

March 2020

US Fish and Wildlife Service
Charleston Field Office
176 Croghan Spur Road, Suite 200
Charleston, SC 29407

**Subject: Protected Species Biological Assessment
Santee Cooper Johns Island-Queensboro 115kV Line
Charleston County, South Carolina
Wood Project No. 6250160115**

To whom it may Concern:

Wood Environment & Infrastructure Solutions, Inc. (Wood), on behalf of our client Santee Cooper, is pleased to submit this report regarding the protected species assessment for the proposed project, Johns Island-Queensboro 115kV Line (Project Study Area). The Project Study Area begins west of the intersection of Comsee Lane and Langston Drive, in Charleston County, South Carolina at coordinates 32.73154 N, -80.0883 W and ties into the existing Dominion Church Creek-Ritter transmission line near Maybank Highway, at coordinates 32.75097 N, -80.03022 W (See Figure 1).

The proposed transmission project area includes a 55-foot wide corridor parallel to an existing Santee Cooper transmission line and a 100-foot wide corridor in all other portions of the Project Study Area. The Project Study Area encompasses approximately 6.38 miles of new transmission line. The proposed transmission line runs north of SC-700 from the Johns Island substation, paralleling the existing Santee Cooper Mateeba-Johns Island transmission line right-of-way (ROW), before running northeast through undeveloped wetlands to Pennys Creek. The proposed transmission line then turns west to parallel the existing Dominion Church Creek-Ritter transmission line ROW towards Maybank Highway. The proposed Santee Cooper transmission line ties into the Dominion Church Creek-Ritter transmission line east of Maybank Highway (See Figure 1).

INTRODUCTION

Plants and animals listed as federally threatened and endangered are protected under the Endangered Species Act (P.L. 92-205) (ESA) which is administered and enforced by the United States Fish and Wildlife Service (USFWS). The bald eagle is federally protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. This biological assessment documents the results of a literature search and an on-site habitat assessment for federally endangered and threatened species and the bald eagle for the Santee Cooper proposed Johns Island Green Route in Charleston County, South Carolina. This biological assessment is being completed to support Clean Water Act permitting.

SPECIES TO BE CONSIDERED

A current list of federally endangered and threatened species for Charleston County (Table 1) was compiled using the USFWS Charleston Field Office website (accessed March 2020), the USFWS Information Planning and Conservation System (IPAC) (March 2020), and the South Carolina Department of Natural Resources (SCDNR) county list (March 2020). The SCDNR Heritage Trust Database, a Geographic Information System (GIS) natural resource data layer that includes the locations of all documented occurrences of federally threatened or endangered species, was reviewed for known occurrences of such species on or near the Study Area.

Table 1. Current list of Federally Endangered, and Threatened Species in Charleston County, South Carolina (USFWS 2019) and their Habitat Types

Common Name	Scientific Name	Status	General Habitat Type
Amphibian			
Frosted Flatwoods Salamander	<i>Ambystoma cingulatum</i>	T, CH	pine areas maintained in an open state by fire with isolated ponds for breeding sites
Bird			
Bald Eagle	<i>Haliaeetus leucocephalus</i>	BGEPA	coastlines, rivers, large lakes or streams
American Wood Stork	<i>Mycteria americana</i>	T	marshes, swamps, lagoons, ponds, flooded fields; depressions in marshes are important during drought; also occurs in brackish wetlands
Eastern Black Rail	<i>Laterallus jamaicensis</i>	T	tidal marshes on the coast, grassy marshes inland; found in dense spartina stands
Piping Plover	<i>Charadrius melodus</i>	T, CH	nest on coastal beaches, sandflats, and sand dunes above the high tide line; forage in intertidal zones of beaches, mudflats, sandflats, and shorelines of coastal ponds, lagoons, or salt marches
Red Knot	<i>Calidris canutus rufa</i>	T	long distant migratory shorebird. Nests in Canada and migrates to South America.
Red-Cockaded Woodpecker	<i>Picoides borealis</i>	E	mature pine forests
Kirtland's Warbler	<i>Setophaga kirtlandii</i>	E	young jack pine forests; winters in dense understory of pines 5-25' tall, mainly winters in pines of the Bahamas
Black-Capped Petrel	<i>Pterodroma hasitata</i>	T	open ocean on the southeastern coastline
Bachman's Warbler	<i>Vermivora bachmanii</i>	E	Timbered bottomland swamps with pools of still water
Fish			
Shortnose Sturgeon	<i>Acipenser brevirostrum</i>	E	major river systems along the eastern seaboard
Atlantic Sturgeon	<i>Acipenser oxyrinchus</i>	E	major river systems along the eastern seaboard
Mammal			
Finback Whale	<i>Balaenoptera physalus</i>	E	offshore and coastal waters
Humpback Whale	<i>Megaptera novaengliae</i>	E	offshore and coastal waters
Right Whale	<i>Balaena glacialis</i>	E	offshore and coastal waters
West Indian Manatee	<i>Trichechus manatus</i>	T	coastal and inland waters
Northern Long-Eared Bat	<i>Myotis septentrionalis</i>	T	winter: hibernacula – cave and mines with constant temp., high humidity, and no air current. Summer: Roost and maternity trees with loose bark or cavities.
Reptile			
Green Sea Turtle	<i>Chelonia mydas</i>	T	coastal waters
Kemp's Ridley Sea Turtle	<i>Lepidochelys kempii</i>	E	oceanic, shallow water benthic feeder, nests on sandy beaches
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	E	oceanic, deepest diver of the sea turtles, nests on sandy beaches
Loggerhead Sea Turtle	<i>Caretta caretta</i>	T, CH	oceanic, nests on sandy beaches



Plant			
American Chaffseed	<i>Schwalbea americana</i>	E	fire maintained open pine forest
Canby's Dropwort	<i>Oxypolis canbyi</i>	E	pond-cypress savannahs dominated by grasses, sedges or ditches next to bays; borders and shallows of cypress-pond pine ponds and sloughs
Seabeach Amaranth	<i>Amaranthus pumilus</i>	T	Sandy beaches, on barrier islands, at base of dunes
Pondberry	<i>Lindera melissifolia</i>	E	swamp and pond margins, sandy sinks, swampy depressions, wet flats

E Federally endangered

CH Critical habitat

T Federally threatened

BGEPA Federally protected under the Bald and Golden Eagle Protection Act

METHODOLOGY

Wood conducted a literature search, desktop habitat assessment, and on-site ground truthing to determine the likelihood of the presence or absence of each of the above listed species. The above list was used as the baseline for the survey. Aerial photography and ground-truthing was used to generalize habitat types on the site. General habitat types located on the property are described below in the Habitats section. On-site field work was conducted on March 5, 2019 and September 26, 2019. Aquatic surveys were not conducted as a part of this protected species review.

HABITATS

The Study Area encompasses the existing transmission line ROW and the proposed transmission line ROW.

Uplands within the Project Study Area have a dense overstory of loblolly pine (*Pinus taeda*), live oak (*Quercus virginiana*), red maple (*Acer rubrum*), and sweetgum (*Liquidambar styraciflua*). The sapling layer is made up of young species of the overstory, water oak (*Quercus nigra*), american hornbeam (*Carpinus caroliniana*), and American beech (*Fagus grandifolia*). The shrub layer is sparser, made up of inkberry (*Ilex glabra*), wax myrtle (*Morella cerifera*), loblolly pine, Chinese tallow (*Triadica sebifera*), and dwarf palmetto (*Sabal minor*). The herbaceous and woody vines stratum contains broom sedge (*Andropogon virginicus*), dog-fennel (*Eupatorium capillifolium*), southern waxy sedge (*Carex glaucescens*), netted chain fern (*Woodwardia aerolata*), and saw-tooth blackberry (*Rubus argutus*), evening trumpet-flower (*Gelsemium sempervirens*), fringed greenbrier (*Smilax bona-nox*), muscadine (*Vitis rotundifolia*), and laurel-leaf greenbrier (*Smilax laurifolia*).

The freshwater non-tidal wetlands have a similar overstory as the uplands, but a slightly denser sapling layer, including water oak, American hornbeam, and southern magnolia (*Magnolia grandiflora*). There are scattered loblolly pines within the sapling layer as well. The shrub layer consists of dwarf palmetto, southern magnolia, wax myrtle, and loblolly pine. The herb layer is sparse and mostly consisted of woolgrass (*Scirpus cyperinus*) and broom sedge. Woody vines are sparse but consist of muscadine and yellow jessamine where present.

The tidal wetlands consist of a dense herbaceous layer made up of both black rush (*Juncus roemerianus*) and smooth cordgrass (*Spartina alterniflora*).

One stream within the Project Study Area is a perennial sand bed stream surrounded by a freshwater non-tidal wetland. The stream is a freshwater stream with a canopy consisting of bald cypress (*Taxodium distichum*), sweetgum, water oak, laurel oak (*Quercus laurifolia*), and southern magnolia. The stream has a sparse understory consisting of yaupon holly (*Ilex vomitoria*), dwarf palmetto, wax myrtle, and horse sugar (*Symplocos tinctorial*).

There are also wide tidal canals (excavated) surrounded by both tidal wetlands and non-tidal wetlands. The surrounding vegetation is similar to the aforementioned wetlands.

LITERATURE SEARCH AND ON-SITE SURVEY RESULTS

Frosted Flatwoods Salamander

The flatwoods salamander was listed as threatened on April 1, 1999 (USFWS 1999b). In 2009, the flatwoods salamander was divided into two distinct species: the frosted flatwoods salamander (*Ambystoma cingulatum*) and the reticulated flatwoods salamander (*Ambystoma bishopi*) due to a recognized taxonomic reclassification (USFWS 2009). The frosted flatwoods salamander is located east of the Apalachicola River Basin. Critical habitat (CH) has been designated for the frosted flatwoods salamander in Berkeley, Charleston, and Jasper counties, SC (USFWS 2009). The frosted flatwoods salamander occurs in isolated populations scattered across the lower southeastern Coastal Plain in Florida, Georgia, and South Carolina (USFWS 1999b, USFWS 2009). There are only four known populations of frosted flatwoods salamander in South Carolina (USFWS 2009).

It is a slender, small-headed mole salamander. Adult dorsal color ranges from dark black to chocolate black with grayish or silvery network pattern or frosted appearance running along the lateral and dorsal surfaces. Aquatic larvae are long and slender, broad-headed and bushy-gilled, with white bellies and yellow stripes on the sides (Palis 1995).

Typical breeding sites are isolated wetland depressions, which dry completely on a cyclic basis, thus eliminating fish species. The isolated ponds are typically small with an open canopy allowing grasses and sedges to grow on the edge where adult salamanders will lay their eggs in the fall. During the non-breeding season, the fossorial adults return to the upland pine areas that are maintained by frequent fire.

Based on review of the SCDNR Heritage Trust Database (SCDNR 2020), there are no known occurrences of flatwood salamander within three miles of the Project Study Area. In addition, the Study Area contains no fire-maintained habitat or ephemeral ponded areas suited for the frosted flatwoods salamander. Appropriate best-management practices (BMPs) will be used to mitigate any impacts. Therefore, the proposed project will have no effect on the frosted flatwoods salamander.

Bald Eagle

The bald eagle was listed as endangered on March 11, 1967. The species was reclassified from endangered to threatened throughout the lower 48 states on July 12, 1995 (USFWS 1995) and was proposed to be removed from the federal endangered species list on July 6, 1999 (USFWS 1999a). On July 9, 2007, the bald eagle was removed from the endangered species list (USFWS 2007). The bald eagle is still federally protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

The bald eagle has a wingspan of approximately seven feet and is mainly dark brown with a white head and tail. The bald eagle feeds primarily on fish, but also takes a variety of birds, mammals, and reptiles opportunistically (USFWS 1992a). The bald eagle nests in large, sturdy trees with open canopies typically near large, open water bodies. Many nests are used annually. Egg laying for the bald eagle peaks in late December in the southern United States. The nesting season in the southeast extends from October to May 15.

Based on review of the SCDNR Heritage Trust Database (SCDNR 2020) there are no known bald eagle nests within 3 miles of the Study Area. Construction of the new transmission line will require removal of trees which could be used for nesting by the bald eagle. However, potential nesting trees are plentiful near the Study Area and not a limiting factor for use of the surrounding area by the bald eagle. New powerlines will be constructed in an avian friendly way to reduce potential impact to birds by the completed line. Therefore, the proposed project will have no effect on the bald eagle.

American Wood Stork

The U.S. breeding population of the wood stork was listed as endangered on February 28, 1984 (USFWS 1992a). The U.S. breeding population was down-listed to threatened and established as a distinct population segment on July 30, 2014 (USFWS 2014). Wood storks are large, long-legged wading birds. They are white except for black primaries and secondaries and a short black tail. The head and neck are largely unfeathered and dark gray in color. The bill is black, thick at the base, and slightly decurved (USFWS 1992a).

Wood storks have been seen in South Carolina during every month of the year. However, they are uncommon from December through mid-March (USFWS 1996a). They typically nest in cypress/tupelo gum ponds with standing water. It is a highly colonial species usually nesting in large rookeries and feeding in flocks. The wood stork forages in a wide variety of shallow wetlands, wherever prey concentration reach high enough densities, in water that is shallow and open enough for the birds to be



successful in their hunting efforts (Ogden et al. 1978, Browder 1984). Nesting wood storks generally use foraging sites that are located within 31 miles flight range of the colony (USFWS 1996a).

Based on review of the SCDNR Heritage Trust Database (SCDNR 2020) there are no known wood stork nests within 3 miles of the Study Area. The Study Area is located within the wood stork habitat; however, no impacts will occur to the waters or tidal marsh. Therefore, we have determined that the proposed project will have no effect on the wood stork.

Eastern Black Rail

The U.S. Fish and Wildlife Service was petitioned to list the eastern black rail as endangered or threatened under the Endangered Species Act in April of 2010. A-12 month finding based on the review of the subspecies was delivered to the Federal Register proposing to list the eastern black rail as a threatened species in late 2018. Adult eastern black rails are generally blackish-gray, with a small black bill and noticeably bright red eyes. The remiges and tailfeathers are black and dark grey with white spots. Males are generally darker in color than females (USFWS 2019b).

The eastern black rail has a habitat that can range from freshwater to brackish to saltwater. It is influenced by tides on the Atlantic coast as well as the gulf coast. They thrive in areas that are classified as marshes with dense cover. The wintering habitat is thought to be similar to the breeding habitat, with a slight shift south.

The Study Area is located within or near the eastern black rail's preferred habitat, however no impacts will occur to the tidal marsh. Therefore, we have determined that the proposed project will have no effect on the eastern black rail.

Piping Plover

The wintering piping plover forages and roosts along sandy beaches on the Atlantic coast from North Carolina south to Florida. Habitat on the wintering grounds consists of exposed sandflats, beaches, washovers, and algal flats. They feed on invertebrates found in the sand including insects, crustaceans, and mollusks (USFWS 1996b).

The Study Area does not contain habitat necessary to support the wintering piping plover. Therefore, we have determined that the proposed project will have no effect on the species.

Red Knot

This subspecies was listed as threatened on December 11, 2014 (USFWS 2014a). The adults in spring are finely mottled with grays, black and light ochre, running into stripes on crown; throat, breast and sides of head cinnamon-brown; dark gray line through eye; abdomen and undertail coverts white; uppertail coverts white, barred with black. Adults in winter are pale ashy gray above, from crown to rump, with feathers on back narrowly edged with white; underparts white, the breast lightly streaked and speckled, and the flanks narrowly barred with gray.

This species nests in Canada and migrates to South America. They are long-distance migrant shorebirds and highly dependent on the continued existence of quality habitat at a few key staging areas. South Carolina is not identified as a key stopover but there could be some use of the SC coast by this species. Habitats used by red knots in migration and wintering are generally coastal marine and estuarine habitats with large areas of exposed intertidal sediments. In North American, red knots are commonly found along sandy, gravel, or cobble beaches, tidal mudflats, salt marshes, shallow coastal impoundments and lagoons (USFWS 2015).

The Study Area is located within or near habitats utilized by the red knot, however no impacts will occur to the tidal marsh. Therefore, we have determined that the proposed project will have no effect on the red knot.

Red-Cockaded Woodpecker (RCW)

In 1970, the RCW was officially listed as endangered (USFWS 2003). With passage of the ESA in 1973, the RCW received the protection afforded listed species under the ESA. The endangered status of the RCW primarily is due to four environmental factors that have been shown to limit its numbers: (1) hardwood encroachment; (2) a shortage of suitable cavity trees; (3) loss and fragmentation of habitat, and (4) demographic isolation (Conner and Rudolph 1991, Walters 1991, Rudolph and Conner 1994).

The RCW is endemic to pine forests of the southeast (Ligon 1970). RCWs are territorial, non-migratory, cooperative breeders (Lennartz et al. 1987). RCWs are unique in that they excavate cavities for roosting and nesting in living pines (USFWS 2003) and



use living pines almost exclusively for foraging substrate, preferring longleaf pine when available (Walters 1991). RCWs require open pine woodlands and savannahs with large old pines for nesting and roosting habitat (i.e., cavity trees). Cavity trees must be in open pine stands with little or no hardwood midstory and few or no over-story hardwoods. For purposes of surveying, suitable nesting habitat consists of pine, pine/hardwood, and hardwood/pine stands that contain pines 60 years in age or older and that are within 0.5 mile of suitable foraging habitat. For the purposes of surveying, suitable foraging habitat consists of a pine or pine/hardwood stand in which 50 percent or more of the dominant trees are pines and the dominant pine trees are generally 30 years in age or older (USFWS 2003).

Based on review of the SCDNR Heritage Trust Database (SCDNR 2020) there are no known RCW occurrences within three miles of the Study Area. There is no suitable habitat within the Study Area, therefore we have determined that the proposed project will have no effect on this species.

Kirtland's Warbler

The Kirtland's warbler was listed as endangered under the Endangered Species Preservation Act on March 11, 1967. The Kirtland's warbler is approximately six inches long and is characterized by a blueish gray back; a bright yellow breast with black streaks along the back and sides; and white rings around the eyes. Females exhibit patterns but are less brightly colored than males (USFWS 2019a).

Kirtland's warblers nest in dense, young jack pine stands in Michigan, Wisconsin, and Canada where they forage for insects, larvae, and small, soft berries in the lower branches and on the ground (USFWS 2019a). Mating and nesting also occur there. Kirtland's warblers are found in thickets and densely vegetated woodlands and shrub habitats in the eastern U.S. during their migration south before settling at their winter grounds in Bahamian pine forests (Audubon 2016b).

The Kirtland's Warbler is being considered for delisting from the federally endangered list, due to reaching population levels more than double its recovery goal (Cirino 2019). While this is the case, the Kirtland's Warbler is still among the most range-restricted migratory songbird in North America, with only about 2300 breeding pairs in the wild today.

Based on review of the SCDNR Heritage Trust Database, there are no known Kirtland's warbler populations located within three miles of the Study Area (SCDNR 2020). The Study Area does not contain suitable habitat for the Kirtland's warbler, therefore we have determined that the proposed project will have no effect on this species.

Black-Capped Petrel

The black-capped petrel is a pelagic seabird that is distinguished by sheathed nostrils in horny tubes on the base of its bill (USFWS 2019a). It is a medium sized seabird with slender wings, black cap markings, and a white collar. These birds spend most of their time at sea in the waters off the eastern coast of North America primarily in the Gulf Stream. In June of 2012, the USFWS found that the listing of the black-capped petrel might be warranted based on substantial scientific information (USFWS 2019a).

Black-capped petrel nest around steep forested cliffs in the West Indies but spend the majority of their lives on the open sea foraging over warm deep water (Lang et al. 2019).

Due to the lack of habitat available for this species we have determined that the proposed project will have no effect on this species.

Bachman's Warbler

The Bachman's warbler was listed as endangered in 1967 and is very rare or possibly extinct. Historic records indicate the Bachman's warbler typically nested in low, wet, forested areas containing variable amounts of water, but usually with some permanent water. It was known for dramatic changes in population size, possibly in response to the irregular reproductive cycle of bamboo (USFWS 1999d).

There is suitable habitat for the Bachman's warbler within the Study Area, however the SCDNR Heritage Trust Database (SCDNR 2020) shows no known occurrences of the Bachman's warbler. Therefore, we have determined that the proposed project will not affect the Bachman's warbler.



Shortnose Sturgeon

The shortnose sturgeon was listed as endangered on March 11, 1967 (32 FR 4001). It is an anadromous fish that spawns in the coastal rivers along the east coast of North America from the St. John River in Canada to the St. Johns River in Florida. In South Carolina, the species is present in the Waccamaw, Pee Dee, Black (Winyah Bay system), Santee, Cooper, Ashepoo, Combahee, Edisto, and Savannah Rivers (NMFS 1998). The shortnose sturgeon prefers the nearshore marine, estuarine and riverine habitat of large river systems (NMFS/NOAA 2012). Adults have separate summer and winter areas. Spawning occurs in mid-February to March.

Due to the lack of habitat available for this species we have determined that the proposed project will have no effect on this species.

Atlantic Sturgeon

The Carolina and the South Atlantic Distinct Population Segments (DPS) of the Atlantic sturgeon were listed as endangered in February 2012 (NOAA 1998). A DPS is a vertebrate population or group of populations that is discrete from other populations of the species and significant in relation to the entire species. The ESA provides for listing species, subspecies, or distinct population segments of vertebrate species (NOAA 1998).

The Atlantic sturgeon is a long-lived, estuarine dependent, anadromous fish. Spawning adults migrate upriver in spring, beginning in February-March in the south. Adults spawn in freshwater of large rivers and migrate into estuarine and marine waters where they spend most of their lives. They spawn in moderately flowing water (46-76 cm/s) in deep parts of large rivers (NOAA 1998).

Due to the lack of habitat available for this species we have determined that the proposed project will have no effect on this species.

Finback, Humpback, and Right whales

On December 2, 1970, the finback whale was listed as endangered throughout its range within the U.S. Weighing anywhere from 40 to 80 tons and reaching 75 to 85 feet in length, finback whales have a sleek and streamlined body with a V-shaped head. The coloration pattern is typically marked by black or dark brownish-gray back and sides and a white belly (NMFS & NOAA 2013).

While little is known about their social and mating systems, they are typically found in groups of 2 to 7 whales. Similarly, migration patterns are poorly understood, but finback whales are thought to migrate seasonally into and out of high-latitude feeding areas. They are typically found in deep waters of all major oceans, specifically in temperate to polar latitudes where they feed on krill, small schooling fish, and squid (NMFS & NOAA 2013).

The humpback whale was designated as endangered in June 1970 under the Endangered Species Conservation Act (ESCA), a designation that remained in effect when the Endangered Species Act replaced the ESCA in 1973. Known for their long pectoral fins, humpback whales can measure up to 60 feet long and weigh 25 to 40 tons, with females that are larger than males. They are primarily dark grey with a variable amount of white coloration on their pectoral fins and bellies (NMFS & NOAA 2015b).

Humpback whales inhabit all major oceans from the equator to the sub-polar latitudes and are known to migrate seasonally over great distances. Their summer feeding grounds are located in the cold waters of the higher latitudes and winter calving takes place in subtropical or tropical waters. The summer months are spent feeding on krill, plankton, and small fish, storing up fat to live on in the winter. Females typically give birth every other year (NMFS & NOAA 2015b).

Originally listed as endangered in June 1970 under the Endangered Species Conservation Act (ESCA), the right whale has continued to be designated as endangered under the Endangered Species Act since 1973. Right whales have stocky black bodies and lack a dorsal fin but are easily identified by rough patches of raised skin on their heads known as callosities. Measuring about 50 feet in length and weighing up to 70 tons, females are typically larger than males (Braham & Rice 1984).

Historically, right whales were found in all of the world's oceans from temperate to subpolar latitudes. Typically, they are found in coastal or shelf waters, but they have been seen over deep waters as well. Seasonal migration occurs as right whales travel from feeding grounds in the northern latitudes to calving grounds in the southern latitudes. Right whales feed on zooplankton



from spring to fall and calving occurs in the shallow, coastal waters of the southeastern U.S. from December through March (Braham & Rice 1984).

No impact to open water is proposed. Therefore, we have determined that the proposed project will have no effect on the finback, humpback, or right whale.

West Indian Manatee

The West Indian manatee was listed as endangered on March 11, 1967 (USFWS 1967). It is a large gray or brown aquatic mammal averaging 10 feet long and weighing about 1,000 pounds (USFWS 1992a). During the winter months, the United States' manatee population confines itself to the coastal waters of the southern half of peninsular Florida and to springs and warm water outfalls as far north as southeast Georgia. During the summer months, they may migrate as far north as coastal Virginia on the east coast and the Louisiana coast on the Gulf of Mexico (USFWS 1992a). The West Indian manatee inhabits both salt and fresh water and may be encountered in canals, rivers, estuarine habitats, and saltwater bays (USFWS 1992a).

Due to the lack of habitat available for this species we have determined that the proposed project will have no effect on this species.

Northern Long-Eared Bat (NLEB)

The NLEB was listed as threatened on April 2, 2015. The listing is listed as "due to declines caused by white-nose syndrome and the continued spread of the disease." The NLEB is a medium-sized bat with a body length of 3 to 3.7 inches and a wingspan of 9 to 10 inches. Their fur color is medium to dark brown on the back and tawny to pale brown on the belly (USFWS 2019a).

NLEB spend winter hibernating in caves and mines, known as hibernacula. Suitable hibernacula including various sized caves with constant temperatures, high humidity, and no air current. Suitable summer habitat for NLEB consists of a wide variety of forested/wooded habitats where they roost, forage, and travel. They may also use some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roost trees (i.e., live trees and/or snags three inches diameter at breast height or larger that have exfoliating bark, cracks, crevices, or cavities). These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit characteristics of suitable roost trees and are within 1,000 feet of other forested habitats. NLEBs typically occupy their summer habitat from mid-May through mid-August each year. The inactive season for the NLEB is generally October – March (USFWS 2019a).

There are no known hibernacula for the NLEB in the vicinity of the Study Area. Because no known hibernacula or maternity trees are located within or near the Project Study Area, current USFWS guidance states that incidental take that may result from the project would be exempted by the 4(d) rule. Therefore, the project will have no effect on the NLEB.

Green, Kemp's Ridley, Leatherback and Loggerhead sea turtles

These large marine turtles inhabit the offshore waters of the Atlantic and Caribbean. During nesting periods which fall within the summer months, these species leave the water to nest on sandy beaches and primary dunes of the Atlantic and Caribbean coasts. Turtle nests are not uncommon on the barrier islands of South Carolina.

Green sea turtles reach a maximum size of 4 feet and weigh 440 pounds. It has a heart-shaped shell, small head, and single clawed flippers. Green sea turtles are general found in fairly shallow waters (except when migrating) inside reefs, bays, and/or inlets. Adult turtles feed on seagrasses and marine algae (NMFS & NOAA 2015a).

The Kemp's Ridley turtle is the smallest of the sea turtles, with adults reaching about 2 feet in length and weighing up to 100 pounds. The adult Kemp's Ridley has an oval carapace that is almost as wide as it is long and is usually olive-gray in color. This turtle is a shallow water benthic feeder with a diet consisting primarily of crabs (NMFS & NOAA 2015c).

The leatherback is the largest, deepest diving, and most migratory and wide ranging of all sea turtles. The adult leatherback can reach 4 to 8 feet in length and 500 to 2000 pounds in weight. There is critical habitat designated for this species, but the site is not within the designated area (NMFS & NOAA 2015d).

Loggerheads were named for their relatively large heads, which support powerful jaws and enable them to feed on hard-shelled prey, such as whelks and conch. On July 28, 1978, the Fish and Wildlife Service and National Marine Fisheries Service (Services) issued a final rule listing the loggerhead sea turtle as threatened throughout its worldwide range. On September 22, 2011, the



Services determined that the loggerhead sea turtle is composed of 9 distinct population segments and listed four Distinct Population Segments (DPS) as threatened and five DPSs as endangered under the ESA. All but two of these DPSs are wholly foreign species. The loggerhead sea turtles in this area are part of the Northwest Atlantic Ocean DPS. There is critical habitat designated for this species, but the site is not within the designated area (NMFS & NOAA 2014).

Due to the lack of habitat available for these species we have determined that the proposed project will have no effect on the green, loggerhead, Kemp's Ridley, and leatherback sea turtles. BMPs will be implemented to protect downstream water quality and wildlife.

American Chaffseed

American chaffseed was listed as endangered on September 29, 1992 (USFWS 1992b). It is a perennial, erect herb in the figwort family with large, purplish-yellow tubular flowers. The fruit is a long and narrow capsule, enclosed in a loose-fitting sac-like structure that provides the basis for the common name, chaffseed (Musselman and Mann 1978 *in* USFWS 1992b). Flowering occurs from April to June (USFWS 1992a).

American chaffseed occurs in sandy acidic, seasonally moist to dry soils (USFWS 1992a). It typically occurs in fire-maintained ecosystems, such as the longleaf pine-wiregrass ecosystem of the southeastern coastal plain, open, moist pine flatwoods, and fire-maintained savannas. American chaffseed seems to require fire for persistence. One of the most serious threats to its continued existence is fire-suppression (USFWS 1992a).

Due to the lack of habitat available for this species, we have determined that the proposed project will have no effect on American chaffseed.

Canby's Dropwort

Canby's dropwort was listed as endangered on February 25, 1991 (USFWS 1991). It is a perennial herb with erect, hollow stems, aromatic foliage and elongate, stoloniferous rhizomes. It has minute white flowers produced in terminal or axillary umbels; sepals may be tinged red. The fruit is a strongly-winged schizocarp. The species flowers from May through early August and fruits in early fall (USFWS 1991).

This species occurs in pond cypress savannas, shallows and edges of cypress/pond pine sloughs, and wet pine savannas. The healthiest populations seem to occur in open bays or ponds which are wet most of the year and have little or no canopy cover (Aulbach-Smith 1985).

Due to the lack of habitat available for this species, we have determined that the proposed project will have no effect on Canby's dropwort.

Seabeach Amaranth

Seabeach amaranth was listed as threatened in 1993 and is an annual plant found on the dunes of Atlantic Ocean beaches. The primary habitat for this species consists of over wash flats at accreting ends of islands and lower foredunes and upper strands of non-eroding beaches. It occasionally establishes small temporary populations in other habitats, including sound-side beaches, blowouts in foredunes, and sand and shell material placed as beach replenishment or dredge spoil. Seabeach amaranth appears to be intolerant of competition and does not occur on well-vegetated sites. The species appears to need extensive areas of barrier island beaches and inlets, functioning in a relatively natural and dynamic manner. These characteristics allow it to move around in the landscape as a fugitive species, occupying suitable habitat as it becomes available. (USFWS 1996c).

Due to the lack of habitat available for this species, we have determined that the proposed project will have no effect on seabeach amaranth.

Pondberry

Pondberry was listed as endangered on July 31, 1986 (USFWS 1986). Pondberry is a dioecious, deciduous shrub with pale yellow flowers. The fruit is a bright red drupe that matures in the fall. Flowering occurs late in February to mid-March; fruiting occurs from August to early October. The leaves have a strong, sassafras-like odor when crushed. Reproduction seems to be primarily vegetative by means of stolons (USFWS 1992a).



Pondberry is found in shallow depression ponds of the sandhills, along margins of cypress ponds in the pineland coastal areas of South Carolina, and in seasonally wet, low areas among bottomland hardwoods in interior areas.

Due to the lack of habitat available for this species, we have determined that the proposed project will have no effect on pondberry.

SUMMARY

Based on a literature review, aerial photography, and an on-site habitat assessment, it is our determination that the proposed project may affect, but not adversely affect the frosted flatwoods salamander and will have no effect on the bald eagle, American wood stork, eastern black rail, piping plover, red knot, RCW, Kirtland's warbler, black-capped petrel, Bachman's warbler, shortnose sturgeon, Atlantic sturgeon, finback whale, humpback whale, right whale, west indian manatee, NLEB, green sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, loggerhead sea turtle, American chaffseed, Canby's dropwort, seabeach amaranth, or pondberry.

CLOSING

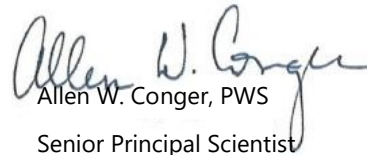
By this letter, we request the concurrence of the Fish & Wildlife Service that the project will have no adverse impacts to federally listed threatened or endangered species. Upon review of this concurrence request, should you have any questions, please feel free to contact Brendon Kelly at brendon.kelly@woodplc.com or (803) 798-1200. We appreciate your timely assistance with this matter.

Sincerely,

Wood Environment & Infrastructure Solutions, Inc.



Brendon Kelly
Staff Environmental Scientist



Allen W. Conger, PWS
Senior Principal Scientist

Attachments:

References

Figures: Figure 1 – Site Location Map



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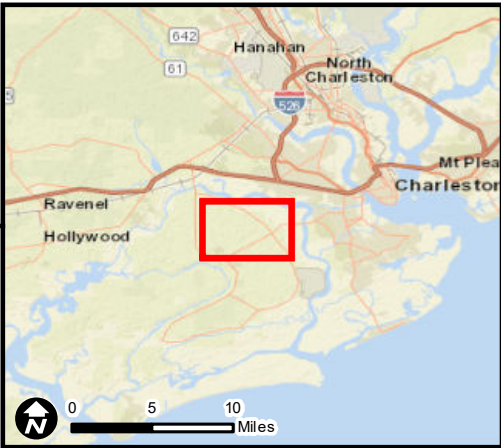


Figure 1. Site Location Map

Johns Island - Queensboro 115kV
Transmission Project
Charleston County, South Carolina

Legend

- Project Study Area (71.66 AC)
- Existing Santee Cooper ROW
- Existing Dominion ROW
- Road Centerline



Job No. 6250160115

Drawn By: BWS

Reviewed By: AWC

Date: 1/10/2020

The map shown here has been created with all due and reasonable care and is strictly for use with Wood Environment & Infrastructure Solutions, Inc. (Wood) project number 6250160115. Wood assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.

