Protected Species Assessment
Salem Sand-Henry Tract Mine
Johnsonville, Florence County, SC
S&ME Project No. 23610415

PREPARED FOR:

Blue Water Industries, LLC
200 West Forsyth Street, Suite 1200
Jacksonville, FL 32202

PREPARED BY:

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

November 7, 2023

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Blue Water Industries, LLC
200 West Forsyth Street, Suite 1200
Jacksonville, Florida 32202

Attention: Mr. Clift Hicks
hicks@bluewaterindustries.com

Protected Species Assessment
Salem Sand – Henry Tract
Johnsonville, Florence County, South Carolina
S&ME Project No. 23610415

Dear Mr. Hicks:

S&ME, Inc. (S&ME) is pleased to submit our Protected Species Assessment for the above-referenced site located in Florence County, South Carolina. This work was performed in general accordance with S&ME Proposal Number 23610415, dated September 29, 2023, and our Agreement for Services (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.

Chris Handley
Biologist
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Chris Daves, P.W.S.
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1.0 Project Background

This Protected Species Assessment has been conducted to assess the potential for the presence of federally and state-protected species on the site in preparation for development of a sand mine located in the Salem Community near Johnsonville, Florence County, South Carolina.

Blue Water Industries, LLC is proposing a sand mine on a 260-acre site. The proposed maximum depth of the mine is approximately 50 feet. The sand will be mined using a hydraulic dredge and piped to an on-site processing plant. The wash water from the plant will initially be directed to a tailings pond and eventually to the mining pit (Phase 1 Pit). The mine will be divided into five segments and reclamation will begin on each segment prior to beginning a new segment. The mine site will be prepared through timbering the mine area in approximately 35-acre blocks as mining advances. Stormwater from mine disturbed areas will be routed into the pit. Stormwater from the outside flanks of berms will be managed with brush barriers, diversion berms, or silt fencing to control sediment until the soil can be stabilized with vegetation. The reclamation plan indicates the proposed mine site will be reclaimed to a lake/pond and grassland.

Blue Water Industries, LLC has applied to the South Carolina Department of Health and Environmental Control (SCDHEC) for a National Pollution Discharge Elimination System (NPDES) General Permit for Discharges Associated with Nonmetal Mineral Mining Facilities (SCG730000) and has been assigned Permit Number I-002403.

As part of the application process, the South Carolina Department of Natural Resources (SCDNR) commented in their September 22, 2023 letter that a habitat assessment and a review of protected species was needed. The SCDNR provided a list of state-protected species under their purview as well as guidance for spotted turtle protection and protected bat species.

A wetland/stream delineation was conducted by the Brigman Company and the U.S. Army Corps of Engineers (USACE) verified the delineation via a Delineation Concurrence e-mail (SAC-2023-00414) dated April 17, 2023.

The site (33.8804°N; -79.5017°W) is located south of U.S. Highway 378/S.C. Highway 51 near Johnsonville, Florence County, South Carolina as shown on the **Exhibits** in **Appendix I**. Florence County Parcel Number 00418-02-006 represents the site.

2.0 Site and Habitat Descriptions

The site is located in southeastern Florence County within the Carolina Flatwoods/ Middle Atlantic Coastal Plain ecoregion of South Carolina. The site consists of multiple habitats and communities as listed below. The properties adjacent to the site consist of wooded land, forested wetlands, and rural residential parcels. Please refer to **Exhibit 3** in **Appendix I** and the site photographs in **Appendix II** for depictions of the predominant habitat types located on the site.

2.1 Agricultural Field

A fallow agricultural field was observed on the northwestern portion of the site (Photograph 1). The most recent crop appears to have been soybeans (*Glycine max*).

2.2 Scrub Pines

Scrub longleaf pine (*Pinus palustris*) habitat was observed primarily on the northern portion of the site as well other scattered locations (Photographs 2-3). The pines averaged between six to eight inches diameter-at-breast-height (DBH) and 15-25 feet in height. Understory species included black cherry (*Prunus serotina*), passion flower (*Passiflora incarnata*), blackberry (*Rubus* spp.), dogfennel (*Eupatorium capillifolium*), snake cotton (*Froelichia floridana*), horseweed (*Conyza canadensis*), false golden aster (*Heterotheca* spp.), rustweed (*Polypremum procumbens*), and reindeer lichen (*Cladonia* spp.).

2.3 Planted Pines

Planted longleaf and loblolly pines (*Pinus taeda*) were observed throughout the site (Photographs 4-7). The planted pine stands consisted of varying age classes and averaged between six to 10 inches DBH, 10 to 15 years in age, and 15-30 feet in height. Understory species included American beautyberry (*Callicarpa americana*), wax myrtle (*Morella cerifera*), southern red oak (*Quercus falcata*), water oak (*Q. nigra*), and sweetleaf (*Symplocos tinctoria*), muscadine (*Vitis rotundifolia*), yellow jessamine (*Gelsemium sempervirens*), bracken fern (*Pteridium aquilinum*), and blackberry.

2.4 Pine-Mixed Hardwood Woodland

Areas of pine-mixed hardwood woodland were observed adjacent to the wetland areas on the site (Photograph 8). Dominant canopy species observed included loblolly pine, sweetgum (*Liquidambar styraciflua*), black cherry (*Prunus serotina*), American holly (*Ilex opaca*), and water oak. The understory consisted of saplings and shrubs of the canopy dominants as well as American beautyberry, sweetleaf, and Chinese privet (*Ligustrum sinense*). Woody vine and ground cover species included muscadine, common greenbrier (*Smilax rotundifolia*), Japanese honeysuckle (*Lonicera japonica*), ebony spleenwort (*Asplenium platyneuron*), and bracken fern.

2.5 Wetlands

Mixed hardwood forested wetlands were observed throughout the site (Photographs 9-11). Dominant overstory species observed in the forested wetlands included red maple (*Acer rubrum*), tulip poplar (*Liriodendron tulipifera*), sweet gum, and American holly. The understory consisted of the canopy dominants, ironwood (*Carpinus caroliniana*), red bay (*Persea borbonia*), Chinese privet, and inkberry (*Ilex glabra*). Woody vine and groundcover species observed consisted of roundleaf greenbrier, laurel-leaf greenbrier (*S. laurifolia*), poison ivy (*Toxicodendron radicans*), netted chain fern (*Woodwardia areolata*), cinnamon fern (*Osmundastrum cinnamomeum*), royal fern (*Osmunda regalis*) and giant cane (*Arundinaria gigantea*).

Pine-dominated forested wetlands were observed on the eastern and southeastern portion of the site (Photograph 12). Similar vegetation to the pine-mixed hardwood forested wetlands was observed in the understory.

Floodplain-type wetlands were observed on the southern and eastern portions of the site (Photographs 13-14). Deep Creek borders the southeastern portion of the site and has been impounded in multiple locations by beaver activity. Dominant overstory species observed in the forested wetlands included bald cypress (*Taxodium distichum*) and swamp tupelo (*Nyssa biflora*). The understory consisted of the canopy dominants, green ash *(Fraxinus pennsylvanica*), and black willow (*Salix nigra*). Woody vine and groundcover species observed consisted of laurel-leaf greenbrier, woolgrass (*Scirpus cyperinus*), plumegrass (*Saccharum* spp.), sedge (*Carex* spp.), cattails (*Typha latifolia*), tearthumb (*Persicaria sagittata*), and giant cane.

2.6 Streams

Three streams stream features were observed on the western, southwestern, and eastern portions of the site (Photographs 15-16). The streams appeared to be perennial channels with steady flow. The streams were approximately four to five feet wide, three to six inches deep, with sandy bottoms. Deep Creek borders the southeastern portion of the site and has been impounded in multiple locations by beaver activity. Dominant riparian vegetation along the streams was similar to the vegetation observed within the forested wetlands.

3.0 Methodology

S&ME personnel reviewed the SCDNR and the U.S. Fish and Wildlife Service (USFWS) websites to determine those species that are currently listed as federally and state-protected (threatened or endangered) in Florence 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 Senior Scientist, Chris Daves, P.W.S., performed a field review on October 24, 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** and **Table 5-1** 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 III**. The SCDNR and USFWS websites identified the following federally listed protected species for Florence County:

Table 4-1 Federally Protected Flora and Fauna Summary

Species	Listing	Habitat
Bald Eagle *Haliaeetus leucocephalus*	BGEPA	Coastlines, rivers, and large lakes which provide adequate feeding grounds.
Red-Cockaded Woodpecker *Leuconotopicus borealis*	E	Open pine stands with minimum age of 60 years; nests in live pines with red-heart disease.
American Wood Stork *Mycteria americana*	T	Primarily feeds in fresh-water and brackish wetlands and nest in cypress or other wooded swamps.
Canby's Dropwort *Tiedemannia canbyi*	E	Wet pineland ponds, savannas, wet meadows, and around edges of open cypress ponds; prefers habitat with little or no canopy closure.
American Chaffseed *Schwalbea americana*	E	On margins of seasonally wet savannas and cypress ponds.
Atlantic Sturgeon *Acipenser oxyrinchus*	E	Shallow coastal waters and estuaries; spawns in freshwater areas.
Shortnose Sturgeon *Acipenser brevirostrum*	E	Brackish water of large rivers and estuaries; spawns in freshwater areas.
Northern Long-eared Bat *Myotis septentrionalis*	E	Caves and abandoned mines (winter hibernacula). In summer, underneath bark or in cavities or crevices of trees with loose or exfoliating bark, with diameter at breast height (DBH) greater than three inches.
Tricolored Bat *Perimyotis subflavus*	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 *T = Threatened* *BGEPA = Bald and Golden Eagle Protection Act*
PE = Proposed Endangered

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 their 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

exceptionally 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. No nests or individuals were observed during field surveys. Accordingly, future development of the site is not expected to impact or disturb 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 intricately 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.

Planted loblolly and longleaf pines were observed throughout the site; however, these pine stands did not contain suitable nesting or foraging habitat for the red-cockaded woodpecker. The pine stands lacked the proper age to be considered suitable nesting habitat for the red-cockaded woodpecker. The understory in a majority of the pine stands was too thick to support nesting or 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 or start cavities on the site. Accordingly, future development of the site is not expected to impact or disturb this species.

4.3 American Wood Stork

BIOLOGICAL DETERMINATION: MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT

The American wood stork is a large wading bird that is approximately 50 inches tall and has a wingspan of approximately five feet. The plumage of the American wood stork is primarily white, with black primary and secondary wing feathers and a short, black tail. The head and neck are dark gray and primarily unfeathered. The American wood stork displays a prominent black bill that is slightly decurved and thick at the base. The wood stork feeds primarily on small fish, including minnows and shellfish. Nests are constructed as high as 100 feet in the tops of trees.

The American wood stork requires shallow wetland areas with a depth of six to 10 inches. The bird's primary habitat is brackish and freshwater wetland areas with associated shallow water zones. The American wood stork favors depressional areas within larger wetland systems that are subject to falling water levels due to the resultant concentration of fish species. American wood storks are highly colonial and prefer forested wetland areas (swamps) or islands surrounded by open water.

The canopies of the majority of the on-site wetlands were closed and dense, and lacked adequate amounts of surface water habitat to support the American wood stork. However, the more open-canopy wetlands associated with the beaver-impounded wetlands along Deep Creek could provide potential foraging habitat for American wood stork. These wetlands will be preserved and buffered (50 feet) as part of the overall site plan, and mining activities will not impact these wetland areas. No active or abandoned nests were observed during the field review. Accordingly, future development of the site is not expected to impact this species.

4.4 Canby's Dropwort

BIOLOGICAL DETERMINATION: NO EFFECT

Canby's dropwort is a perennial herb growing to a height of two to four feet. The stems are hollow and erect with slender leaves. The species is aromatic, smelling like dill. The flowers of Canby's dropwort have white petals, pale green sepals, and are five-parted. The leaves are round in cross-section, thin, and divided by partitions. The flowering period is from August through October. The primary habitats of Canby's dropwort are wet pineland ponds and savannas, wet meadows, and around the edges of open cypress ponds. The species prefers habitat with little or no canopy closure. Canby's dropwort prefers soils with a high-water table.

The site does not contain suitable habitat for Canby's dropwort. There are no true wet pineland ponds, savannas, wet meadows, or open cypress ponds on the site. A majority of the canopies of the on-site wetlands were closed. The water levels were too deep in the wetland areas around Deep Creek that have been impounded to support this species. Accordingly, the future development of the site is not expected to impact this species.

4.5 American Chaffseed

BIOLOGICAL DETERMINATION: NO EFFECT

American chaffseed is an erect, perennial herb that grows to a height of 12 to 24 inches tall. Chaffseed has simple, alternate leaves that are lance-shaped to elliptic. The leaves are three to five centimeters long and approximately one centimeter wide, ascending and reduced upwards. The bracts and leaves are purplish-tinged. The corollas range from creamy yellow to purple-tinted green with rose-tinted green. The fruit resembles a capsule that is divided into four sections that shed numerous, winged seeds. The flowering season occurs in May through June, with the fruiting period occurring June through July. American chaffseed occurs in sandy (sandy peat, sandy loam), acidic, seasonally-moist to dry soils. It is generally found in early successional habitats described as open, moist pine flatwoods, fire-maintained savannas, ecotonal areas between peaty wetlands and xeric (dry) sandy soils, bog borders, and other open grass-sedge systems. American chaffseed is dependent on factors such as fire and fluctuating water tables to maintain the crucial open to partly-open conditions that it requires. American chaffseed occurs in species-rich plant communities where grasses, sedges, and savanna dicots are numerous.

The site does not contain suitable habitat for American chaffseed. There are no open, moist pine flatwoods, fire-maintained savannas, ecotonal areas, bog borders, or other open grass-sedge systems within the site. Accordingly, future development of the site is not expected to impact this species.

4.6 Atlantic Sturgeon

BIOLOGICAL DETERMINATION: NO EFFECT

The Atlantic sturgeon is a cartilaginous, anadromous fish growing to a length of up to 14 feet. Individuals are bluish-black or olive brown with a white belly and have five rows of plates along the body. Four barbels are located in front of the mouth and are used to locate food along the bottom. The Atlantic sturgeon can be differentiated from the shortnose sturgeon by its larger size, smaller mouth, narrower snout, and their plates. This species migrates from salt water to freshwater to spawn from February to March. The Atlantic sturgeon's habitat consists of nearshore coastal waters along the Atlantic coast of North America.

The site does not contain suitable habitat for Atlantic sturgeon. There are no rivers or large streams within the site. Accordingly, future development of the site is not expected to impact this species.

4.7 Shortnose Sturgeon

BIOLOGICAL DETERMINATION: NO EFFECT

The shortnose sturgeon is a bony, anadromous fish growing to a length of up to four feet. Shortnose sturgeon exhibit five rows of plates along the body, with olive to black coloring along the back, and yellow to white coloring on the belly. Four barbels are located in front of the mouth and are used to locate food along the river bottom. The shortnose sturgeon migrates from salt water to freshwater to spawn from April to May. The shortnose sturgeon's habitat consists of tidal river systems along the Atlantic coast of North America. This species typically occupies the channels and deeper holes within the river, while feeding in shallow areas at night.

The site does not contain suitable habitat for shortnose sturgeon. There are no rivers or large streams within the site. Accordingly, future development of the site is not expected to impact this species.

4.8 Northern Long-eared Bat

BIOLOGICAL DETERMINATION: MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT

The northern long-eared bat is a medium-sized bat approximately three to 3.7 inches, with a wingspan of nine to 10 inches. Fur color ranges from medium to dark brown on the back and tawny to pale brown on the underside. It is distinguished by its long ears in relation to other bats in the genus *Myotis,* which means mouse-eared. Northern long-eared bats use caves and abandoned mines as winter hibernacula. In summer, the bat will roost in small colonies or alone underneath bark or in cavities or crevices of both live trees and dead trees. The USFWS considers any live or dead tree with loose or exfoliating bark with a DBH greater than three inches to be potential roosting habitat.

The SCDNR Natural Heritage Program Response Letter (November 3, 2023) did not identify known hibernation sites and/or roost trees within one mile of the project area. Potential suitable summer roosting habitat for the northern long-eared bat exists within the pine-mixed hardwoods, forested wetlands, and some of the older planted pines as trees within these habitats exhibited loose and peeling bark capable of providing roosting habitat. Snags were also observed in the wetlands. The site does not contain suitable winter hibernacula habitat as there were no caves or abandoned mines.

A majority of the potential habitat is within the forested wetlands and immediately adjacent buffer area. These areas are not proposed to be impacted as part of the overall site plan. As a conservation measure, SCDNR and USFWS recommended that tree clearing activities be conducted during the inactive season (November 1 through March 15) for northern long-eared bat. Provided tree clearing can be conducted during these times, proposed development of the site may affect, but is not likely to adversely affect this species.

4.9 Tricolored Bat

BIOLOGICAL DETERMINATION: NOT APPLICABLE TO PROPOSED SPECIES

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 hibernacula.

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 Program Response letter did not identify known hibernation sites and/or roost trees within one mile of the project area. Potential suitable summer roosting habitat for the tricolored bat exists within the pine-mixed hardwoods, forested wetlands, and some of the older planted pines as trees within these habitats exhibited loose and peeling bark capable of providing roosting habitat. Snags were also observed in the wetlands. The site does not contain suitable winter hibernacula habitat as there were no caves or abandoned mines.

A majority of the potential habitat is within the forested wetlands and immediately adjacent buffer area. These areas are not proposed to be impacted as part of the overall site plan. As a conservation measure, SCDNR and USFWS recommended that tree clearing activities be conducted during the inactive season (November 1 through March 15) for tricolored bat.

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 November-December 2023.

5.0 State-Protected Species

Descriptions of the species and their respective state status are identified in **Table 5-1** and in **Appendix II**. The SCDNR website identified the following state-listed protected species for Florence County:

Table 5-1 State-Protected Flora and Fauna Summary

Species	Listing	Habitat	Habitat Observed
Broadtail Madtom *Noturus* sp.	ST	Middle of narrow and deep rivers; sand and gravel substrates with woody debris.	No
Carolina Gopher Frog *Lithobates capito*	SE	Fire-maintained, longleaf pine-wire grass ecosystems. Hides in stump holes, root tunnels, and mammal and crayfish burrows. Nearly all breeding sites are upland, ephemeral, isolated ponds/wetlands in longleaf pine savannas devoid of predators. Wetlands typically have open canopy above and abundant grasses and sedges.	No
Swallow-tailed Kite *Elanoides forficatus*	SE	Open savannahs for foraging; mature trees (loblolly pine, bald cypress, water tupelo, sweetgum, and willow oak in South Carolina per SCDNR) for nesting near swamps and marshes.	**Yes**
Spotted Turtle *Clemmys guttata*	ST	Shallow aquatic habitats, including unpolluted bogs, pond edges, ditches, marshes, fens, vernal pools, Carolina Bays, red maple/cypress swamps, and slow-moving streams often with abundant vegetation.	**Yes**

SE = State Endangered *ST = State Threatened*

Swallow-Tailed Kite

Swallow-tailed kite has a strong preference for nesting in loblolly pines (and other hardwoods, see above) within or on the edges of forested wetland. The mature trees on the site are within the wetland areas or in the immediately adjacent pine-mixed hardwood woodland. These wetlands will be preserved and buffered (50 feet) as part of the overall site plan, and mining activities will not impact these areas.

Spotted Turtle

Potential habitat for spotted turtle was observed on the site and included shallow aquatic wetland habitats with abundant vegetation and perennial streams. In their letter, SCDNR recommended the following to minimize potential impacts to the spotted turtle:

- Avoid construction in areas within or adjacent to aquatic resources from January 15th through May 31st.
- Prior to any construction activity, install silt fencing from November 15th through January 15th adjacent to all aquatic resources onsite. Silt fencing should include 45-degree arms to direct spotted turtles to the uplands adjacent to the waterbody and away from the construction site. The 45-degree arms should be placed at a minimum of 100 feet from the waterbody and no more than 300 feet from the waterbody. Additionally, silt fence arms should extend at least 50 feet and extend in each direction so that the ends of

each 45-degree angle to the fence meet to form a triangle. Silt fencing should remain in place throughout the duration of the proposed construction activities.

- Prior to construction, monitor the silt fencing to ensure it is effectively working properly on a monthly basis. This should effectively exclude the species from the project area prior to construction activities. Once construction activities begin, the silt fence should be monitored weekly for the integrity of the fencing and the presence of spotted turtles or other herpetofauna or small wildlife species.
- If spotted turtles are encountered, the SCDNR state herpetologist should be notified immediately.

Blue Water Industries, LLC is prepared to adhere to these recommendations pending the timing of SCDHEC approval of the mining permit.

6.0 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.

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 over 10 years of experience in environmental consulting and GIS mapping and is proficient in conducting wetland delineations and habitat assessments, including protected species surveys.

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 November 3, 2023.
- SCDNR. Letter Response to Mining Permit Number I-0024-3, dated September 22, 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) – Project Code 2024-0009084, dated October 25, 2023: https://ecos.fws.gov/ipac/.
- USFWS. South Carolina Ecological Services Field Office. https://www.fws.gov/southeast/charleston/project-planning/.

8.0 Summary and Conclusions

8.1 Federal Species

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

Table 8-1 Federal Species Conclusions Table

Species/ Resource Name	Conclusion	ESA Section 7/ Eagle Act Determination	Notes/Documentation
Bald Eagle	No suitable habitat present	No Eagle Act Permit Required	Habitat assessment indicated no suitable habitat present.
Red-Cockaded Woodpecker	No suitable habitat present	No effect	Habitat assessment indicated no suitable habitat present.
American Wood Stork	Suitable foraging habitat present	May affect, not likely to adversely affect	Suitable foraging habitat within open-canopy wetlands associated with beaver-impounded wetlands along Deep Creek. These wetlands will not be impacted as part of mining activities. No active or abandoned nests observed.
Canby's Dropwort	No suitable habitat present	No effect	Habitat assessment indicated no suitable habitat present.
American Chaffseed	No suitable habitat present	No effect	Habitat assessment indicated no suitable habitat present.
Atlantic Sturgeon	No suitable habitat present	No effect	Habitat assessment indicated no suitable habitat present.
Shortnose Sturgeon	No suitable habitat present	No effect	Habitat assessment indicated no suitable habitat present.
Northern Long-eared Bat	Suitable roosting habitat present	May affect, not likely to adversely affect	Suitable habitat within certain planted pines, pine-mixed hardwoods, and forested wetlands. Winter clearing recommended in inactive season (November 1 through March 15).
Tricolored Bat (proposed endangered)	Suitable roosting habitat present	Not applicable for proposed species	Suitable habitat within certain planted pines, pine-mixed hardwoods, and forested wetlands. Winter clearing recommended in inactive season (November 1 through March 15). Final listing decision expected as soon as November/December 2023.

8.2 State Species

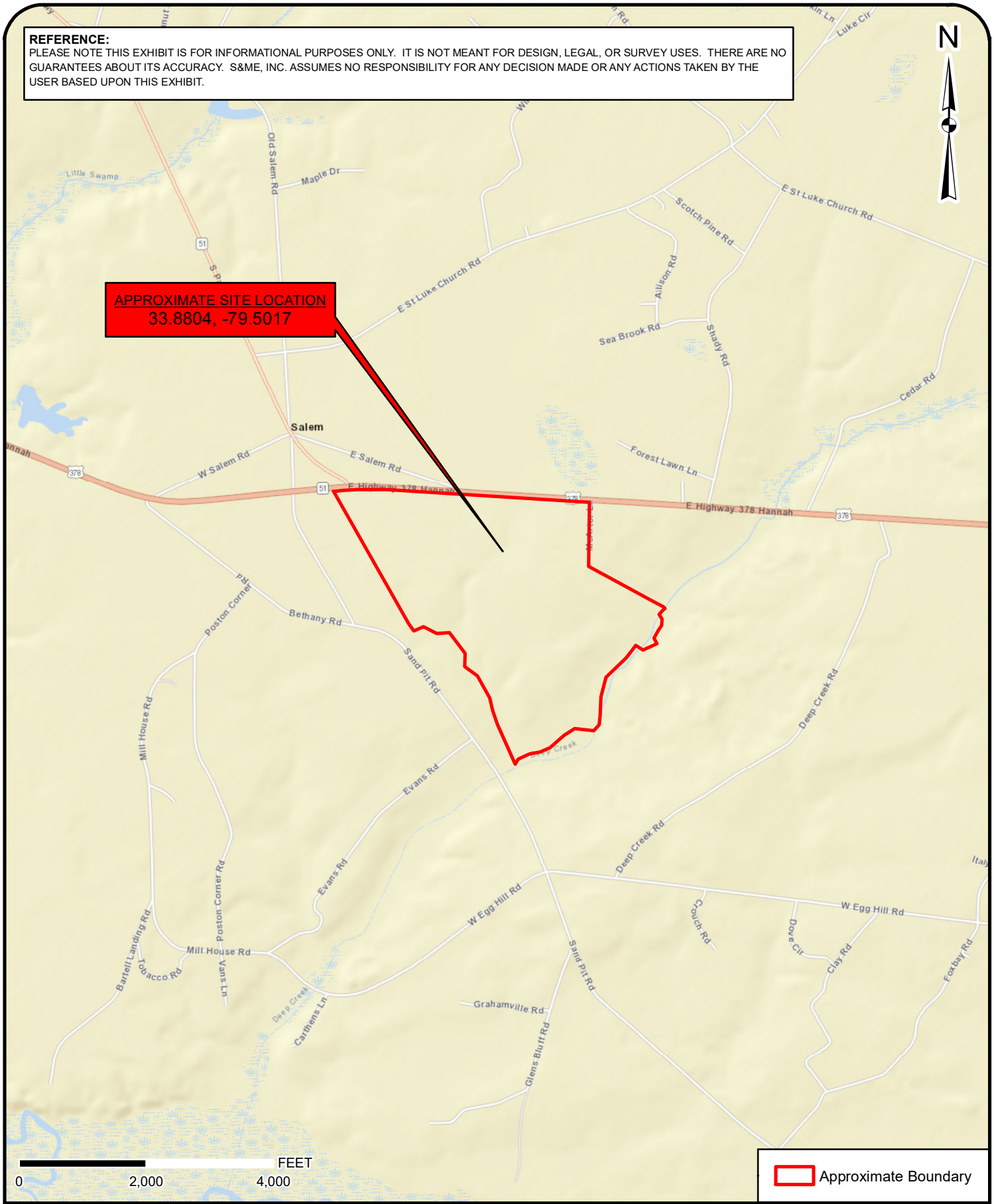
Based on the literature review, habitat assessment, and pedestrian field review of the site, the following conclusions are given regarding state-listed species in Florence County:

Table 8-2 State Species Conclusions Table

Species/ Resource Name	Conclusion	Notes/Documentation
Broadtail Madtom	No suitable habitat present	Habitat assessment indicated no suitable habitat present.
Carolina Gopher Frog	No suitable habitat present	Habitat assessment indicated no suitable habitat present.
Swallow-tailed Kite	Suitable habitat present	Suitable nesting habitat within mature trees in wetland areas and immediately adjacent uplands. These wetlands and buffer areas will not be impacted as part of mining activities.
Spotted Turtle	Suitable habitat present	Suitable habitat within wetland areas. These wetlands will not be impacted as part of mining activities. Mitigation activities and monitoring during construction to be implemented to minimize potential impacts to wetland areas.

Appendices

Appendix I – Exhibits



Vicinity Exhibit

Salem Sand-Henry Tract Mine +/- 260 Acres

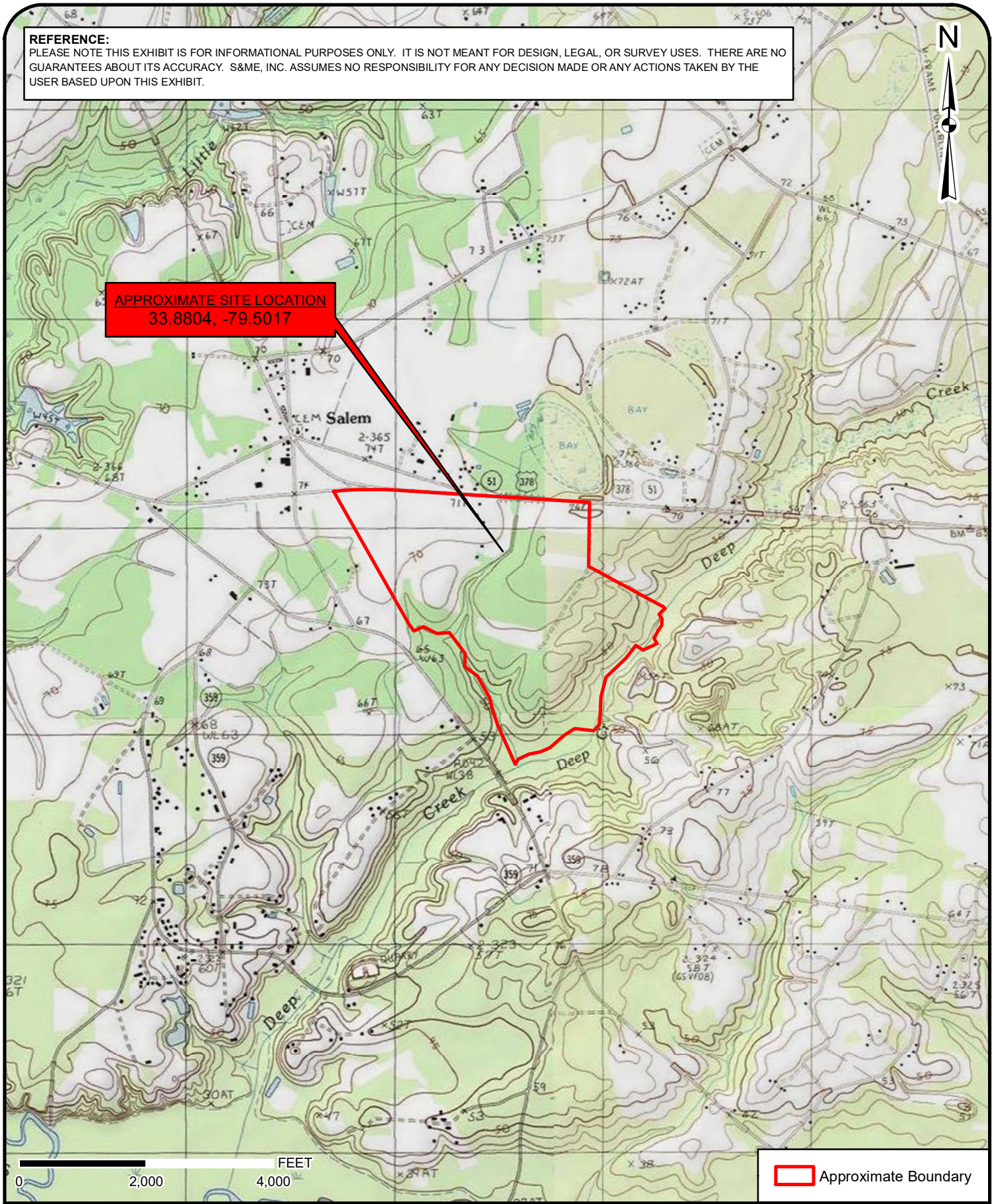
Johnsonville, Florence County, South Carolina

Source: World Street Map

SCALE:	EXHIBIT NO.
1 " = 2,000 '	1
DATE: 11-3-23	
PROJECT NUMBER 23610415	

Drawing Path: T:\Columbia-1610\Projects\2023\23610415_Blue Water Industries, LLC_Salem Sand - Henry Tract Mine_Johnsonville, SC\ENV\GIS\mxds\Henry Tract Mine Vicinity Exhibit.mxd plotted by chandley 11-03-2023

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.



Topographic Exhibit

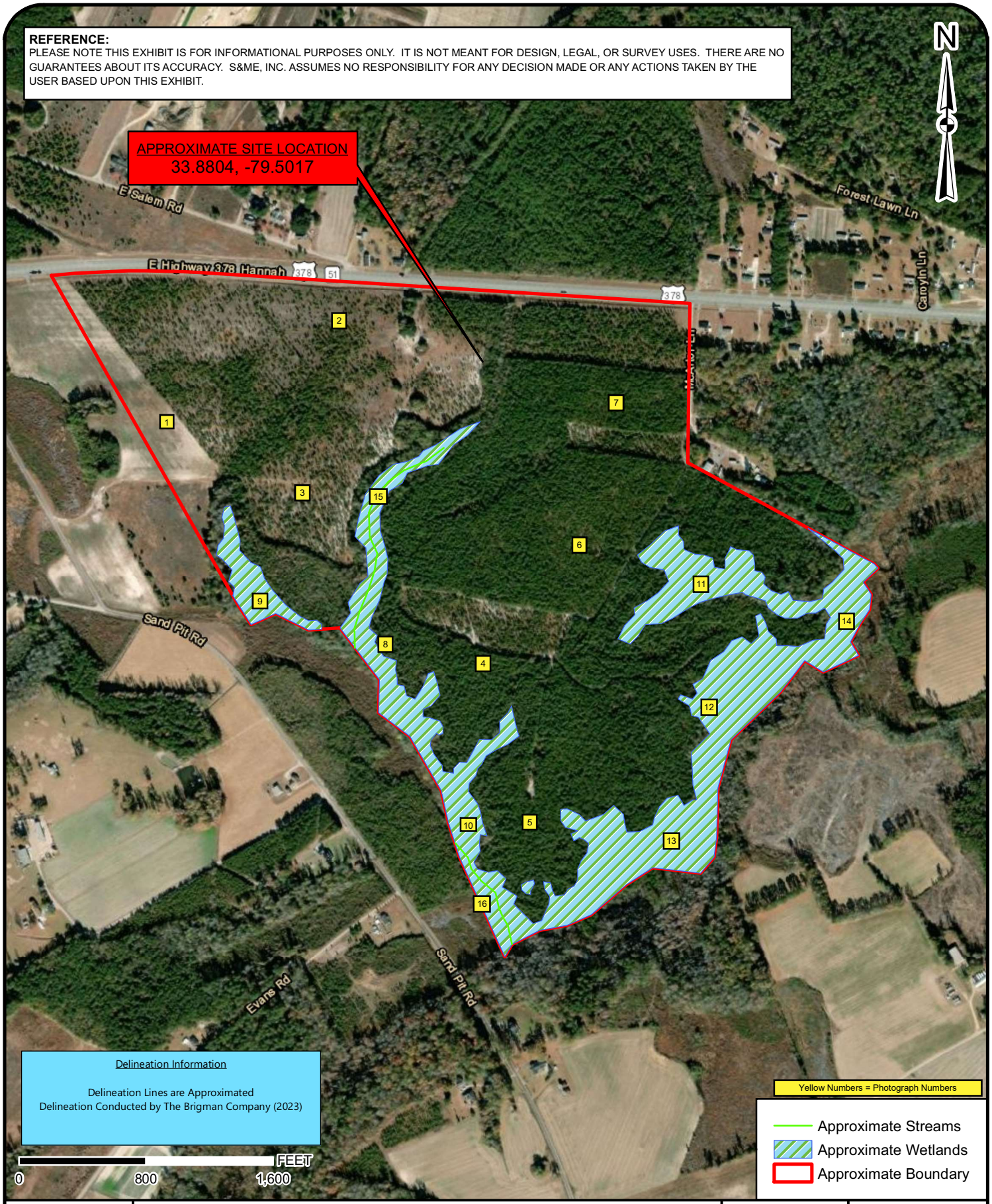
Salem Sand-Henry Tract Mine +/- 260 Acres

Johnsonville, Florence County, South Carolina

Source: USGS 7.5-Minute Topo Quads Gresham, Johnsonville, Pamplico South, and Prospect Crossroads, SC 1990

SCALE:	EXHIBIT NO.
1 " = 2,000 '	2
DATE: 11-3-23	
PROJECT NUMBER 23610415	

Drawing Path: T:\Columbia-1610\Projects\2023\23610415_Blue Water Industries, LLC_Salem Sand - Henry Tract Mine_Johnsonville, SC\ENV\GIS\mxds\Henry Tract Mine Topo Exhibit.mxd plotted by chandley 11-03-2023



Aerial Exhibit

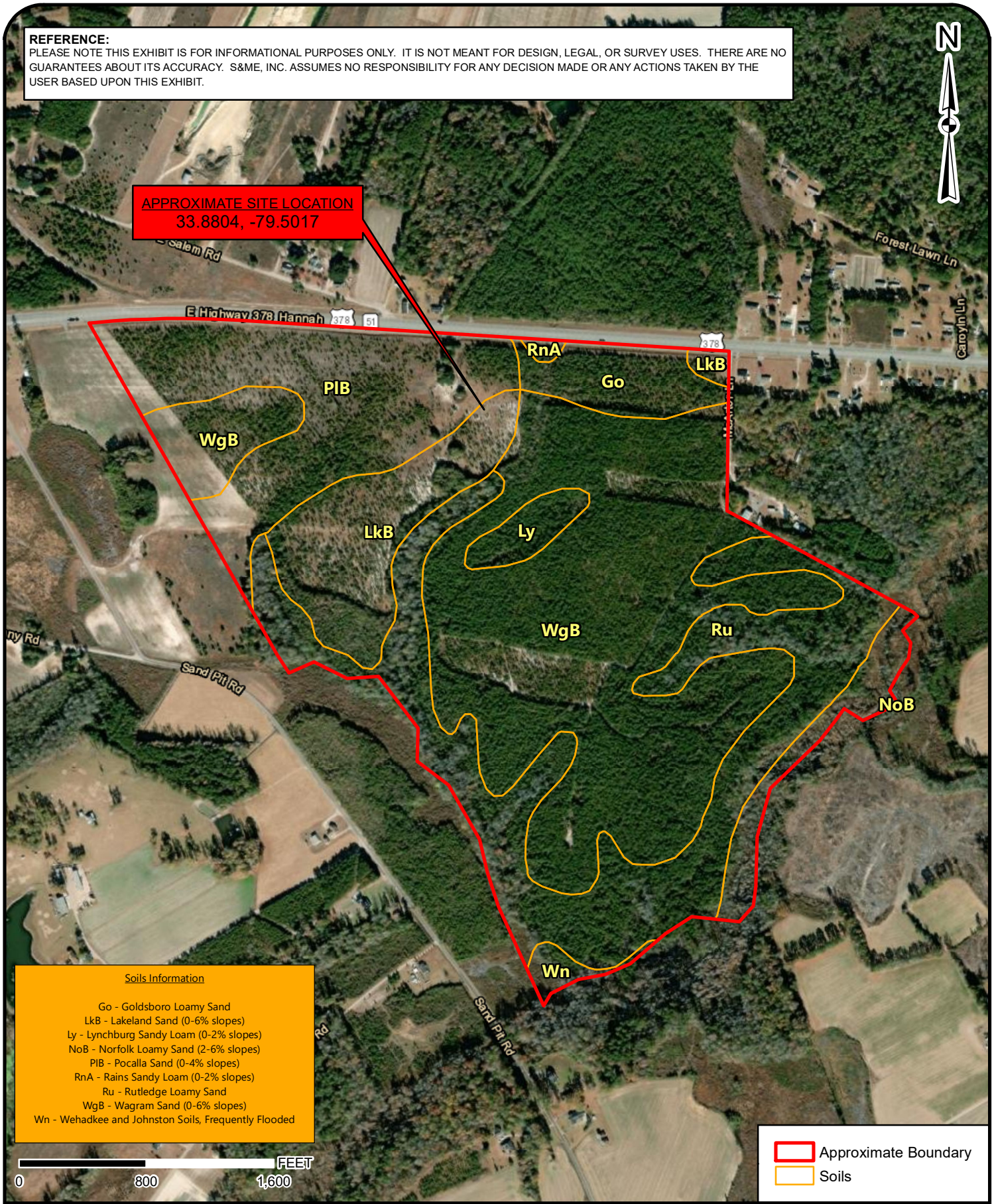
Salem Sand-Henry Tract Mine +/- 260 Acres

Johnsonville, Florence County, South Carolina

Source: World Imagery 2021 & NRCS

SCALE:	EXHIBIT NO.
1 " = 800 '	3
DATE: 11-3-23	
PROJECT NUMBER 23610415	

Drawing Path: T:\Columbia-1610\Projects\2023\23610415_Blue Water Industries, LLC_Salem Sand - Henry Tract Mine_Johnsonville, SC\ENV\GIS\mxds\Henry Tract Mine Aerial Exhibit.mxd plotted by chandley 11-03-2023



Soils Exhibit

Salem Sand-Henry Tract Mine +/- 260 Acres

Johnsonville, Florence County, South Carolina

Source: World Imagery 2021 & NRCS

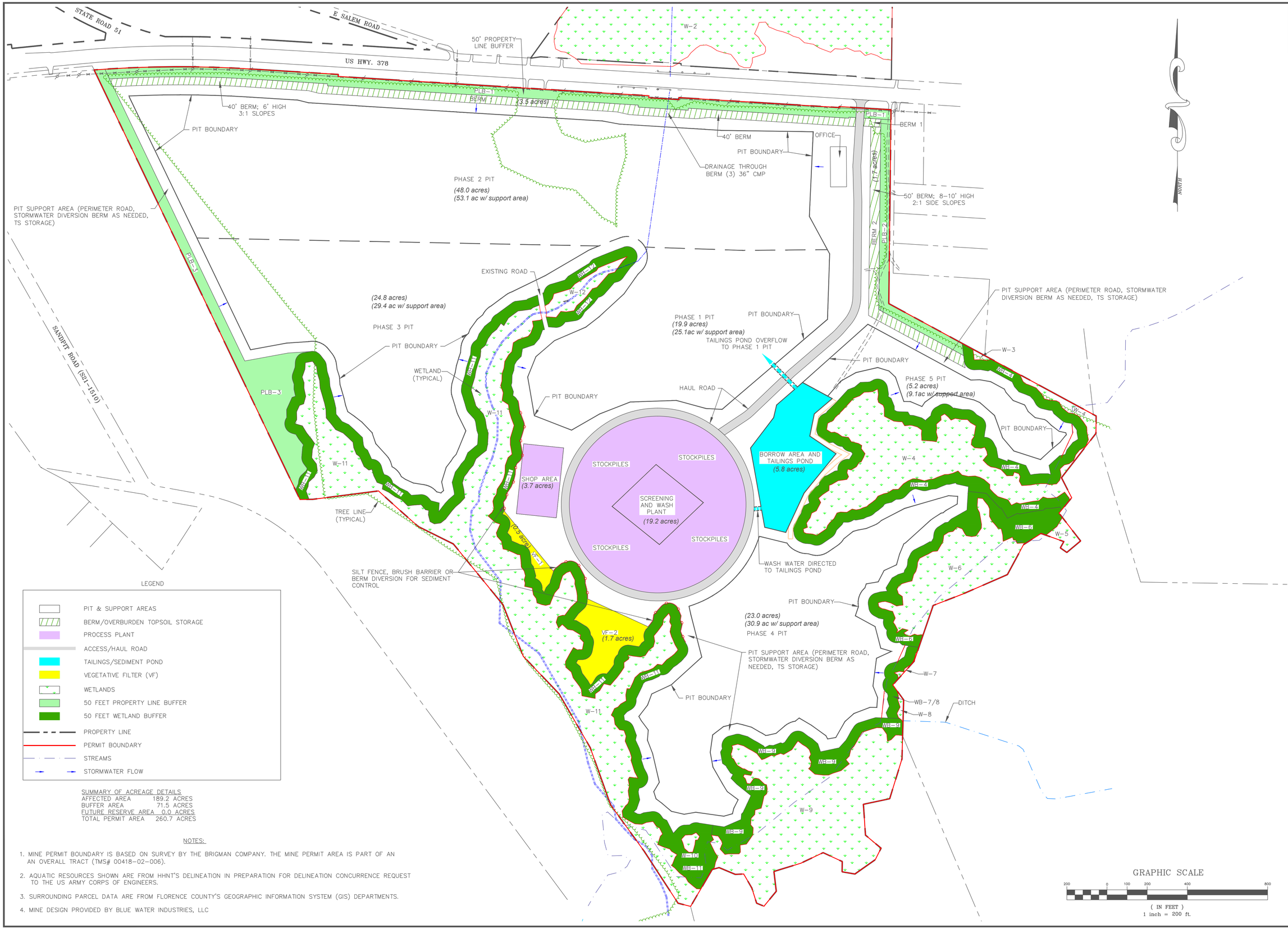
SCALE: 1 " = 800 '

DATE: 11-3-23

PROJECT NUMBER 23610415

EXHIBIT NO. 4

Drawing Path: T:\Columbia-1610\Projects\2023\23610415_Blue Water Industries, LLC_Salem Sand - Henry Tract Mine_Johnsonville, SC\ENV\GIS\mxds\Henry Tract Mine Soils Exhibit.mxd plotted by chandley 11-03-2023



SUMMARY OF ACREAGE DETAILS

AFFECTED AREA	189.2 ACRES
BUFFER AREA	71.5 ACRES
FUTURE RESERVE AREA	0.0 ACRES
TOTAL PERMIT AREA	260.7 ACRES

NOTES:

1. MINE PERMIT BOUNDARY IS BASED ON SURVEY BY THE BRIGMAN COMPANY. THE MINE PERMIT AREA IS PART OF AN AN OVERALL TRACT (TMS# 00418-02-006).
2. AQUATIC RESOURCES SHOWN ARE FROM HHNT'S DELINEATION IN PREPARATION FOR DELINEATION CONCURRENCE REQUEST TO THE US ARMY CORPS OF ENGINEERS.
3. SURROUNDING PARCEL DATA ARE FROM FLORENCE COUNTY'S GEOGRAPHIC INFORMATION SYSTEM (GIS) DEPARTMENTS.
4. MINE DESIGN PROVIDED BY BLUE WATER INDUSTRIES, LLC

REVISIONS

Description	Date	By

Kennedy Consulting Services, LLC
Craig Kennedy, P.G.
KCS
Office: 403 Seaside court Lexington, SC 29072
Cell 803.960.2562
Mail: P.O. Box 364 Irmo, SC 29063
craigkennedy.KCS@gmail.com

Salem Sand-Henry Tract Mine
Mine Map

Prepared for
Blue Water Industries, LLC
Florence County - South Carolina

Project No.:	KCS 22-174
Date:	07-27-23
Approved by:	RCK
Drawn by:	B.C.
Scale:	1"=200'

Sheet No. 1 of 2

Appendix II – Site Photographs

1	Agricultural field (soybeans) on northwestern portion of site.

2	Scrub pines (longleaf) on northeastern portion of site.

3	Scrub pines (longleaf) on western portion of site.

4	Planted loblolly pines on southeastern portion of site.

	Site Photographs **Salem Sand – Henry Tract Site** **Johnsonville, Florence County, South Carolina**	S&ME Project No. 23610415
		Taken by: CD / Date: October 24, 2023

5 Planted longleaf pine stand on southern portion of site.

6 Planted longleaf pine stand on central portion of site.

7 Planted longleaf pine stand on northeast portion of site.

8 Typical pine-mixed hardwood woodland adjacent to wetland areas.

	Site Photographs **Salem Sand – Henry Tract Site** **Johnsonville, Florence County, South Carolina**	S&ME Project No. 23610415	
		Taken by: CD	Date: October 24, 2023

9	Forested wetland on western portion of site.

10	Forested wetland on southern portion of site.

11	Forested wetland on eastern portion of site.

12	Pine-dominated wetland on southeastern portion of site.

	Site Photographs **Salem Sand – Henry Tract Site** **Johnsonville, Florence County, South Carolina**	S&ME Project No. 23610415	
		Taken by: CD	Date: October 24, 2023

13	Floodplain, impounded wetland from beaver activity along Deep Creek. Southeastern portion of site.

14	Floodplain/impounded wetland from beaver activity along Deep Creek. Eastern portion of site.

Appendix III – 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: 2024-0009084
Project Name: Henry Tract Mine

October 25, 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 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 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:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

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/program/migratory-bird-permit/what-we-do.

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 recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

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/partner/council-conservation-migratory-birds.

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
- Bald & Golden Eagles
- 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".

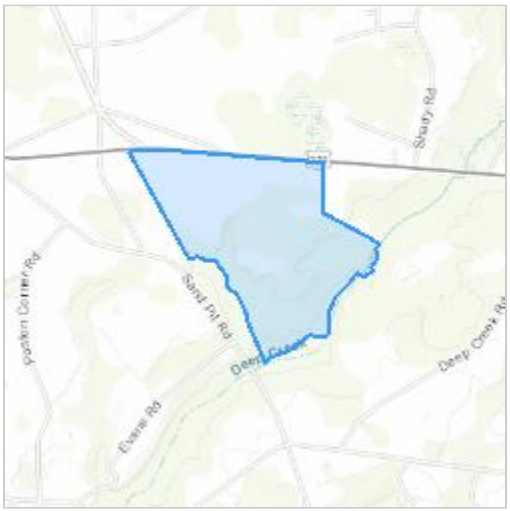
This species list is provided by:

South Carolina Ecological Services
176 Croghan Spur Road, Suite 200
Charleston, SC 29407-7558
(843) 727-4707

PROJECT SUMMARY

Project Code: 2024-0009084
Project Name: Henry Tract Mine
Project Type: Commercial Development
Project Description: Johnsonville, Florence County, South Carolina.
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.8788365,-79.49992805789844,14z



Counties: Florence County, South Carolina

ENDANGERED SPECIES ACT SPECIES

There is a total of 6 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[1], 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
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

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

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

FLOWERING PLANTS

NAME	STATUS
American Chaffseed *Schwalbea americana* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1286	Endangered
Canby's Dropwort *Oxypolis canbyi* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7738	Endangered

CRITICAL HABITATS

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

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

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.

BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

THERE ARE NO BALD AND GOLDEN EAGLES WITHIN THE VICINITY OF YOUR PROJECT AREA.

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] 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)

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
American Kestrel *Falco sparverius paulus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9587	Breeds Apr 1 to Aug 31
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9439	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9398	Breeds May 10 to Sep 10
Swallow-tailed Kite *Elanoides forficatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8938	Breeds Mar 10 to Jun 30
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9431	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 the supplemental

information and specifically the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

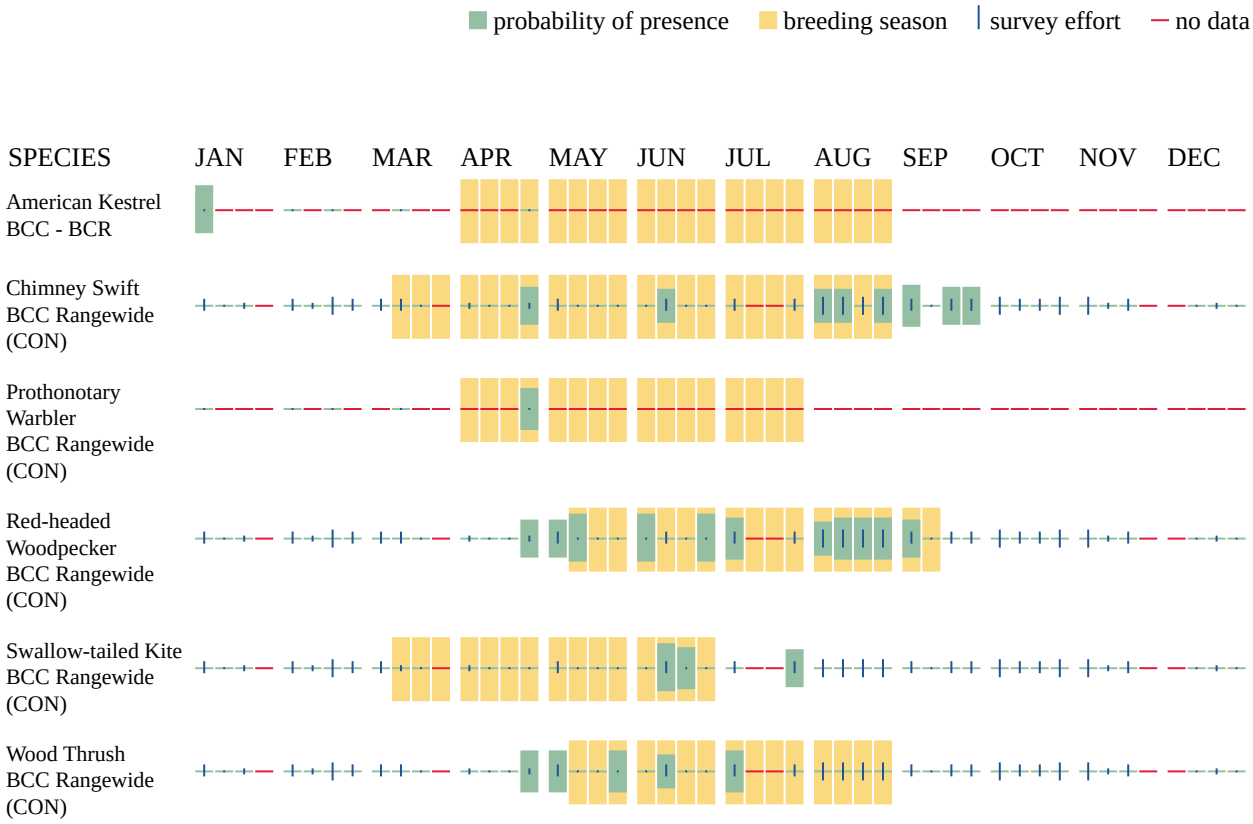
Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management

- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

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.

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1/4B
- PFO1B
- PFO1C

RIVERINE

- R5UBFx
- R4SBC

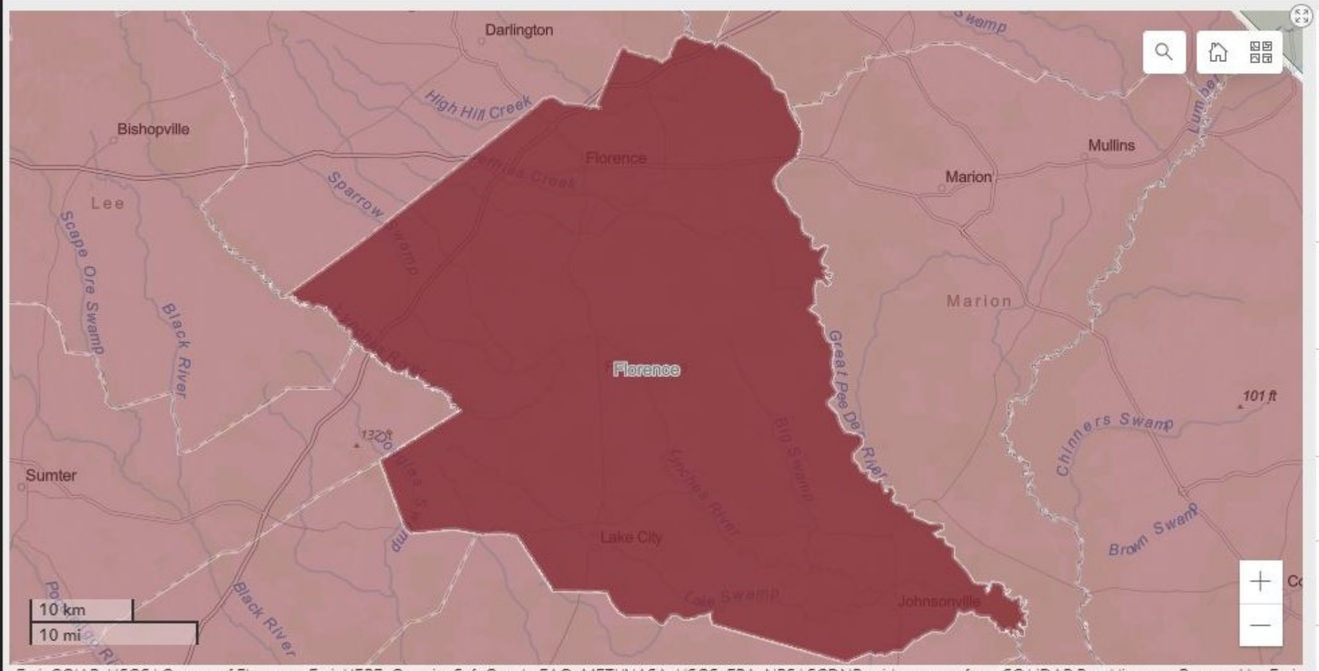
IPAC USER CONTACT INFORMATION

Agency: S&ME
Name: Will Trotter
Address: 134 Suber Road
City: Columbia
State: SC
Zip: 29210
Email jtrotter@smeinc.com
Phone: 8035619024

Tracked Species by County

Select a county to the right to identify species found within that county. Data updated as of 4/18/2023

Select County: Florence



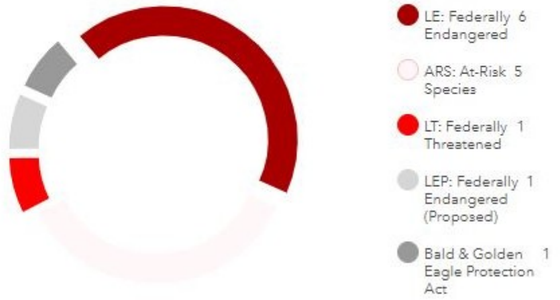
Species Name	G-Rank / S-Rank	Federal Status	State Status	SWAP Priority
Select a species, then navigate to the NatureServe Explorer Species Profile Tab to learn more.				
Acipenser brevirostrum; **Shortnose Sturgeon** View Statewide Distribution	G3 / S3	LE: Federally Endangered	SE: State Endangered	Highest
Acipenser oxyrinchus; **Atlantic Sturgeon** View Statewide Distribution	G3 / S3	LE: Federally Endangered	Not Applicable	Highest
Dryobates borealis; **Red-cockaded Woodpecker** View Statewide Distribution	G3 / S2	LE: Federally Endangered	SE: State Endangered	Highest
Haliaeetus leucocephalus; **Bald Eagle** View Statewide Distribution	G5 / S3B,S3N	Bald & Golden Eagle Protection Act	ST: State Threatened	High
Mycteria americana; **Wood Stork** View Statewide Distribution	G4 / S2	LT: Federally Threatened	SE: State Endangered	Highest
Perimyotis subflavus; **Tricolored Bat** View Statewide Distribution	G3G4 / S1S2	LEP: Federally Endangered (Proposed)	Not Applicable	Highest
Rhus michauxii; **Michaux's Sumac, Dwarf Sumac** View Statewide Distribution	G2G3 / SX	LE: Federally Endangered	Not Applicable	Highest
Schwalbea americana; **Chaffseed** View Statewide Distribution	G2 / S2	LE: Federally Endangered	Not Applicable	Highest
Tiedemannia canbyi; **Canby's Cowbane** View Statewide Distribution	G2 / S2	LE: Federally Endangered	Not Applicable	Highest

Tracked Species

106

in the selected county

Federal Status



Federal Status | State Status | SWAP Priority

Export Table function coming soon! A current workaround: drag to select all records in the list with your cursor, and copy/paste it into a spreadsheet.

Species Lists by County | NatureServe Explorer Species Profiles

State of South Carolina
Department of Natural Resources

P.O. Box 167
Columbia, SC 29202
803-734-3886

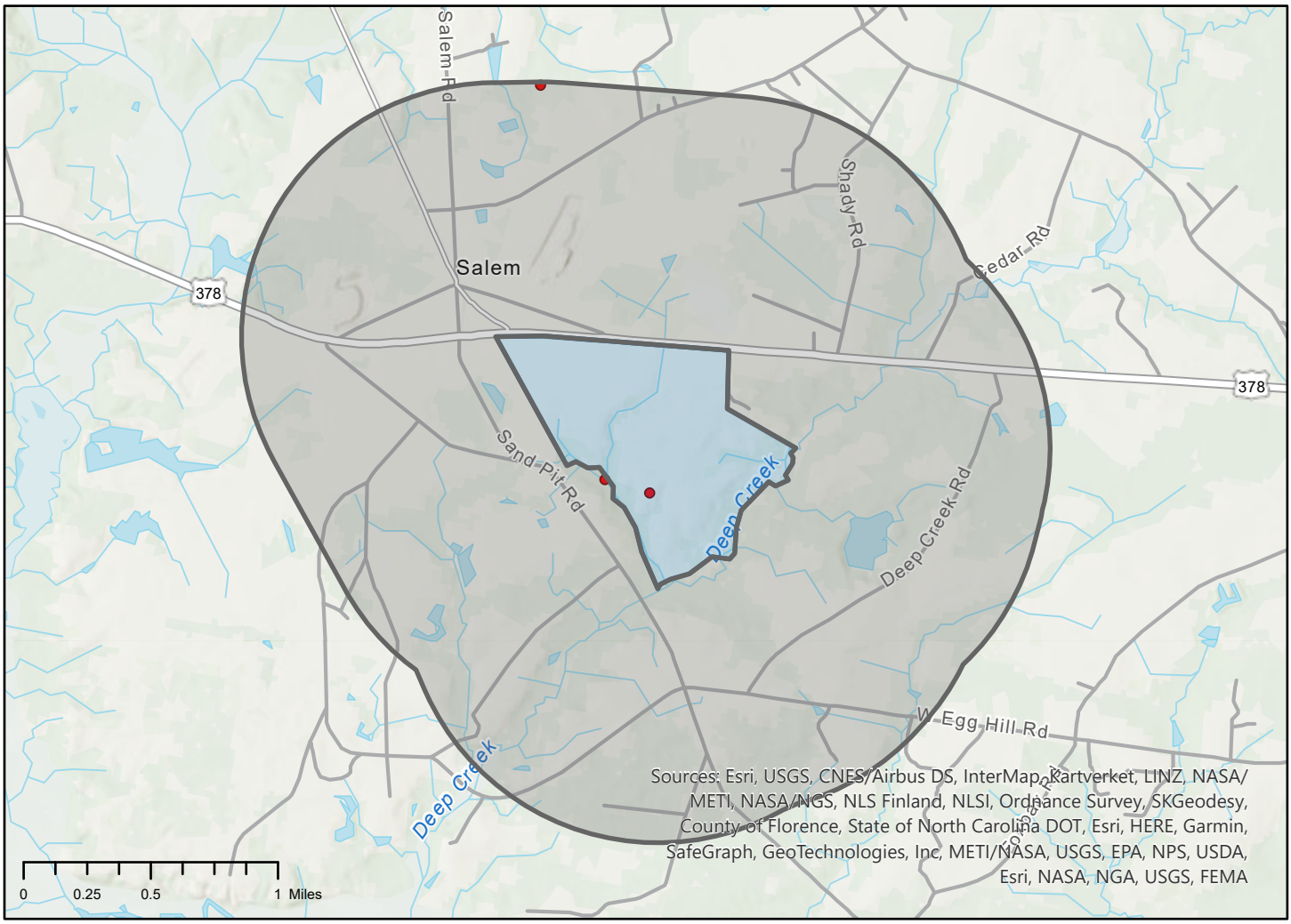
Robert H. Boyles, Jr., *Director*
Emily C. Cope, *Deputy Director, Wildlife and Freshwater Fisheries*

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

Requested on Friday, November 3, 2023 by *Chris Daves*.

Re: Request for Threatened and Endangered Species Consultation
Chris Daves - Salem Tract Mine - Development (Commercial/Residential) - Florence 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 Florence County, South Carolina. The following map depicts the project area and a 1 mile buffer surrounding:



State of South Carolina
Department of Natural Resources

P.O. Box 167
Columbia, SC 29202
803-734-3886

Robert H. Boyles, Jr., *Director*
Emily C. Cope, *Deputy Director, 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 - A list of state & federally listed species within the county of the project area
F - 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 or by visiting 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.

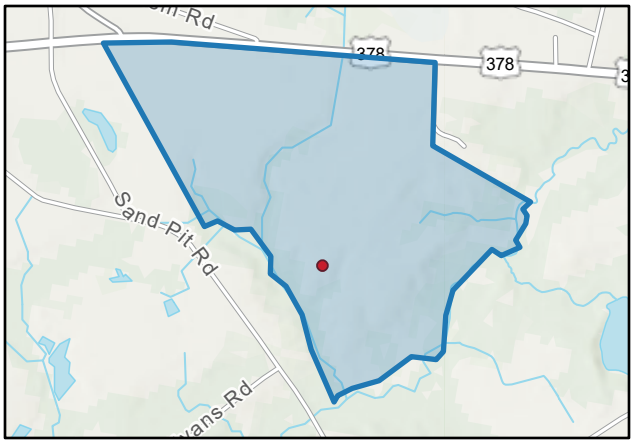
Should you have any questions or need more information, please do not hesitate to contact our office by email at speciesreview@dnr.sc.gov or by phone at 803-734-1396.

Sincerely,

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

A. Project Area - Species Report

There are 0 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 should you have further questions related to sensitive species found within the project area.

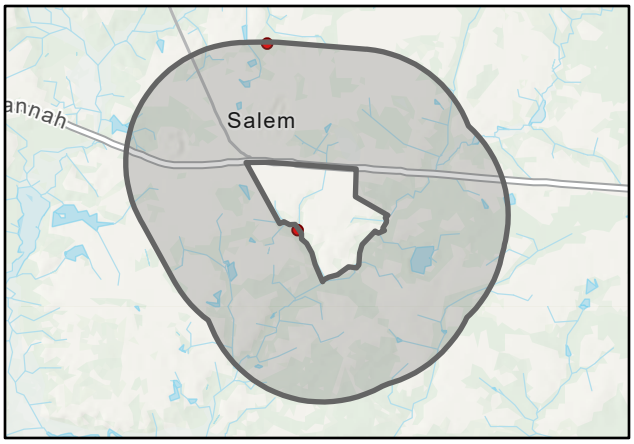


Map Credits: Sources: Esri, USGS, CNES/Airbus DS, InterMap, Kartverket, LINZ, NASA/METI, NASA/NGS, NLS Finland, NLSI, Ordnance Survey, SKGeodesy, Esri, NASA, NGA, USGS, FEMA, County of Florence, State of North Carolina DOT, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census

No records for species of concern are found within the project area

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.

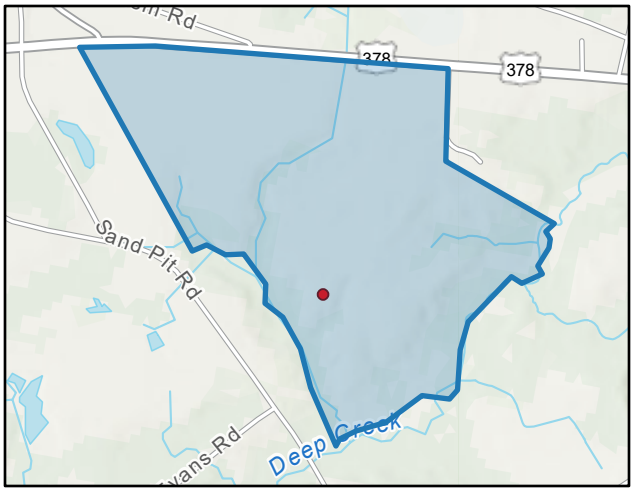


Map Credits: Sources: Esri, USGS, CNES/Airbus DS, InterMap, Kartverket, LINZ, NASA/METI, NASA/NGS, NLS Finland, NLSI, Ordnance Survey, SKGeodesy, County of Florence, State of North Carolina DOT, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, Esri, NASA, NGA, USGS,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

Scientific Name	Common Name	Federal Protection Status	State Protection Status	G Rank	S Rank	SWAP Priority	Last Obs. Date
Anguilla rostrata	American Eel	Not Applicable	Not Applicable	G4	S3S4	Highest	1977-06-24

C. Species Best Management Practices (1 of 2)

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 should you have further questions with regard to survey methods, consultation, or other species-related concerns.



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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.

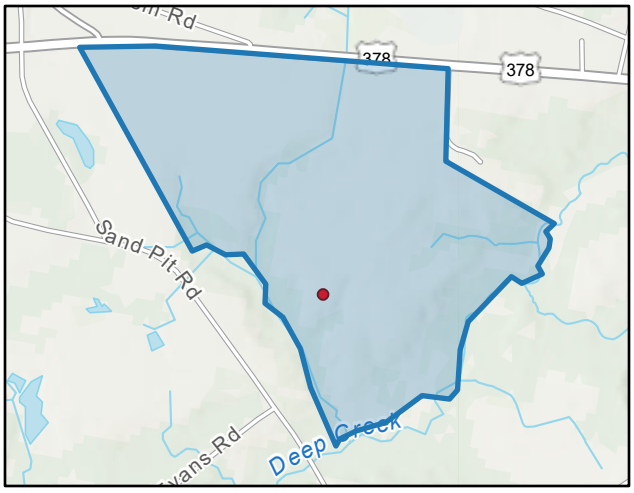
Related to American alligator (1 of 3):
American alligator (Alligator mississippiensis), a federally and state regulated species, is common throughout freshwater habitats in the Coastal Plain of South Carolina. Juvenile alligators frequently utilize stormwater or stormwater-like ponds, such as golf course ponds or resort lagoons, to avoid being preyed upon by larger adult alligators. Alligators are ambush predators that spend most of their lives in water. They have a natural fear of people unless they become habituated. Most often alligators become habituated when people feed them, either purposefully or accidentally. Please note it is illegal to feed, entice or molest an alligator pursuant to S.C. Code of Laws §50-15-500(C); it is also illegal to kill or possess an alligator without a permit pursuant to S.C. Code §50-15-500(D). Accidental feeding can occur when people do not properly dispose of food or fish carcasses associated with recreational fishing or indirect feeding of other wildlife, such as fish, turtles, or ducks, where alligators resides. A habituated alligator is more likely to approach or be near people and pose a potential threat. Therefore, any development should be designed in a manner that will substantially minimize the interaction of alligators and people.

Related to American alligator (2 of 3):
The SCDNR recommends the following best management practices to deter human and alligator interactions:

- Any private property or private yards near ponds or waterways should be fenced to limit unexpected alligator encounters. If fencing individual yards is not possible, fencing around the pond should occur. Keeping people, pets, and children from the edge of the water is the single best way to prevent alligator interactions. Due to the alligator's ability to ambush and lunge a great distance to capture its prey, walking paths around ponds should be a minimum of 10 feet from the shoreline. However, to provide greater protection, the SCDNR recommends this distance be increased to 30 feet to reduce alligator and human conflicts. Brush near the water's edge should be managed and considered in the minimum distance as alligators will utilize vegetation to rest and hunting to wait and ambush prey. If vegetation extends five feet from the edge of the water, then the walkway should be a minimum of 10 to ideally 30 feet beyond the farthest edge of vegetation from the water. Additionally, consideration should be given to require that all dogs on walkways near stormwater ponds or pond-like features in the neighborhood must be leashed to prevent alligator from targeting pets as prey. There should be a designated area included in design plans to provide a place for fishermen to properly dispose of fish carcasses or bait to avoid the accidental feeding and habituation of alligators.

C. Species Best Management Practices (2 of 2)

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 should you have further questions with regard to survey methods, consultation, or other species-related concerns.



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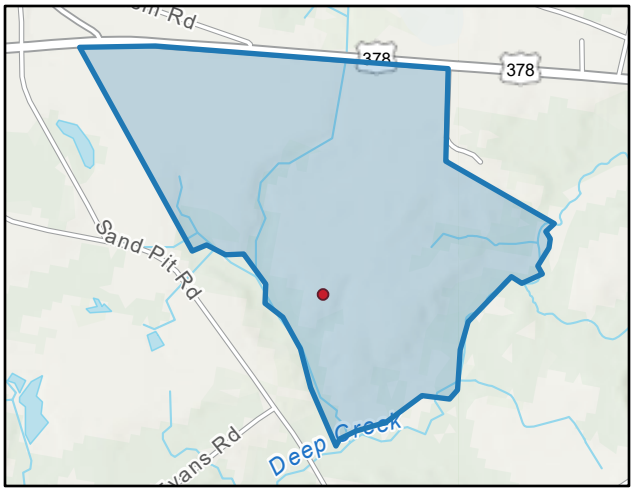
Related to American alligator (3 of 3):
The SCDNR recommends the following best management practices to deter human and alligator interactions:

- Retention ponds, lagoons and other water features should be designed to limit the occurrence of alligator basking adjacent to homes and walkways. As alligators are more likely to bask on shallow slopes, this can be achieved by construction of shallow bank slopes away from the homes and steeper bank slopes near homes or walkways.
- Warning signs noting the presence of alligators and that feeding is illegal should be posted at the entrances to the neighborhood and at any access point where people may be able to approach the water's edge. Signs can be acquired by callingSCDNR at 843-546-6062 or can be purchased on our website at www.gooutdoorssouthcarolina.com.
- The SCDNR recommends that the HOA/management company for the residential development should provide information and educational handouts to all residents on an annual basis prior to spring and summer before alligator activity increases. Informationand educational handouts are available on our website www.dnr.sc.gov/wildlife/herps/alligator.

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 should you have further questions with regard to best management practices related to this project area.



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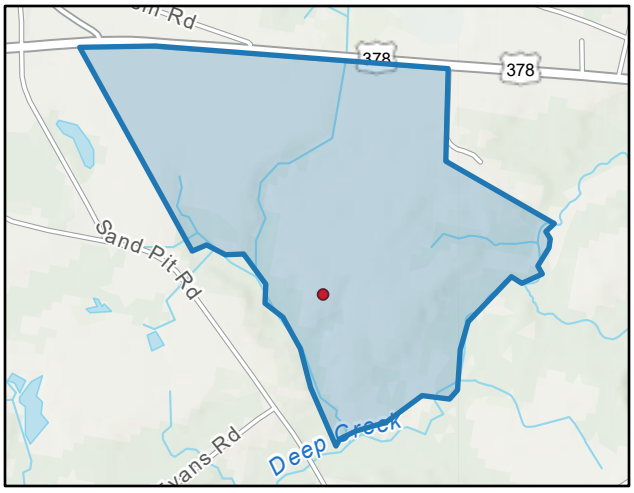
Review of available data, National Wetlands Inventory and hydric soils, indicate that wetlands or waters of the United States are present within your project area. These areas may require a permit from the U.S. Army Corps of Engineers (USACE), as well as a compensatory mitigation plan. SCDNR advises 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. 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 should you have further questions with regard to best management practices related to this project area.



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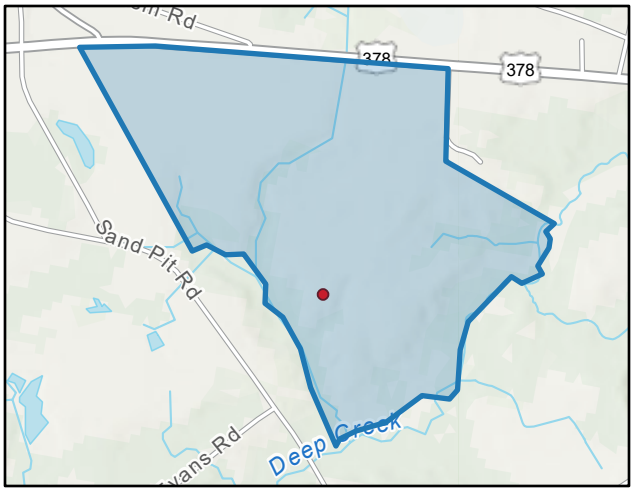
- If clearing must occur, riparian vegetation within wetlands and waters of the U.S. must be conducted manually and low growing, woody vegetation and shrubs must be left intact to maintain bank stability and reduce erosion.
- Construction activities must avoid and minimize, to the greatest extent practicable, 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.

- 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. 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 should you have further questions with regard to best management practices related to this project area.



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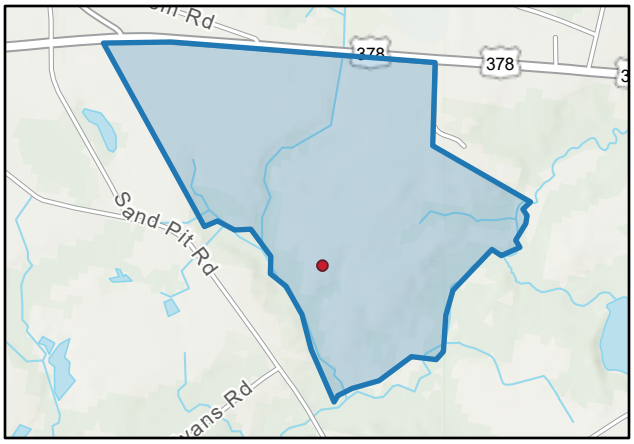
- Residential and commercial development has grown exponentially in recent years. Activities associated with these developments can have detrimental impacts on wildlife and aquatic resources such as habitat fragmentation, loss of available habitats and pollution, especially stormwater pollution. The 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. State & Federally Listed Species in Florence County



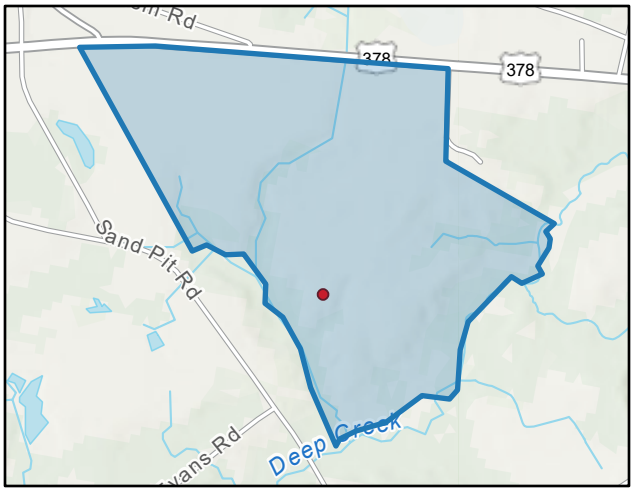
The South Carolina Department of Natural Resources' Heritage Trust Program organizes a database that captures and tracks element of occurrence data for rare, threatened and endangered species, both federal and state. Please keep in mind that this information included within this report is derived from existing databases, and do not assume that it is complete. Areas not yet inventoried may contain significant species or communities. If your project requires the assessment of potential threatened or endangered species that could be within the project area, the SCDNR asks that you include a review of the state listed species within the county or watershed in addition to those that may be within the report as being within the project footprint or within 1-mile of the proposed project area. Consideration should be given to the occurrence of suitable habitat onsite, species movement and connectivity of habitat when assessing the likelihood of a state listed species on 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, County of Florence, State of North Carolina DOT, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census

County	Scientific Name	Common Name	G Rank	S Rank	Federal Protection Status	State Protection Status	Group Type
Florence	*Acipenser brevirostrum*	Shortnose Sturgeon	G3	S3	LE: Federally Endangered	SE: State Endangered	Zoological
Florence	*Acipenser oxyrinchus*	Atlantic Sturgeon	G3	S3	LE: Federally Endangered	Not Applicable	Zoological
Florence	*Clemmys guttata*	Spotted Turtle	G5	S3	ARS: At-Risk Species	ST: State Threatened	Zoological
Florence	*Crotalus adamanteus*	Eastern Diamond-backed Rattlesnake	G3	S3	ARS: At-Risk Species	Not Applicable	Zoological
Florence	*Dryobates borealis*	Red-cockaded Woodpecker	G3	S2	LE: Federally Endangered	SE: State Endangered	Zoological
Florence	*Haliaeetus leucocephalus*	Bald Eagle	G5	S3B,S3N	Bald & Golden Eagle Protection Act	ST: State Threatened	Zoological
Florence	*Lithobates capito*	Carolina Gopher Frog	G2G3	S1	ARS: At-Risk Species	SE: State Endangered	Zoological
Florence	*Mycteria americana*	Wood Stork	G4	S2	LT: Federally Threatened	SE: State Endangered	Zoological
Florence	*Noturus sp. 2*	Broadtail Madtom	G2	S1	Not Applicable	ST: State Threatened	Zoological
Florence	*Perimyotis subflavus*	Tricolored Bat	G3G4	S1S2	LEP: Federally Endangered (Proposed)	Not Applicable	Zoological
Florence	*Amorpha georgiana*	Georgia Indigo-bush	G3	S2	ARS: At-Risk Species	Not Applicable	Botanical
Florence	*Lobelia boykinii*	Boykin's Lobelia	G2G3	S2?	ARS: At-Risk Species	Not Applicable	Botanical
Florence	*Rhus michauxii*	Michaux's Sumac, Dwarf Sumac	G2G3	SX	LE: Federally Endangered	Not Applicable	Botanical
Florence	*Schwalbea americana*	Chaffseed	G2	S2	LE: Federally Endangered	Not Applicable	Botanical
Florence	*Tiedemannia canbyi*	Canby's Cowbane	G2	S2	LE: Federally Endangered	Not Applicable	Botanical

F. 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.



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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 it's 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.

Important Information Regarding Element Occurrence Data:

The South Carolina Department of Natural Resources' Heritage Trust Program organizes a database that captures and tracks element of occurrence data for rare, threatened and endangered species, both federal and state. Please keep in mind that this information included within this report is derived from existing databases, and do not assume that it is complete. Areas not yet inventoried may contain significant species or communities. If your project requires the assessment of potential threatened or endangered species that could be within the project area, the SCDNR asks that you include a review of the state listed species within the county or watershed in addition to those that may be within the report as being within the project footprint or within 1-mile of the proposed project area. Consideration should be given to the occurrence of suitable habitat onsite, species movement and connectivity of habitat when assessing the likelihood of a state listed species on the project area. To view these lists please visit our county and watershed dashboards at our website: https://schtportal.dnr.sc.gov/portal/apps/sites/#track

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) 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.'
3) 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.

SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES

The HERITAGE TRUST Program