



Protected Species Assessment
Chester Greenfield Site
Chester, Chester Co., SC
S&ME Project No. 4261-19-016

PREPARED FOR:

Luck Companies
Post Office Box 29682
Richmond, VA 23242

PREPARED BY:

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

April 9, 2019



April 9, 2019

Luck Companies
Post Office Box 29682
Richmond, Virginia 23242

Attention: Mr. Bruce Smith
brucesmith@luckcompanies.com

Reference: **Protected Species Assessment**
Chester Greenfield Site +/- 287 Acres
Chester, Chester County, South Carolina
S&ME Project No. 4261-19-016

Dear Mr. Smith:

S&ME, Inc. (S&ME) is pleased to submit our Protected Species Assessment for the above-referenced project located in Chester County, South Carolina. This work was performed in general accordance with S&ME Proposal Number 42-1900046, dated January 16, 2019 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.

Handwritten signature of Chris Handley in cursive.

Chris Handley
Biologist
chandley@smeinc.com

Handwritten signature of Chris Daves in cursive.

Chris Daves, P.W.S.
Senior Scientist
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 development. The site is being considered for a commercial business or industrial park. 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 287-acre site consists of three Chester County tax parcels. The site is located north of S.C. Highway 9 (Lancaster Highway) in Chester, Chester County, South Carolina as shown on **Exhibits 1-3** in **Appendix I**.

2.0 Site and Habitat Descriptions

The site is located in central Chester County within the Southern Outer Piedmont ecoregion of South Carolina. The site consists of planted pine stands, cutover forestland, pastureland, and aquatic features (wetlands and tributaries). The southeastern portion of the site is developed with residences and associated farming structures. The properties adjacent to the site consist of forestland, a church, and Chester Wood Products.

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 Planted Pines

The eastern and northern portions of the site consisted of planted loblolly pine (*Pinus taeda*) stands. (Photographs 1-3). The northern portion of the site consisted of mature pine stands. The northern pine stand was approximately 25 years in age and consisted of pines with an average diameter-at-breast-height (DBH) between 10-16 inches. The northern pine stand was approximately 60-70 feet in height. The eastern half of the site consisted of a loblolly pine stand approximately 20 years in age, 8-12 inches in DBH, and 50-60 feet in height. The pine stands consisted of dense understories. Dominant understory species included sweetgum (*Liquidambar styraciflua*), eastern red cedar (*Juniperus virginiana*), Chinese privet (*Ligustrum sinense*), water oak (*Quercus nigra*), southern red oak (*Q. falcata*), white oak (*Q. alba*), post oak (*Q. stellata*), and flowering dogwood (*Cornus florida*). Woody vine and herbaceous species included muscadine (*Vitis rotundifolia*), Japanese honeysuckle (*Lonicera japonica*), blackberry (*Rubus* spp.), blueberry (*Vaccinium* spp.), dog fennel (*Eupatorium capillifolium*), cranefly orchid (*Tipularia discolor*), goldenrod (*Solidago* spp.), and ebony spleenwort (*Asplenium platyneuron*).



2.2 Cutover Forestland

The western portion of the site consist of recent cutover forestland (Photograph 4). The area had been replanted with loblolly pine seedlings. Sapling and shrub layer consisted of loblolly pine, eastern red cedar, water oak, and sweetgum. Herbaceous species included dog fennel, broomsedge (*Andropogon virginicus*), tapered rosette grass (*Dichanthelium acuminatum*), and blackberry.

2.3 Pastureland

Pastureland was observed on the southern and far northern portions of the site (Photograph 5). The pastureland was heavily grazed by cattle. Herbaceous species included fescue (*Festuca arundinacea*), broomsedge, geranium (*Geranium carolinianum*), and chickweed (*Stellaria media*).

2.4 Aquatic Features

The site contained numerous aquatic features including wetlands and tributaries (Photographs 6-14). There were 17 wetlands observed on the site. The wetlands can be classified as palustrine forested, palustrine scrub-shrub, and palustrine emergent. Dominant overstory species observed in the wetland features included red maple (*Acer rubrum*), American sycamore (*Platanus occidentalis*), green ash (*Fraxinus pennsylvanica*), sweetgum, and tulip poplar (*Liriodendron tulipifera*). Understory species consisted of those of the canopy dominants and ironwood (*Carpinus caroliniana*), loblolly pine, and water oak. Woody vine and herbaceous species included muscadine, common greenbrier (*Smilax rotundifolia*), giant cane (*Arundinaria gigantea*), common rush (*Juncus effusus*), woolgrass (*Scirpus cyperinus*), and cattail (*Typha latifolia*).

Seven tributaries were observed on the site including Rocky Creek. Two of the tributaries, including Rocky Creek were classified as perennial and the remaining were seasonal in nature. The streams ranged from three to 20 feet in width and had sandy, gravel, cobble, and bedrock substrate. Species observed along the tributaries included sweetgum, loblolly pine, tulip poplar, eastern red cedar, ironwood, and water oak. Understory species along the tributaries consisted of those of the canopy dominants and giant cane.

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 Chester 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. and Chris Handley performed the field reviews January 18, February 1, and February 4, 2019. 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 Chester 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>Picoides borealis</i>	E	Open pine stands with minimum age of 60 years; nests in live pines with red-heart disease.
Carolina Heelsplitter <i>Lasmigona decorata</i>	E	Variety of substrates or river and creek beds, including mud, clay, sand, gravel, and cobble/bolder/bedrock; Catawba, Savannah, Saluda, and Pee Dee River systems.

E = Endangered

T = Threatened

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).

The site does not contain suitable nesting habitat for the bald eagle. There are no coastlines, rivers, or large lakes on or immediately adjacent to the site considered suitable habitat for the bald eagle. No nests or individuals were observed during the field survey. 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 pine stands on the site were too young to support red-cockaded nesting habitat. The pine stands observed on the site ranged from three to 25 years in age, which are too young to support red-cockaded woodpecker foraging 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 Carolina Heelsplitter

BIOLOGICAL DETERMINATION: NO EFFECT

The Carolina heelsplitter is a medium-sized freshwater mussel with an ovate, trapezoid-shaped shell. The shell is yellowish, greenish-brown to dark brown in color. Younger specimen's shells have greenish-brown or black rays. The inside of the shell (nacre) is pearly-white to bluish-white. The umbo area is orange or a mottle-orange. The heelsplitter has been documented in Catawba, Pee Dee River, Saluda, and Savannah River basins. The Carolina heelsplitter has been recorded in a variety of substrates, including mud, clay, sand, gravel, cobble, bolder, and bedrock. A majority of these areas are without significant silt accumulations and are along stable, well-shaded stream banks. Habitat is severely affected by siltation.

The tributaries observed on the site consisted of two perennial and five seasonal/intermittent tributaries. The seasonal/intermittent tributaries on the site have minimal flow to no flow and contain moderate to heavy amounts of siltation from adjacent cattle farming activities; therefore these streams are not considered suitable habitat for the Carolina heelsplitter.

Rocky Creek enters the site along the northern site boundary and flows southward to S.C. Highway 9. Rocky Creek was approximately 20 feet in width and consisted predominately of a sandy/gravel substrate. The second perennial stream located on the site enters the site along the northeastern site boundary and flows in a



southwesterly pattern until it terminates at Rocky Creek on the southern portion of the site. This tributary consisted of varying substrates including sand, gravel, cobbles, boulders, and bedrock. The tributary was approximately six feet in width. These tributaries provided potential suitable habitat for the Carolina heelsplitter.

S&ME subcontracted with Alderman Environmental Services, Inc. to conduct a mussel survey of the site. The survey was conducted on March 24, 2019. The report stated that the tributaries on-site were mostly poor quality Carolina heelsplitter habitat. No living Carolina heelsplitter or vacated shells were observed during the survey. The report stated "The Carolina heelsplitter occurs within the Rocky Creek Subbasin; however, because of the poor quality habitat present within the surveyed reach and the significant distance (~14 miles) between this survey's reach and known Carolina heelsplitter habitat in Hooper Creek, the Biological Conclusion is No Effect."

S&ME contacted Ms. Morgan Wolf, the USFWS species lead for Carolina heelsplitter, on April 8, 2019 to ascertain if their Clearance Letter could be used for streams that had potential Carolina heelsplitter habitat, but did not contain the species. Ms. Wolf stated that if a federally permitted/licensed mussel surveyor (Alderman) renders a biological conclusion of No Effect, then the USFWS does not need to review the report and the Clearance Letter can be used.

S&ME also consulted with the USFWS Information for Planning and Conversation (IPaC) website to request an Official Species list for the site. No known critical habitat for Carolina heelsplitter was listed on or directly downstream of the site. Based on this information and the Carolina heelsplitter report by Alderman Environmental Services, Inc. stating that the tributaries on-site including Rocky Creek were considered poor quality heelsplitter habitat and no individual Carolina heelsplitters were located during the survey a No Effect determination is applicable. Accordingly, future development of the site is not expected to impact this species.

5.0 Qualifications

The field survey was led by Chris Daves of S&ME. Mr. Daves is a biologist and natural resources project manager with over 18 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 & Environmental Resources Management from the University of South Carolina. Mr. Handley holds a B.S. degree in Forest Resource Management and a Master's degree in Forest Resources (GIS Emphasis) from Clemson University. Mr. Handley has six years of experience in environmental consulting and GIS mapping and is proficient in conducting wetland delineations and habitat assessments, including protected species surveys.

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 Chester County:

- ◆ Potential habitat for the Carolina heelsplitter was observed in Rocky Creek and the smaller perennial tributary on the site. A mussel survey was performed by Alderman Environmental Services, Inc. in March of 2019. The survey determined the on-site tributaries to be poor habitat for the heelsplitter and no Carolina heelsplitter



were observed on the site during the survey. Based on the No Effect determination in the mussel survey report by a federally permitted/licensed mussel surveyor, the site qualifies for the use of a Clearance Letter.

- ◆ The site does not provide suitable habitat for the federally listed species in Chester County. Our opinion is that proposed development of the site will have *no effect* on the federally listed species in Chester County. The site qualifies to use a Clearance Letter for Species and Habitat Assessments (**Appendix IV**) from the USFWS.

No further action is recommended at this time.

7.0 References

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

- ◆ Alderman Environmental Services, Inc., Mussel Survey for Chester SC Site, dated March 24, 2019.
- ◆ SCDNR. 2019. SC Rare, Threatened, and Endangered Species Inventory. <http://www.dnr.sc.gov/species/index.html>.
- ◆ SCDNR. 2018. South Carolina's Bald Eagles – Nest Locations. <http://www.dnr.sc.gov/wildlife/baldeagle/locations.html>.
- ◆ USFWS. 2019. Information for Planning and Conservation. <https://ecos.fws.gov/ipac/>.
- ◆ USFWS. 2017. Clearance Letter for Species and Habitat Assessments.
- ◆ USFWS. 2019. South Carolina List of At Risk, Candidate, Endangered, and Threatened Species. https://www.fws.gov/charleston/pdf/Endangered/species_by_county/Chester_county.pdf.
- ◆ U.S. Department of Agriculture – Natural Resources Conservation Service Web Soil Survey. 2019. <http://websoilsurvey.nrcs.usda.gov/app/>.

Appendices

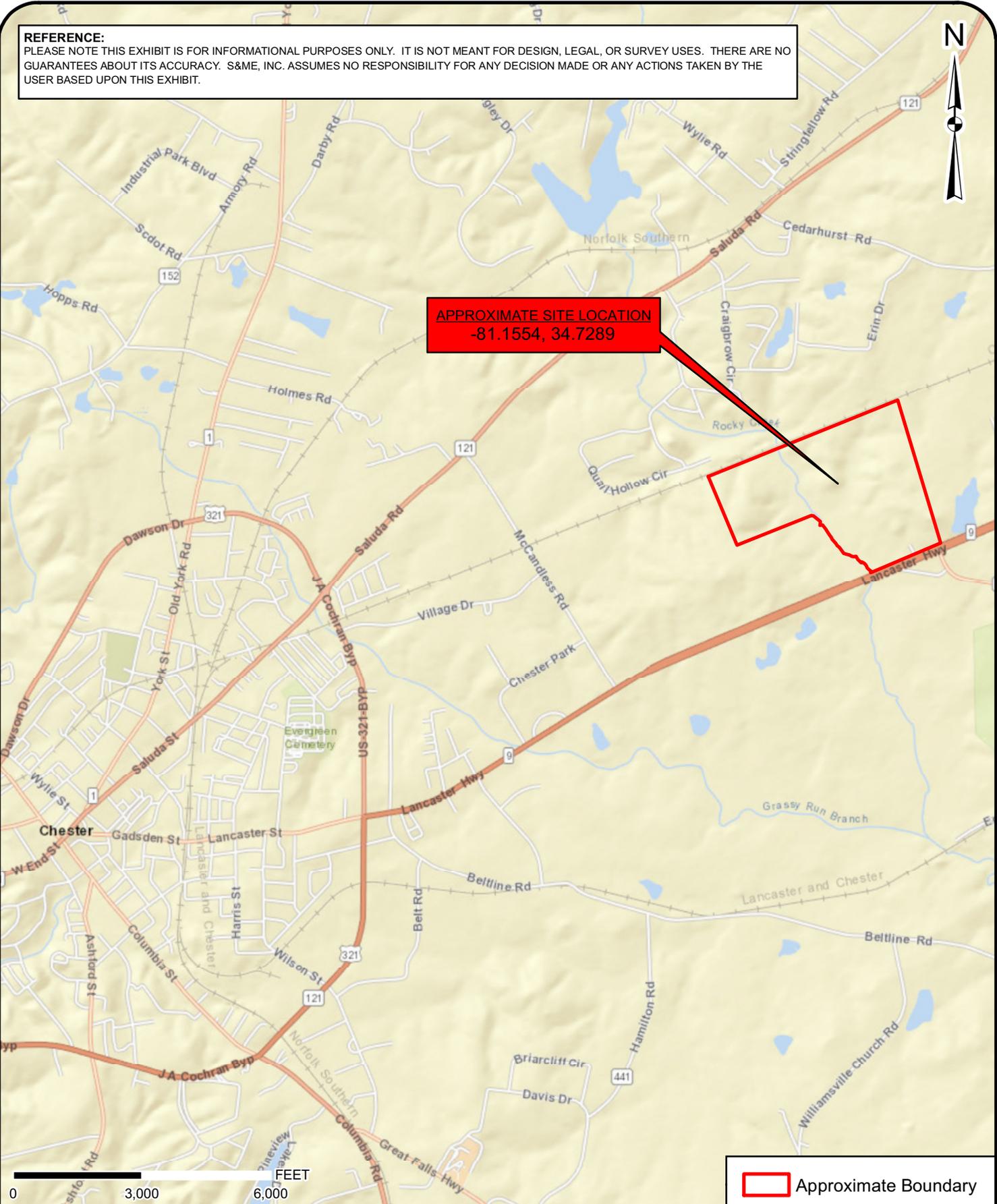
Appendix I – Exhibits and Site Photographs

REFERENCE:

PLEASE NOTE THIS EXHIBIT IS FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT MEANT FOR DESIGN, LEGAL, OR SURVEY USES. THERE ARE NO GUARANTEES ABOUT ITS ACCURACY. S&ME, INC. ASSUMES NO RESPONSIBILITY FOR ANY DECISION MADE OR ANY ACTIONS TAKEN BY THE USER BASED UPON THIS EXHIBIT.



APPROXIMATE SITE LOCATION
-81.1554, 34.7289



 Approximate Boundary

SCALE:
1" = 3,000'
DATE:
2-18-19
PROJECT NUMBER
4261-19-016

EXHIBIT NO.
1

Vicinity Exhibit

Chester Greenfield Site +/- 287 Acres

Chester, Chester County, South Carolina

Source: World Street Map

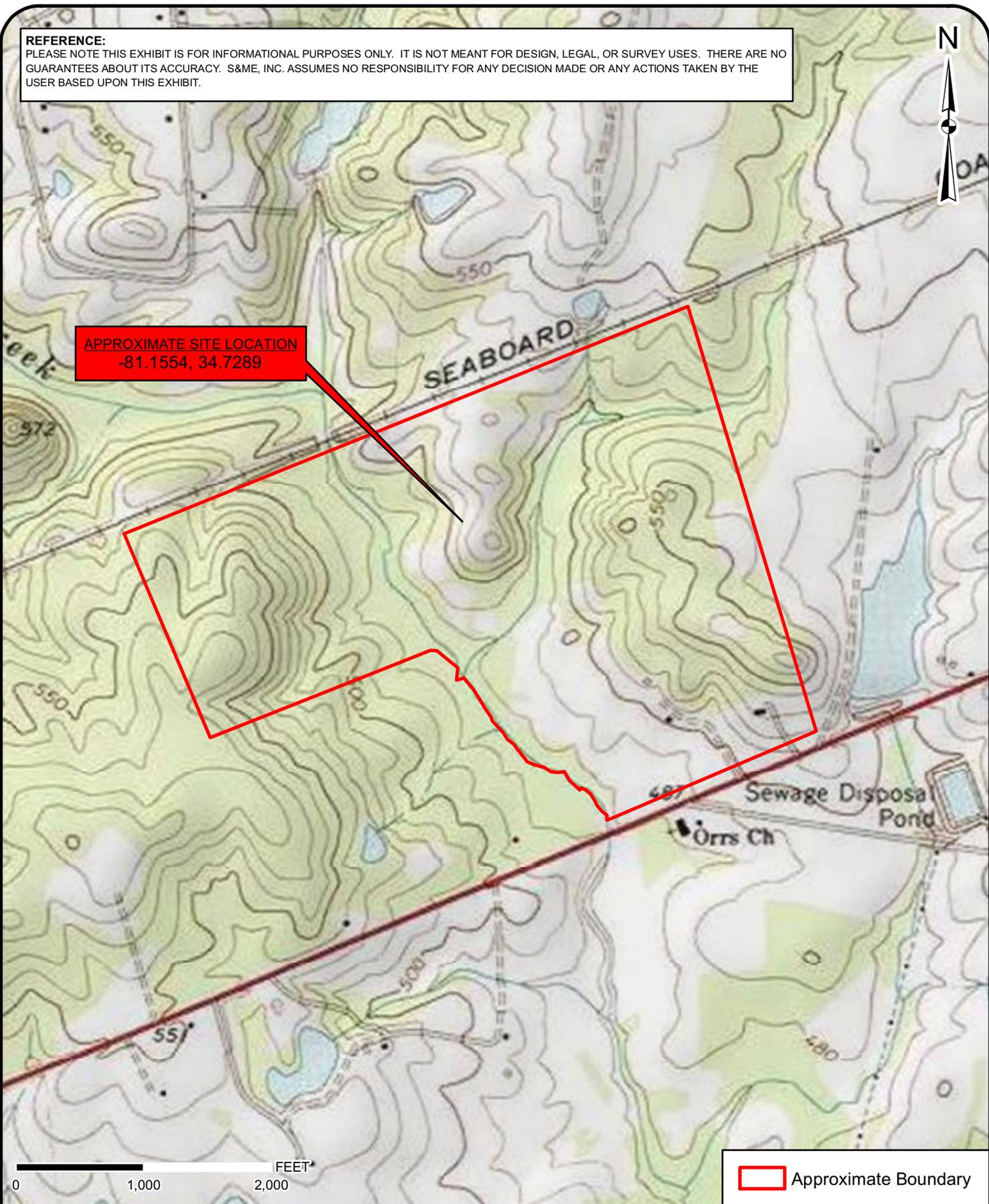


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PLEASE NOTE THIS EXHIBIT IS FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT MEANT FOR DESIGN, LEGAL, OR SURVEY USES. THERE ARE NO GUARANTEES ABOUT ITS ACCURACY. S&ME, INC. ASSUMES NO RESPONSIBILITY FOR ANY DECISION MADE OR ANY ACTIONS TAKEN BY THE USER BASED UPON THIS EXHIBIT.



APPROXIMATE SITE LOCATION
-81.1554, 34.7289



 Approximate Boundary

SCALE:
1" = 1,000'
DATE:
2-18-19
PROJECT NUMBER
4261-19-016

EXHIBIT NO.
2



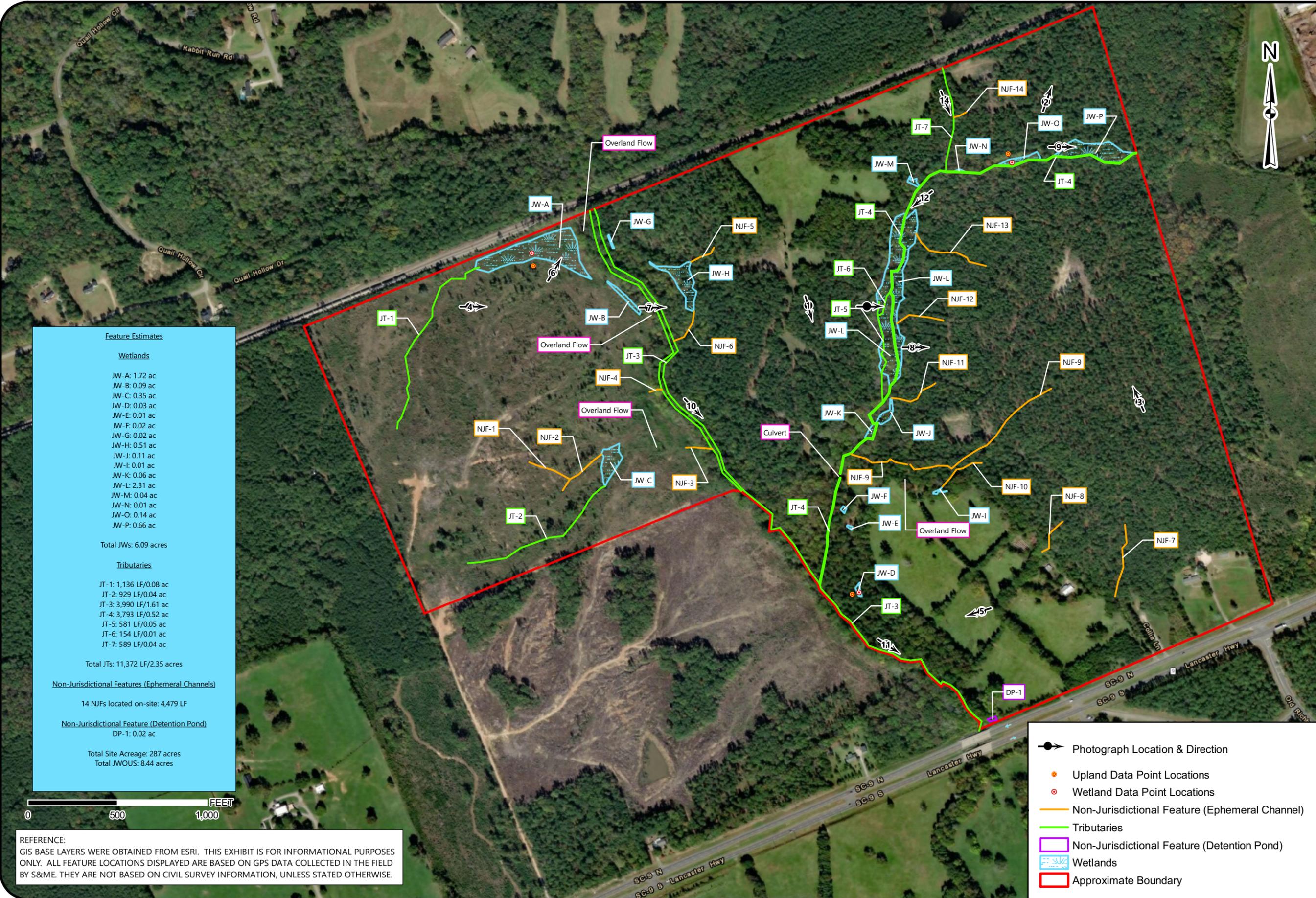
Topographic Exhibit

Chester Greenfield Site +/- 287 Acres

Chester, Chester County, South Carolina

Source: USA Topo Maps, USGS 7.5-Minute Topo Quad Chester, SC 1969

Drawing Path: T:\Projects\2019\ENVV\4261-19-016 Luck Co_Chester Greenfield Site_Chester\GIS\mxd\T&E Aerial Exhibit.mxd plotted by chandley 04-09-2019



Feature Estimates	
Wetlands	
JW-A:	1.72 ac
JW-B:	0.09 ac
JW-C:	0.35 ac
JW-D:	0.03 ac
JW-E:	0.01 ac
JW-F:	0.02 ac
JW-G:	0.02 ac
JW-H:	0.51 ac
JW-I:	0.11 ac
JW-J:	0.01 ac
JW-K:	0.06 ac
JW-L:	2.31 ac
JW-M:	0.04 ac
JW-N:	0.01 ac
JW-O:	0.14 ac
JW-P:	0.66 ac
Total JWs:	6.09 acres
Tributaries	
JT-1:	1,136 LF/0.08 ac
JT-2:	929 LF/0.04 ac
JT-3:	3,990 LF/1.61 ac
JT-4:	3,793 LF/0.52 ac
JT-5:	581 LF/0.05 ac
JT-6:	154 LF/0.01 ac
JT-7:	589 LF/0.04 ac
Total JTs:	11,372 LF/2.35 acres
Non-Jurisdictional Features (Ephemeral Channels)	
14 NJFs located on-site:	4,479 LF
Non-Jurisdictional Feature (Detention Pond)	
DP-1:	0.02 ac
Total Site Acreage:	287 acres
Total JWOUS:	8.44 acres



REFERENCE:
 GIS BASE LAYERS WERE OBTAINED FROM ESRI. THIS EXHIBIT IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE BASED ON GPS DATA COLLECTED IN THE FIELD BY S&M. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.

- Photograph Location & Direction
- Upland Data Point Locations
- Wetland Data Point Locations
- Non-Jurisdictional Feature (Ephemeral Channel)
- Tributaries
- Non-Jurisdictional Feature (Detention Pond)
- Wetlands
- Approximate Boundary

Aerial Exhibit

Chester-Greenfield Site +/- 287 Acres
 Chester, Chester County, South Carolina
 World Imagery 2017

SCALE:
 1" = 500'

DATE:
 4-5-19

PROJECT NUMBER
 4261-19-016

EXHIBIT NO.

3



1 Planted pines located on the northern portion of the site.



2 Planted pines located on the northeastern portion of the site.



3 Planted pine stand located on the eastern portion of the site.



4 Cutover forestland and replanted pines located on the western portion of the site.



**Site Photographs
Chester Greenfield Site
Chester, Chester County, South Carolina**

S&ME Project 4261-19-016

Taken by: CH/CD

Date: Jan./Feb. 2019



5 Typical view of pastureland located on the southern portion of the site.



6 Herbaceous wetland (JW-A) located on the northwestern portion of the site.



7 Herbaceous wetland (JW-B) located on the western portion of the site.



8 Forested wetland (JW-L) located on the north-central portion of the site.





9 Forested wetland (JW-P) located on the northeastern portion of the site.



10 Rocky Creek (JT-3) located on the central portion of the site.



11 Rocky Creek located on the southern portion of the site.



12 Perennial tributary (JT-4) located on the southern, central, and northeastern portions of the site.





13 Seasonal tributary (JT-6) located on the central portion of the site.



14 Seasonal tributary (JT-7) located on the northeastern portion of the site.



Appendix II – County Species Lists from USFWS and SCDNR

South Carolina List of At-Risk, Candidate, Endangered, and Threatened Species - Chester County

CATEGORY	COMMON NAME/STATUS	SCIENTIFIC NAME	SURVEY WINDOW/ TIME PERIOD	COMMENTS
Amphibian	None Found			
Bird	Bald eagle (BGEPA)	<i>Haliaeetus leucocephalus</i>	October 1-May 15	Nesting season
	Red-cockaded woodpecker (E)	<i>Picoides borealis</i>	April 1-July 31	Nesting season
Crustacean	None Found			
Fish	Blueback herring* (ARS)	<i>Alosa aestivalis</i> *	Mid-January-mid May	Peak: March-April
Insect	Monarch butterfly (ARS)	<i>Danaus plexippus</i>	August-December	Overwinter population departs: March-April
Mammal	Tri-colored bat (ARS)	<i>Perimyotis subflavus</i>	Year round	Found in mines and caves in the winter
Mollusk	Carolina heelsplitter (E, CH)	<i>Lasmigona decorata</i>	March 1-September 30	Optimal survey window
Plant	Georgia aster (ARS*)	<i>Symphyotrichum georgianum</i>	Early October-mid November	
Reptile	None Found			

* Contact National Marine Fisheries Service (NMFS) for more information on this species

** The U.S. Fish and Wildlife Service (FWS) and NMFS share jurisdiction of this species

ARS Species that the FWS has been petitioned to list and for which a positive 90-day finding has been issued (listing may be warranted); information is provided only for conservation actions as no Federal protections currently exist.

ARS* Species that are either former Candidate Species or are emerging conservation priority species

BGEPA Federally protected under the Bald and Golden Eagle Protection Act

C FWS or NMFS has on file sufficient information on biological vulnerability and threat(s) to support proposals to list these species

CH Critical Habitat

E Federally Endangered

P or P - CH Proposed for listing or critical habitat in the Federal Register

S/A Federally protected due to similarity of appearance to a listed species

T Federally Threatened

These lists should be used only as a guideline, not as the final authority. The lists include known occurrences and areas where the species has a high possibility of occurring. Records are updated as deemed necessary and may differ from earlier lists.

For a list of State endangered, threatened, and species of concern, please visit <https://www.dnr.sc.gov/species/index.html>.



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
<http://www.fws.gov/charleston/>

In Reply Refer To:

January 29, 2019

Consultation Code: 04ES1000-2019-SLI-0222

Event Code: 04ES1000-2019-E-00418

Project Name: Chester Greenfile Site

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

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 Tracking Number 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
-

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

Project Summary

Consultation Code: 04ES1000-2019-SLI-0222

Event Code: 04ES1000-2019-E-00418

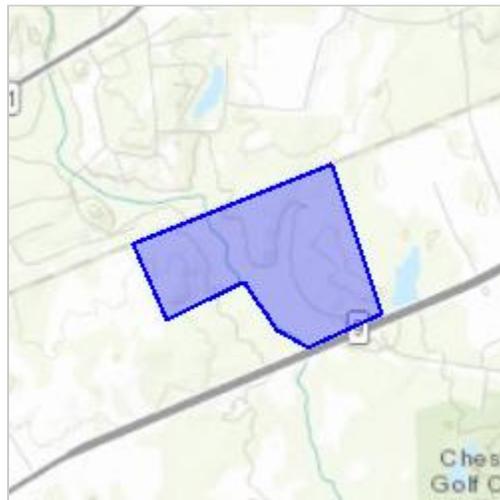
Project Name: Chester Greenfile Site

Project Type: LAND - CLEARING

Project Description: Due Diligence

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/34.72766389594382N81.15558549525758W>



Counties: Chester, SC

Endangered Species Act Species

There is a total of 2 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 Fisheries¹, 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.

Birds

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

Clams

NAME	STATUS
Carolina Heelsplitter <i>Lasmigona decorata</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3534	Endangered

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.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

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](#).

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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)

THERE ARE NO FWS MIGRATORY BIRDS OF CONCERN WITHIN THE VICINITY OF YOUR PROJECT AREA.

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](#) and/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 migratory birds potentially occurring 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 [E-bird Explore Data 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 to 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, migrating or present year-round in my project 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 refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). 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.

Rare, Threatened, and Endangered Species of South Carolina - by County

The lists below indicate what species have been reported to the Heritage Trust Program as occurring in each county. They are not a complete listing of what actually exists, as no complete survey of the state has ever been done.

Chester County

Animals

Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank
<i>Danaus plexippus</i>	Monarch Butterfly	ARS*: Risk, Priority	--	G4	SNR
<i>Haliaeetus leucocephalus</i>	Bald Eagle	--	ST: Threatened	G5	S2
<i>Lasmigona decorata</i>	Carolina Heelsplitter	LE: Endangered	SE: Endangered	G1	S1
<i>Perimyotis subflavus</i>	Tricolored Bat	ARS*: Risk, priority	--	G2G3	S1S2
<i>Pseudacris feriarum</i>	Upland Chorus Frog	--	--	G5	S5
<i>Villosa delumbis</i>	Eastern Creekshell	--	--	G4	S4

Plants

Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank
<i>Agrimonia pubescens</i>	Soft Groovebur	--	--	G5	S1
<i>Camassia scilloides</i>	Wild Hyacinth	--	--	G4G5	S2
<i>Dirca palustris</i>	Eastern Leatherwood	--	--	G4	S2
<i>Hymenocallis coronaria</i>	Shoals Spider-lily	--	--	G3?	S2
<i>Menispermum canadense</i>	Canada Moonseed	--	--	G5	S2S3
<i>Ophioglossum vulgatum</i>	Adder's-tongue	--	--	G5	S2
<i>Ranunculus fascicularis</i>	Early Buttercup	--	--	G5	S1
<i>Ratibida pinnata</i>	Gray-head Prairie Coneflower	--	--	G5	S1
<i>Scutellaria parvula</i>	Small Skullcap	--	--	G4	S2S3
<i>Symphyotrichum georgianum</i>	Georgia Aster	ARS*: Risk, priority	--	G3	SNR

For additional information about rare, threatened, and endangered species or questions about these lists, please contact [Anna Smith](#).

Environmental Review

- [Office of Environmental Programs](#)
- [Bald Eagle Nest Data](#)
- [Planning & Conservation](#)

**Appendix III – Mussel Survey, Performed by Alderman
Environmental Services, Inc.**



Alderman Environmental Services, Inc.

24 March 2019

PROJECT: S&ME Freshwater Mussel Surveys for Chester SC 9 Site

TARGET SPECIES: Carolina Heelsplitter (*Lasmigona decorata*)

Staff: **Joseph D. Alderman**
 John M. Alderman
 Logan Williams

STATION 190320.1jda

LOCATION: Upstream from SC 9 within Rocky Creek to 100 m upstream from Seaboard Coast Line Railroad tracks; Chester County, SC; **see associated map at end of report**

SURVEY DATE: 20 March 2019

SITE COMMENTS: Good survey conditions: water relatively low and slightly turbid; mostly poor quality Carolina Heelsplitter habitat

HABITAT

WATERBODY TYPE:	Stream
FLOW:	Run, riffle, slack
RELATIVE DEPTH:	Very shallow
DEPTH (%<2 FEET):	90
SUBSTRATE:	Clay, organics, silt, sand , pebble, gravel, cobble, boulder
COMPACTNESS:	Normal and unconsolidated
SAND/GRAVEL BARS:	Common
WOODY DEBRIS:	Average
BEAVER ACTIVITY:	Evidence (gnawed sticks); dams in stream
WINDTHROW:	Moderate
TEMPORARY POOLS:	Present

HABITAT (CONTINUED):

CHANNEL WIDTH:	10 m
BANK HEIGHT:	3 m
BANK STABILITY:	Some erosion/undercutting
BUFFER WIDTH:	Narrow right, moderate left
RIPARIAN VEGETATION:	Wooded, shrub-brush
LAND USE:	Natural, Timber, Pasture, Rural
PERCENT COVER:	90
VISIBILITY:	Slightly turbid
WATER LEVEL:	Normal
WEATHER:	Varied; cool to warm

TECHNIQUES AND SURVEY TIME:

TECHNIQUES:	Visual, tactile, bathyscopes
SURVEY TIME:	6 hours

DOCUMENTED MUSSEL TAXA:

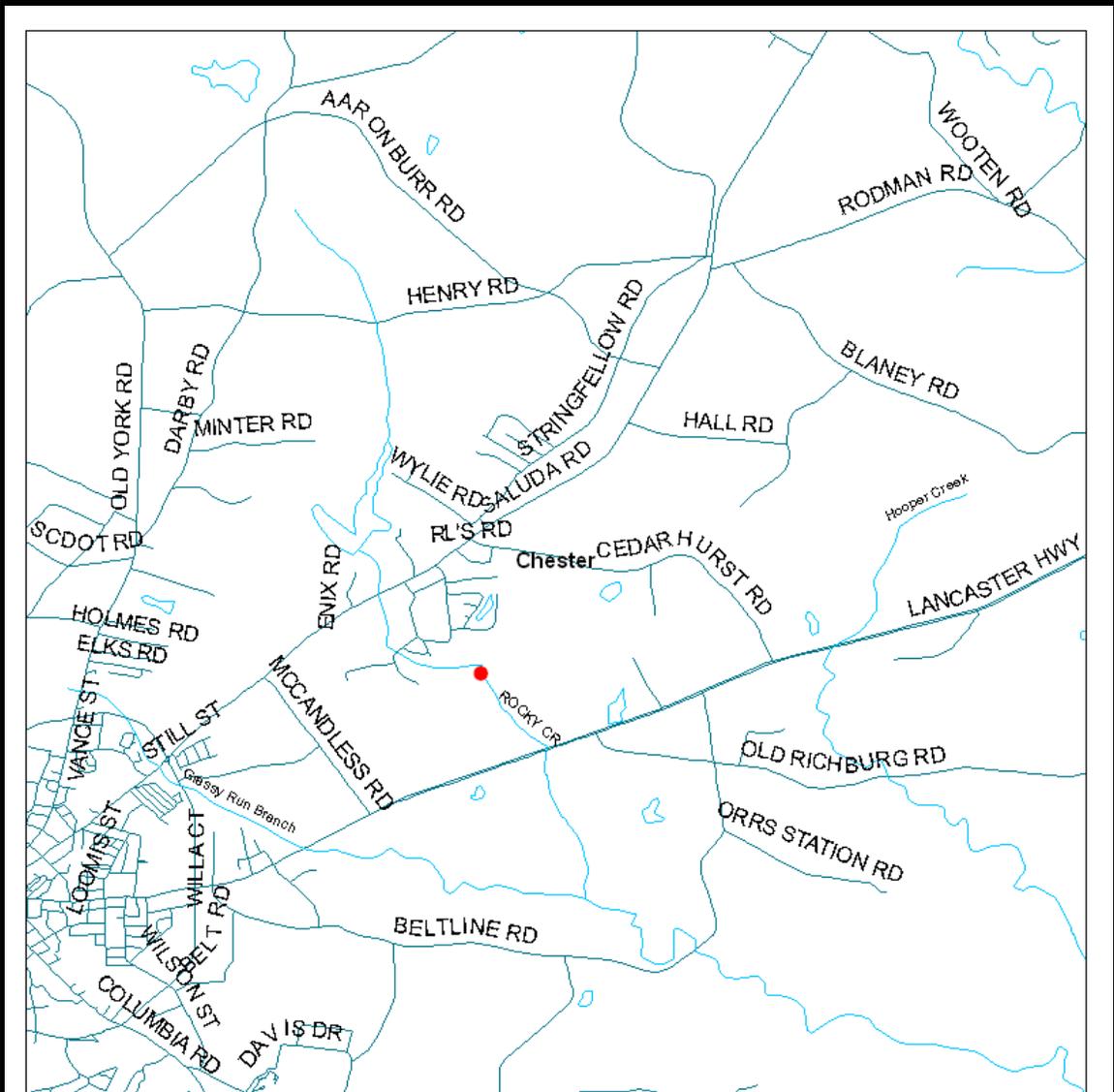
Elliptio complanata – 278 live

Elliptio icterina – 4 live

Villosa delumbis – 2 live, 3 shells

BIOLOGICAL CONCLUSION

The Carolina Heelsplitter occurs within the Rocky Creek Subbasin; however, because of the poor quality habitat present within the surveyed reach and the significant distance (~14 miles) between this survey reach and known Carolina Heelsplitter habitat in Hooper Creek, the Biological Conclusion is No Effect.



Legend

- Mussel Survey Stream

Figure 1

0 0.5 1 2 Miles

3/24/2019



**Appendix IV– USFWS Clearance Letter for Species & Habitat
Assessments**



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

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. 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 but 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. 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.

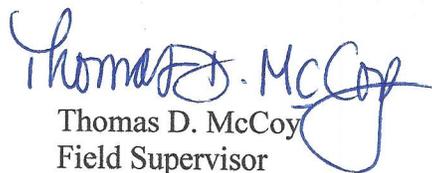
Northern Long-eared Bat Consideration

The Service issued a nationwide programmatic biological opinion (PBO) for the northern long-eared bat (*Myotis septentrionalis*, NLEB) on January 5, 2016. The PBO was issued pursuant to section 7(a)(2) of the ESA to address impacts that Federal actions may have on this species. In addition, the Service published a final 4(d) rule on January 14, 2016, which details special consultation provisions for Federal actions that may affect the NLEB. Briefly, the PBO and the 4(d) rule allow for "incidental" take of the NLEB throughout its range under certain conditions. Take is defined in section 3 of the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Further, incidental take is defined as take that results from, but is not the purpose of, carrying out an otherwise lawful activity. Under the PBO and 4(d) rule, all incidental take of the NLEB is exempted from the ESA's take prohibitions under certain conditions. However, incidental take is prohibited within one quarter mile from known hibernacula and winter roost, or within 150 feet from a known maternity roost tree during the months of June and July.

In consideration of known hibernacula, winter roosts, and maternity roost tree locations in South Carolina, this letter hereby offers blanket concurrence for a may affect, but is not likely to adversely affect determination for the NLEB if the proposed work occurs more than one quarter mile from known hibernacula, winter roosts, or is further than 150 feet from a known maternity roost trees. If an activity falls within one-quarter mile of hibernacula or winter roost or within 150 feet of a maternity roost tree additional consultation with the Service will be required. As a conservation measure for all projects it is recommended that all tree clearing activities be conducted during the NLEB inactive season of November 15th to March 31st of any given year.

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

Sincerely,


Thomas D. McCoy
Field Supervisor