



Protected Species Assessment  
Luck Edgefield  
Clarks Hill, Edgefield Co., SC  
S&ME Project No. 22350640

PREPARED FOR:

**Luck Companies**  
**Post Office Box 29682**  
**Richmond, VA 23242**

PREPARED BY:

**S&ME, Inc.**  
**134 Suber Road**  
**Columbia, SC 29210**

**February 9, 2024**



February 9, 2024

Luck Companies  
Post Office Box 29682  
Richmond, Virginia 23242

Attention: Mr. Bruce Smith  
[brucesmith@luckcompanies.com](mailto:brucesmith@luckcompanies.com)

Reference: **Protected Species Assessment**  
**Luck Edgefield**  
Clarks Hill, Edgefield County, South Carolina  
S&ME Project No. 22350640

Dear Mr. Smith:

S&ME, Inc. (S&ME) is pleased to submit our Protected Species Assessment for the above-referenced project located in Edgefield County, South Carolina. This work was performed in general accordance with S&ME Proposal Number 22350640, dated November 21, 2022, and Our Agreement for Services (Form AS-071).

S&ME appreciates the opportunity to be of service to you by performing this Protected Species Assessment for this project. Please contact us at (803) 561-9024 with questions regarding this report or if you require additional information.

Sincerely,

**S&ME, Inc.**

A handwritten signature in cursive script that reads "Chris Handley".

Chris Handley  
Biologist  
[chandley@smeinc.com](mailto:chandley@smeinc.com)

A handwritten signature in cursive script that reads "Chris Daves".

Chris Daves, P.W.S.  
Senior Scientist  
[cdaves@smeinc.com](mailto:cdaves@smeinc.com)



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## 1.0 Project Background

This Protected Species Assessment has been conducted to assess the potential for the presence of protected species on the site in preparation for proposed quarry/mine. S&ME is requesting the technical assistance (in the form of a written Response Letter) of the U.S. Fish and Wildlife Service (USFWS) as to whether site development would likely result in “take” as defined under Section 9 of the Endangered Species Act (ESA).

The approximate 402-acre site is located north of Woodlawn Road near Clarks Hill, Edgefield County, South Carolina as shown on the **Exhibits** in **Appendix I**.

## 2.0 Site and Habitat Descriptions

The site is located in southern Edgefield County within the Southern Outer Piedmont/Piedmont ecoregion of South Carolina. The site consists of floodplain hardwoods, cutover land, pine-mixed hardwoods, planted pines, and aquatic resources (tributaries and wetlands). The properties adjacent to the site consist of wooded land, cut-over land, and single-family residences. Please refer to **Exhibit 3** and the site photographs in **Appendix I** for depictions of the predominant habitat types located on the site.

### 2.1 Floodplain Hardwoods

Floodplain hardwood woodland was observed on the northern and northeastern portions of the site adjacent to the Stevens Creek and the on-site tributaries (Photograph 1). Dominant overstory species observed included tulip poplar (*Liriodendron tulipifera*), American sycamore (*Platanus occidentalis*), sweet gum (*Liquidambar styraciflua*), water oak (*Quercus nigra*), white oak (*Q. alba*), northern red oak (*Q. rubra*), swamp chestnut oak (*Q. michauxii*), red maple (*Acer rubrum*), cottonwood (*Populus deltoides*), and bald cypress (*Taxodium distichum*). The understory species consisted of those of the canopy dominants, Chinese privet (*Ligustrum sinense*), ironwood (*Carpinus caroliniana*), and saw palmetto (*Serenoa repens*). Woody vine and groundcover species observed consisted of crossvine (*Bignonia capreolata*), giant cane (*Arundinaria gigantea*), and fish-on-a-pole (*Chasmanthium latifolium*).

### 2.2 Cutover Land

Cutover land was observed on a majority of the site (Photograph 2). The sparse overstory consisted of loblolly pine (*Pinus taeda*). Sapling/shrub species observed also consisted of loblolly pine. Woody vine and groundcover species observed included blackberry (*Rubus* spp.), yellow jessamine (*Gelsemium sempervirens*), broomsedge (*Andropogon virginicus*), bull thistle (*Cirsium horridulum*), needle palm (*Yucca filamentosa*), woolly mullein (*Verbascum thapsus*), and rosette grass (*Dichanthelium* spp.).

### 2.3 Pine-Mixed Hardwoods

Pine-mixed hardwoods were observed adjacent to the tributaries located on various portions of the site (Photograph 3). Dominant overstory species observed included loblolly pine, sweet gum, American beech (*Fagus grandifolia*), northern red oak, and water oak. The understory consisted of the canopy dominants. Woody vine and groundcover species observed consisted of poison ivy (*Toxicodendron radicans*), Japanese honeysuckle (*Lonicera*



*japonica*), clover (*Oxalis* spp.), jack-in-the-pulpit (*Arisaema triphyllum*), liverwort (*Hepatica* spp.), violet (*Viola* spp.), spiderwort (*Tradescantia* spp.), little brown jug (*Hexastylis arifolia*), bedstraw (*Gallium aparine*), giant cane, and Christmas fern (*Polystichum acrostichoides*).

## 2.4 Planted Pines

Planted pine stands were observed on the southern portion of the site (Photograph 4). The dominant overstory species observed was loblolly pine. The pine stands observed were approximately 20-25 years in age and averaged approximately 70-80 feet in height. Average diameter-at-breast height (DBH) was 14 inches. The understory consisted of loblolly pine, post oak (*Q. stellata*), and sweet gum. Woody vine and groundcover species observed included Japanese honeysuckle, yellow jessamine, and spotted wintergreen (*Chimaphila maculata*).

## 2.5 Aquatic Features

The site contained multiple aquatic features, including wetlands and tributaries (Photographs 5-8). The wetlands observed on the site are classified as palustrine forested (PFO) and palustrine emergent (PEM), riparian and headwater wetlands.

Dominant overstory species observed in the PFO wetlands located on various portions of the site included sweet gum and American elm (*Ulmus americana*). The understory consisted of those of the canopy dominants and ironwood. Woody vine and groundcover species observed included Christmas fern and giant cane.

Dominant species observed in the PEM wetlands on the northern portion of the site included woolgrass (*Scirpus cyperinus*) and red-rooted flatsedge (*Cyperus erythrorhizos*).

Multiple tributaries were observed on various portions of the site. The tributaries ranged in width from 2-8 feet and are classified as seasonal and perennial. The tributaries had a variety of sand, cobble, boulder, and bedrock substrates. The dominant habitat surrounding the tributaries were similar to the hardwood floodplain and pine-mixed hardwood habitat described above.

## 3.0 Methodology

S&ME personnel reviewed the South Carolina Department of Natural Resources (SCDNR) and the USFWS websites to determine those species that are currently listed as federally protected (threatened or endangered) in Edgefield County. The results of this search, including identified protected species and preferred habitat served as the basis of the field review and are presented in **Table 4-1**.

SCDNR maintains a database of elements of occurrence for protected species in the state of South Carolina. A search of this database did not reveal the known presence of federally protected species (occurrences) on or immediately adjacent to the site. Supporting information was researched for the purpose of identifying soil types, vegetative communities, and possible drainage features in the study area. The supporting information reviewed included aerial photography, topographic quadrangle maps, soil survey sheets, land use information, and data from the National Wetlands Inventory.



S&ME Biologists, Chris Daves P.W.S., Chris Handley and Will Trotter, performed the field review on January 10, 12, and 17, 2023, March 21, 2023, and April 18, 2023. The information obtained from supporting documentation was integrated with the field review to identify potential areas of preferred habitat of protected species. Portions of the site that matched descriptions of preferred habitat for protected species listed in **Table 4-1** were considered to be potential habitat for the respective protected species. These areas were subsequently field reviewed to confirm the presence/absence of the respective species.

## 4.0 Federally Protected Species

Descriptions of the species and their respective federal status are identified in **Table 4-1** and in **Appendix II**. The SCDNR and USFWS websites identified the following federally listed species for Edgefield County:

**Table 4-1 Federally Protected Flora and Fauna Summary**

Species	Listing	Habitat
Bald Eagle <i>Haliaeetus leucocephalus</i>	BGEPA	Coastlines, rivers, large lakes which provide adequate feeding grounds.
Red-Cockaded Woodpecker <i>Dryobates borealis</i>	E	Open pine stands with minimum age of 60 years; nests in live pines with red-heart disease.
Relict Trillium <i>Trillium reliquum</i>	E	Calcium-rich soils in hardwood forests of ravines and adjacent bottomlands near the fall line in the Savannah River area.
Monarch Butterfly <i>Danaus plexippus</i>	C	Fields, roadsides, and open areas with flowering plants. Breed in areas with milkweed; host plant for larva.
Tricolored Bat <i>Perimyotis subflavus</i>	PE	Roosts among leaf clusters of alive or recently dead deciduous trees. Also roosts in summer months in artificial structures (barns and bridges). Winter hibernacula includes caves, abandoned mines, and road culverts.

*E = Endangered*

*C=Candidate for Listing*

*PE = Proposed Endangered*

*BGEPA = Bald and Golden Eagle Protection Act*

### 4.1 Bald Eagle

BIOLOGICAL DETERMINATION: NO EFFECT

This large raptor has characteristic adult plumage consisting of a white head and tail with a dark brown body. Juvenile eagles are completely dark brown and do not fully develop the majestic white head and tail until the fifth or sixth year. Adults average about three feet from head to tail, weigh approximately 10 to 12 pounds and have a wingspread that can reach seven feet. Generally, female bald eagles are larger than the males. The typical nest is constructed of large sticks and is lined with soft materials such as pine needles and grasses. The nests are very large, measuring up to six feet across and weighing hundreds of pounds. Nesting and feeding sites are generally in the vicinity of large bodies of open water (coastlines, rivers, large lakes).



There are no coastlines or large lakes on or immediately adjacent to the site considered suitable habitat for the bald eagle. One large stream (Stevens Creek) is located immediately adjacent to the site that could be considered potential feeding habitat. However, no nests or individuals were observed on the site of within 660 feet of the property boundary during the field surveys. Accordingly, future development of the site is not expected to impact this species.

## 4.2 Red-Cockaded Woodpecker

BIOLOGICAL DETERMINATION: NO EFFECT

This black and white bird measures approximately seven inches long and has black and white horizontal stripes on its back. The cheeks and underparts are white, and the sides are streaked in black. The cap and stripe on the throat and neck of the bird are black. Male individuals of the species have a small red spot on each side of the black cap and display a red crown patch after the first post-fledgling molt.

The red-cockaded woodpecker's range is closely linked to the distribution of southern pines. Loblolly and longleaf pines that are 60-plus years old are generally selected for nesting sites. However, other species of southern pines are occasionally used for nesting. The woodpecker usually excavates nest cavities in trees infected with a fungus that produces red-heart disease. Preferred nesting sites generally include relatively open, mature pine stands with an undeveloped or low understory layer. Foraging habitat is frequently limited to pine or pine-hardwood stands that are 30 years or older, with a preference for pine trees with a diameter of 10 inches or larger. The USFWS indicates that the maximum foraging range for the red-cockaded woodpecker is approximately one-half mile.

The site did not contain suitable nesting or foraging habitat for the red-cockaded woodpecker. The majority of the site consisted of cutover land. The planted pines on the southern portion of the site were too young to be suitable nesting habitat. A review of aerial photographs and pine stand observations from accessible roads and trails did not identify pine stands of sufficient age for nesting habitat immediately adjacent to the site. SCDNR had no occurrence records for this species and field surveys did not identify red-cockaded woodpecker nests. Accordingly, future development of the site is not expected to impact this species.

## 4.3 Relict Trillium

BIOLOGICAL DETERMINATION: NO EFFECT

Relict trillium is a low, perennial herb growing to a height of two to eight inches. The stems are long and curved. Leaves are stalkless, elliptical, and heavily blue-green mottled with a silvery streak down their middle. The flowers of the relict trillium are brown and have a foul odor. The flowering period is from March through April. The primary habitat of relict trillium is calcium-rich soils in hardwood forests of ravines and adjacent bottomlands near the fall line in the Savannah River area.

S&ME reviewed the U.S. Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS) Web Soil Survey to determine the soil series present on the site. The soil series located on the site consists of acidic soils and a slightly basic soil with pH values ranging from 4.5 to 7.3, which is not preferred habitat for this species due to the lack of calcium and magnesium. Relict trillium prefers basic soils underlined by mafic or calcareous rocks. Rock outcropping was not observed in the upland areas of the site.



**Table 4-2 Site Soils Descriptions**

Soil Series	pH Level
CaC – Cataula Sandy Loam (6-10% slopes)	4.5-6.0
CcB – Cecil Sandy Loam (2-6% slopes)	4.5-6.0
CcC – Cecil Sandy Loam (6-10% Slopes)	4.5-6.0
CcD – Cecil-Cataula Complex (10-15% slopes)	4.5-6.0
CpE – Cecil-Pacolet Complex (15-25% slopes)	4.5-6.0
Cw – Chewacla Loam (0-2% slopes)	4.5-7.3
To – Toccoa Sandy Loam (0-2% slopes)	5.1-6.5
WeE – Wateree Sandy Loam (10-25% slopes)	3.6-6.0

The site contains suitable habitat for relict trillium. Multiple forested slopes were located on various portions of the site. However, per the USDA-NRCS soil survey, the on-site soils were listed as Catula, Cecil, Cecil-Pacolet, Toccoa, and Wateree and are not considered calcium rich. Chewacla loam is listed as being slightly basic and is present on the northeastern corner of the site.

S&ME conducted field surveys during the flowering season of relict trillium (March 21 and April 18, 2023). Two species of the genus *Trillium* were observed on the site. The individuals observed consisted of bashful wakerobin (*Trillium catesbaei*) and mottled wakerobin (*T. discolor*). Individuals observed during the field survey lacked the curved s-shape stem, pronounced silver streaking, and distinct mottling that is associated with the relict trillium. No individuals of relict trillium were observed on the site. Accordingly, future development of the site is not expected to impact this species.

#### 4.4 Monarch Butterfly

BIOLOGICAL DETERMINATION: NOT APPLICABLE

The monarch butterfly is a bright orange insect with scattered white dots and black vein-like markings. The monarch butterfly's scientific name, *Danaus plexippus*, translated in Greek means "sleepy transformation" in reference to the species hibernation and metamorphosis. The monarch butterfly is also one of the few insect species that migrate. Monarch butterflies fly up to 2,500 miles from their breeding grounds in the United States and Canada to their overwintering spots in central Mexico.

Monarch butterfly habitat includes fields, roadsides, and other open areas. Monarch butterflies require flowering plants within these habitats to feed on their nectar. Monarch butterflies breed in areas with milkweed, the host plant for their larva.

As a candidate species, there is no federal protection afforded for the monarch butterfly. However, the USFWS appreciates its inclusion in assessments. No milkweed species or individuals of the Monarch butterfly were observed. A biological determination for the monarch butterfly is not applicable to the proposed project as the monarch butterfly is a candidate species.





## 4.5 Tricolored Bat

BIOLOGICAL DETERMINATION: NOT APPLICABLE AT THIS TIME

The tricolored bat is a small bat species reaching between two and three inches in length. The tricolored bat is named after the coloration of each strand of hair, which is dark at the base, blends to yellow midshaft, and ends in a brown tip. The species' current range is eastern North America, though the tricolored bat is in great decline from its historic range and population numbers.

The tricolored bat is a generalist feeder that preys on insects using echolocation. The tricolored bat hibernates in caves or abandoned mines. This species is known to hibernate in man-made structures such as roadside culverts. During spring, summer, and fall seasons the tricolored bat roosts in trees and leaf clusters in both live and dead trees. The tricolored bat tends to hibernate alone and roost singly, though has been known to share hibernacula with other bat species. Large basal cavities in mature trees are also potential habitat.

Owls, raccoons, snakes, hawks, and feral cats, among other species, are predators of the tricolored bat. Threats to the tricolored bat include habitat degradation, human disturbance of hibernacula, and a lack of knowledge of their ecology needed to inform management plans.

The SCDNR Natural Heritage Response Letter did not identify known hibernation sites and/or roost trees within one mile of the site. The site does not contain suitable winter hibernacula habitat as there were no caves, abandoned mines, or large culverts. A majority of the site was cutover land; however, potential suitable habitat for the tricolored bat exists within the mixed hardwoods, pine-mixed hardwoods, and planted pines as trees within these habitats exhibited loose and peeling bark capable of providing summer roosting habitat.

Since the tricolored bat is not federally protected at this time, a biological determination is not applicable to this species. However, a final decision on the listing of this species may come as soon as mid-2024; if the tricolored bat becomes listed as an endangered species, further consultation may be required as the removal of trees may affect this species. Please note that the USFWS currently recommends that no tree removal occur during the pup season (April 15 to July 31) of this species. As a conservation measure, SCDNR and USFWS recommend that tree clearing activities be conducted during the inactive season (November 1 through March 15) for tricolored bat.

## 5.0 Qualifications

The field survey was overseen by Chris Daves of S&ME. Mr. Daves is a Senior Scientist with over 22 years of experience in environmental consulting. Mr. Daves is proficient in conducting wetland delineations, environmental permitting activities, and habitat assessments, including protected species surveys. He is a Professional Wetland Scientist (PWS) and holds a B.S. degree in Biology from Wofford College and a Master's degree in Earth and Environmental Resources Management from the University of South Carolina.

The report was written by Will Trotter of S&ME. Mr. Trotter is a Natural Resources Staff Professional with three years of experience in environmental consulting. Mr. Trotter is proficient in conducting wetland delineations and habitat assessments, including protected species surveys. He holds a B.S. degree in Environmental Science from Wofford College.



## 6.0 Summary and Conclusions

Based on the literature review, habitat assessment, and pedestrian field review of the site, the following conclusions are given regarding federally listed species in Edgefield County:

- ◆ The site does not provide suitable habitat for the bald eagle or red-cockaded woodpecker. The development of the site will have “no effect” on these species.
- ◆ The site provides suitable habitat for the relict trillium. Field surveys were conducted during the flowering season and no individuals were observed. The development of this site will have “no effect” on this species.
- ◆ The site does not provide suitable habitat for the monarch butterfly. A biological determination for the monarch butterfly is not applicable to the proposed project as the monarch butterfly is a candidate species.
- ◆ The site does provide suitable summer roosting habitat for the tricolored bat in the forested areas. Since the tricolored bat is not federally protected at this time, a biological determination is not applicable to this species. However, a final decision on the listing of this species may come as soon as mid-2024; if the tricolored bat becomes listed as an endangered species, further consultation with the USFWS may be required as the removal of trees may affect this species.

Based on the findings of this Protected Species Assessment, the site qualifies for use of a Clearance Letter for Species and Habitat Assessments (**Appendix III**) from the USFWS until the tricolored bat is officially listed as endangered.

## 7.0 References

The following sources were referenced during the course of this assessment:

- ◆ SCDNR. Natural Heritage Program: <https://schtportal.dnr.sc.gov/portal/apps/sites/#/natural-heritage-program>.
- ◆ SCDNR. Natural Heritage Program. Response Letter dated January 9, 2023.
- ◆ SCDNR. Rare, Threatened, and Endangered Species Inventory: <https://experience.arcgis.com/experience/af61ba156d054cc7b3e27d09a0c35c0f>.
- ◆ SCDNR: Bald Eagle Locations: <https://scdnr.maps.arcgis.com/apps/opsdashboard/index.html#/e202ad118e5f4d42a15d12bc985b9e33?species=Haliaeetus%20leucocephalus>.
- ◆ U.S. Department of Agriculture – National Resources Conservation Service Web Soil Survey. <http://websoilsurvey.nrcs.usda.gov/app/>.
- ◆ USFWS. Information for Planning and Consultation (IPaC): <https://ecos.fws.gov/ipac/>.
- ◆ USFWS. South Carolina Ecological Services Field Office. <https://www.fws.gov/southeast/charleston/project-planning/>.
- ◆ USFWS. South Carolina List of At Risk, Candidate, Endangered, and Threatened Species by County. [https://www.fws.gov/sites/default/files/documents/SouthCarolina\\_County\\_by\\_County\\_List.pdf](https://www.fws.gov/sites/default/files/documents/SouthCarolina_County_by_County_List.pdf).
- ◆ USFWS Clearance Letter for Habitat Assessments. January 3, 2023.

## Species Conclusions Table

Project Name: Luck Edgefield – Clarks Hill, Edgefield County, SC

Date: February 9, 2024

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Bald Eagle	No suitable habitat present	No Eagle Act Permit Required	No nests on or within 660 feet of site
Red-Cockaded Woodpecker	No suitable habitat present	No effect	Habitat assessment indicated no suitable habitat present
Relict Trillium	Suitable habitat present in forested divides and adjacent to on-site tributaries on western portion of site.	No effect	Habitat assessment indicated suitable habitat present. Field surveys were conducted during the flowering season for the relict trillium. Two species of trillium: <i>Trillium catesbaei</i> and <i>T. discolor</i> were observed on the western portion of the site. No individuals of relict trillium were observed during surveys.
Monarch Butterfly	No suitable habitat present	Not applicable	Candidate species; no biological determination is applicable at this time.

Tricolored Bat	Suitable habitat present	Not applicable at this time.	Suitable habitat present; species is proposed endangered by USFWS at this time. Therefore, a biological determination is not applicable at this time.
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Acknowledgement: I agree that the above information about my proposed project is true. I used all of the provided resources to make an informed decision about impacts in the immediate and surrounding areas.



Chris Daves, P.W.S./Senior Scientist

February 9, 2024

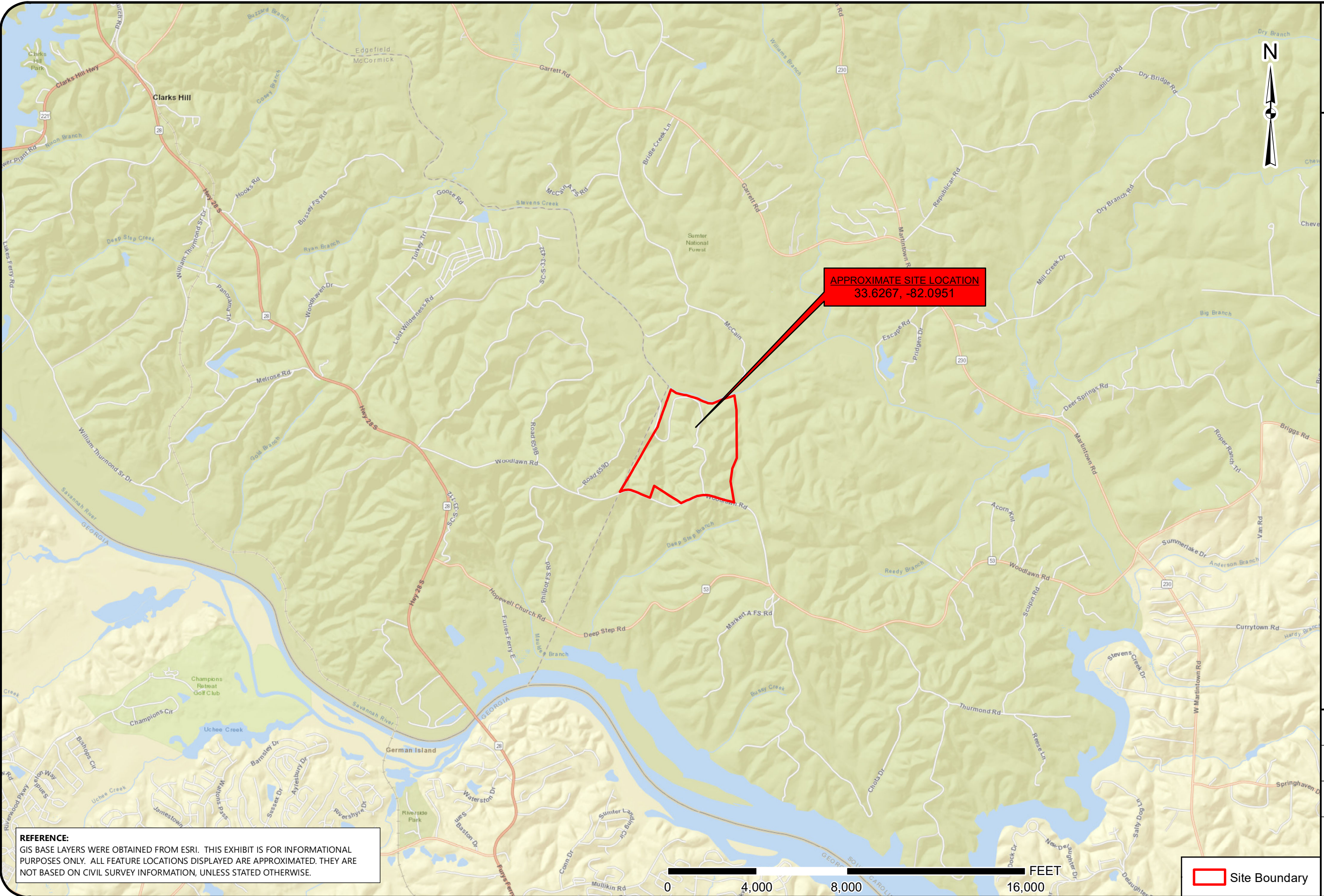
Signature /Title

Date

## **Appendices**

## **Appendix I – Exhibits and Site Photographs**

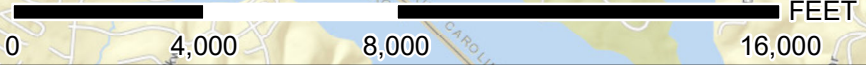
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**Vicinity Exhibit**

Luck Edgefield +/- 402 Acres  
Clarks Hill, Edgefield County, South Carolina  
World Street Map

**REFERENCE:**  
GIS BASE LAYERS WERE OBTAINED FROM ESRI. THIS EXHIBIT IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.



 Site Boundary

SCALE:  
1" = 4,000'

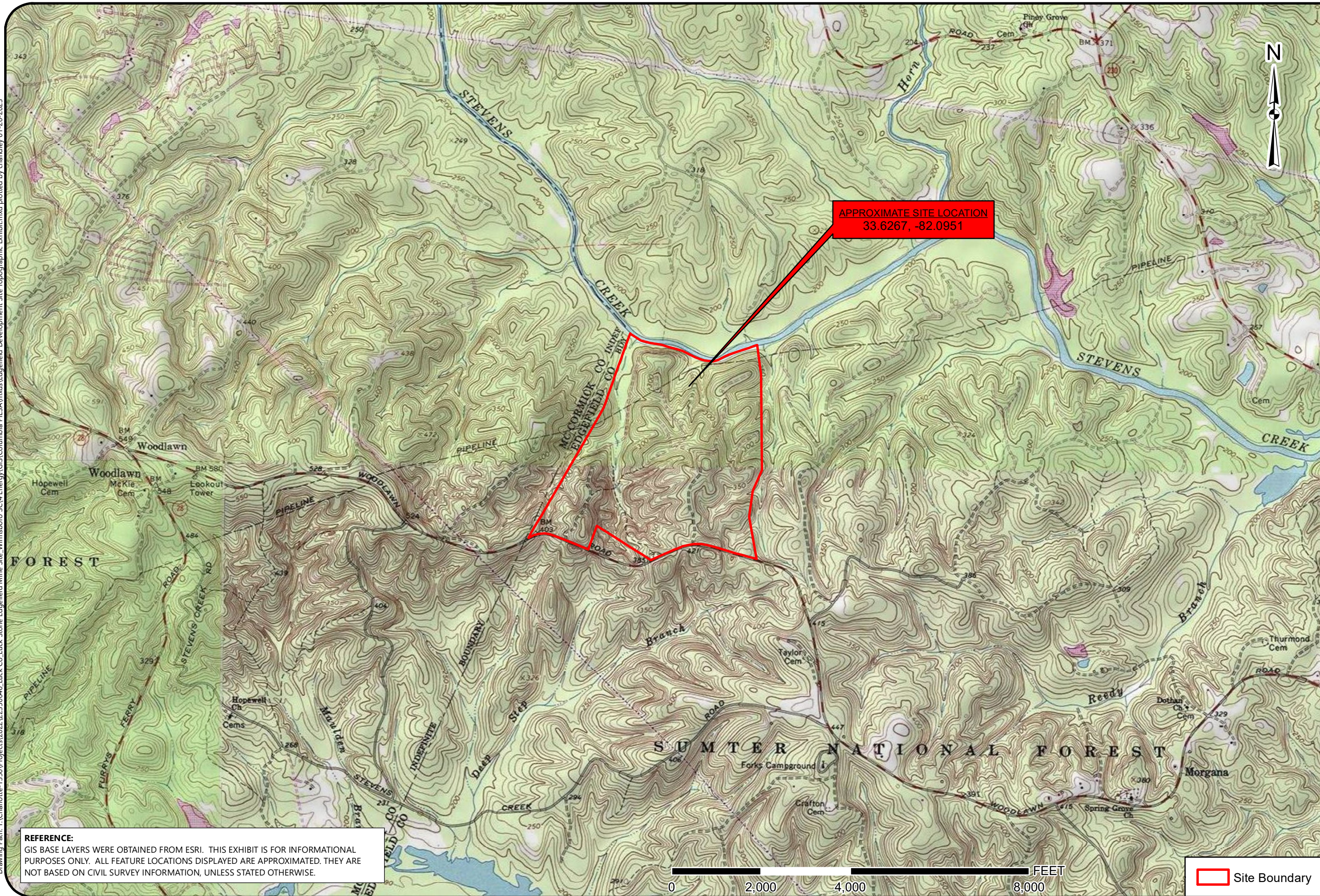
DATE:  
1-26-23

PROJECT NUMBER  
22350640

EXHIBIT NO.

**1**

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APPROXIMATE SITE LOCATION  
33.6267, -82.0951

**REFERENCE:**  
GIS BASE LAYERS WERE OBTAINED FROM ESRI. THIS EXHIBIT IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.



 Site Boundary



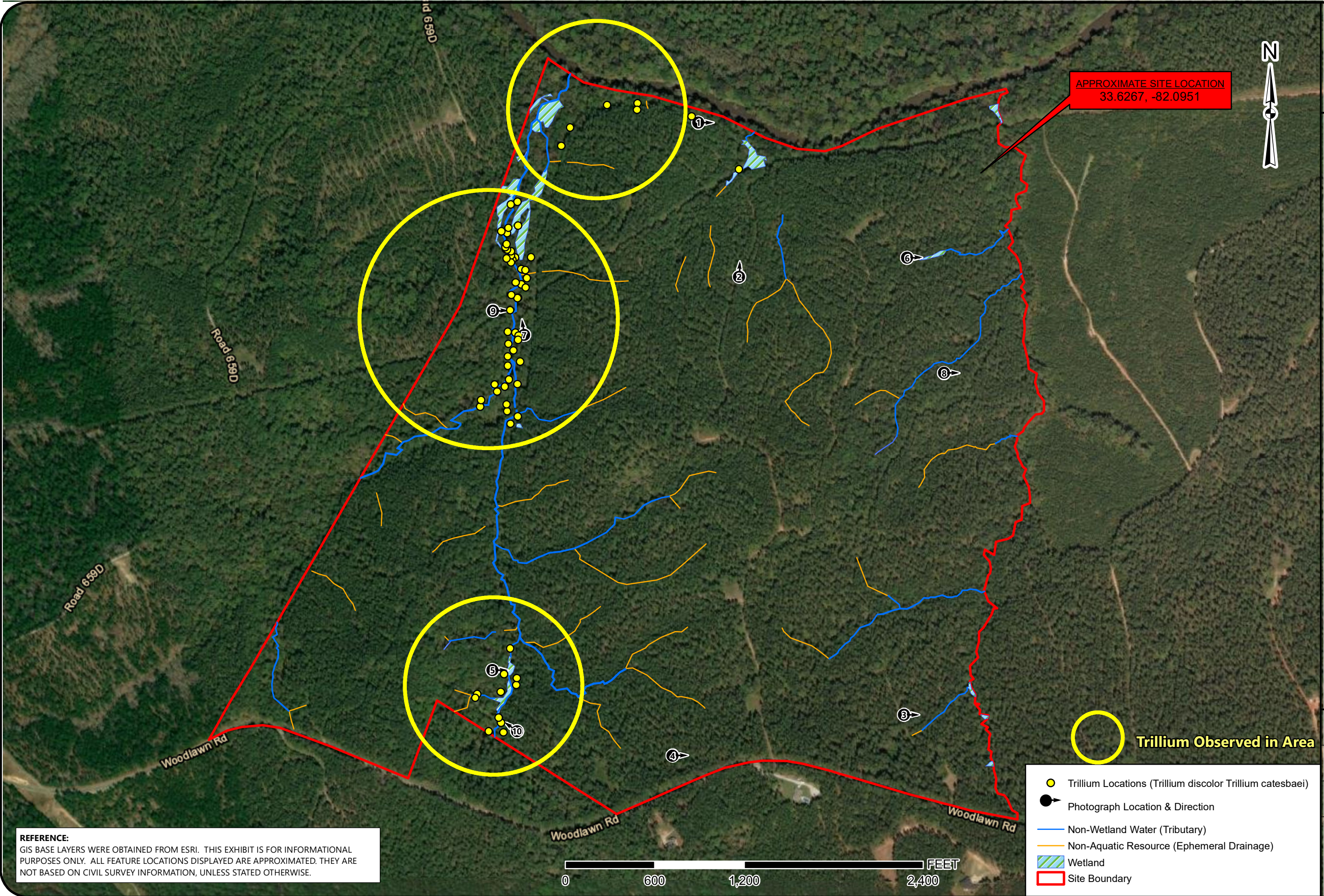
**Topographic Exhibit**

Luck Edgfield +/- 402 Acres  
Clarks Hill, Edgfield County, South Carolina  
USGS 7.5-Minute Topo Quads Colliers, SC 1964 (Rev. 1986) and Martinez, GA 1964 (Rev. 1980)

SCALE:  
1" = 2,000'  
DATE:  
1-26-23  
PROJECT NUMBER  
22350640  
EXHIBIT NO.



Drawing Path: T:\Charlotte-1350\Projects\2022\22350640\_Luck Co\_Luck Stone Edgfield Mine Site\_Winnsboro SC\4\_Energy\GIS\Columbia\_PSA\mxd\Edgfield Development Site Aerial Exhibit.mxd plotted by chandley\_05-09-2023



**REFERENCE:**  
 GIS BASE LAYERS WERE OBTAINED FROM ESRI. THIS EXHIBIT IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.

APPROXIMATE SITE LOCATION  
 33.6267, -82.0951

- Trillium Locations (Trillium discolor Trillium catesbaei)
- Photograph Location & Direction
- Non-Wetland Water (Tributary)
- Non-Aquatic Resource (Ephemeral Drainage)
- Wetland
- Site Boundary

  Trillium Observed in Area



**Aerial Exhibit**

Luck Edgfield +/- 402 Acres  
 Clarks Hill, Edgfield County, South Carolina  
 World Imagery 2020

SCALE:  
 1" = 600'

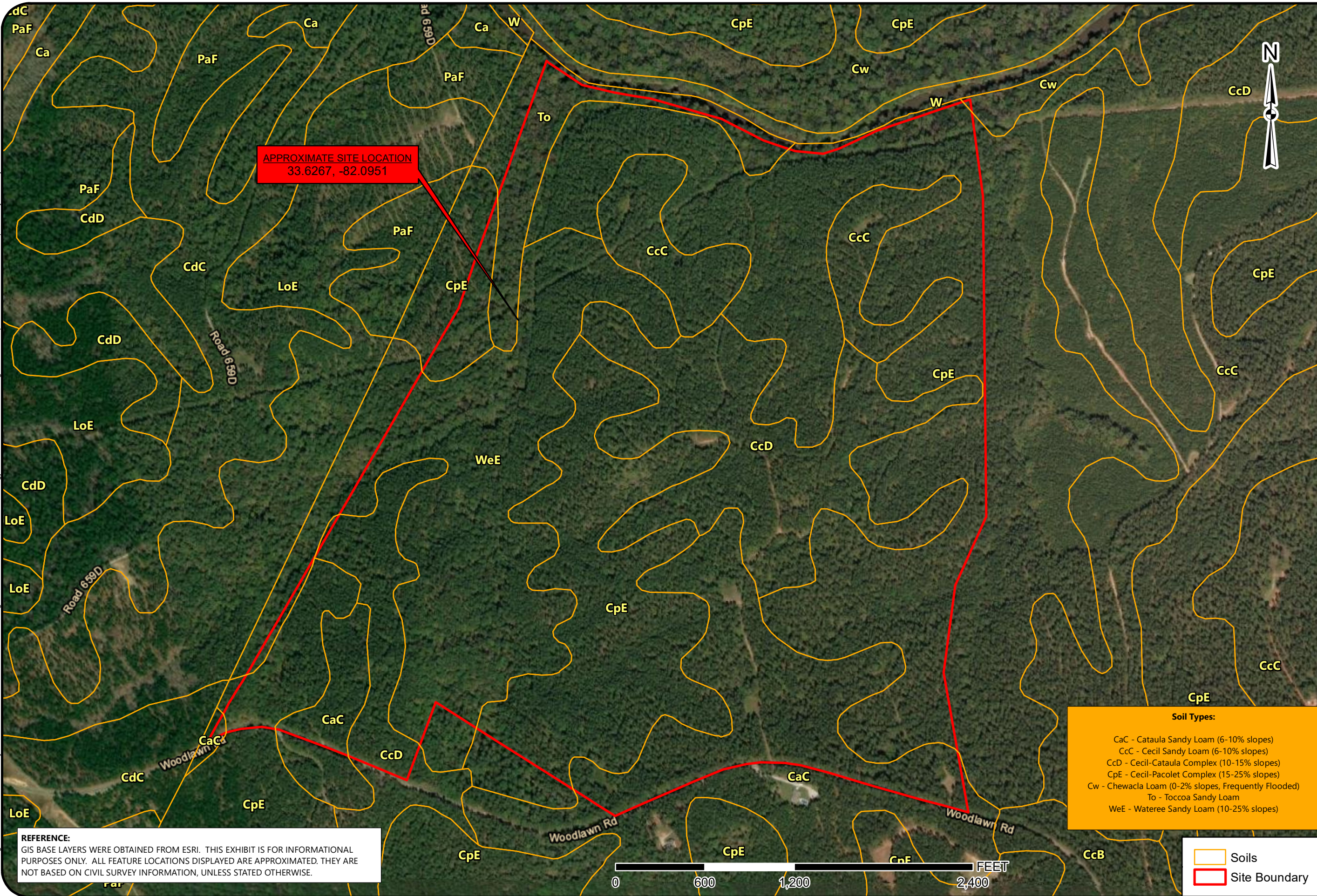
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 5-9-23

PROJECT NUMBER  
 22350640

EXHIBIT NO.

**3**

Drawing Path: T:\Charlotte-1350\Projects\2022\22350640\_Luck Co\_Luck Stone Edgfield Mine Site\_Winnsboro SC\4\_Energy\GIS\Columbia\_PSA\mxd\Edgfield Development Site Soils Exhibit.mxd plotted by chandley 02-10-2023



APPROXIMATE SITE LOCATION  
33.6267, -82.0951



**Soils Exhibit**

Luck Edgfield +/- 402 Acres  
Clarks Hill, Edgfield County, South Carolina  
World Imagery 2020 & NRCS

- Soil Types:**
- CaC - Cataula Sandy Loam (6-10% slopes)
  - CcC - Cecil Sandy Loam (6-10% slopes)
  - CdD - Cecil-Cataula Complex (10-15% slopes)
  - CpE - Cecil-Pacolet Complex (15-25% slopes)
  - Cw - Chewacla Loam (0-2% slopes, Frequently Flooded)
  - To - Toccoa Sandy Loam
  - WeE - Wateree Sandy Loam (10-25% slopes)

- Soils
- Site Boundary

**REFERENCE:**  
GIS BASE LAYERS WERE OBTAINED FROM ESRI. THIS EXHIBIT IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.

SCALE:  
1" = 600'

DATE:  
2-10-23

PROJECT NUMBER  
22350640

EXHIBIT NO.

**4**

**Appendix II – County Species Lists from USFWS and SCDNR**



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
South Carolina Ecological Services  
176 Croghan Spur Road, Suite 200  
Charleston, SC 29407-7558  
Phone: (843) 727-4707 Fax: (843) 727-4218

In Reply Refer To:  
Project Code: 2023-0031684  
Project Name: Edgefield Development Site

March 17, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

### To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

**Northern Long-eared Bat:** On November 30, 2022, the U.S. Fish and Wildlife Service published our final rule to reclassify the northern long-eared bat as endangered under the Endangered Species Act. Based on a thorough review of the species' status, we found the species, currently listed as threatened, now meets the definition of endangered under the act due to the range-wide impacts of white-nose syndrome. The rule becomes effective on March 31, 2023.

The reclassification removes the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective. If your project may require re-initiation of consultation, please contact our office for additional guidance.

Final Rule: <https://www.federalregister.gov/documents/2022/11/30/2022-25998/endangered-and-threatened-wildlife-and-plants-endangered-species-status-for-northern-long-eared-bat>

Species Information: <https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis>

**Migratory Birds:** In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and

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recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
  - USFWS National Wildlife Refuges and Fish Hatcheries
  - Migratory Birds
  - Wetlands
-

## **OFFICIAL SPECIES LIST**

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**South Carolina Ecological Services**

176 Croghan Spur Road, Suite 200

Charleston, SC 29407-7558

(843) 727-4707

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## PROJECT SUMMARY

Project Code: 2023-0031684  
Project Name: Edgefield Development Site  
Project Type: Commercial Development  
Project Description: Approximate 402-acre site located in Clarks Hill, Edgefield County, SC.  
Reason for request of information is due diligence.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@33.62654595,-82.09193228354911,14z>



Counties: Edgefield County, South Carolina

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## ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. [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.

### MAMMALS

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

### BIRDS

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

### INSECTS

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

### FLOWERING PLANTS

NAME	STATUS
Relict Trillium <i>Trillium reliquum</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/8489">https://ecos.fws.gov/ecp/species/8489</a>	Endangered

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**CRITICAL HABITATS**

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.



# **USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES**

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 OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

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## 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.
  3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

**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
Bald Eagle <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
Chimney Swift <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
Kentucky Warbler <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

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NAME	BREEDING SEASON
Prairie Warbler <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
Prothonotary Warbler <i>Protonotaria citrea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker <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
Wood Thrush <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 (■)

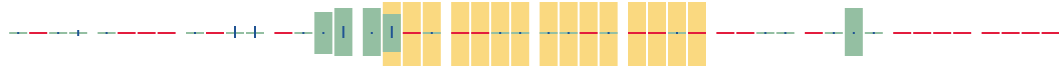
Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .



Wood Thrush  
BCC Rangewide  
(CON)



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>

## MIGRATORY BIRDS FAQ

**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.

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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.

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## WETLANDS

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.

### RIVERINE

- [R4SBC](#)
  - [R5UBH](#)
-

## **IPAC USER CONTACT INFORMATION**

Agency: S&ME

Name: Will Trotter

Address: 134 Suber Road

City: Columbia

State: SC

Zip: 29210

Email: jtrotter@smeinc.com

Phone: 8035619024

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# South Carolina Department of Natural Resources

Robert H. Boyles, Jr.  
Director

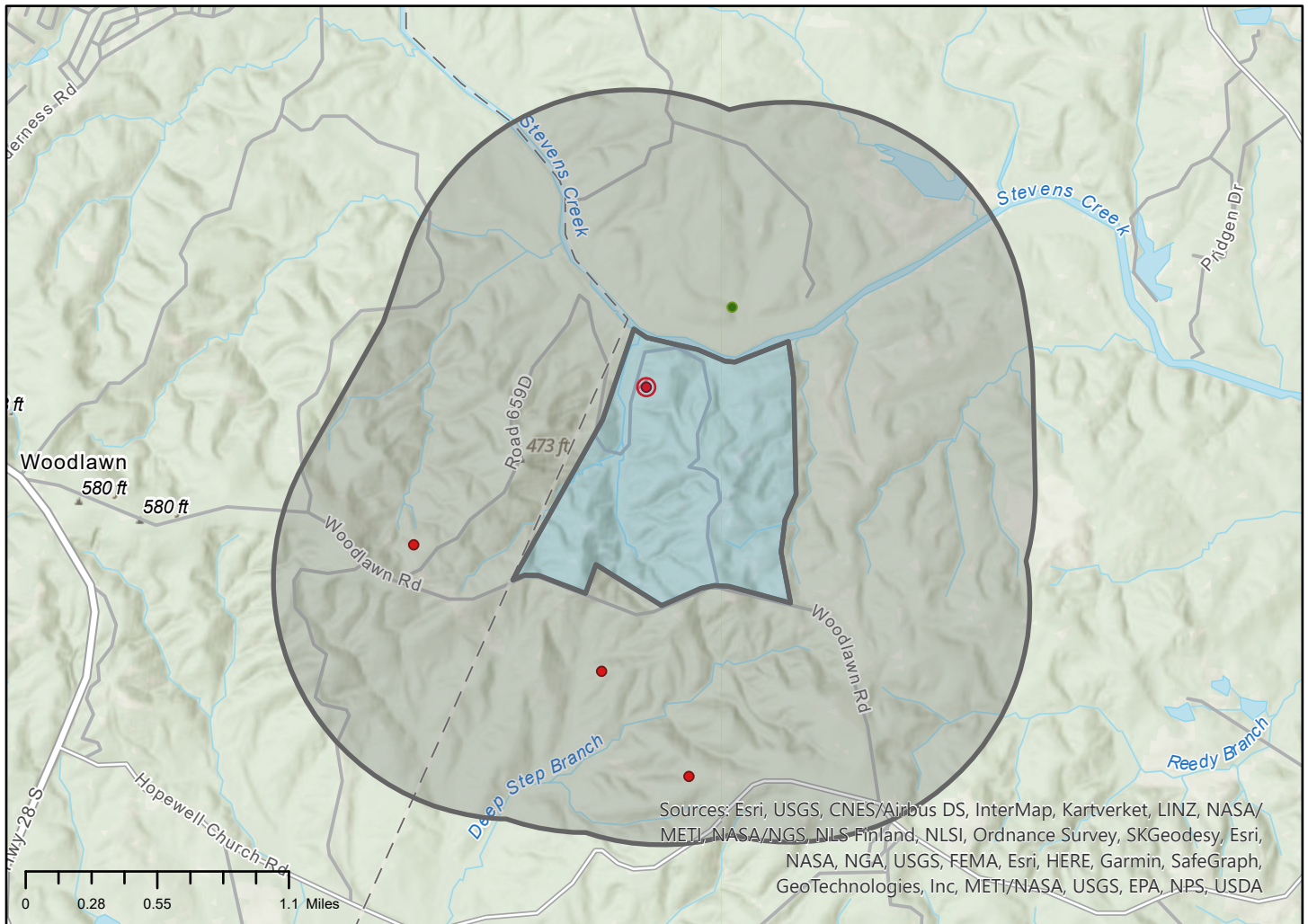
Emily C. Cope  
Deputy Director for Wildlife and Freshwater Fisheries

PO Box 167  
Columbia, SC 29202  
(803) 734-1396  
speciesreview@dnr.sc.gov

*Requested on Monday, January 9, 2023 by Chris Handley.*

Re: Request for Threatened and Endangered Species Consultation  
S&ME - Edgefield Development Site - Development (Commercial/Residential) - Edgefield County, South Carolina

The South Carolina Department of Natural Resources (SCDNR) has received your request for threatened and endangered species consultation of the above named project in Edgefield County, South Carolina. The following map depicts the project area and a 1 mile buffer surrounding:



Live Life Outdoors



www.dnr.sc.gov



1000 Assembly St. P.O. Box 167 Columbia, S.C. 29202



803-734-3886

Equal Opportunity Agency



# South Carolina Department of Natural Resources

Robert H. Boyles, Jr.  
Director

Emily C. Cope  
Deputy Director for Wildlife and Freshwater Fisheries

This report includes the following items:

- A - A report for species which intersect the project area
- B - A report for species which intersect the buffer around the project area
- C - A list of best management practices relevant to species near to or within the project area
- D - A list of best management practices relevant to the project type
- E - Instructions to submit new species observation records to the SC Natural Heritage Program

Please be advised:

The contents of this report, including all tables, maps, recommendations, and various other text, are produced as a direct result of the information a user provides at the time of submission. The SCDNR assumes that all information submitted by the user represents the project scope as proposed, and recommends that additional reports be requested should the scope deviate from how the project was initially represented to the SCDNR.

The technical comments outlined in this report are submitted to speak to the general impacts of the activities as described through inquiry by parties outside the South Carolina Department of Natural Resources. These technical comments are submitted as guidance to be considered and are not submitted as final agency comments that might be related to any unspecified local, state or federal permit, certification or license applications that may be needed by any applicant or their contractors, consultants or agents presently under review or not yet made available for public review. In accordance with its policy 600.01, Comments on Projects Under Department Review, the South Carolina Department of Natural Resources, reserves the right to comment on any permit, certification or license application that may be published by any regulatory agency which may incorporate, directly or by reference, these technical comments.

Interested parties are to understand that SCDNR may provide a final agency position to regulatory agencies if any local, state or federal permit, certification or license applications may be needed by any applicant or their contractors, consultants or agents. For further information regarding comments and input from SCDNR on your project, please contact our Office of Environmental Programs by emailing [environmental@dnr.sc.gov](mailto:environmental@dnr.sc.gov) or by visiting [www.dnr.sc.gov/environmental](http://www.dnr.sc.gov/environmental). Pursuant to Section 7 of the Endangered Species Act, requests for formal letters of concurrence with regards to federally listed species should be directed to the USFWS.

Should you have any questions or need more information, please do not hesitate to contact our office by email at [speciesreview@dnr.sc.gov](mailto:speciesreview@dnr.sc.gov) or by phone at 803-734-1396.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph Lemeris, Jr.", is written over a light blue horizontal line.

Joseph Lemeris, Jr.  
Heritage Trust Program  
SC Department of Natural Resources

*Live Life Outdoors*

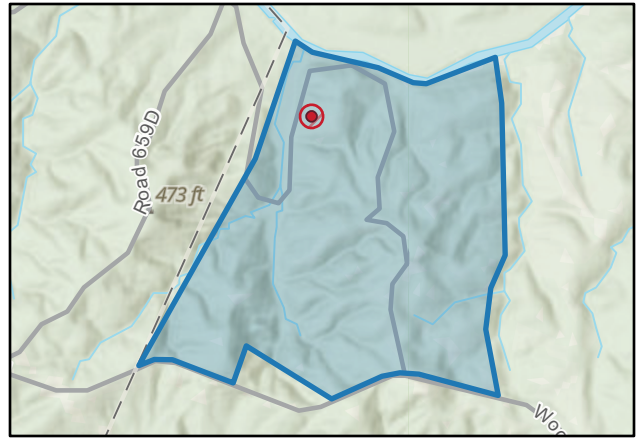


# A. Project Area - Species Report

There are 2 tracked species records found within the project foot print. The following table outlines occurrences found within the project footprint (if any), sorted by listing status and species name. Please keep in mind that this information is derived from existing databases and do not assume that it is complete. Areas not yet inventoried may contain significant species or communities. You can find more information about global and state rank status definitions by visiting Natureserve's web page. Please note that certain sensitive species found on site may be listed in this table but are not represented on the map. Please contact [speciesreview@dnr.sc.gov](mailto:speciesreview@dnr.sc.gov) should you have further questions related to sensitive species found within the project area.



Map Credits: Sources: Esri, USGS, CNES/Airbus DS, InterMap, Kartverket, LINZ, NASA/METI, NASA/NGS, NLS Finland, NLSI, Ordnance Survey, SKGeodesy, Esri, NASA, NGA, USGS, FEMA, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA



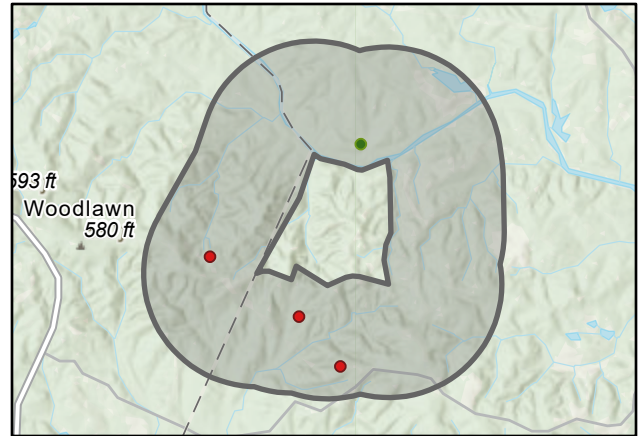
Common Name	Scientific Name	Federal Protection Status	State Protection Status	SWAP Priority	Last Obs. Date	Type
Baltimore Oriole	<i>Icterus galbula</i>	MBTA: Migratory Bird Treaty Act	Not Applicable	High	2016-09-23	Zoological
Prairie Larkspur, Carolina	<i>Delphinium carolinianum ssp. carolinianum</i>	Not Applicable	Not Applicable	Moderate	1997-06-13	Botanical

## B. Buffer Area - Species Report

The following table outlines rare, threatened or endangered species found within 1 miles of the project footprint, arranged in order of protection status and species name. Please keep in mind that this information is derived from existing databases and do not assume that it is complete. Areas not yet inventoried may contain significant species or communities. You can find more information about global and state rank status definitions by visiting NatureServe's web page. Please note that certain sensitive species found within the buffer area may be listed in this table but are not represented on the map.



Map Credits: Sources: Esri, USGS, CNES/Airbus DS, InterMap, Kartverket, LINZ, NASA/METI, NASA/NGS, NLS Finland, NLSI, Ordnance Survey, SK Geodesy, Esri, NASA, NGA, USGS, FEMA, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA



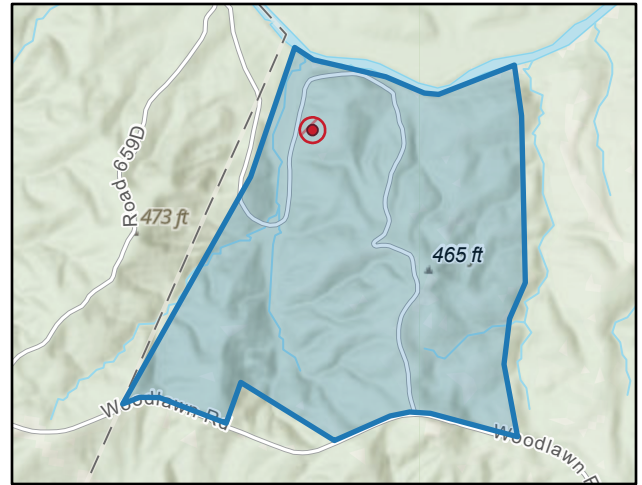
Common Name	Scientific Name	Federal Protection Status	State Protection Status	SWAP Priority	Last Obs. Date	Type
Prairie Larkspur, Carolina	<i>Delphinium carolinianum ssp. carolinianum</i>	Not Applicable	Not Applicable	Moderate	1997-06-13	Botanical
Southern Adder's-tongue	<i>Ophioglossum pycnostichum</i>	Not Applicable	Not Applicable	Not Applicable	2019-03-26	Botanical
Lanceleaf Trillium, Narrowleaf	<i>Trillium lancifolium</i>	Not Applicable	Not Applicable	High	2019-03-26	Botanical

## C. Species Best Management Practices (1 of 1)

SCDNR offers the following comments and best management practices (BMPs) regarding this project's potential impacts to species of concern which may be found on or near to the project area. Please contact [speciesreview@dnr.sc.gov](mailto:speciesreview@dnr.sc.gov) should you have further questions with regard to survey methods, consultation, or other species-related concerns.



Map Credits: Sources: Esri, USGS, CNES/Airbus DS, InterMap, Kartverket, LINZ, NASA/METI, NASA/NGS, NLS Finland, NLSI, Ordnance Survey, SKGeodesy, Esri, NASA, NGA, USGS, FEMA, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA



In the interest of preserving plant diversity, the South Carolina Plant Conservation Alliance performs native plant rescues in order to protect and preserve our diversity of native plants. If you are interested in assisting with this important endeavor please contact Mrs. April Punsalan at (843) 727-4707 ext. 218, or by email: [scpca@lists.fws.gov](mailto:scpca@lists.fws.gov) before any development occurs onsite. There may be plants of interest on the project site that the Alliance would like to preserve.

Species in the above table with SWAP priorities of High, Highest or Moderate are designated as having conservation priority under the South Carolina State Wildlife Action Plan (SWAP). SWAP species are those species of greatest conservation need not traditionally covered under any federal funded programs. Species are listed in the SWAP because they are rare or designated as at-risk due to knowledge deficiencies; species common in South Carolina but listed rare or declining elsewhere; or species that serve as indicators of detrimental environmental conditions. SCDNR recommends that appropriate measures should be taken to minimize or avoid impacts to the aforementioned species of concern.

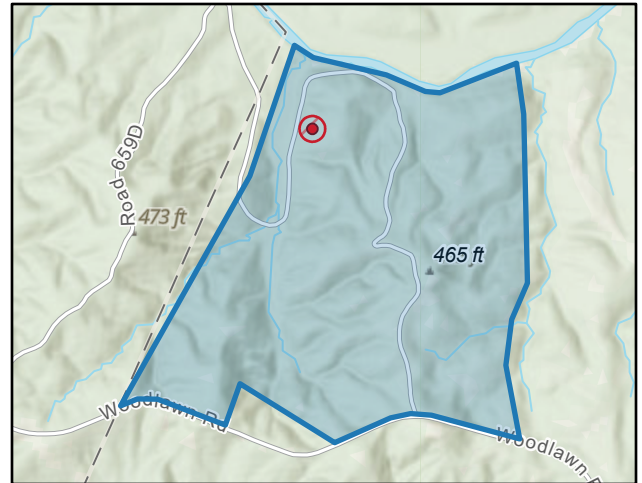


## D. Project Best Management Practices (1 of 3)

SCDNR offers the following comments and best management practices (BMPs) regarding this project's potential impacts to natural resources within or surrounding the project area. Please contact our Office of Environmental Programs at [environmental@dnr.sc.gov](mailto:environmental@dnr.sc.gov) should you have further questions with regard to best management practices related to this project area.



Map Credits: Sources: Esri, USGS, CNES/Airbus DS, InterMap, Kartverket, LINZ, NASA/METI, NASA/NGS, NLS Finland, NLSI, Ordnance Survey, SK Geodesy, Esri, NASA, NGA, USGS, FEMA, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA



Please be aware that the proposed development is in close proximity to property managed to maintain high-quality wildlife habitats using prescribed burning. Future property owners in this area should be made aware of the potential for smoke and hazardous conditions during seasonal prescribed burning events. In an effort to inform the public and allow for the continued use of this essential management tool, the SCDNR strongly encourages the use of smoke easement restrictive covenant and contract language associated with individual lots such that the owners of each individual lots will be required to acknowledge and agree that they may experience noise and smoke emanating from time to time from adjacent protected lands in connection with prescribed burning techniques employed to reduce understory growth, improve wildlife habitat and decrease chances of wildfire.

Review of available data, National Wetlands Inventory and hydric soils, indicate that wetlands or waters of the United States are present within your project area. These areas may require a permit from the U.S. Army Corps of Engineers (USACE), as well as a compensatory mitigation plan. SCDNR advises that you consult with the USACE Regulatory to determine if jurisdictional wetlands are present and if a permit and mitigation is required for any activities impacting these areas. For more information, please visit their website at [www.sac.usace.army.mil/Missions/Regulatory](http://www.sac.usace.army.mil/Missions/Regulatory). Additionally, a 401 Water Quality Certification may also be required from the SC Department of Health & Environmental Control. For more information, please visit their website at <https://www.scdhec.gov/environment/water-quality/water-quality-certification-section-401-clean-water-act>.

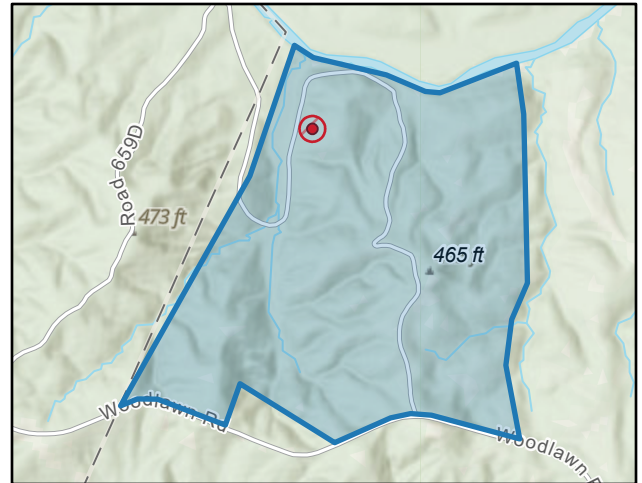
- All necessary measures must be taken to prevent oil, tar, trash and other pollutants from entering the adjacent offsite areas/wetlands/water.
- Once the project is initiated, it must be carried to completion in an expeditious manner to minimize the period of disturbance to the environment.
- Upon project completion, all disturbed areas must be permanently stabilized with vegetative cover (preferable), riprap or other erosion control methods as appropriate.
- The project must be in compliance with any applicable floodplain, stormwater, land disturbance, shoreline management guidance or riparian buffer ordinances.
- Prior to beginning any land disturbing activity, appropriate erosion and siltation control measures (e.g. silt fences or barriers) must be in place and maintained in a functioning capacity until the area is permanently stabilized.
- Materials used for erosion control (e.g., hay bales or straw mulch) will be certified as weed free by the supplier.
- Inspecting and ensuring the maintenance of temporary erosion control measures at least:
  - a. on a daily basis in areas of active construction or equipment operation;
  - b. on a weekly basis in areas with no construction or equipment operation; and
  - c. within 24 hours of each 0.5 inch of rainfall.
- Ensuring the repair of all ineffective temporary erosion control measures within 24 hours of identification, or as soon as conditions allow if compliance with this time frame would result in greater environmental impacts.
- Land disturbing activities must avoid encroachment into any wetland areas (outside the permitted impact area). Wetlands that are unavoidably impacted must be appropriately mitigated.
- Your project may require a Stormwater Permit from the SC Department of Health & Environmental Control, please visit <https://www.scdhec.gov/environment/water-quality/stormwater>

## D. Project Best Management Practices (2 of 3)

SCDNR offers the following comments and best management practices (BMPs) regarding this project's potential impacts to natural resources within or surrounding the project area. Please contact our Office of Environmental Programs at [environmental@dnr.sc.gov](mailto:environmental@dnr.sc.gov) should you have further questions with regard to best management practices related to this project area.



Map Credits: Sources: Esri, USGS, CNES/Airbus DS, InterMap, Kartverket, LINZ, NASA/METI, NASA/NGS, NLS Finland, NLSI, Ordnance Survey, SKGeodesy, Esri, NASA, NGA, USGS, FEMA, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA



- If clearing must occur, riparian vegetation within wetlands and waters of the U.S. must be conducted manually and low growing, woody vegetation and shrubs must be left intact to maintain bank stability and reduce erosion.
- Construction activities must avoid and minimize, to the greatest extent practicable, disturbance of woody shoreline vegetation within the project area. Removal of vegetation should be limited to only what is necessary for construction of the proposed structures.
- Where necessary to remove vegetation, supplemental plantings should be installed following completion of the project. These plantings should consist of appropriate native species for this ecoregion and exclude plant species found on the exotic pest plant council list: [https://www.se-eppc.org/southcarolina/SCEPPC\\_LIST2014finalOct.pdf](https://www.se-eppc.org/southcarolina/SCEPPC_LIST2014finalOct.pdf).
- Review of available data, National Hydrography Dataset, indicates that streams or waters of the United States are present within your project area. These areas may require a permit from the U.S. Army Corps of Engineers (USACE), as well as a compensatory mitigation plan. SCDNR advises that you consult with the USACE Regulatory to determine if jurisdictional waters are present and if a permit and mitigation is required for any activities impacting these areas. For more information, please visit their website at [www.sac.usace.army.mil/Missions/Regulatory](http://www.sac.usace.army.mil/Missions/Regulatory). Additionally, a 401 Water Quality Certification or a State Navigable Waters permit may also be required from the SC Department of Health & Environmental Control. For more information, please visit the following websites:
  - <https://www.scdhec.gov/environment/water-quality/water-quality-certification-section-401-clean-water-act>
  - <https://www.scdhec.gov/environment/water-quality/navigable-waters>
- Excavation/Construction activities must not occur during fish spawning season from March through June due to its negative impacts on eggs and reproduction activities.
- If clearing must occur, riparian vegetation within wetlands and waters of the U.S. must be conducted manually and low growing, woody vegetation and shrubs must be left intact to maintain bank stability and reduce erosion.
- Construction activities must avoid and minimize, to the greatest extent practicable, disturbance of woody shoreline vegetation within the project area. Removal of vegetation should be limited to only what is necessary for construction of the proposed structures.
- Where necessary to remove vegetation, supplemental plantings should be installed following completion of the project. These plantings should consist of appropriate native species for this ecoregion.

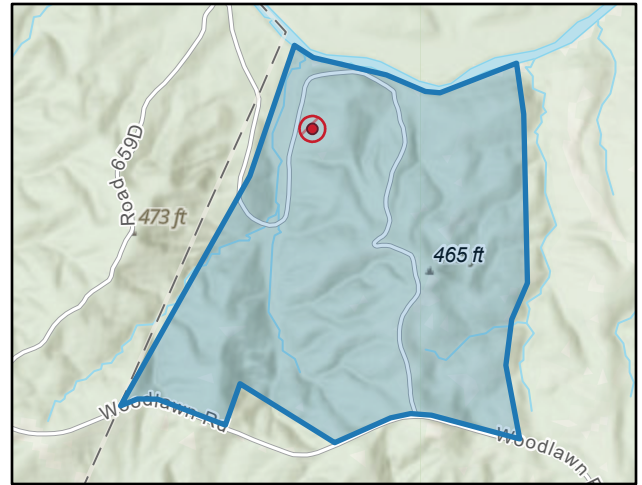
Your project area includes a FEMA special flood hazard area and may require a permit from the County National Floodplain Insurance Program Manager before impacts occur to aquatic resources and the associated floodplains on site. Please refer to <https://www.dnr.sc.gov/water/flood/documents/nfipadmindirectory.pdf> to find your appropriate contact information.

## D. Project Best Management Practices (3 of 3)

SCDNR offers the following comments and best management practices (BMPs) regarding this project's potential impacts to natural resources within or surrounding the project area. Please contact our Office of Environmental Programs at [environmental@dnr.sc.gov](mailto:environmental@dnr.sc.gov) should you have further questions with regard to best management practices related to this project area.



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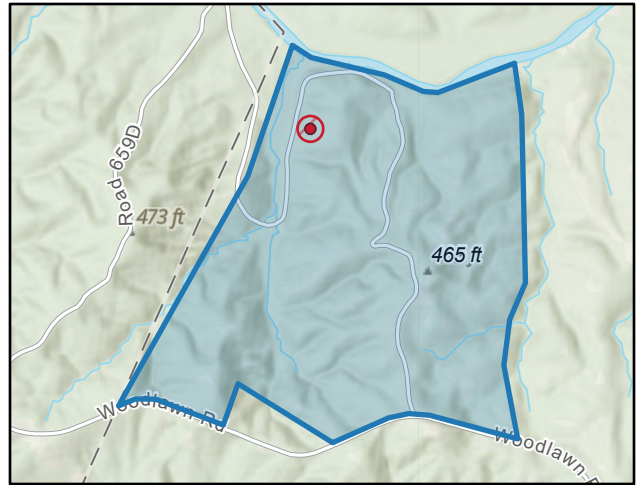


- Residential and commercial development has grown exponentially in recent years. Activities associated with these developments can have detrimental impacts on wildlife and aquatic resources such as habitat fragmentation, loss of available habitats and pollution, especially stormwater pollution. The result of these impacts causes the displacement of species and increases wildlife and human interactions. However, properly planned and sited development activities may allow for economic expansion with minimal negative impacts.
- Where appropriate, particularly adjacent to wetlands and water bodies, drainage plans and construction measures for residential and commercial development should be designed to control erosion and sedimentation, water quality degradation and other negative impacts on adjacent water and wetlands utilizing the best available design research. Developers proposing development activities should contact and work closely with local community development planning entities.
- Developments should be planned where growth is most compatible with natural resources utilizing residential and commercial cluster development methods, maximizing green spaces which can both be beneficial to protect natural resources and provide recreational opportunities for outdoor enthusiasts.
- Developments should be designed and constructed to avoid impact to wetland and stream areas whenever possible and to minimize unavoidable wetland and stream impacts to the maximum extent possible. Aquatic habitats and other sensitive natural areas should be identified in the initial planning stages of the project and incorporated in their natural state into the overall development plan.
- Developments should be designed to maintain the integrity and contiguity of wetland and stream systems and their associated riparian corridors, including the establishment of protective upland buffers around and between undisturbed aquatic systems whenever possible. Projects should be designed to minimize habitat fragmentation, including the construction of a limited number of road and utility crossings through streams and wetlands.
- The SCDNR recommends that the applicant incorporate vegetated bioswales, catch basins and/or bioretention cells/rain gardens into development plans beyond the regulatory requirements of the Stormwater Permitting requirements to add additional features to aid in capturing and filtering runoff from hardened surfaces. These structures can protect water quality and prevent oil, gas and other pollutants from directly entering nearby waterways. In addition, the SCDNR strongly recommends the use of permeable or porous pavement surfaces when possible. Permeable surfaces allow for rainfall to filter through the soil which aids in flood control and improves water quality.
- The following resources are available from Clemson Extension to assist:
  - <https://hgic.clemson.edu/factsheet/an-introduction-to-bioswales/>
  - <https://hgic.clemson.edu/factsheet/rain-garden-plants-introduction/>
  - <https://hgic.clemson.edu/factsheet/bioretention-cells-a-guide-for-your-residents/>
  - <https://hgic.clemson.edu/factsheet/an-introduction-to-porous-pavement/>
  - <https://hgic.clemson.edu/factsheet/trees-for-stormwater-management/>

## E. Instructions for Submitting Species Observations

The SC Natural Heritage Dataset relies on continuous monitoring and surveying for species of concern throughout the state. Any records of species of concern found within this project area would greatly benefit the quality and comprehensiveness of the statewide dataset for rare, threatened and endangered species. Below are instructions for how to download the SC Natural Heritage Occurrence Reporting Form through the Survey123 App.

Map Credits: Sources: Esri, USGS, CNES/Airbus DS, InterMap, Kartverket, LINZ, NASA/METI, NASA/NGS, NLS Finland, NLSI, Ordnance Survey, SKGeodesy, Esri, NASA, NGA, USGS, FEMA, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA



## Conservation Ranks & SWAP Priority Status

The SC Natural Heritage Program assigns S Ranks for species tracked within the state of South Carolina based on ranking methodology developed by NatureServe and its state program network. For information conservation rank definitions, please visit <https://explorer.natureserve.org/AboutTheData/Statuses>

The SCDNR maintains and updates its State Wildlife Action Plan (SWAP) every 10 years. This plan categorizes species of concern by Moderate, High, and Highest Priority. Please visit <https://www.dnr.sc.gov/swap/index.html> for more information about the SC SWAP.

## Instructions for accessing the SC Natural Heritage Occurrence Reporting Form

For use in a browser (on your desktop/PC):

- 1) Follow <https://bit.ly/scht-reporting-form>
- 2) Select 'Open in browser'
- 3) The form will open and you can begin entering data!

This method of access will also work on a browser on a mobile device, but only when connected to the internet. To use the form in the field without relying on data/internet access, follow the steps below.

For use on a smartphone or tablet using the field app:

- 1) Download the Survey123 App from the Google Play store or the Apple Store. This app is free to download. Allow the app to use your location.
- 2) No need to sign in. However, you will need to provide the app with our Heritage Trust GIS portal web address. You will only need to do this once: (this is a known bug with ESRI's software, and future releases of the form should not require the below steps. Bear with us in the meantime!).
  - a. Tap 'Sign in'
  - b. Tap the settings (gear symbol) in the upper right corner
  - c. Tap 'Add Portal'
  - d. After the 'https://', type [schtportal.dnr.sc.gov/portal](https://schtportal.dnr.sc.gov/portal)
  - e. Tap 'Add Portal'
  - f. Tap the back-arrow icon (upper left corner) twice to return to the main sign in page.
- 3) Use the camera app (or other QR Reader app) to scan the QR code on this page from your smartphone or tablet. Click on the 'Open in the Survey123 field app'. This will prompt a window to allow Survey123 to download the SC Natural Heritage Occurrence Reporting Form. Select 'Open.'
- 4) The form will automatically open in Survey123, and you can begin entering data! This form will stay loaded in the app on your device until you manually delete it, and you can submit as many records as you like.



## Will Trotter

---

**From:** Megan James <JamesM@dnr.sc.gov>  
**Sent:** Monday, January 9, 2023 12:04 PM  
**To:** Will Trotter; Christopher Handley  
**Subject:** Re: SC Natural Heritage Species Review Report - Chris Handley - Edgefield Development Site

**This message originated outside of S&ME. Please report this as phishing if it implies it is from an S&ME employee.**

---

Another note has been added by OEP for your project:

3. While there is no Shoreline Management Plan (SMP) currently approved for the Steven's Creek Hydro project, there likely will be in the future. Any development will need to stay in compliance with any future SMP requirements.

### Megan C. James

GIS Analyst, Natural Heritage Program & S.C. Conservation Bank  
S.C. Department of Natural Resources

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**From:** Megan James <JamesM@dnr.sc.gov>  
**Sent:** Monday, January 9, 2023 10:48 AM  
**To:** jtrotter@smeinc.com <jtrotter@smeinc.com>; chandley@smeinc.com <chandley@smeinc.com>  
**Subject:** SC Natural Heritage Species Review Report - Chris Handley - Edgefield Development Site

Good morning,

Your request for a review of species of concern within and near to your project area has been processed. Two additional comments have been added by OEP:

1. Please note that this site is located within the boundaries of the Long Cane Ranger District of the Sumter National Forest. Please consult with the US Forest Service as early as possible to avoid unnecessary delays of this project. The Regional Forest Supervisor's Office may be reached by calling (803) 561-4000 or by visiting <https://www.fs.usda.gov/detail/scnfs/about-forest/offices>.
2. Forested floodplain wetlands and riparian zones perform numerous ecological functions and serve significant public benefits. Riparian plant communities provide excellent food, cover, and nesting sites for a variety of wildlife species plus canopy cover helps to maintain water quality by reducing surface water temperatures. Riparian zones also reduce flood damages by slowing and absorbing floodwaters, then gradually releasing them into streams. As biofilters, riparian zones remove nutrients and other pollutants as water flows slowly through.

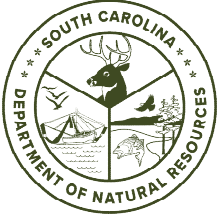
Please contact [speciesreview@dnr.sc.gov](mailto:speciesreview@dnr.sc.gov) if you have any questions related to the content of your report.

You can find the report here using the following link. Please note this report will only be available for download for 48 hours from receipt of this email.

[https://schtgis.dnr.sc.gov/server/rest/directories/arcgisjobs/webtools/exportreport\\_2022\\_10\\_gpserver/jc42805a735bc4dbdbda92d07d34abac6/scratch/20230109\\_094141-edgefield-county-chris-handley-edgefield-development-site.pdf](https://schtgis.dnr.sc.gov/server/rest/directories/arcgisjobs/webtools/exportreport_2022_10_gpserver/jc42805a735bc4dbdbda92d07d34abac6/scratch/20230109_094141-edgefield-county-chris-handley-edgefield-development-site.pdf)

**Megan C. James**

GIS Analyst, Natural Heritage Program & S.C. Conservation Bank  
S.C. Department of Natural Resources  
Office: (803) 734-4080  
P.O. Box 167, Columbia, SC 29202  
JamesM@dnr.sc.gov



Legend

Final Polygon Features



Final Linear Features



Proposed Polygon Features



Proposed Linear Features



## **Appendix III – USFWS Clearance Letter**





# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

176 Croghan Spur Road, Suite 200  
Charleston, South Carolina 29407



### U.S. Fish and Wildlife Service Clearance Letter for Species and Habitat Assessments

Updated: January 3, 2023

The U.S. Fish and Wildlife Service (Service) is one of two lead Federal Agencies mandated with the protection and conservation of Federal trust resources, including threatened and endangered (T&E) species and designated critical habitat as listed under the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*) (ESA). Development of lands in South Carolina have the potential to impact federally protected species. Accordingly, obligations under the ESA, National Environmental Policy Act (NEPA), Clean Water Act (CWA), Federal Power Act (FPA), and other laws, require project proponents to perform an environmental impact review prior to performing work on the site. These projects may include a wide variety of activities including, but not limited to, residential or commercial developments, energy production, power transmission, transportation, infrastructure repair, maintenance, or reconstruction of existing facilities on previously developed land.

Project applicants, or their designated representatives, may perform initial species assessments in advance of specific development proposals to determine the presence of T&E species and designated critical habitat that are protected under the ESA. These reviews are purposely speculative and do not include specific project or site development plans. Many of these speculative proposals are for previously developed or disturbed lands such as pasture lands, agricultural fields, or abandoned industrial facilities. Due to historical uses and existing conditions, these sites often do not contain suitable habitat to support T&E species. Therefore, an assessment may conclude that any future development of the site would have no effect to T&E species or adversely modify designated critical habitat. If the applicant, or their designee, determines there is no effect or impact to federally protected species or designated critical habitat, no further action is required under the ESA.

#### Clearance to Proceed

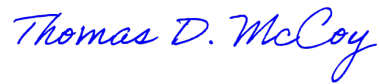
For all sites with potential projects that have no effect or impact upon federally protected species or designated critical habitat, no further coordination with the Service is necessary at this time. This letter may be downloaded and serve as the Service's concurrence or agreement to the conclusions of the species assessment. Any protected species survey or assessment conducted for the property should be included with this letter when submitting the project to Federal permitting agencies. Due to obligations under the ESA potential impacts must be reconsidered if: (1) new information reveals impacts of this identified action may affect any listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner which was not considered in this assessment; or (3) a new species is listed or critical habitat is designated that may be affected by the identified action.

**Please note this Clearance Letter applies only to assessments in South Carolina and may not be used to satisfy section 7 requirements for projects that have already been completed or currently under construction.**

If suitable habitat for T&E species or designated critical habitat occurs on, or nearby, the project site, a determination of no effect/impact may not be appropriate. In these cases, direct consultation requests with the Service should be initiated by the Federal action agency. Additional coordination with the Service may also be required if the potential project requires an evaluation under another resource law such as, but not limited to, NEPA, CWA, FPA, and the Coastal Zone Management Act.

The Service appreciates your cooperation in the protection of federally listed species and their habitats in South Carolina.

Sincerely,



Thomas D. McCoy  
Field Supervisor