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16 July 2021

Mr. Josh Epps
2411 North Oak Street
Myrtle Beach, SC 29577

Dear Mr. Epps:

On 1 and 2 July 2021, personnel from Dr. J. H. Carter III & Associates, Inc. (JCA) conducted a habitat assessment on Soilutions, LLC's 33-acre parcel on Edge Road, near Conway, Horry County, South Carolina, as shown on the enclosed map (Figure 1). Soilutions intent is to create a sand mine on the parcel. The mine area is designed to be 4.2-acres with a 0.6-acre haul/access road, for a total of 4.8-acres.

The South Carolina Department of Natural Resources (SCDNR) Lewis Ocean Bay Heritage Preserve (LOB) borders the project site to the east and south and private lands border the parcel to the north and west (Figure 1).

JCA was contracted to address a 4 June 2021 letter from the SCDNR regarding potential habitat on the parcel for 3 species; the spotted turtle (*Clemmys guttata*), southern hognose snake (*Heterodon simus*) and Carolina pygmy sunfish (*Elassoma boehlkei*).

JCA proposed to conduct a habitat assessment of the 33-acre property in order to determine if potential habitats for any species of concern are present. If potential spotted turtle habitat was observed on, or adjacent to the parcel, the JCA biologist would assess the feasibility of placing turtle traps for future study.

The SCDNR's June letter chiefly addressed with the 3 above-listed species, however it did state that there could be additional plant or animal species and/or habitats of concern within or near the project site. The JCA biologist noted any additional species and habitats that may need to be addressed for this project.

The habitats associated with the southern hog-nosed snake, spotted turtle and Carolina pygmy sunfish vary greatly.

Southern hog-nosed snakes are most commonly found in xeric, upland longleaf pine (*Pinus palustris*), turkey oak (*Quercus laevis*) and wiregrass (*Aristida stricta*) forests, but have

been found in other types of forests and woodlands, river floodplains and other habitats that are known to be associated with dry soils. These snakes have also been found in abandoned agricultural fields (Beane et al. 2010).

Spotted turtles are associated with a wide array of wetland habitats including, but not limited to, emergent marshes, deciduous shrub swamps, forested wetlands, seasonal pools, linear ditches and canals, floodplain forests, beaver impoundments or other small bodies of water. They prefer shallow waters with a soft substrate and some vegetation (Harding 2013).

The Carolina pygmy sunfish is known to inhabit shallow, quiet water (ponds, pools, streams, and roadside ditches, including tidal freshwater), with a soft detritus-rich substrate and abundant emergent and/or submerged aquatic vegetation. It occurs in weakly alkaline to strongly acidic waters, often in human-disturbed habitats (Shute et al. 1981, Rohde and Arndt 1987, Rohde 1997).

During the site evaluation on 1 and 2 July 2021, it was noted by the JCA biologist that the United States Drought Monitor listed the project area as under a D0 drought as shown on the attached image (https://droughtmonitor.unl.edu/ 2021). This slight drought category is indicative of low water conditions. Portions of the site that typically contain surface waters may be dry or otherwise have lower water depths than typical for the site during a normal non-drought year. The dry conditions were confirmed during the habitat evaluation and are discussed below.

The JCA biologist evaluated the entire parcel concentrating parallel transects at a spacing of approximately 10 feet (ft.) apart in the proposed mine site. Both wetland and upland habitats occur on the parcel. The wetlands on the parcel were composed mostly of Pond Pine Woodland and the uplands were mostly Xeric Sandhill Scrub (Coastal Fringe subtype).

The proposed 4.8-acre mine area is vegetated with the Xeric Sandhill Scrub (Coastal Fringe subtype) and is immediately west of a linear Pond Pine Woodland wetland. This wetland had been delineated previously by another entity.

The Xeric Sandhill Scrub (Coastal Fringe subtype) community had an open canopy of longleaf pine with a turkey oak understory. A low shrub layer was often present and included dwarf huckleberry (*Gaylussacia dumosa*) and poison-oak (*Toxicodendron pubescens*). The ground cover was dominated by Carolina wiregrass. Photos 1 and 2 illustrate this community.

The Pond Pine Woodland wetland shown on the attached map was immediately east of the proposed mine area. There was evidence of past water marks and leaf staining, and the soil color and condition supported the US Drought Monitor's reporting of the area being slightly

drier than is typical. The ordinary high water marks observed indicate a wetland system with some standing surface water during normal rainfall years. The JCA biologist did not observe any significant areas of standing water within the wetland immediately adjacent to the mine site. This wetland did have some areas of saturated soil and a very small dry channel as shown in Photos 3 and 4. The wetland contained pond (*P. serotina*) and loblolly (*P. taeda*) pines and there was a very dense, often tall, shrub understory including fetterbush (*Lyonia lucida*), inkberry (*Ilex glabra*), blueberries (*Vaccinium* spp.) and laurel-leaved greenbrier (*Smilax laurifolia*).

The project site is unlikely to support spotted turtles as there were no water features onsite that they are typically found in. If a major rain event or even normal rainfall events were to increase the standing water in the onsite wetland it would be more likely to support the turtle. Overall, the thickness of the foliage, shrubs and trees would decrease the likelihood of the spotted turtle using the wetland even if it did have some standing water of sufficient depth to meet their hydrological requirements. Vegetative shading would decrease desirability during cooler days when the turtles need sunlight to regulate body temperature.

Observations onsite indicate that there are portions of the parcel, particularly the 4.2-acre mine area that could support southern hognose snakes; however, none were observed during the site visit. This species is quite rare and difficult to find.

There were no open water habitats to support the Carolina pygmy sunfish or any fish at all. If normal rain events were to add some additional water to the wetland system it would most likely still have insufficient permanence to support fish for any significant amount of time. Additionally, the linear wetland adjacent to the mine area was fragmented from the larger wetlands off site by a dirt road. Also, a choked road culvert may inhibit fish movement from off-property during high water events.

The project site occurs within the 0.5-mile radius foraging habitat partitions of 2 Federally-endangered red-cockaded woodpecker (*Dryobates borealis = Picoides borealis*) (RCW) clusters (LOB Clusters 10 and 11R) (Figure 2). A JCA biologist observed 2 RCWs on the project site along the southwestern boundary of the 33-acre parcel. The biologist transected the proposed mine area and specifically surveyed for RCW cavity trees, but none were found. The nearest known RCW cavity tree (#774A) contains an insert cavity and is located 1,190 ft. south of the project site in LOB Cluster 10 (Figure 2).

There are 218 acres of forested habitat on LOB property within the 0.5-mile (mi.) radius foraging partition of LOB Cluster 10 and 276 ac. of forested habitat on LOB property within the foraging partition of LOB Cluster 11R. The Soilutions mine and haul road are proposed to be approximately 4.8 acres in size and will predominately occur within the foraging partition of LOB Cluster 10 (Figure 2). The Standard Managed for Stability (SMS) guidelines require 3,000 $ft.^2$ of pine basal area in pines $\geq$ 10 inches in diameter in breast height (dbh) on at least 75 acres of contiguous suitable habitat (USFWS 2003) or as defined in the Regional SMS Foraging Habitat Standards for the Outer Coastal Plain in southeastern North Carolina (NC) and Northeastern SC (Carter 2012). These latter guidelines allow pines from 4 to 10 inches in dbh to count as foraging habitat depending on vegetative community type. There appears to be adequate forested habitat on LOB to meet these guidelines.

It is unlikely that the property would support either the spotted turtle or the Carolina pygmy sunfish. There are suitable habitats to support southern hog-nose snakes however, none were observed during this visit. JCA and the SCDNR recommend installing uninterrupted silt fencing completely around the mine site and access road. This will help to keep all types of wildlife particularly the species of reptiles mentioned in this letter from entering areas where they could be injured or killed as a result of mining activities.

Please feel free to call if you have any questions or comments.

Sincerely,

William Mullin
Wetland & Wildlife Biologist

LITERATURE CITED

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Photos 1 and 2 Illustrate the Proposed Mine Area.

Photos 3 and 4 Illustrate the Pond Pine Wetland

Figure 1 - Site Location

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

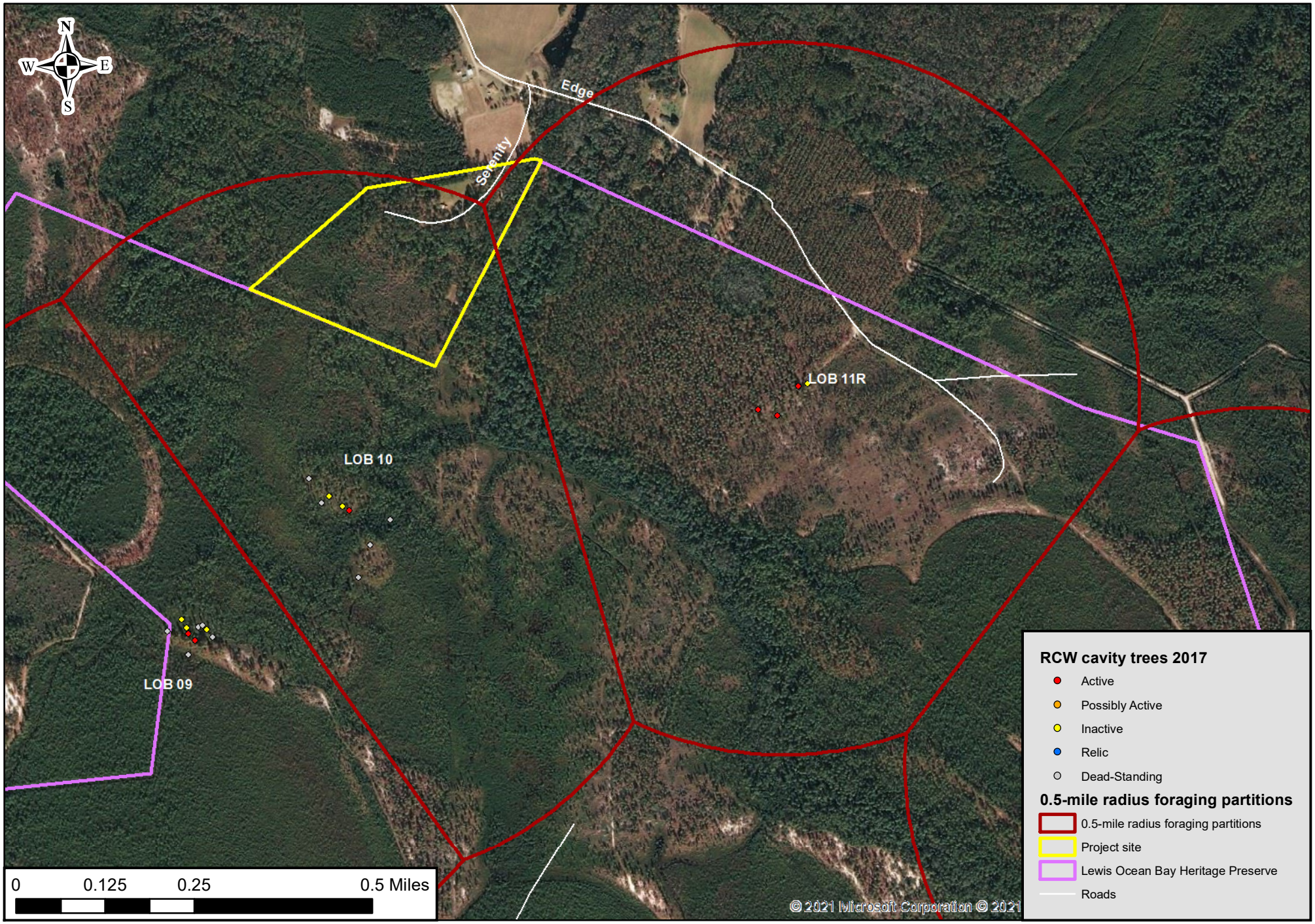
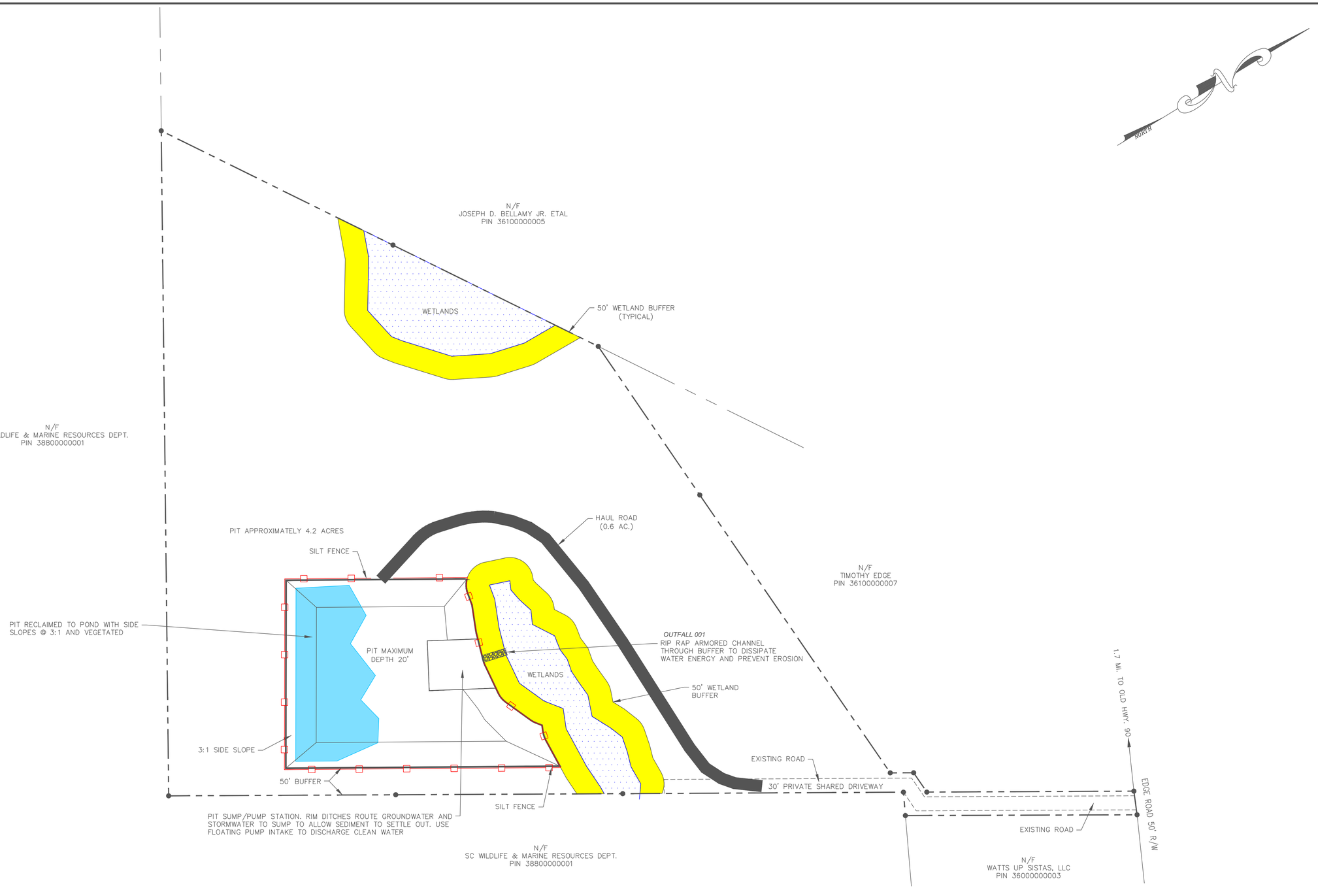


Figure 2. Location of red-cockaded woodpecker (*Dryobates borealis*) (RCW) clusters and partitions on Lewis Ocean Bay Heritage Preserve in Horry County, South Carolina.



GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

REVISIONS

	Description	Date	By
1	IDENTIFY WETLANDS; IDENTIFY EXISTING ACCESS ROAD INTO PERMIT AREA	4-14-21	BC

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Craig Kennedy, P.G.
KCS
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Tel. 803.399.1133 Mail: P.O. Box 364 Irmo, SC 29063

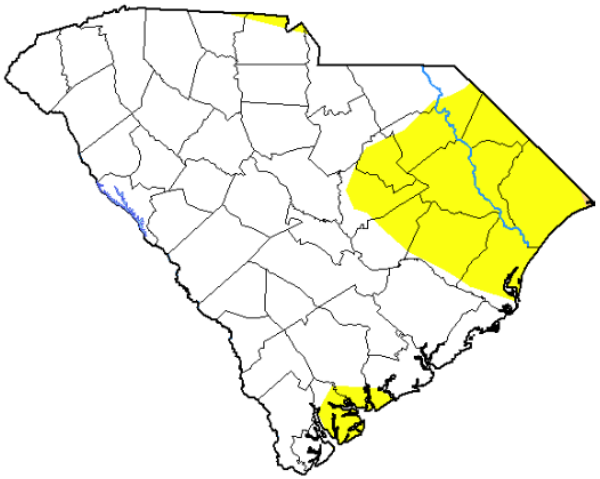
Edge Road Mine
Prepared for
Soilutions, LLC
Dogwood Neck Township, Horry County, South Carolina

Project No.: KCS 21-147
DATE: 03-29-21
Approved by: RCK
Drawn by: B.C.
Scale: 1"=100'

Sheet No.
1
of
1

U.S. Drought Monitor

South Carolina



June 29, 2021

(Released Thursday, Jul. 1, 2021)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	77.56	22.44	0.06	0.00	0.00	0.00
Last Week *06-22-2021*	75.65	24.35	4.31	0.00	0.00	0.00
3 Months Ago *03-30-2021*	100.00	0.00	0.00	0.00	0.00	0.00
Start of Calendar Year *12-29-2020*	86.70	13.30	0.00	0.00	0.00	0.00
Start of Water Year *09-29-2020*	99.42	0.58	0.00	0.00	0.00	0.00
One Year Ago *06-30-2020*	100.00	0.00	0.00	0.00	0.00	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

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droughtmonitor.unl.edu