over 2 years of experience conducting aquatic species surveys, including crayfish, fish, and mussels, as well as experience preparing and writing ecological reports. Mr. Haney has a Bachelor of Science in Forest Resources from the University of Georgia and a Master of Science in Fisheries and Allied Aquacultures from Auburn University.

# FIGURES



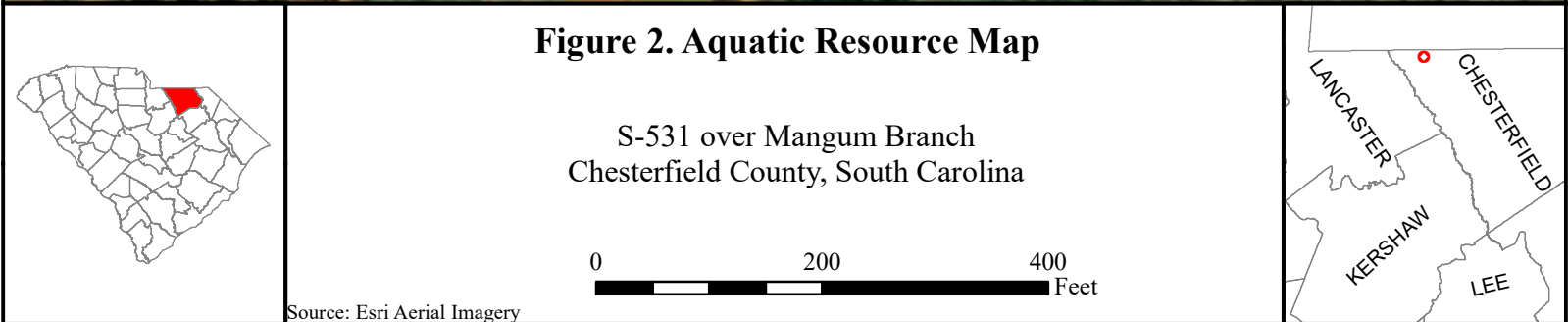
**Figure 1. Project Location Map**

S-531 over Mangum Branch  
Chesterfield County, South Carolina



Source: Esri Aerial Imagery





# **APPENDICES**

## **Appendix A**

### **References**



## REFERENCES

- Bogan, A.E., and J.M. Alderman. 2004. Workbook and Key to the Freshwater Bivalves of South Carolina. Revised Second Edition.
- Burch, J.B. 1975. Freshwater Unionacean Clams (Mollusca: Pelycypoda) of North America. Malacological Publications, Hamburg, Michigan.
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- Parmalee, P.W., and A.E. Bogan. 1998. The Freshwater Mussels of Tennessee. The University of Tennessee Press, Knoxville, Tennessee.
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- United States Fish and Wildlife Service. 2002. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Carolina Heelsplitter; Final Rule. 50 CFR 17, Federal Register (July 2, 2002), Vol. 67, No. 127, Pages 44502-44522.
- United States Fish and Wildlife Service. 2008. Freshwater Mussel Protocol for the Southeastern Atlantic Slope and Northeastern Gulf Drainages in Florida and Georgia.
- United States Fish and Wildlife Service. 2023. Information, Planning and Conservation (IPaC) website; <http://ecos.fws.gov/ipac/>
- United States Geologic Survey. 2023. USGS Current Water Data for South Carolina. <http://water.usgs.gov/realtime.html>.

## **Appendix B**

### **Protected Species Information**

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Chesterfield County, South Carolina



## Local office

South Carolina Ecological Services

☎ (843) 727-4707

📠 (843) 727-4218

176 Croghan Spur Road Suite 200



1790 E. Highway 101, Suite 200  
Charleston, SC 29407-7558

NOT FOR CONSULTATION

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

- 
1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

## Mammals

NAME	STATUS
<b>Tricolored Bat</b> <i>Perimyotis subflavus</i> Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/10515">https://ecos.fws.gov/ecp/species/10515</a>	Proposed Endangered

## Birds

NAME	STATUS
<b>Red-cockaded Woodpecker</b> <i>Picoides borealis</i> Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/7614">https://ecos.fws.gov/ecp/species/7614</a>	Endangered

## Clams

NAME	STATUS
<b>Carolina Heelsplitter</b> <i>Lasmigona decorata</i> Wherever found There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. <a href="https://ecos.fws.gov/ecp/species/3534">https://ecos.fws.gov/ecp/species/3534</a>	Endangered

## Insects

NAME	STATUS
<b>Monarch Butterfly</b> <i>Danaus plexippus</i> Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate

## Flowering Plants

NAME	STATUS
------	--------

## Rough-leaved Loosestrife *Lysimachia asperulaefolia* Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/2747>

## Schweinitz's Sunflower *Helianthus schweinitzii* Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/3849>

## Smooth Coneflower *Echinacea laevigata* Threatened

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/3473>

## Ferns and Allies

NAME

STATUS

### Black Spored Quillwort *Isoetes melanospora* Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6315>

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME

TYPE

### Carolina Heelsplitter *Lasmigona decorata* Final

<https://ecos.fws.gov/ecp/species/3534#crithab>

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.



## **Appendix C**

### **USFWS Site Condition Data Forms**

Site Number: <u>1</u>		Field Number: <u>1</u>		Time Beg: <u>9:00</u>		Date: <u>5/19/27</u>																																																																						
Watershed/Drainage:		End: <u>12:00</u>		County/State: <u>Cherokee Field</u>																																																																								
Waterbody: <u>Maple Branch</u>		Latitude: <u>74.799325</u>		Long: <u>-80.457642</u>																																																																								
Location: <u>S-571</u>		Drainage Area*: <u>Lynch River</u>		Stream Type:																																																																								
Gage Station:		Surveyor(s): <u>K. H. D. R.</u>		Per:																																																																								
<b>Determining PSA</b>		Distance upstream: <u>300'</u>		<b>Mussel/Snail Survey</b>		Tactile Only <input checked="" type="radio"/> Tactile With Snorkel <input type="radio"/>																																																																						
		Distance downstream: <u>900</u>				Tactile With SCUBA <input type="radio"/>																																																																						
<b>Fish/Crayfish Survey</b> <input checked="" type="radio"/> Boat Electrofishing <input type="radio"/> BP Electrofishing <input type="radio"/> Kick-seine <input type="radio"/> Seine haul <input type="radio"/>																																																																												
<b>Instream Features Quantitative</b>				<b>Water Quality</b>																																																																								
Please specify all units of measurement				Water Temp: <u>16.3</u> °C		Water Clarity																																																																						
% Canopy Cover: <u>90</u> Wetted Width: <u>5'</u>				Dissolved Oxygen: <u>7.03</u> mg/L		<input type="radio"/> Clear																																																																						
Surface Velocity (at thalweg): _____				Conductivity <u>99.1</u>		<input type="radio"/> Slightly turbid																																																																						
Water Depth (at thalweg): <u>6"</u>				pH <u>7.14</u> Other: <u>40</u>		<input checked="" type="radio"/> Turbid																																																																						
Bank Height (rt/lr): <u>40</u> Bank Angle (rt/lr): <u>40</u>				303d Listed: <input type="radio"/> yes <input checked="" type="radio"/> no		<input type="radio"/> Opaque																																																																						
<b>Instream Features Qualitative</b>				<b>Designated Use:</b>																																																																								
Channel Alteration: <input checked="" type="radio"/> No <input type="radio"/> Yes				<b>Violated Criteria:</b>																																																																								
Describe:				Heavy Rain in past 7 days: Yes <input checked="" type="radio"/> No <input type="radio"/>																																																																								
Shoring Structures: <input type="radio"/> None <input type="radio"/> Limerock <input type="radio"/> Gabion				Air Temperature: <u>78</u> Est. <input checked="" type="radio"/> Act. <input type="radio"/>																																																																								
<input type="radio"/> Concrete <input checked="" type="radio"/> Rip-rap <input type="radio"/> Other: _____ Extent: _____				<b>Survey Weather Conditions:</b>																																																																								
Substrate composition (% est.): Gravel <u>10</u> Silt <u>30</u> Clay <u>20</u>				Heavy rain <input type="radio"/> Clear/sunny <input checked="" type="radio"/>																																																																								
Clay Marl _____ Fine sand <u>10</u> Coarse s. <u>10</u> Medium s. <u>10</u>				Steady rain <input type="radio"/> Scattered showers <input type="radio"/>																																																																								
Boulder _____ Bedrock <u>5</u> Cobble <u>5</u>				% Cloud cover _____																																																																								
<b>Channel Stability</b> (Check one box for each column):																																																																												
<b>Deposition/Aggradation</b>				<b>Incision/Degradation</b>																																																																								
<b>Excellent</b>	Large, fresh deposits absent		<input type="radio"/>	No mass-wasting or significant erosion of banks		<input type="radio"/>	<b>Impoundments:</b> <input checked="" type="radio"/> None <input type="radio"/> yes (Describe): _____																																																																					
	High number of deep pools			Channel slightly entrenched																																																																								
<b>Good</b>	Large, fresh deposits uncommon		<input type="radio"/>	Some bank erosion apparent, no mass wasting		<input type="radio"/>		<b>Fish Passage:</b> <b>Blocked?</b> <input type="radio"/> yes <input checked="" type="radio"/> no Describe: _____																																																																				
	Moderate number of deep pools			Channel slightly-moderately entrenched																																																																								
<b>Fair</b>	Large, fresh deposits common		<input type="radio"/>	Active bank erosion, potential mass-wasting		<input checked="" type="radio"/>	<b>Fish Presence:</b> <input checked="" type="radio"/> Absent <input type="radio"/> Rare <input type="radio"/> Common <input type="radio"/> Abundant																																																																					
	Low-moderate number of deep pools			Channel moderately-highly entrenched																																																																								
<b>Poor</b>	Large, fresh deposits very common		<input checked="" type="radio"/>	Active bank erosion, frequent mass-wasting		<input type="radio"/>		<b>Woody Material:</b> <input type="radio"/> None/infrequent <input type="radio"/> Moderate <input checked="" type="radio"/> Extensive																																																																				
	Few, if any, deep pools			Channel moderately-highly entrenched																																																																								
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="2"><b>Riparian Features Quantitative</b></td> <td colspan="2"><b>Site Road Crossing</b></td> </tr> <tr> <td colspan="2"> <b>Rt* Buffer width(ft):</b>  <input type="radio"/> 10-25  <input type="radio"/> 25-75  <input checked="" type="radio"/> 75-150  <input type="radio"/> 150+         </td> <td colspan="2"> <b>Road Type:</b> <input type="radio"/> Paved <input checked="" type="radio"/> Unpaved  <b>Name (if known):</b> <u>S-571</u> </td> </tr> <tr> <td colspan="2"> <b>Landuse Characterization:</b>          (100 feet to either side of the stream)       </td> <td colspan="2"> <b>Crossing Type:</b> <input type="radio"/> Pipe culvert <input type="radio"/> Box culvert  <input checked="" type="radio"/> Bridge <input type="radio"/> Paved box culvert       </td> </tr> <tr> <td colspan="2"> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td></td> <td>Rt Bk</td> <td>Lt Bk</td> <td>%</td> </tr> <tr> <td>Natural Forest</td> <td><u>50</u></td> <td><u>50</u></td> <td>%</td> </tr> <tr> <td>Silviculture</td> <td></td> <td></td> <td>%</td> </tr> <tr> <td>Pasture</td> <td><u>50</u></td> <td><u>40</u></td> <td>%</td> </tr> <tr> <td>Agricultural</td> <td></td> <td></td> <td>%</td> </tr> <tr> <td>Residential</td> <td></td> <td><u>10</u></td> <td>%</td> </tr> <tr> <td>Commercial</td> <td></td> <td></td> <td>%</td> </tr> <tr> <td>Industrial</td> <td></td> <td></td> <td>%</td> </tr> </table> </td> <td colspan="2"> <b>Riparian Features Qual.</b>  <b>Local Non-Point Source Pollution Potential:</b>  <input type="radio"/> No evidence <input checked="" type="radio"/> Slight  <input checked="" type="radio"/> Moderate potential <input type="radio"/> Obvious sources  <input type="radio"/> Livestock access          Describe: _____       </td> </tr> <tr> <td colspan="2"> <b>Notes</b>  <div style="height: 100px; 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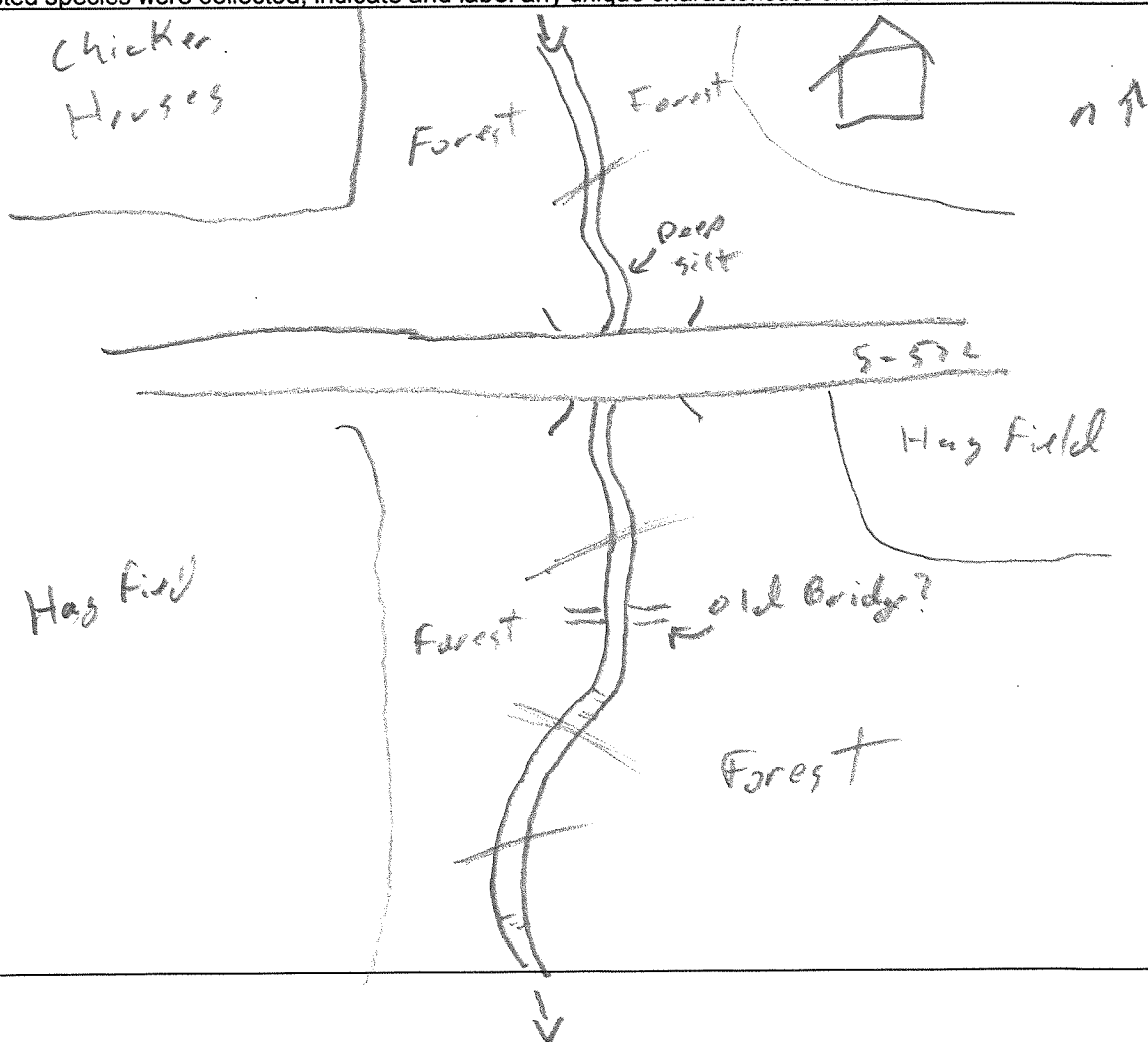
Other notable aquatic species observed, including invasive species, and their relative abundance:

Very little Life.  
Few May Flies

Explain/describe any deviations from protocol:

none

Include sketch map, using back of page if necessary. Include north arrow, flow directions, label any locations where listed species were collected, indicate and label any unique characteristics or instream structures.



## Mollusk Measurement Data Sheet

page 12 of 12

Field/PI Number:

County: \_\_\_\_\_

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

Aquatic Resource: Mayan Reef

PSA Segment Number: \_\_\_\_\_

**Surveyor** (Record mussels collected per surveyor below if multiple surveyors listed per sheet):

[illegible]

\*Optional

\*\*= Male, female, undetermined



## **Appendix D**

### **USGS Stream Gage Information**



IMPORTANT

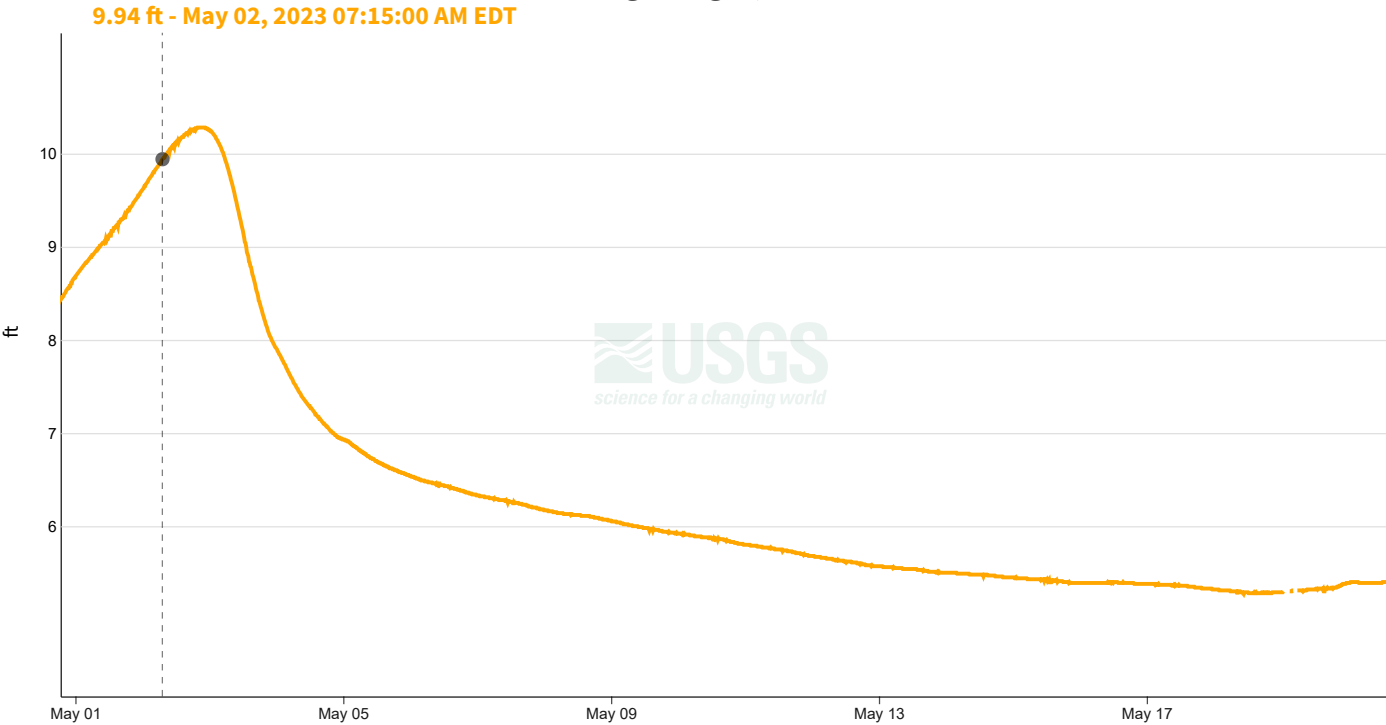
[Legacy real-time page](#) 

☐ 7 days ☒ 30 days ☐ 1 year

- using graph zoom -

# Lynches River Near Bishopville, SC - 02131500

April 30, 2023 - May 20, 2023  
Gage height, ft 



Show legend ▾

	Value	Status
<div><div></div> Latest</div> <div>May 26, 2023 12:00:00 PM EDT</div>	5.20	Provisional
<div><div></div> Selected</div> <div>May 02, 2023 07:15:00 AM EDT</div>	9.94	Provisional
<div><div></div> Compare</div>		
Add last year's data to graph		<div></div>
<div><div></div> Median</div>		
Add median data to graph		<div></div>

Hide data details view ^

Statistics for Friday, May 26, 2023 based on 20 years of data

low (2002)	25th	median
4.41	4.67	5.52
75th	mean	high (2020)
6.24	6.29	12.99

Hide statistics ^

IMPORTANT Data may be [provisional](#)

Change time span

Subscribe to WaterAlert

View related graphs

Download data

View data records

Select data to graph

2007-10-01 to 2023-05-26 ^

☒ Gage height, feet

Questions or Comments

☐ Select data to graph on second y-axis

2002-02-06 to 2023-05-26 v

☐ Discharge, cubic feet per second

2007-10-01 to 2023-05-26 v

☐ Precipitation, total, inches

2021-10-01 to 2023-05-26 v

☐ Stream water level elevation above NAVD 1988, in feet

Monitoring camera —

There are no cameras currently available at this monitoring location.





The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydro...

Interested in understanding how to access the upstream/downstream data? [Learn about the Network-Linked Data Index \(NLDI\)](#).

**Summary of available field and laboratory sample data**



**Summary of all available data**



**Location metadata**



Operated in cooperation with:



[USGS - Federal Priority Streamgages](#)

[DOI Privacy Policy](#) | [Legal](#) | [Accessibility](#) | [Site Map](#) | [Contact USGS](#)

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[No Fear Act](#) | [FOIA](#)



**Appendix E**

**Site Photographs**



Photograph 1. At existing bridge facing upstream.



Photograph 2. 300 meters downstream of existing bridge facing downstream.





Photograph 3. 150 meters downstream of existing bridge facing upstream.



Photograph 4. 50 meters upstream of existing bridge facing upstream.

**Attachment C- Bridge Replacement Scoping Risk Assessment Form**



## BRIDGE SCOPE AND RISK ASSESSMENT FORM

COUNTY: \_\_\_\_\_

DATE: \_\_\_\_\_

ROAD #: \_\_\_\_\_

STREAM CROSSING: \_\_\_\_\_

Purpose & Need for the Project:

### I. FEMA Acknowledgement

Is this project located in a regulated FEMA Floodway? ☐ Yes ☐ No

Panel Number: \_\_\_\_\_ Effective Date: \_\_\_\_\_ (See Attached)

### II. FEMA Floodmap Investigation

FEMA Flood Profile Sheet Number \_\_\_\_\_ illustrates the existing 100 year flood:

- ☐ Passes under the existing low chord elevation.
- ☐ Is in contact with the existing low chord elevation.
- ☐ Overtops the existing bridge finished grade elevation.

### III. No Rise/CLOMR Preliminary Determination

- ☐ Preliminary assessment indicates this project may be constructed to meet the "No-Rise" requirements. A detailed hydraulic analysis will be performed to verify this assessment.

Justification:

- ☐ Preliminary assessment indicates this project may require a CLOMR/LOMR. Impacts will be determined by a detailed hydraulic analysis.

Justification:

## BRIDGE SCOPE AND RISK ASSESSMENT FORM

### IV. Preliminary Bridge Assessment

#### A. Locate Existing Plans

a. Bridge Plans ☐ Yes File No. \_\_\_\_\_ Sheet No. \_\_\_\_\_ (See Attached)  
☐ No

b. Road Plans ☐ Yes File No. \_\_\_\_\_ Sheet No. \_\_\_\_\_ (See Attached)  
☐ No

#### B. Historical Highwater Data

a. USGS Gage ☐ Yes Gage No. \_\_\_\_\_ Results: \_\_\_\_\_  
☐ No

b. SCDOT/USGS Documented Highwater Elevations  
☐ Yes Results: \_\_\_\_\_  
☐ No

c. Existing Plans ☐ Yes See Above  
☐ No

### V. Field Review

#### A. Existing Bridge

Length: \_\_\_\_\_ ft. Width: \_\_\_\_\_ ft. Max. span Length: \_\_\_\_\_ ft.

Alignment: ☐ Tangent ☐ Curved

Bridge Skewed: ☐ Yes ☐ No Angle: \_\_\_\_\_

End Abutment Type: \_\_\_\_\_

Riprap on End Fills: ☐ Yes ☐ No Condition: \_\_\_\_\_

Superstructure Type: \_\_\_\_\_

Substructure Type: \_\_\_\_\_

Utilities Present: ☐ Yes ☐ No

Describe:

Debris Accumulation on Bridge: Percent Blocked Horizontally: \_\_\_\_\_ %

Percent Blocked Vertically: \_\_\_\_\_ %

Hydraulic Problems: ☐ Yes ☐ No

Describe:

## BRIDGE SCOPE AND RISK ASSESSMENT FORM

### V. Field Review (cont.)

#### B. Hydraulic Features

a. Scour Present: ☐ Yes ☐ No Location: \_\_\_\_\_

b. Distance from F.G. to Normal Water Elevation: \_\_\_\_\_ ft.

c. Distance from Low Steel to Normal Water Elev.: \_\_\_\_\_ ft.

d. Distance from F.G. to High Water Elevation: \_\_\_\_\_ ft.

e. Distance from Low Steel to High Water Elev.: \_\_\_\_\_ ft.

f. Channel Banks Stable: ☐ Yes ☐ No

Describe:

g. Soil Type: \_\_\_\_\_

h. Exposed Rock: ☐ Yes ☐ No Location: \_\_\_\_\_

i. Give Description and Location of any structures or other property that could be damaged due to additional backwater.

#### C. Existing Roadway Geometry

a. Can the existing roadway be closed for an On-Alignment Bridge Replacement

☐ Yes ☐ No

Describe:

If "yes", does the existing vertical and horizontal curves meet the proposed design speed criteria?

If "No", will the proposed bridge be:

☐ Staged Constructed

☐ Replaced on New Alignment

# BRIDGE SCOPE AND RISK ASSESSMENT FORM

## VI. Field Review (cont.)

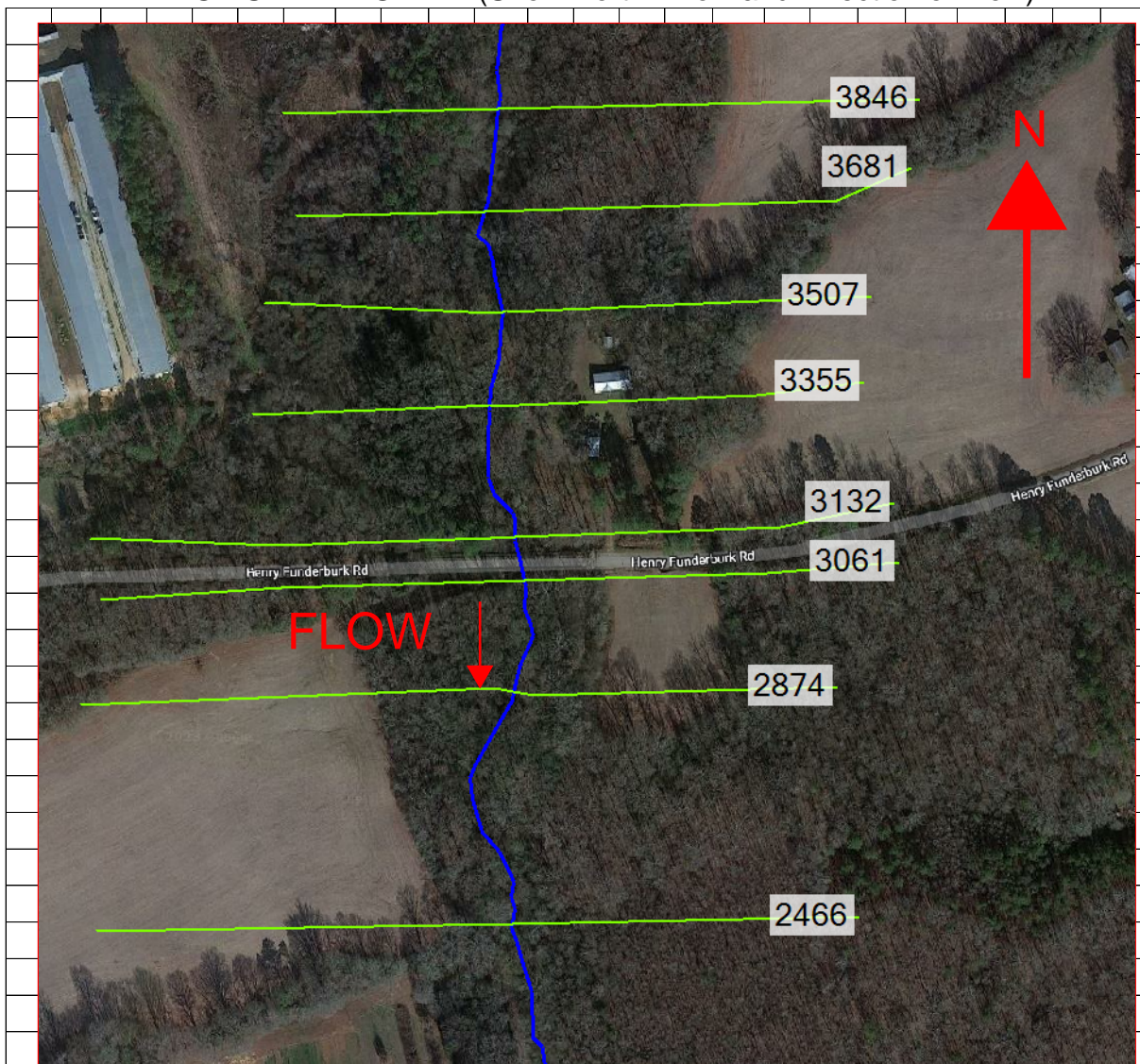
### A. Proposed Bridge Recommendation:

Length: \_\_\_\_\_ ft.      Width: \_\_\_\_\_ ft.      Elevation: \_\_\_\_\_ ft.

Span Arrangement: \_\_\_\_\_

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

BRIDGE SITE DIAGRAM: (Show North Arrow and Direction of Flow)



Performed By: \_\_\_\_\_



## **Attachment D- Floodplain Checklist**

**South Carolina Department of Transportation  
Location and Hydraulic Design of Encroachments on Floodplains Checklist**

23 CFR 650, this regulation shall apply to all encroachments and to all actions which affect base floodplains, except for repairs made with emergency funds. Note: These studies shall be summarized in the environmental review documents prepared pursuant to 23 CFR 771.

**I. PROJECT DESCRIPTION**

**A. Narrative Describing Purpose and Need for Project**

- a. Relevant Project History:
- b. General Project Description and Nature of Work (attach Location and Project Map):
- c. Major Issues and Concerns:

**B. Are there any floodplain(s) regulated by FEMA located in the project area?**

Yes ☐ No ☐

**C. Will the placing of fill occur within a 100-year floodplain?**

Yes ☐ No ☐

**D. Will the existing profile grade be raised within the floodplain?**

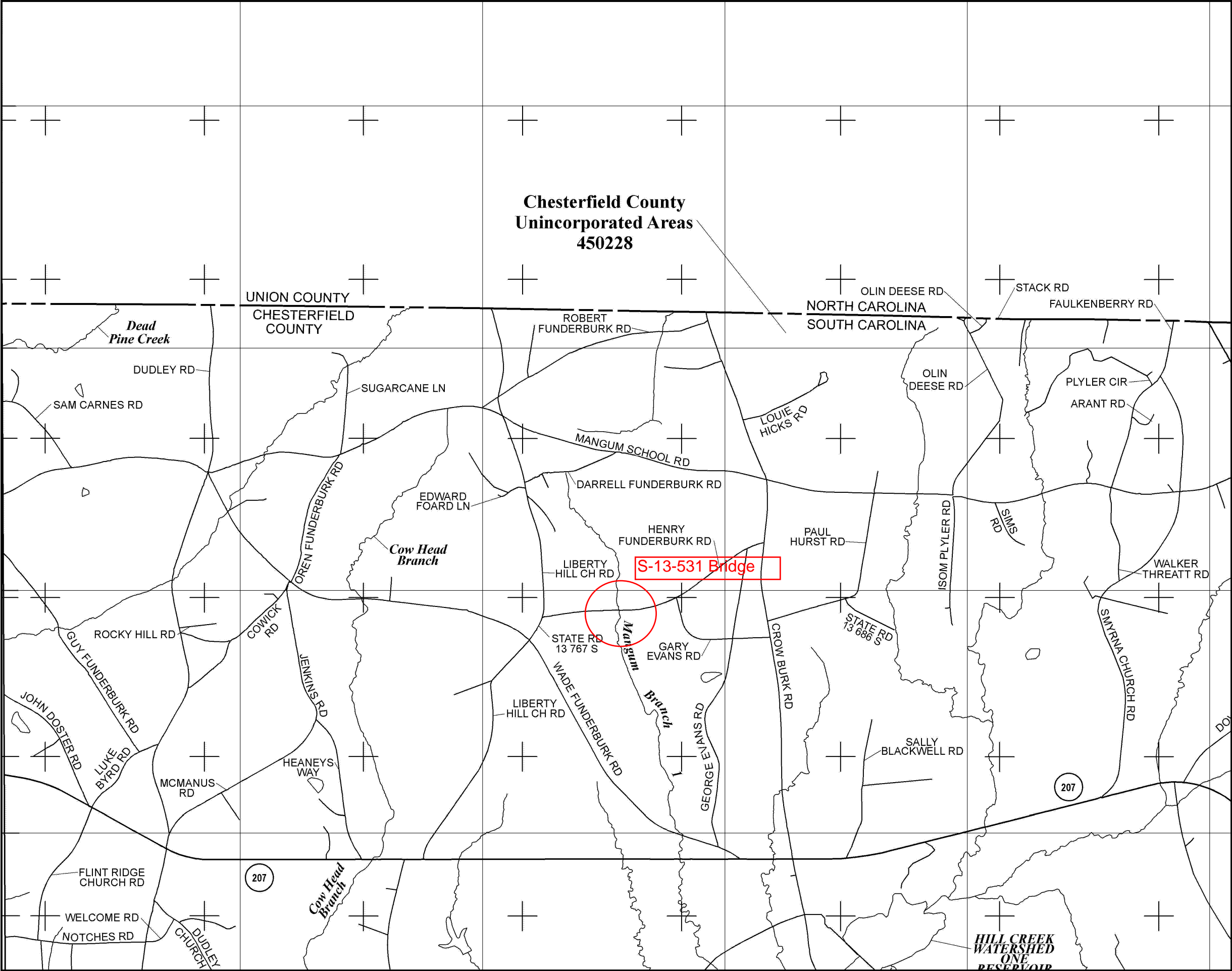
**E. If applicable, please discuss the practicability of alternatives to any longitudinal encroachments.**

**F. Please include a discussion of the following: commensurate with the significance of the risk or environmental impact for all alternatives containing encroachments and those actions which would support base floodplain development:**

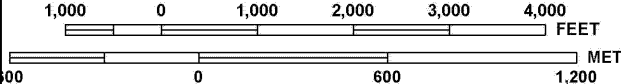
- a. What are the risks associated with implementation of the action?
  - b. What are the impacts on the natural and beneficial floodplain values?
  - c. What measures were used to minimize floodplain impacts associated with the action?
  - d. Were any measures used to restore and preserve the natural and beneficial floodplain values impacted by the action?
- G. Please discuss the practicability of alternatives to any significant encroachments or any support of incompatible floodplain development.
- H. Were local, state, and federal water resources and floodplain management agencies consulted to determine if the proposed highway action is consistent with existing watershed and floodplain management programs and to obtain current information on development and proposed actions in the affected? Please include agency documentation.

Paul Cameron, PE  
SCDOT Hydraulic Engineer

\_\_\_\_\_  
Date



MAP SCALE 1" = 2000'



NFIP

PANEL 0050C

**FIRM**  
FLOOD INSURANCE RATE MAP  
**CHESTERFIELD  
COUNTY,  
SOUTH CAROLINA  
AND INCORPORATED AREAS**

**PANEL 50 OF 625**  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CHESTERFIELD COUNTY	450228	0050	C
PAGELAND, TOWN OF	450307	0050	C

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



**MAP NUMBER  
45025C0050C**

**EFFECTIVE DATE  
SEPTEMBER 16, 2011**

Federal Emergency Management Agency

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at <https://msc.fema.gov>.



## **Attachment E - Public Involvement**

## Public Outreach Summary:

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**Project:** SCDOT Closed and Load Restricted Bridge Projects-  
Package 19

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**Subject:** Public Information Outreach

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## Package 20 Overview:

The South Carolina Department of Transportation (SCDOT) proposes to replace seven bridges in Package 20. The projects include replacing the existing bridge structures and constructing the roadway to meet current design and safety standards. The proposed facilities are comprised of two and four lane roadways with 12-foot travel lanes and paved shoulders. The seven proposed bridges are shown below (bridges with in-person public meetings are bolded):

<b>S-46-998 (Robertson Road)</b>	<b>WILDCAT CREEK</b>
<b>S-29-292 (Plantation Road)</b>	<b>BEAR CREEK</b>
S-46-1086 (Dacusville Rd)	BEAVERDAM CREEK
S-130 (Rudolph Sikes Road)	BR THOMPSON CR
S-20 (Camp Welfare Road)	HOGFORK BR
S-296 (Old Creek Road)	BLACKWELL MILL STREAM
S-531 (Henry Funderburk Road)	IRIS HILLS CK

The purpose of these projects is to correct the load restriction placed on the bridges as well as restore all bridge components to good condition. The proposed work involves replacing the current bridges with a new bridges.

## Public Information Outreach Overview:

Public outreach for the entire package consisted of creating a publicly accessible website, individually mailed postcards, installation of informational yard signs, public meeting notification road signs, and public information meetings.

For this project, postcards were mailed to local residents identified through the US Postal Service's Every Door Direct application. Postcards provided basic information about the specific bridge project and provided a website address for the individual to visit to find more information and provide comments if desired. One comment was provided for this site.

The comment period for the projects began July 5 and ended on August 11, 2023. Information about the projects, including meeting displays, was available on the website throughout the duration of the comment period. A comment form was also available. The project website can be accessed at: [https://scdotgis.online/CLRB\\_2022\\_Package20](https://scdotgis.online/CLRB_2022_Package20).

## Public Outreach:

Leading up to the comment periods for all 7 bridges, the project team executed several outreach strategies to maximize public participation. The outreach activities completed are listed in the table below.

Bridge Project	Outreach Type	Number of Recipients	Type of Recipients	Date Sent
All Package 20 Bridges	Postcard	581	General Public Mailed via Every Door Direct Mail Service Sent to all postal routes surrounding the project areas.	July 1, 2023

Date Received	Full Name	Email	Phone Number	Street Address	City	Zipcode	Comment
7/7/2023	Greg Funderburk	Lolli@duck.com	(843) 672-3981	2201 Mangum School Road	Pageland	29728	We are excited for a replacement bridge on Henry Funderburk road. However, it won't last long with the Cal-Maine trucks using it! That's what destroyed it in the first place. It would be easier for the trucks to go down liberty hill church road off 207.

**From:** [Pitts, Michael E.](#)  
**To:** [Lolli@duck.com](mailto:Lolli@duck.com)  
**Subject:** SCDOT Closed and Load Restricted Bridge Package 20 (Chesterfield, Fairfield, Lancaster, and York Counties)  
**Date:** Friday, August 18, 2023 10:56:12 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)

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Good Morning Mr. Funderburk –

Thank you for your comment. The bridge replacement will be designed and constructed to meet all current design standards to accommodate the existing and future truck volumes in the area.

Thank you,



**Michael E. Pitts, P.E., Assoc. DBIA**

*Alternative Delivery Program Manager*

**P** 803.737.2566    **M** 803.413.9316    **E** [pittsme@scdot.org](mailto:pittsme@scdot.org)

955 Park Street, P.O. Box 191, Columbia, SC 29202-0191

**LET 'EM WORK. LET 'EM LIVE.**



# Bridge Replacement Package 20

## Design-Build Projects

Counties: Chesterfield, Fairfield, Lancaster and York

## Share Your Feedback

### Project Description

SCDOT proposes to replace seven existing bridge structures and constructing the roadway to meet current design and safety standards in Chesterfield, Fairfield, Lancaster and York counties. This card is to let you know about the bridge replacement near your residence or business. Please provide comments by phone, email, or by visiting the website. You can scan the QR code below or enter the address found on the reverse side of this postcard to access the website.



Scan QR code to visit  
project web page.

### Estimated Project Schedule

- Construction start: Early 2024
- Construction duration: ~24 Months

### Project Manager

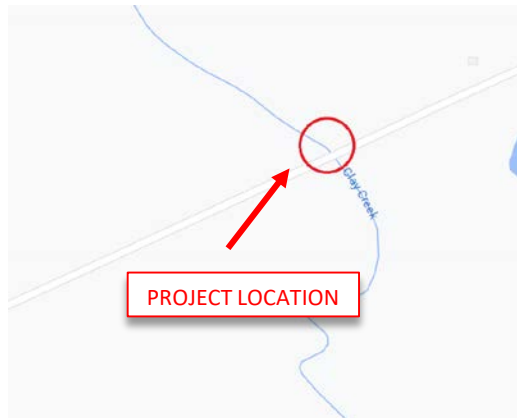
Michael Pitts, PE

Phone: 803-737-2566

Email: [pittsME@scdot.org](mailto:pittsME@scdot.org)

Comments for S-130 proposed bridge replacement will be accepted until Aug. 11, 2023.

### S-130 Clay Creek Project Area





South Carolina Department of Transportation



SCDOT is hosting a website with **online project information** for the Design-Build bridge replacement projects (Package 20).

**Visit the Project Website to comment on S-130 over Clay Creek**

**Comment Period: 7/5/23 - 8/11/23**

### **Contact Us!**



803-737-2566



[PittsME@scdot.org](mailto:PittsME@scdot.org)



[www.scdotgis.online/CLRB\\_2022\\_Package20](http://www.scdotgis.online/CLRB_2022_Package20)

PLACE  
STAMP  
HERE

### **SCDOT Environmental Services Offices**

PO Box 191

Columbia, SC 29202

