

June 23, 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 6
HANCOCK COUNTY, MISSISSIPPI

Mr. Cork:

We have completed the Wetlands Delineation 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

Wetlands Delineation Report

**Hancock County Port and Harbor Commission
Port Bienville Industrial Park – Site 6
Pearlington, Mississippi**



Prepared By
 **NEEL-SCHAFFER**
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**THREATENED AND ENDANGERED SPECIES SURVEY
HANCOCK COUNTY PORT AND HARBOR COMMISSION
PORT BIENVILLE INDUSTRIAL PARK – SITE 6
PEARLINGTON, MISSISSIPPI
NS Project # 13531.001.015**

Prepared For:

Hancock County Port and Harbor Commission

Prepared By:

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Report Date: June 23, 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 southwest of Lower Bay Road near Pearlinton in Hancock County, Mississippi. HCPHC is taking environmental due diligence initiative on all properties that exhibit a high development potential for prospective tenants. One of the potential development sites, known as Site 6, is located southeast of Port and Harbor Drive within the Industrial Park. The approximately 45-acre site is generally undeveloped land and mostly pine-dominated forest. Four unimproved roads cross the site, and a stockpile of crushed limestone is located on the property's northeastern border. A site location map and 2016 aerial photograph are included as Figures 1 and 2.

At the time of the site visits on April 26, April 27, and May 3, 2017, one critical habitat, emergent wetlands, for Federally listed threatened and endangered species, *Mycteria americana* (wood stork), was observed on the property. Evergreen forested wetlands, deciduous forested wetlands, mixed forested wetlands, and scrub/shrub wetlands 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 1.8 miles south-southeast of U.S. Highway 90 (3.6 miles via Lower Bay Road). Given its general location, 13 threatened and endangered (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 45 acres. The site can be delineated between five vegetative communities: forested uplands, evergreen forested wetlands, deciduous forested wetlands, mixed forested wetlands, and scrub/shrub wetlands (see Figure 3).

Barren Uplands

Barren Uplands can be found throughout the central portion of the property and total approximately 5.75 acres. Plant communities include *Panicum anceps* (beaked panicgrass), *Paspalum notatum* (bahiagrass), and *Rhynchospora cephalantha* (bunched beaksedge).

Forested Uplands

Between wetland areas are forested upland areas within property boundaries and encompass approximately 21.75 acres. Plant communities include *Andropogon virginicus* (broomsedge bluestem), *Conyza canadensis* (Canadian horseweed), *Cyperus retrorsus* (pine barren flatsedge), *Dichanthelium scoparium* (velvet panicum), *Eleocharis* sp. (spikerush), *Euthamia caroliniana* (slender goldentop), *Ilex glabra* (inkberry), *Ilex opaca* (American holly), *Ilex vomitoria* (yaupon), *Nyssa sylvatica* (blackgum), *Panicum anceps* (beaked panicgrass), *Pinus echinata* (shortleaf pine), *Rhus copallinum* (winged sumac), *Rubus aboriginum* (garden dewberry), *Schedonorus arundinaceus* (tall fescue), *Serenoa repens* (saw palmetto), *Smilax bona-nox* (saw greenbriar), *Smilax rotundifolia* (roundleaf greenbriar), *Triadica sebifera* (Chinese tallow), *Quercus stellata* (post oak), *Quercus virginiana* (live oak).

Evergreen Forested Wetland

Evergreen forested wetland habitats within property boundaries encompass approximately 6.23 acres. Plant communities in this wetland habitat include *Andropogon glomeratus* (bushy bluestem), *Andropogon virginicus* (broomsedge bluestem), *Dichanthelium commutatum* (variable panicgrass), *Eriocaulon decangulare* (tenangle pipewort), *Ilex coriacea* (large gallberry), *Ilex glabra* (inkberry), *Juncus biflorus* (bog rush), *Pinus echinata* (shortleaf pine), *Polypremum procumbens* (juniper leaf), *Rhynchospora cephalantha* (bunched beaksedge), and *Sphagnum carolinianum* (Carolina sphagnum).

Deciduous Forested Wetlands

Deciduous forested wetland habitats within the site encompass approximately 0.71 acre. Plant communities in these areas include *Baccharis halimifolia* (eastern baccharis), *Ilex glabra* (inkberry), *Ilex opaca* (American holly), *Ilex vomitoria* (yaupon), *Magnolia virginiana* (sweetbay magnolia), *Nyssa sylvatica* (blackgum), *Pinus echinata* (shortleaf pine), *Quercus laurifolia* (laurel oak), *Smilax bona-nox* (saw greenbriar), and *Viburnum nudum* (possumhaw).

Mixed Forested Wetlands

Mixed forest wetlands on the property total approximately 6.02 acres. Plant communities in these wetlands include *Andropogon virginicus* (broomsedge bluestem), *Baccharis halimifolia* (eastern baccharis), *Cliftonia monophylla* (buckwheat tree), *Dichanthelium commutatum* (variable panicgrass), *Ilex glabra* (inkberry), *Ilex vomitoria* (yaupon), *Magnolia virginiana* (sweetbay magnolia), *Morella cerifera* (wax myrtle), *Pinus echinata* (shortleaf pine), *Polygala lutea* (orange milkwort), *Rhynchospora cephalantha* (bunched beaksedge), *Scleria triglomerata* (whip nutrush), and *Vitis rotundifolia* (muscadine).

Scrub/Shrub Wetlands

Scrub/shrub wetland habitats are located in the middle portion of the property and encompass approximately 3.31 acres. Plant communities include *Centella erecta* (erect centella), *Eragrostis amabilis* (Japanese lovegrass), *Panicum anceps* (beaked panicgrass), *Paspalum notatum* (bahiagrass), *Polygala lutea* (orange milkwort), and *Rhynchospora cephalantha* (bunched beaksedge).

Emergent Wetlands

Emergent wetland habitats are located along the southwestern border of the property and encompass approximately 1.08 acres. Plant communities include *Juncus roemerianus* (needlegrass rush) and *Nelumbo lutea* (American lotus).

1.2 Threatened and Endangered Species Survey and Methods

On April 26, April 27, and May 5, 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. Evergreen forested wetlands, deciduous forested wetlands, mixed forested wetlands, and scrub/shrub wetlands 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, and 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, and 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 are considered critical habitat for *Mycteria americana* (wood stork). Evergreen forested wetlands, deciduous forested wetlands, mixed forested wetlands, and scrub/shrub wetlands can be considered associated habitat for *Gopherus polyphemus* (gopher tortoise), although this species most notably prefers longleaf pine savannas. Because these associated habitats exist within property boundaries, and undeveloped land is adjacent to the east and south, 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 breeding season.

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 the railroad, 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 6 property located southeast 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 non-critical (associated) habitat related to *Gopherus polyphemus* within the property boundaries. Because these habitats exist within property boundaries, and undeveloped pine forests are adjacent to the east and south, 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 prior to or during construction activities.

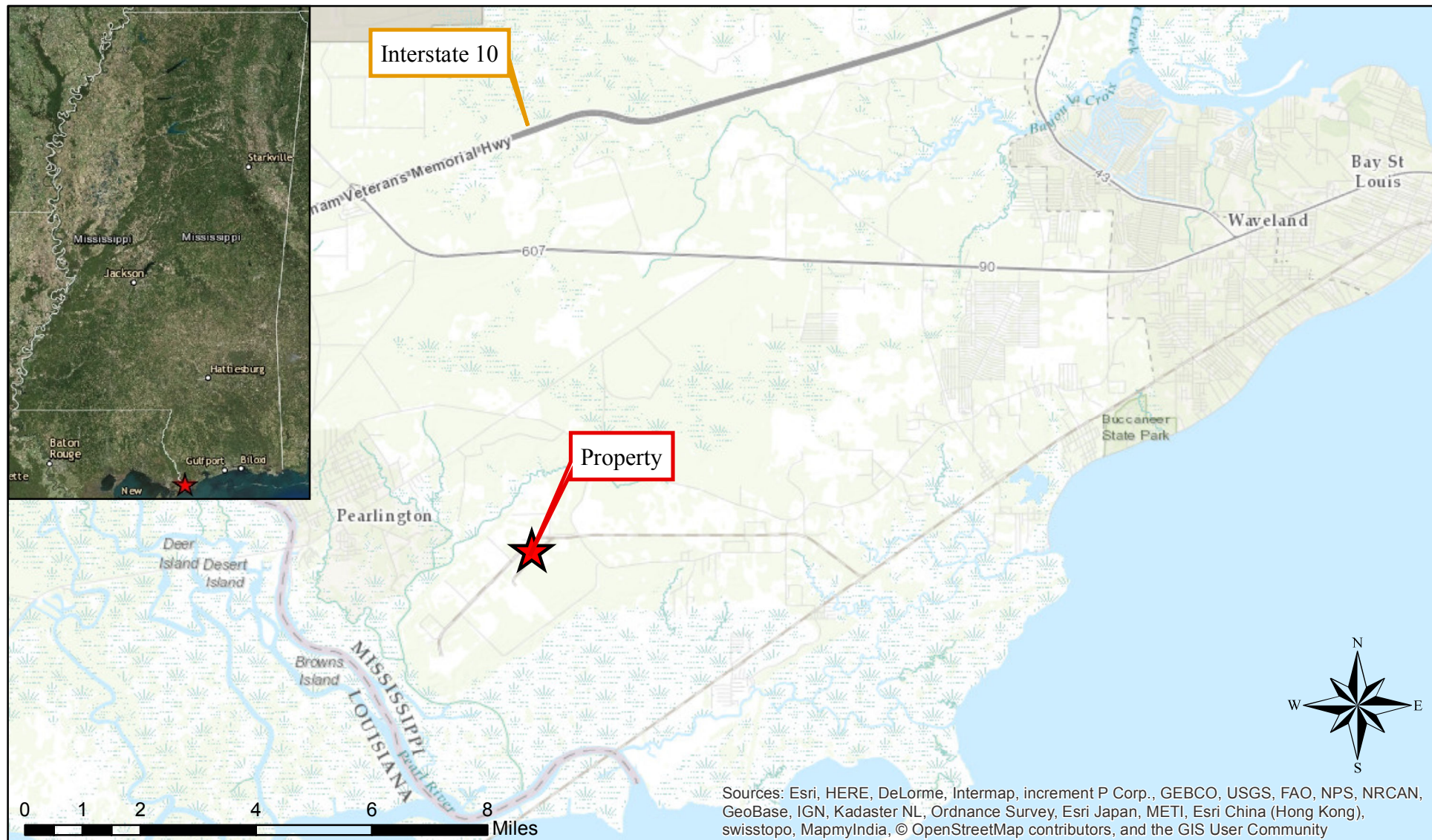
4.0 REFERENCES

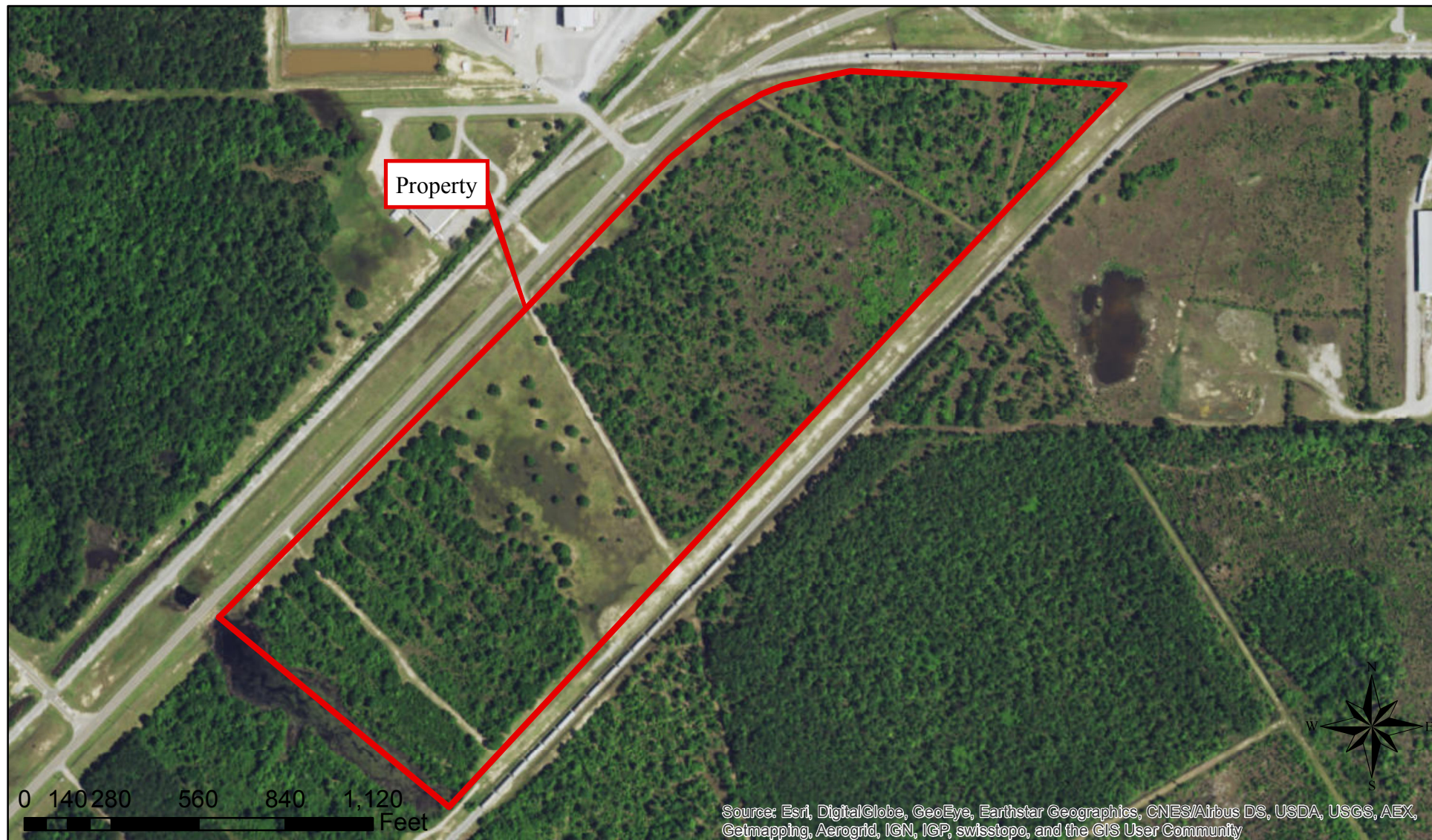
- Conant, Roger and Collins, J.T. 1998. *Reptiles and Amphibians of Eastern/Central North America*. Houghton Mifflin Harcourt. Boston, Massachusetts.
- International Union for Conservation of Nature (IUCN). 2010. IUCN Red List of Threatened Species. Version 2010.3. Website accessed May 26, 2017.
<http://www.iucnredlist.org>
- 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 September 8, 2016. <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 5, 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 September 8, 2016.
<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.

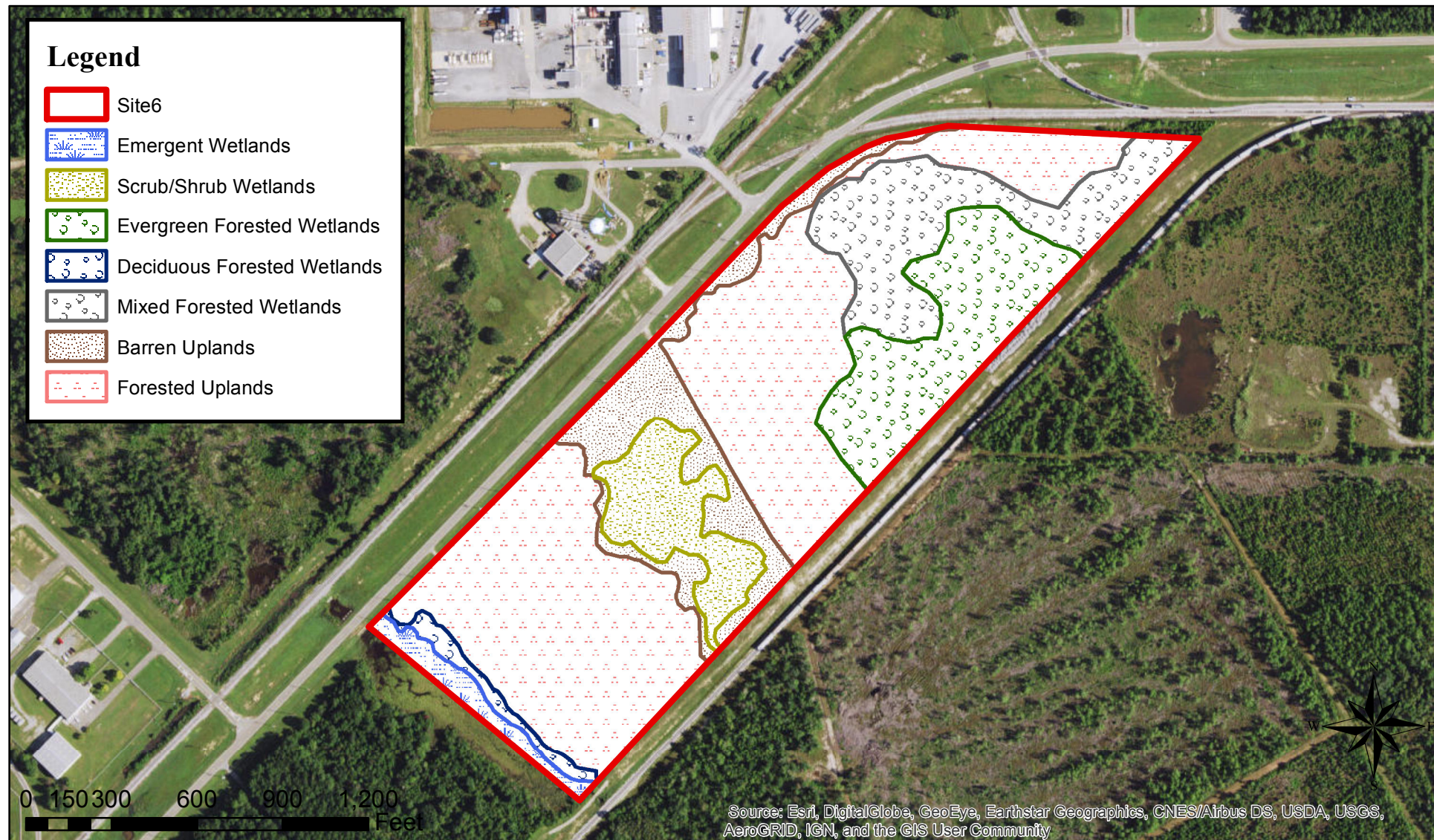
*Threatened and Endangered Species Report
Port Bienville Industrial Park – Site 6
Hancock County, Mississippi*

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



Photograph of Site 6, facing south from Port and Harbor Drive



Photograph of forested upland habitat on property



Photograph of evergreen forested wetland habitat on property



Photograph of deciduous forested wetlands on property



Photograph of mixed forested wetlands on property



Photograph of scrub/shrub wetlands located on property



Photograph, facing northeast, of emergent wetlands on property