



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Mississippi Ecological Services Field Office
6578 Dogwood View Parkway, Suite A
Jackson, Mississippi 39213
Phone: (601)965-4900 Fax: (601)965-4340

January 20, 2023

IN REPLY REFER TO:
2023-0036041

Lisa Morrison
Compton Engineering, Inc.
156 Nixon Street
Biloxi, Mississippi 39530

Dear Ms. Morrison:

The Fish and Wildlife Service (Service) has reviewed your correspondence dated January 5, 2023 regarding the Jackson County Economic Development Foundation – Memorandum of Understanding (MOU) for the Trent Lott International Airport (TLIA) in Jackson County, Mississippi. Our comments are submitted in accordance with the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

The results of your biological survey (December 2022) indicated that the TLIA contains potentially suitable habitat for the federally threatened red-cockaded woodpecker (*Picoides borealis*, RCW). Although trees potentially suitable for foraging and nesting are present, no RCW's nor their cavities were observed.

The Service concurs with your determination regarding the RCW. There are no records of this species within or near the TLIA and the fire-maintained, open-pine habitat required by the RCW appears to be absent within or adjacency to the TLIA.

However, the Service disagrees with your determination that suitable habitat is not present for the endangered Mississippi Sandhill Crane (*Grus canadensis pulla*). We have numerous records of cranes using the mowed portions of the TLIA, which mimics the open-pine savannah habitat necessary for foraging and roosting. Therefore, we recommend that this species be considered during the planning stages of all future activities at the TLIA, and avoidance and minimization measures be developed to avoid impacts to this species.

Finally, your biological survey concluded that suitable habitat for all other federally listed species found in Jackson County was not identified on the TLIA. We concur with this determination.

Your correspondence indicated that the new MOU would provide predevelopment review by the commenting agencies; therefore, we look forward to reviewing any future proposed development projects at the TLIA.

If you have any questions, please contact David Felder of our office, telephone: (601) 321-1131.

Sincerely,

James Austin
Field Supervisor
Mississippi Field Office



COMPTON ENGINEERING, INC.

ENGINEERING, SURVEYING & ENVIRONMENTAL SERVICES

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Biloxi, MS 39530

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January 5, 2023

Mr. David Felder
U.S. Fish and Wildlife Service
Mississippi Ecological Services Field Office
6578 Dogwood View Parkway
Jackson, MS 39213

Re: Jackson County Economic Development Foundation – Memorandum of Understanding
Request for Concurrence
(C.E. Project No. 221-083.016)

Dear Mr. Felder:

The Jackson County Airport Authority (JCAA) has entered a Memorandum of Understanding (MOU) with the U.S. Army Corps of Engineers (USACE) for the Trent Lott International Airport (TLIA) to allow an expedited review of permit applications for development at the airport. The TLIA previously received concurrence for site development projects from the U.S. Fish and Wildlife Service (USFWS) for a Master Plan Permit with the Corps of Engineers dating back to 2003 that was most recently renewed in 2016. The MOU replaces the Master Plan Permit and provides similar predevelopment review by the commenting agencies.

An endangered species survey was initially conducted in 2003 as part of a Project Ready certification and was updated in 2016. The current MOU requires an updated survey and new concurrence from the USFWS.

A site visit was conducted on October 31, 2022 and an updated Endangered Species Survey Report was prepared. No significant changes to the habitat were observed at the time of the site visit and no new occurrences of endangered species were identified. A copy of the updated report is attached.

At this time, JCAA requests that USFWS provide concurrence with the new survey. I have attached a map of the project area for your use. The project has not been revised since the initial concurrence by USFWS. The lead federal agency for any development site at the Jackson County Aviation Technology Park may be the Federal Aviation Administration or the United States Army Corps of Engineers, depending on the location and activities that a tenant of the technology park may conduct.

Please contact me if you need additional information.

Sincerely,

COMPTON ENGINEERING, INC.

Lisa D. Morrison, R.P.G.
Senior Geologist

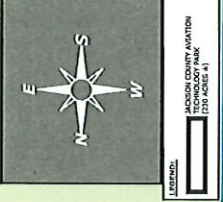
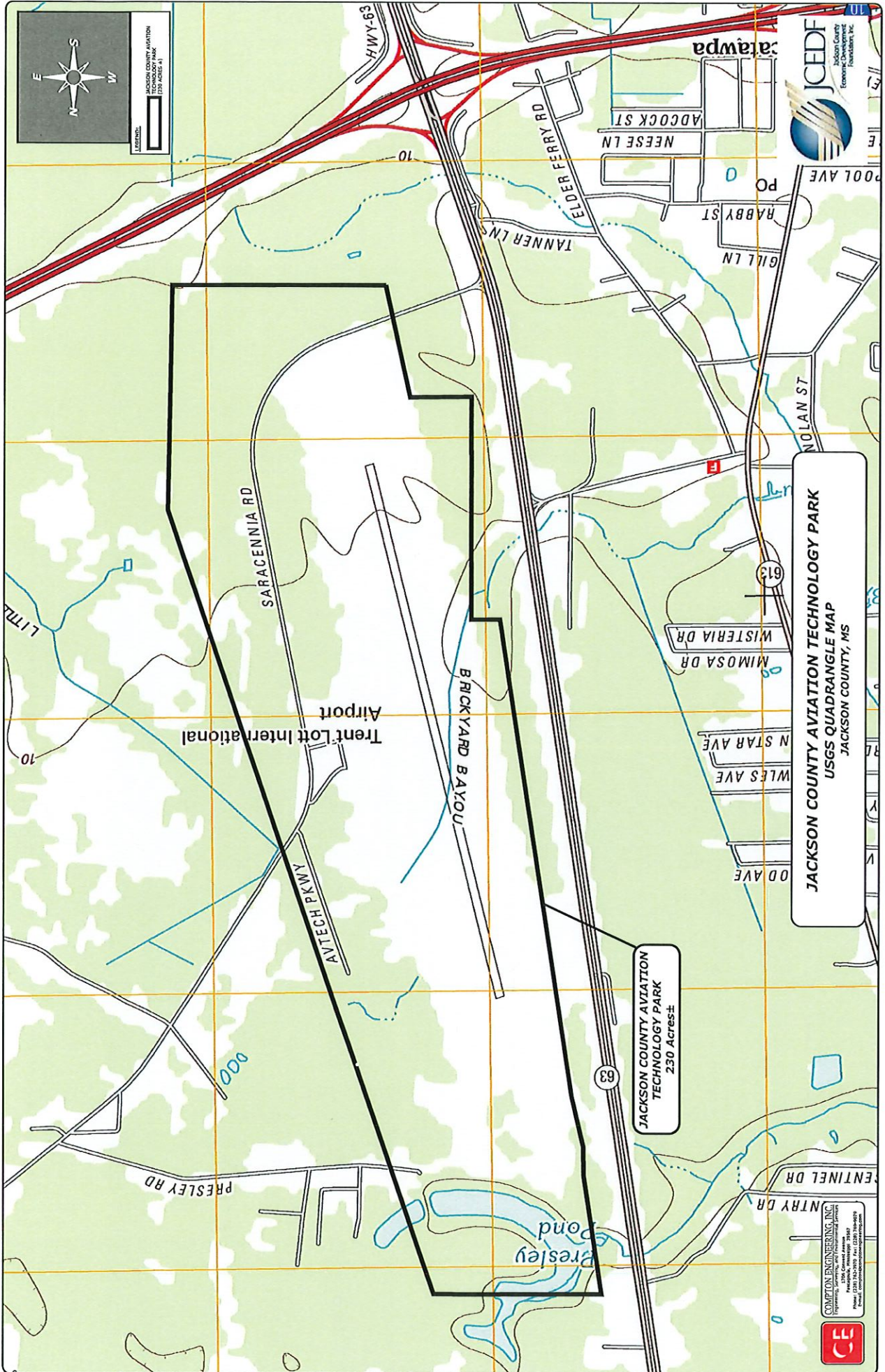
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Enclosures

PASCAGOULA

BILOXI

BAY ST. LOUIS



JACKSON COUNTY AVIATION TECHNOLOGY PARK
 USGS QUADRANGLE MAP
 JACKSON COUNTY, MS

JACKSON COUNTY AVIATION TECHNOLOGY PARK
 230 Acres±

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Threatened and Endangered Species Survey

Trent Lott International Airport

Jackson County, MS



Prepared for

Jackson County Economic Development Foundation

Prepared by:



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Compton Job No. 215-083.005

August 2016, Updated October 2022

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1.0 INTRODUCTION

The Jackson County Economic Development Foundation has entered into a Memorandum of Understanding (MOU) with the U.S. Army Corps of Engineers for development at the Trent Lott International Airport in Moss Point, Mississippi. The MOU requires that an endangered species survey be conducted and concurrence from USFWS be obtained. An Endangered Species Survey was conducted in December 2003 at the request of the United States Fish and Wildlife Service. The survey focused on the gopher tortoise, the eastern indigo snake, the red-cockaded woodpecker, the black pine snake and the Louisiana quillwort. This survey includes an evaluation of the current status of these species within the project boundaries as well as a review of any additional endangered species for which the property may provide habitat.

The Trent Lott International Airport is located in southeast Jackson County in southeastern Mississippi. The project area includes approximately 230 acres. The project area is between Saracenia Road and Highway 63. A map showing the project area is attached.

2.0 ENVIRONMENTAL SETTING

Jackson County is located within the Gulf Coastal Plain physiographic province which is divided into the Southern Pine Hills and Coastal Pine Meadows. The project area is located within the Coastal Pine Meadows region and is characterized with flat to gently rolling terraces near the coast and along rivers. The soils are acid and boggy with high organic content. The meadows include low sandy bluffs of 5-10 feet above sea level which support live oaks, southern magnolia, and saw-palmetto and fire dependent savannahs with slash pine, numerous grasses, sedges, and carnivorous plants (pitcher plants and sundews).

Geology

The subject property is located in the physiographic region known as the Gulf Coastal Plain which consists of three major land-forms divisions: the long leaf pine hills; the coastal pine meadows; and the alluvial plains of the larger rivers, primarily the Pascagoula. The alluvial plains of the Pearl, Pascagoula and Escatawpa Rivers merge with the coastal pine meadows and both are relatively flat and swampy. The coastal pine meadows are 5 to 30 feet above sea level and the alluvial plains of the Pascagoula and Escatawpa Rivers rise from sea level to 50 feet above sea level along the rivers themselves. All of the landforms are bordered by salt water marshes, particularly in the estuarine areas at the mouth of the Pascagoula. The nearest coastal river to the site is the Pascagoula River (1.8 mile west), a regional riverine system cut into Recent and Pleistocene strata. The property can be geomorphologically classified as an urban developed landscape on formerly pine savannah and hardwood forest. The site elevation ranges from 9 feet at the north and south ends of the airport runways to approximately 11 feet on the east and west sides of the airport.

Below the Pleistocene is the Graham Ferry Formation that is 110 to approximately 1000 feet in thickness; that in turn is underlain by the Pascagoula Formation (800 to 1300 feet thick). The clays and sands of the Graham Ferry and Pascagoula formations crop out along streams and in their upper valleys. These are the most developed water use formations, and production wells in the area of the site utilize these formations. These formations consist of sands and gravel units with interbedded clays, (Brown, et. al., 1944). They produce from the Upper and Lower Graham Ferry at depths around 350 - 500 feet below sea level.

Soils

Eight soil types are described for the subject property and three are listed as non-hydric for Jackson County, MS. They are listed in decreasing order of acreage in the subject property and are as follows: Lenoir silt loam -0 to 1 percent slopes; Vancleave loamy sand – 0 to 2 percent slopes; Saucier fine sandy loam – 0 to 2 percent slopes. These soil types occur on terraces, contains loamy alluvium deposits and are moderately well-drained.

The five soil types within the project area that are considered hydric include the Daleville silt loam, 0-1 percent slopes; Daleville loam, ponded; Hyde silt loam; Smithton loam, 0-1 percent slopes, occasionally flooded; Saucier fine sandy loam, 0-2 percent slopes; and Croaton and Johnston soils, frequently flooded. These soils are generally very poorly drained, occur on terraces or depressions and contain loamy marine deposits. The topography is typically gently rolling and the drainage is dendritic.

The surface soils in the coastal area are underlain by estuarine and deltaic sediments that contain fresh water and dip southwestward. These sediments range in age from Miocene to Pleistocene and are not readily separated. Overlying these beds are Pleistocene and Recent terrace and stream valley deposits ranging in thickness from 0 to 160 feet that produce artesian water but are not developed.

Hydrology

The County is fairly level to gently sloping with an elevation of almost 200 feet at the north end of the county to sea level at the coast. Streams flow through a nearly level floodplain, which ranges in width from 0.25 to more than three miles. Stream terraces are only slightly higher than stream bottoms and may be subject to flooding. The central part of the county is drained by the Pascagoula River (1.8 miles west of the project site) with the eastern part being drained by the Escatawpa River (three miles east of the project site). The Graham Ferry formation is the most intensively developed water-bearing formation in the county and is a major source of water for Pascagoula and other communities. In the project area, the depth to groundwater is less than one foot and standing water is common in numerous wetland areas.

3.0 FIELD SURVEY

Field survey of the project area was conducted on October 31, 2022 to evaluate the types of natural habitats present, whether the habitats were suitable for various endangered species listed as possibly present within the county and whether any endangered or threatened species were identified within these habitats. The majority of the project site consists of wetlands varying from low to high quality. The wetlands are classified as palustrine forested or palustrine emergent areas that are flooded or seasonally flooded. These areas are densely vegetated. Developable project areas that are not considered wetlands are cleared uplands adjacent to the runways.

Vegetation

Plant communities that occupy the subject property include trees, saplings, shrubs, herbs, and vines. The canopy is dense and the understory is dense. The area has not been maintained by fire. Observed were: *Acer rubrum* (Red maple), *Pinus elliotii* (Slash pine), *Nyssa biflora* (Swamp tupelo), *Persea borbonia* (Redbay), *Morella cerifera* (Wax myrtle), *Ilex glabra* (Inkberry), *Carex glaucescens* (Southern wax sedge) and *Toxicodendron radicans* (Poison ivy).

The plant community located in the central portion of the property is dominated by trees, saplings, shrubs and herbaceous species. Observed were: *Sapium sebiferum* (Popcorn Tree), *Quercus virginiana* (Live Oak), *Prunus serotina* (Black cherry), *Morella cerifera* (Wax Myrtle), *Ilex vomitoria Aiton* (Yaupon Holly), *Ligustrum sinense* (Chinese privet), *Lygodium japonicum* (Japanese climbing fern), *Rubus argutus* (Sawtooth blackberry), *Toxicodendron radicans* (Poison Ivy), *Lonicera japonica* (Japanese honeysuckle) and *Parthenocissus quinquefolia* (Virginia creeper).

The plant community located at the southeast portion property is dominated by: *Taxodium ascendens* (Pond cypress), *Sapium sebiferum* (Popcorn tree), *Acer rubrum* (Red maple), *Nyssa biflora* (Swamp tupelo), *Ligustrum sinense* (Chinese privet), *Cyrilla racemiflora* (Titi), *Morella cerifera* (Wax myrtle), *Woodwardia aerolata* (Netted chain fern), *Toxicodendron radicans* (Poison Ivy) and *Gelsemium sempervirens* (Evening trumpetflower).

Other plant communities observed include: *Quercus virginiana* (Live Oak), *Sapium sebiferum* (Popcorn tree), *Morella cerifera* (Wax myrtle), *Ligustrum sinense* (Chinese privet), *Ilex vomitoria Aiton* (Yaupon Holly), *Quercus nigra* (Water Oak), *Acer rubrum* (Red maple), *Asplenium platyneuron* (Ebony's spleenwort), *Rubus argutus* (Sawtooth blackberry) and *Vitis rotundifolia* (Muscadine), *Pinus palustris* (Longleaf pine), *Pinus elliotii* (Slash pine), *Ilex glabra* (Inkberry), *Vaccinium arboretum* (Farkleberry), *Vaccinium elliotii* (Elliott's blueberry), *Aristida stricta* (Pineland treeawn) and *Dichantheium clandestinum* (Deer tongue).

Endangered and Threatened Species

Federally listed threatened or endangered species thought to occur within Jackson County are:

Group	Scientific Name	Common Name	Federal Status
Amphibians	<i>Rana sevosa</i>	dusky gopher frog	endangered
Birds	<i>Charadrius melodus</i>	piping plover	endangered
Birds	<i>Calidris canutus rufa</i>	red knot	threatened
Birds	<i>Grus canadensis pulla</i>	Mississippi sandhill crane	endangered
Birds	<i>Picoides borealis</i>	Red-cockaded woodpecker	endangered
Birds	<i>Mycteria Americana</i>	Wood stork	threatened
Ferns and Allies	<i>Isoetes louisianensis</i>	Louisiana quillwort	endangered
Fishes	<i>Acipenser oxyrinchus desotoi</i>	gulf sturgeon	threatened
Fishes	<i>Percina aurora</i>	pearl darter	candidate
Mammals	<i>Trichechus manatus</i>	West Indian manatee	endangered
Mammals	<i>Ursus americanus luteolus</i>	Louisiana black bear	threatened
Reptiles	<i>Chelonia mydas</i>	green sea turtle	threatened
Reptiles	<i>Caretta caretta</i>	loggerhead sea turtle	threatened
Reptiles	<i>Dermochelys coriacea</i>	leatherback sea turtle	endangered
Reptiles	<i>Eretmochelys imbricata</i>	hawksbill sea turtle	endangered
Reptiles	<i>Gopherus polyphemus</i>	gopher tortoise	threatened
Reptiles	<i>Graptemys flavimaculata</i>	yellow-blotched map turtle	threatened
Reptiles	<i>Lepidochelys kempii</i>	Kemp's ridley sea turtle	endangered
Reptiles	<i>Pituophis melanoleucus lodingi</i>	black pine snake	candidate
Reptiles	<i>Pseudemys alabamensis</i>	Alabama red-belly turtle	endangered

In 2003 as part of a Project Ready Certification, the USFWS requested that an endangered species survey be completed with special attention to the potential presence of the gopher tortoise, eastern indigo snake and black pine snake, the red cockaded woodpecker and the Louisiana quillwort. A review of the project area habitats and site conditions did not indicate that these species would likely be present or were identified as present within the project area.

This survey revisited the five species indicated as potentially within the project area as well as reviewed the potential presence of other listed species. The site conditions were observed during field surveys and all of the developable project areas are mapped as wetland with the exception of the cleared and mowed areas adjacent to the runways.

Gopher Tortoise

Gopher tortoises occur in upland habitats throughout the coastal plain of the southeastern United States, with most being found in north-central Florida and southern Georgia. Their numbers have declined range-wide but have been severely reduced at the western and northern part of their range. Gopher tortoise populations along Florida's southeast coast and the Florida Panhandle also are greatly reduced from their historic numbers. Gopher tortoises live in extensive subterranean burrows in dry upland habitats. The habitats where gopher tortoises are found include longleaf pine sandhills, xeric oak hammocks, scrub, pine flatwoods, dry prairies, and coastal dunes. Tortoises can also live in man-made environments, such as pastures, old fields, and grassy roadsides. To be suitable for gopher tortoises, the habitat must have well-drained sandy soils for digging burrows, herbaceous food plants, and open sunny areas for nesting and basking. Periodic natural fires play an important role in maintaining tortoise habitat by opening up the canopy and promoting growth of herbaceous food plants. If natural fires are suppressed, habitats may become unsuitable for tortoises.

The project area soils are typically saturated and the dense canopy limits open areas for nesting. Based on the preferred dry soil habitat, the project area does not provide suitable habitat for the gopher tortoise. No gopher tortoise burrows or actual tortoises were observed during the on-site survey.

Eastern Indigo Snake and Black Pine Snake

The eastern indigo snake (*Drymarchon couperi*) is a massive, black snake. It is the longest snake native to the United States, ranging in size from 60-84 inches (152-213 cm), and is entirely shiny bluish-black color, including the belly. The chin and sides of the head are usually colored reddish or orange-brown. Juvenile indigo snakes look very similar to adults but have much more red on their heads. Indigo snakes are sexually dimorphic, with males growing to larger lengths than females.

Eastern indigo snakes are restricted to Florida and southern areas of Georgia, Alabama, and Mississippi. Although reported historically from extreme southern South Carolina, indigo snakes have not been confirmed in the state in recent years and the early records are questionable. The closely related Texas indigo snake (*Drymarchon corais*) is found in southern Texas and other subspecies range into Central and South America. Until relatively recently, all indigo snakes in the U.S. were considered to be the same species, *D. corais*.

In the Southeast, indigo snakes are restricted to areas of xeric pine-oak sandhills, which are usually inhabited by gopher tortoises. These snakes use gopher tortoise burrows as shelter during the winter and

during the warmer months for nesting and refuge from intense summer heat. During the active season indigo snakes may move long distances and often forage along wetland margins.

The black pinesnake (*Pituophis melanoleucus lodingi*) has a range that extends from southwestern Alabama, through southern Mississippi, and into southeastern Louisiana. In each of these states it is considered imperiled or critically imperiled, and the U.S. Fish and Wildlife Service considers it a candidate for federal listing under the Endangered Species Act. The snakes live in upland, open [longleaf pine forests](#) with sandy, well-drained soils and dense grassy or herbaceous groundcover. These snakes may also be found within stream or river corridors and in or near pitcher plant bogs located within or adjacent to longleaf pine forests. The black pine snake requires large tracts of undisturbed land, from 135 to 385 acres, to conduct seasonal and daily activities such as eating, mating and hibernation.

Based on the lack of gopher tortoise burrows and suitable areas for these snake species for nesting and refuge it does not appear that the project area provides suitable habitat for the Eastern Indigo Snake or the Black Pine Snake. No snakes were observed during the onsite survey.

Red Cockaded Woodpecker

The red-cockaded woodpecker is approximately 7 inches long (18 to 20 centimeters), with a wingspan of about 15 inches (35 to 38 centimeters). Its back is barred with black and white horizontal stripes. The red-cockaded woodpecker's most distinguishing feature is a black cap and nape that encircle large white cheek patches.

Rarely visible, except perhaps during the breeding season and periods of territorial defense, the male has a small red streak on each side of its black cap called a cockade, hence its name. The common name came into use during the early 1800's when 'cockade' was regularly used to refer to a ribbon or other ornament worn on a hat. Female RCWs lack the red cockade. Juvenile males have a red 'patch' in the center of their black crown. This patch disappears during the fall of their first year at which time their 'red-cockades' appear.

RCWs were once considered common throughout the longleaf pine ecosystem, which covered approximately 90 million acres before European settlement. Historical population estimates are 1-1.6 million "groups", the family unit of RCWs. The birds inhabited the open pine forests of the southeast from New Jersey, Maryland and Virginia to Florida, west to Texas and north to portions of Oklahoma, Missouri, Tennessee and Kentucky.

The longleaf pine ecosystem initially disappeared from much of its original range because of early (1700's) European settlement, widespread commercial timber harvesting and the naval stores/turpentine industry (1800's). Early to mid-1900 commercial tree farming, urbanization and agriculture contributed to further declines. Much of the current habitat is also very different in quality from historical pine forests in which RCWs evolved. Today, many southern pine forests are young and an absence of fire has created a dense pine/hardwood forest. Numerous slash pine and long leaf pine are present within the project area, however, no nesting cavities were observed during the onsite survey. It is possible however, if present in the area, the red-cockaded woodpecker uses the area for foraging and nesting cavities may be present, but not easily observed.

Louisiana Quillwort

Louisiana quillwort (*Isoetes louisianensis*) was first discovered in two Louisiana parishes during the late 1970s. It has always been rare and is considered endangered. It is federally listed as an [endangered species](#), partly due to its highly restricted range. To date, there are 8 populations in Louisiana, 3 populations in Alabama and 30 populations in Mississippi. Louisiana quillwort is browsed by marsh rabbits and white-tailed deer. The Louisiana Quillwort occurs predominantly on sand and gravel bars on small to medium-sized streams. These plants live for periods underwater. They are regularly inundated as much as 50 centimeters (20 inches) following rains and may be inundated for long periods in wet seasons. No intermittent or perennial streams are present within the project area, therefore, no habitat suitable for the Louisiana quillwort is available in the project area.

Alabama red-bellied turtle

The Alabama red-bellied turtle is a large (20 to 25 centimeters or 8 to 10 inches carapace length) freshwater turtle, normally with an orange to reddish plastron and a prominent notch at the tip of the upper jaw, bordered on either side by a toothlike cusp. The Alabama red-bellied turtle seems to feed almost entirely on aquatic plants. They are typically found in shallow vegetated backwaters of freshwater streams, rivers, bays, and bayous in or adjacent to Mobile Bay and in south Mississippi. They seem to prefer habitats having soft bottoms and extensive beds of submergent aquatic macrophytes. Based on the preferred habitat of the Alabama red-bellied turtle, it does not appear that the project area provides habitat for the species.

Yellow-blotched map turtle

The yellow-blotched map turtle is (*Graptemys flavimaculata*), or **yellow-blotched sawback**, is a species of [turtle](#) in the [Emydidae](#) family. It is part of the narrow-headed group of [map turtles](#), and is [endemic](#) to the southern [United States](#). It lives mainly in the Pascagoula River drainage basin, primarily on sandbars within sand or clay bottomed streams and rivers, formed by moderate currents. It has also been found along banks, either with limestone ledges or rocky bottoms. Based on the preferred habitat of the yellow blotched map turtle, it does not appear that the project area provides habitat for the species.

Other listed species

Suitable habitat for the other above listed species is not provided within the footprint of the proposed project so impacts to these species are not foreseen.

Critical Habitat

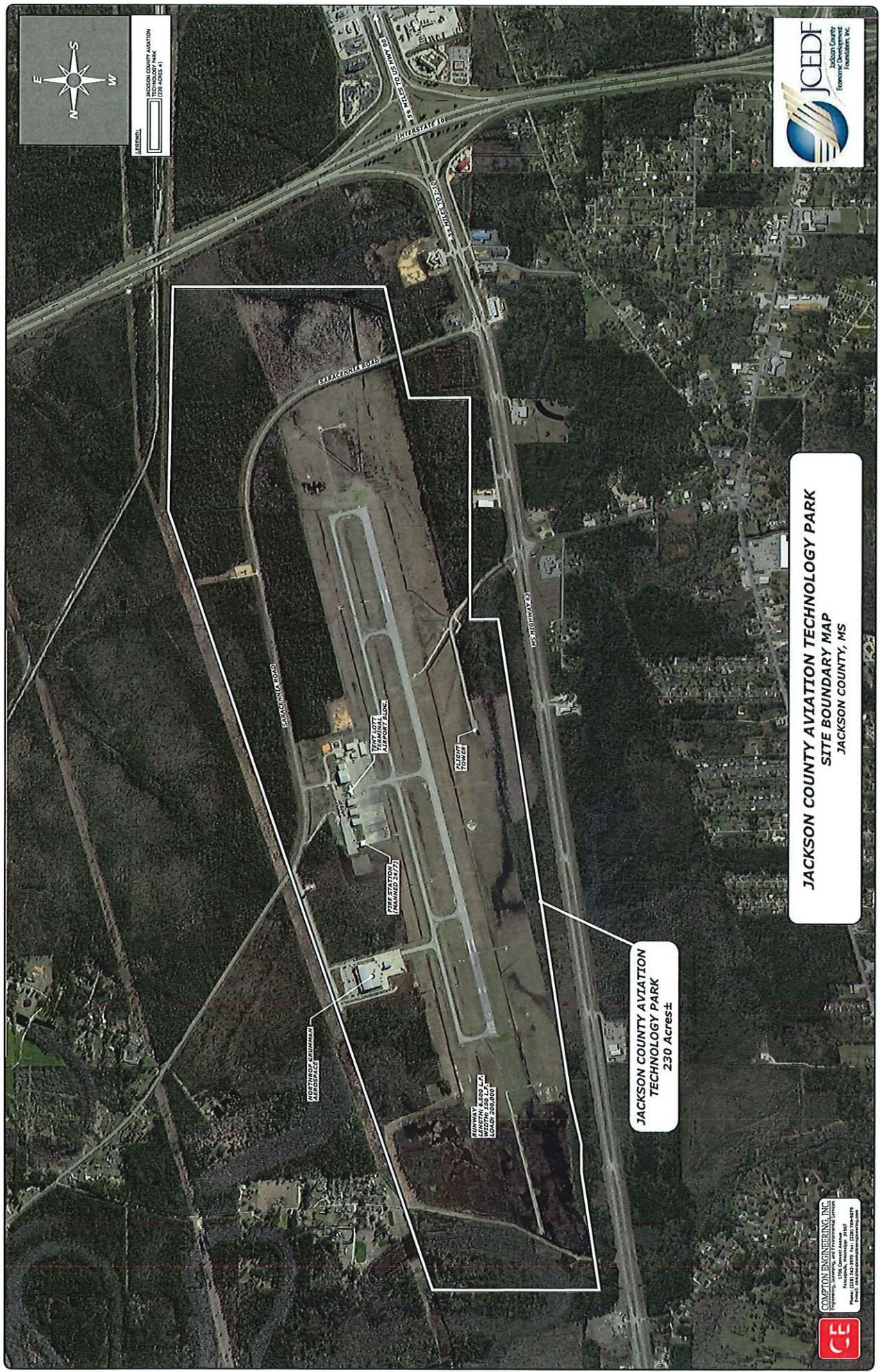
The project area is not located within or near critical habitat for any federally listed species. No impacts to critical habitat are foreseen as a result of this project.

Conclusions

Field surveys for suitable habitat or the presence of threatened or endangered species were conducted within the boundaries of the project area at the Trent Lott International Airport in Moss Point, Mississippi. No suitable habitat was identified for most species listed as potentially present within Jackson County and no individual members of a threatened or endangered species were observed. The project area may provide habitat for the red-cockaded woodpecker; however, no nesting cavities were observed.



JACKSON COUNTY AVIATION
TECHNOLOGY PARK
230 ACRES ±



**JACKSON COUNTY AVIATION TECHNOLOGY PARK
SITE BOUNDARY MAP
JACKSON COUNTY, MS**

**JACKSON COUNTY AVIATION
TECHNOLOGY PARK
230 Acres±**

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