

June 30, 2017
NS Project No. 13531.001.015

Bill Cork
Chief Executive Officer
Hancock County Port and Harbor Commission
14054 Fred and Al Key Road
Kiln, Mississippi 39556

Re: ENVIRONMENTAL DUE DILIGENCE
PORT BIENVILLE INDUSTRIAL PARK – SITE 11
HANCOCK COUNTY, MISSISSIPPI

Mr. Cork:

We have completed the Threatened and Endangered Species Survey for the referenced project located in Pearlinton, Mississippi.

We appreciate the opportunity to provide you with environmental consulting services. Should you have any questions concerning this information, please contact me at (228) 374-1211.

Sincerely,

NEEL-SCHAFFER, INC.



Cori L. Gavin
Environmental Scientist

Enclosures

June 2017

Threatened and Endangered Species Survey Report

Hancock County Port and Harbor Commission
Port Bienville Industrial Park – Site 11
Pearlington, Mississippi



Prepared By
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**THREATENED AND ENDANGERED SPECIES SURVEY
HANCOCK COUNTY PORT AND HARBOR COMMISSION
PORT BIENVILLE INDUSTRIAL PARK – SITE 11
PEARLINGTON, MISSISSIPPI
NS Project # 13531.001.015**

Prepared For:

Hancock County Port and Harbor Commission

Prepared By:

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Report Date: June 30, 2016

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EXECUTIVE SUMMARY

Hancock County Port and Harbor Commission (HCPHC) is anticipating new development within Port Bienville Industrial Park. Port Bienville Industrial Park is located to the west of Lower Bay Road in Pearlington, Hancock County, Mississippi. HCPHC is taking environmental due diligence initiative on all properties that exhibit a high development potential among prospective tenants. One of the potential development sites, known as Site 11, is located northwest of Port and Harbor Drive. The approximately 50-acre site is undeveloped with unimproved access roads around much of its perimeter. Adjacent to the north and west are undeveloped properties abutting the Port Bienville Industrial Canal. Adjacent to the south and east are industrial facilities. A site location map and 2016 aerial photograph are included as Figures 1 and 2.

At the time of the site visit on May 2 and May 3, 2017, two critical habitats for federally listed threatened and endangered (T&E) species, emergent wetlands and shallow streambed habitat, were observed on the property. These habitats are critical for two T&E species, *Isoetes louisianensis* (Louisiana quillwort) and *Mycteria americana* (wood stork). Forested wetlands, forested uplands, and scrub/shrub uplands can all be considered associated habitat for *Gopherus polyphemus* (gopher tortoise). Though these habitats exist on the property, individuals of these species were not observed within property boundaries during the dates of the site visit. For critical habitats that are proposed to be impacted, coordination with U.S. Fish and Wildlife Service (USFWS) and the Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP) will be required. This will ensure no federally listed threatened and endangered species are inhabiting the area of impact prior to and during construction. Best management practices, such as restricting construction during breeding and nesting seasons, may be enforced to guarantee these activities have little or no effect on listed T&E species.

1.0 THREATENED AND ENDANGERED SPECIES

The study area lies in southwestern Hancock County, approximately 1.9 miles south-southeast of U.S. Highway 90 (5.5 miles via Lower Bay Road). Given the general location of the area, 13 T&E species are known to occur or could potentially occur within a two-mile radius of the study area (Table 1).

Table 1. Species of Concern

Scientific Name	Common Name
<i>Mycteria Americana</i>	Wood Stork
<i>Charadrius melodus</i>	Piping Plover
<i>Calidris canutus rufa</i>	Red Knot
<i>Potamilus inflatus</i>	Alabama (Inflated) Heelsplitter
<i>Isoetes louisianensis</i>	Louisiana Quillwort
<i>Acipenser oxyrinchus desotoi</i>	Atlantic Sturgeon
<i>Trichechus manatus</i>	West Indian Manatee
<i>Eretmochelys imbricata</i>	Hawksbill Sea Turtle
<i>Dermochelys coriacea</i>	Leatherback Sea Turtle
<i>Lepidochelys kempii</i>	Kemp's Ridley Sea Turtle
<i>Caretta caretta</i>	Loggerhead Sea Turtle
<i>Graptemys oculifera</i>	Ringed Map Turtle
<i>Gopherus polyphemus</i>	Gopher Tortoise

1.1 Project Area Habitat and Plant Communities

A comprehensive walking survey was conducted to differentiate plant communities and land uses within property boundaries, encompassing approximately 50 acres. The site can be delineated among seven habitat types: forested uplands, scrub/shrub uplands, disturbed barren uplands, forested wetlands, emergent wetlands, shallow intermittent streambed, and palustrine pond (see Figure 3).

Forested Upland

Forested uplands can be found over much of the property and total approximately 34.42 acres. Plant communities include *Andropogon virginicus* (broomsedge bluestem), *Campsis radicans* (trumpet creeper), *Dichanthelium aciculare* (needleleaf rosette grass),

Ilex vomitoria (yaupon), *Morella cerifera* (wax myrtle), *Nekemias arborea* (peppervine), *Pinus echinata* (shortleaf pine), *Pteridium aquilinum* (western brackenfern), *Quercus stellata* (post oak), *Quercus virginiana* (live oak), *Rubus argutus* (sawtooth blackberry), *Smilax bona-nox* (saw greenbriar), and *Smilax rotundifolia* (roundleaf greenbriar).

Scrub/Shrub Upland

Scrub/shrub uplands on the property occupy approximately 5.0 acres, and vegetation communities consist of *Andropogon virginicus* (broomsedge bluestem), *Campsis radicans* (trumpet creeper), *Desmodium obtusum* (stiff tick trefoil), *Dichanthelium aciculare* (needleleaf rosette grass), *Eupatorium cappilifolium* (dog fennel), *Ilex vomitoria* (yaupon), *Morella cerifera* (wax myrtle), *Quercus stellata* (post oak), *Rubus argutus* (sawtooth blackberry), *Smilax bona-nox* (saw greenbriar), *Smilax pumila* (sarsaparilla vine), *Smilax rotundifolia* (roundleaf greenbriar), *Triadica sebifera* (Chinese tallow), and *Tridens flavus* (purpletop tridens).

Barren Upland

Disturbed barren uplands on the property total approximately 7.18 acres. Plant communities within this habitat consist of *Andropogon virginicus* (broomsedge bluestem), *Desmodium obtusum* (stiff tick trefoil), *Dichanthelium commutatum* (variable panicgrass), *Tridens flavus* (purpletop tridens), and *Smilax bona-nox* (saw greenbriar).

Forested Wetlands

Forested wetlands can be found on the western portion of the property and encompass approximately 1.56 acres. Vegetation includes *Campsis radicans* (trumpet creeper), *Dichanthelium commutatum* (needleleaf rosette grass), *Eupatorium capillifolium* (dog fennel), *Ilex vomitoria* (yaupon), *Liquidambar styraciflua* (sweetgum), *Morella cerifera* (wax myrtle), *Nekemias arborea* (peppervine), *Nyssa sylvatica* (blackgum), *Panicum repens* (torpedo grass), *Pinus echinata* (shortleaf pine), *Quercus lyrata* (overcup oak), *Quercus nigra* (water oak), *Rubus argutus* (sawtooth blackberry), *Salix nigra* (black willow), *Smilax bona-nox* (saw greenbriar), *Triadica sebifera* (Chinese tallow), and *Vitis rotundifolia* (muscadine).

Emergent Wetlands

Emergent wetland habitats comprise approximately 1.24 acres and vegetation includes *Athyrium filix-femina* (common ladyfern), *Carex glaucescens* (southern waxy sedge), *Juncus roemerianus* (needlegrass rush), *Ophioglossum vulgatum* (southern adderstongue), and *Peltandra sagittifolia* (white arrow arum).

Streambed

Shallow intermittent streambed habitat covers approximately 1,210 linear feet, draining the central portion of the property to the west towards Port Bienville Industrial Canal.

Palustrine Pond

A small pond is located on the eastern portion of the property and encompasses roughly 0.28 acre.

1.2 Threatened and Endangered Species Survey and Methods

On May 2 and May 3, 2017, a T&E survey was performed by Cori Gavin, Environmental Scientist for Neel-Schaffer, Inc., within the property boundaries. The T&E survey was performed by walking north-south transects spaced approximately 50 to 75 feet apart. No federally listed T&E species or evidence of such was observed within property boundaries on the day of the survey. Critical habitat found on site included emergent wetlands and shallow streambed habitat. Forested wetlands, forested uplands, and scrub/shrub uplands are habitats associated with the listed T&E species for Hancock County and were also observed on the property. Site photographs can be found in Appendix A.

Species Descriptions and Critical Habitats

The following is a description of each listed T&E species, along with their associated critical habitats.

- *Mycteria americana* (wood stork) – Large, bald-headed wading bird that stands at least three feet tall, has a five-foot wingspan, and weighs between four and six pounds. Critical habitat includes emergent freshwater and estuarine wetlands.
- *Charadrius melodus* (piping plover) – Small plover with a very short bill. Pale back blends in with sand beaches and alkali flats. Black band around the neck. Critical habitat includes sandy beaches and tidal flats.
- *Calidris canutus rufa* (red knot) – Stocky bird, 10-11 inches long, with medium-length bill and short legs. Breeding plumage shows face and underparts robin red, back mottled with black, gray, and russet. Winter plumage shows a washed-out gray look with greenish legs. Critical habitat includes tidal flats and coastal mudflats.
- *Potamilus inflatus* (Alabama/inflated heelsplitter mussel) – Large freshwater mussel reaching up to 5.5 inches in length. Shell is typically brown to black with a pink to purple nacre. Found in flowing rivers with stable sand or silt bottoms.
- *Isoetes louisianensis* (Louisiana quillwort) – Often mistaken for grass/sedge, hollow leaves contain four air chambers that give the leaves buoyancy in aquatic conditions. At the base of leaves are reproductive structures that bear spores similar to ferns. Critical habitat is restricted to sandy soils and gravel bars in or near

shallow blackwater streams and overflow channels in riparian woodland/bayhead forests of pine flatwoods and upland longleaf pine.

- *Acipenser oxyrinchus desotoi* (Atlantic sturgeon) – Large primitive fish (up to 200 pounds) characterized by bony plates and a hard, extended snout. Inhabit coastal rivers from Louisiana to Florida during warmer months, and the Gulf of Mexico and its estuaries and bays in the cooler months.
- *Trichechus manatus* (West Indian manatee) – Known as “sea cow” because it forages on aquatic plants. Most often grey in color but can range from black to light brown. Wrinkled skin covered with hairs and sometimes algae or barnacles. They have large, heavy, seal-shaped bodies with paired flippers and round, paddle-shaped tail. Faces are wrinkled and bear whiskers. West Indian manatees prefer shallow, slow-moving waters of rivers, estuaries, saltwater bays, canals, and coastal areas. Can move easily between freshwater and saltwater environments, but prefer freshwater.
- *Eretmochelys imbricata* (Hawksbill sea turtle) – Smaller sea turtle, with adult carapace length ranging from 2.5 to 3 feet. Head is narrow and has two pairs of prefrontal scales. Jaw is not serrate. Carapace is bony without ridges; has large overlapping scutes as well as four lateral scutes; and is orange, brown, or yellow in color. Flippers have two claws. Critical habitat includes coastal reefs, rocky areas, estuaries, and lagoons.
- *Dermochelys coriacea* (leatherback sea turtle) – Largest sea turtle, weighing up to 2,000 pounds, with adult carapace length reaching 6.5 feet. Soft-bodied turtle with primarily black carapace and pinkish-white belly. Carapace consists of leathery, oil-saturated connective tissue overlaying loosely interlocking dermal bones with seven longitudinal ridges. Front flippers without claws or scales. Commonly known as pelagic animals, but forage in coastal waters. Critical habitat includes coastal waters around the U.S. Virgin Islands and Puerto Rico.
- *Lepidochelys kempii* (Kemp’s ridley sea turtle) – Smallest marine turtle, weighing up to 100 pounds, and adult carapace length reaching 2 to 2.5 feet. Carapace is grayish-green, nearly circular with a pale yellowish bottom shell. Kemp’s ridley sea turtles occupy muddy or sandy bottoms, and critical habitat includes beaches along the Texas coast and marine habitats in the Gulf of Mexico and Atlantic Ocean.
- *Caretta caretta* (loggerhead sea turtle) – Named for its extremely large head, adult carapace length can reach 3.5 feet, and adult total body weight can be up to 375 pounds. Carapace is reddish brown to yellowish brown, heart-shaped, bony

without ridges and has large, non-overlapping rough scutes with five lateral scutes. Front flippers are short and thick with two claws. Critical habitat includes coastal bays and estuaries as well as shallow water along the continental shelves of the Atlantic, Pacific, and Indian oceans.

- *Graptemys oculifera* (ringed map turtle) – Smaller “sawback” turtle displaying accentuated scutes down the center of the carapace. A yellow ring can be seen around each of its scutes. Critical habitat includes clear, fast-flowing rivers.
- *Gopherus polyphemus* (gopher tortoise) – The gopher tortoise is the only tortoise in the Southeast and can easily be distinguished by its large size, rigid unhinged plastron, and its stumpy elephantine feet. Adult gopher tortoises are large, 9-15 inches (24 - 38 cm) in length, and are tan or brown above with a yellowish plastron. The juveniles can be yellowish and brightly patterned. Males have a concave plastron and longer tail than females. Found in relatively well-drained, sandy soils generally associated with longleaf pine and dry oak sand hills. They also live in scrub, pine flatwoods, dry prairie, coastal grasslands and dunes, mixed hardwood-pine communities, and a variety of habitats that have been disturbed or altered by man, such as power-line rights-of-way and roadsides. Corolla is pink with dots and yellow lines within, and the capsule is globose. Also found in wet pine savannas and flatwoods, depressions in pinelands, bogs, and along the edges of cypress-gum ponds and depressions.

Critical Habitats within Project Area

The property exhibits five habitat types that may be considered critical or associated habitat for one of the listed T&E species (see Figure 3). Emergent wetlands and shallow streambeds are considered critical habitat for *Mycteria americana* (wood stork) and *Isoetes louisianensis* (Louisiana quillwort). Forested uplands, scrub/shrub uplands, and forested wetlands can be considered associated habitat for *Gopherus polyphemus* (gopher tortoise), although this species most notably prefers longleaf pine savannahs. Because these associated habitats exist within property boundaries, and undeveloped land is adjacent to the north and west, there is a potential for this species to be found foraging within the property boundaries at any time, although nesting and breeding in these habitats is unlikely. Coordination with USFWS and MDWFP should be performed prior to construction to ensure listed T&E species are not breeding, nesting, or foraging in this area prior to or during construction activities.

2.0 PROPOSED ACTION

The proposed action – anticipated future development – may potentially affect listed T&E species or their associated habitats directly or indirectly.

2.1 Direct Effects

Direct effects to the proposed action to T&E species or their associated habitats include the removal of habitat these T&E species depend on to forage, breed, or nest. Construction timing should be coordinated to minimize any interference with the gopher tortoise and wood stork breeding seasons.

2.2 Indirect Effects

Increased human activity, i.e. truck traffic, within the property as a result of the proposed action, could deter certain T&E species from foraging or nesting in areas to which they might expand under natural conditions. However, due to the proximity of surrounding industrial facilities, it is unlikely that increased anthropogenic activity would have much effect on the level of disturbance already affecting faunal use of the property.

3.0 CONCLUSIONS

Neel-Schaffer has performed a threatened and endangered species survey, in conformance with U.S. Fish and Wildlife Service scope and recommendations, of the Port Bienville Industrial Park Site 11 property located northwest of Port and Harbor Drive in Pearlinton, Mississippi. This assessment included research into the current uses of the property and adjacent properties and a survey of the property for listed species of concern, their critical/associated habitats, wetlands, and all other biological aspects within the boundaries of the property. The threatened and endangered species survey revealed evidence of critical habitat associated with *Mycteria americana* (wood stork) and *Isoetes louisianensis* (Louisiana quillwort). The investigation also revealed evidence of non-critical (associated) habitat related to *Gopherus polyphemus* within the property boundaries. Because these habitats exist within property boundaries, and undeveloped properties are adjacent to the north and west, there is a potential for these species to be found foraging within the property boundaries at any time, although nesting and breeding in these non-critical habitats is unlikely. Coordination with USFWS and MDWFP should be performed prior to construction to ensure these species are not breeding, nesting, or foraging in critical habitat areas.

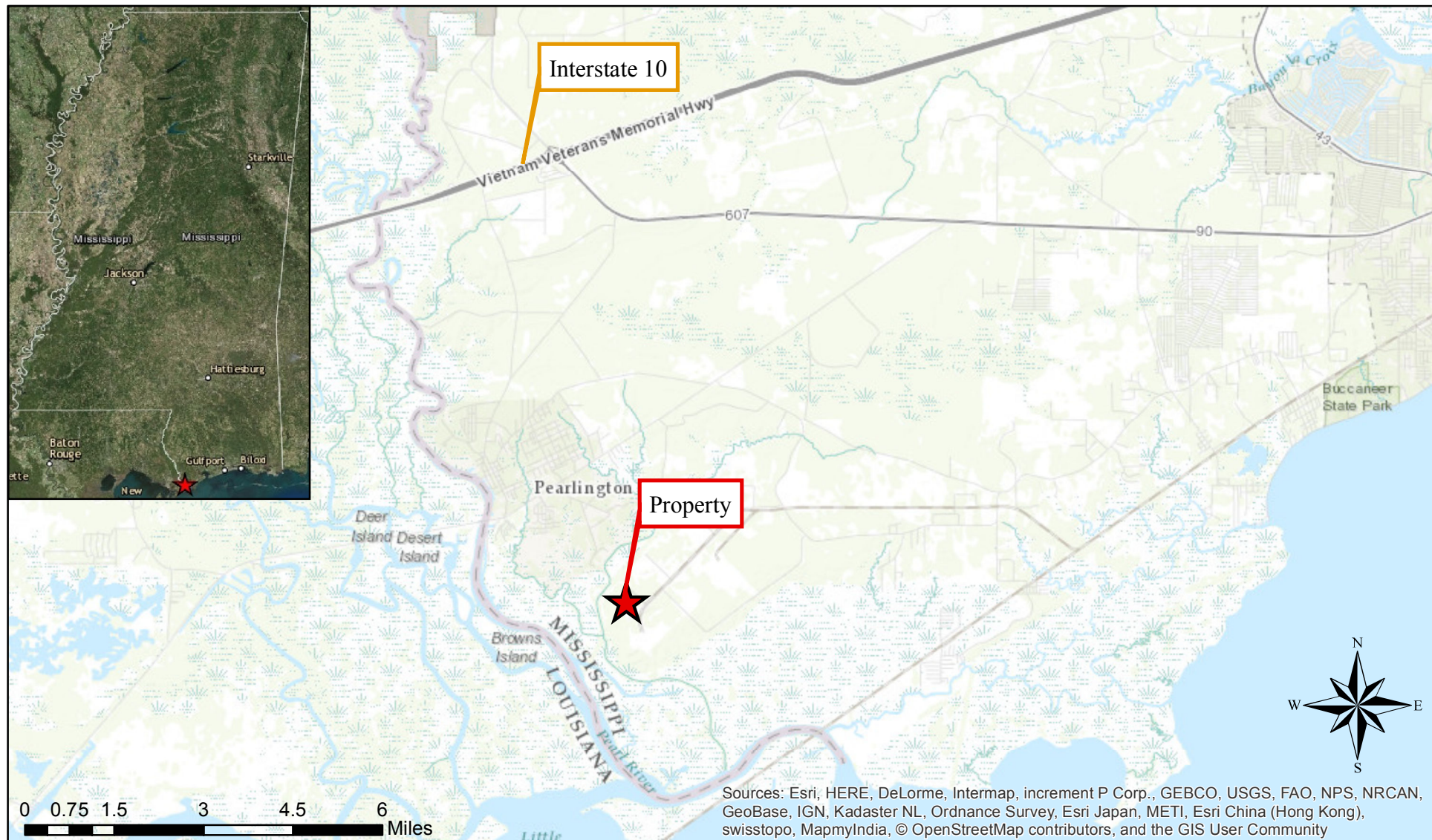
4.0 REFERENCES

- Conant, Roger and Collins, J.T. 1998. *Reptiles and Amphibians of Eastern/Central North America*. Houghton Mifflin Harcourt. Boston, Massachusetts.
- International Union for Conservation of Nature (IUCN). 2010. IUCN Red List of Threatened Species. Version 2010.3. Website accessed May 26, 2017. <http://www.iucnredlist.org>
- Miller, J.H. and Miller, K.V. 2005. *Forest plants of the southeast and their wildlife uses*. University of Georgia Press, Athens.
- National Audubon Society. 2016. “Red Knot: *Calidris canutus*.” Website accessed April 30, 2017. <http://www.audubon.org/field-guide/bird/red-knot>
- National Oceanic and Atmospheric Administration (NOAA) Fisheries. 2015. “Gulf Sturgeon (*Acipenser oxyrinchus desotoi*).” Website accessed April 5, 2017. <http://www.fisheries.noaa.gov/pr/species/fish/gulf-sturgeon.html>
- NOAA Fisheries. 2016. “Leatherback Turtle (*Dermochelys coriacea*).” Website accessed April 5, 2017. <http://www.nmfs.noaa.gov/pr/species/turtles/leatherback.html>
- National Wildlife Federation. 2015. “West Indian Manatee.” Website accessed April 5, 2017. <https://www.nwf.org/Wildlife/Wildlife-Library/Mammals/West-Indian-Manatee.aspx>
- Peterson Roger T. 2002. *Birds of Eastern and Central North America*. Houghton Mifflin Harcourt. Boston, Massachusetts.
- The Nature Conservancy. 2016. “Mississippi Species: Louisiana Quillwort.” Website accessed April 30, 2017. <http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/mississippi/explore/quillwort.xml>
- U.S. Department of Agriculture, Natural Resources Conservation Service. 2008. *The PLANTS database*. National Plant Data Center, Baton Rouge, Louisiana. Website accessed May 26, 2017. <http://plants.usda.gov>
- U.S. Department of the Interior, National Park Service. 2016. “Wood Stork: Species Profile.” Website accessed April 30, 2017. <https://www.nps.gov/ever/learn/nature/woodstork.htm>
- U.S. Fish and Wildlife Service. 1996. *Recovery Plan for Louisiana quillwort (*Isoetes louisianensis* Thieret)*. Atlanta, Georgia. 26pp.

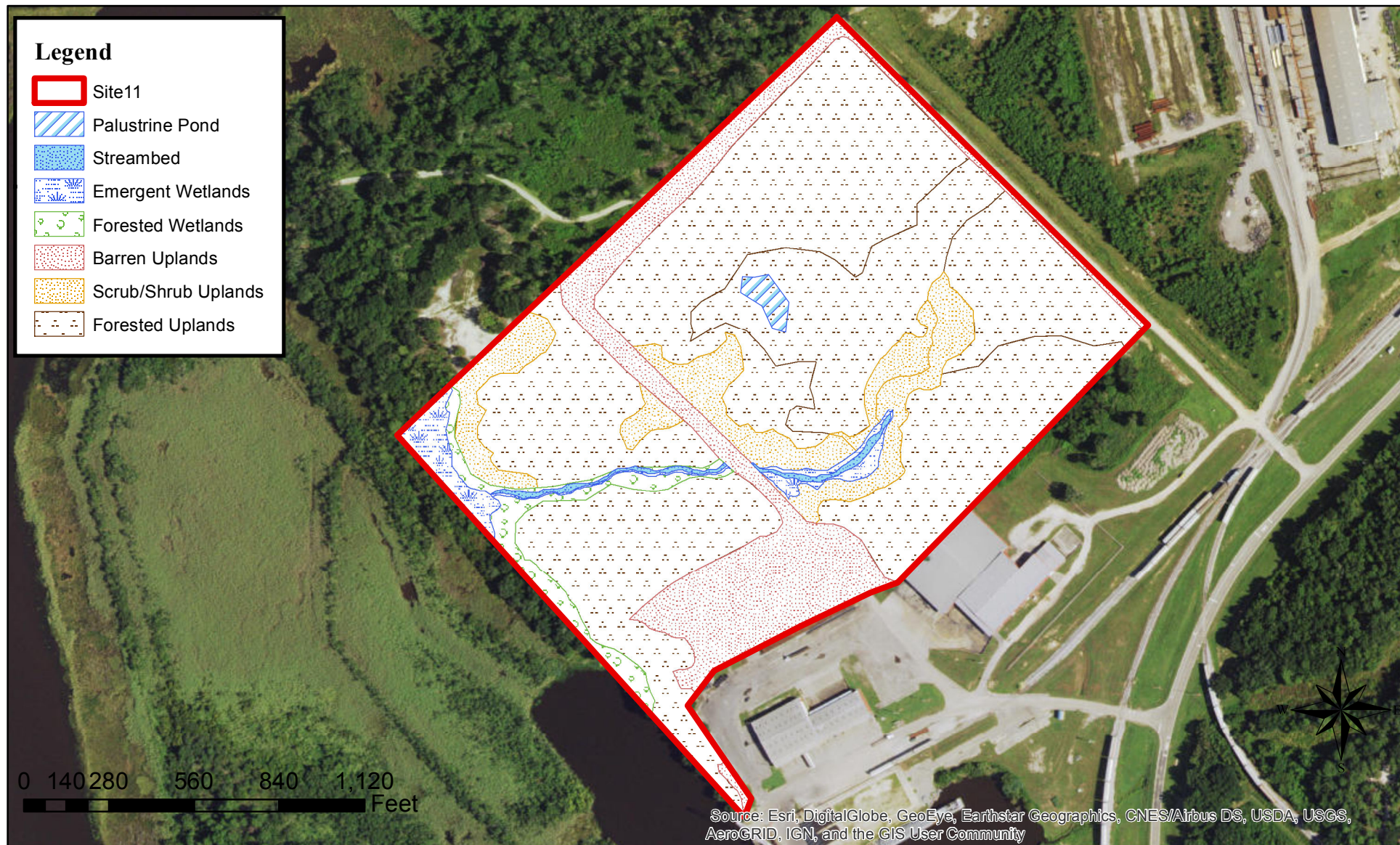
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U. S. Fish and Wildlife Service. 2016. “Species by County Report.” Website accessed April 5, 2017. <https://ecos.fws.gov/ecp0/reports/species-by-current-range-county?fips=28045>

FIGURES







APPENDIX A
SITE PHOTOGRAPHS



Scrub/shrub uplands on property



Forested uplands on property



Forested wetlands on property



Shallow intermittent streambed



Disturbed barren uplands on property