

FMBrew Campus

20.6± Acre Parcel

Section 19, Township 45 South, Range 26 East
Lee County, Florida

Protected Species Assessment

August 2020

Prepared for:

**Mr. Rod Whyte
Ms. Jen Gratz
Fort Myers Brewery
12811 Commerce Lakes Drive # 28
Fort Myers, FL 33913**

Prepared by:

***DexBender*
4470 Camino Real Way, Suite 101
Fort Myers, FL 33966
(239) 334-3680**

INTRODUCTION

The 20.6 ± acre project is located within a portion of Section 19, Township 45 South, Range 26 East, Lee County, Florida. The parcel is bordered to the north by an industrial park, Daniels State Preserve, and open pasture, to the east and south by Daniels Parkway, and to the west by Commerce Lakes Drive.

SITE CONDITIONS

The site consists of upland and wetland habitats including pine flatwoods, dry and wet prairies, upland hardwoods, freshwater marshes, and cypress wetlands. There were several inches of standing water present within the freshwater marsh and cypress wetlands as well as within the ditches at the time of the survey

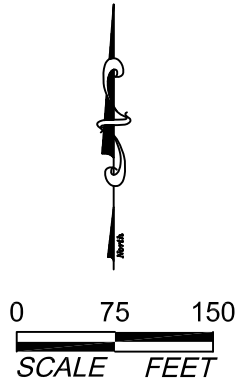
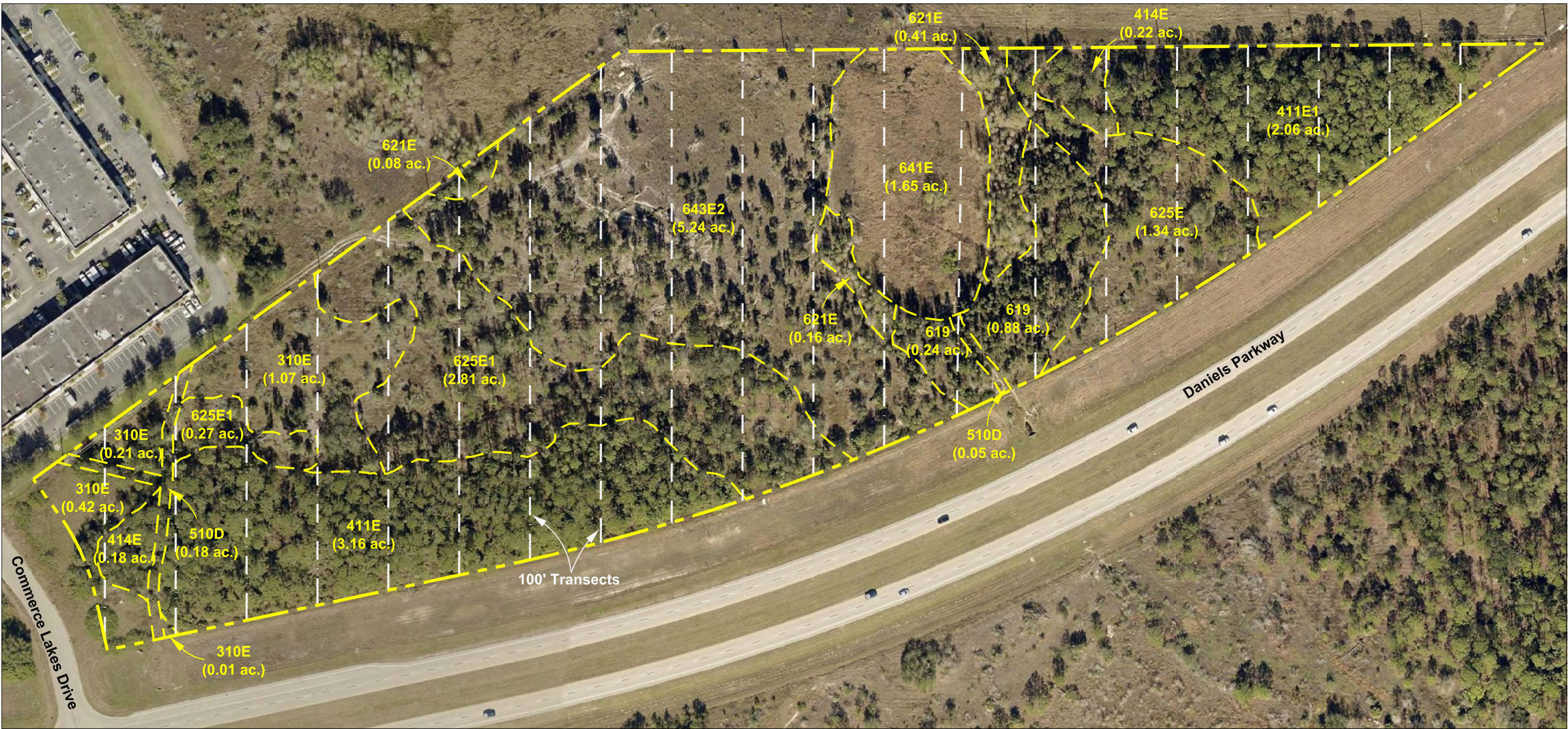
VEGETATIVE CLASSIFICATIONS

The predominant vegetation associations were mapped in the field on 2018 digital 1" = 150' scale aerial photography. The approximate property boundary was obtained from the Lee County Property Appraiser's web site and inserted into the digital aerial. The property boundary was not staked in the field at the time of our site inspection and was, therefore, estimated based on the overlay of the approximate boundary on the aerial photography. Eleven vegetation associations were identified using the Florida Land Use, Cover and Forms Classification System (FLUCCS). Figure 1 depicts the approximate location and configuration of these vegetation associations and Table 1 summarizes the acreages by FLUCCS Code. A brief description of each FLUCCS Code is also provided below.

Table 1. Acreage Summary by FLUCCS Code

FLUCCS CODE	DESCRIPTION	ACREAGE
310E	Dry Prairie Invaded by Exotics (5-9%)	1.71
411E	Pine Flatwoods Invaded by Exotics (5-9%)	3.16
411E1	Pine Flatwoods Invaded by Exotics (10-25%)	2.06
414E	Pine – Mesic Oak Invaded by Exotics (5-9%)	0.40
510D	Ditches	0.23
619	Exotic Wetland Hardwoods	1.12
621E	Cypress Invaded by Exotics (5-9%)	0.65
625E	Hydric Pine Flatwoods Invaded by Exotics (5-9%)	1.34
625E1	Hydric Pine Flatwoods Invaded by Exotics (10-25%)	3.03
641E	Freshwater Marshes Invaded by Exotics (5-9%)	1.65
643E2	Wet Prairies Invaded by Exotics (26-50%)	5.24
Total		20.64

SECTION: 19
TOWNSHIP: 45 S
RANGE: 26 E



Notes:
1. Property boundary provided by Waldrop Engineering.
2. Mapping based on photointerpretation of 2018 aerial photography and ground truthing in February 2019.
3. Delineation of jurisdictional wetlands field reviewed/approved by SFWMD (App No. 190319-1262).

FLUCCS	Description	Acreage
310E	Dry Prairie Invaded by Exotics (5-9%)	1.71 ac.
411E	Pine Flatwoods Invaded by Exotics (5-9%)	3.16 ac.
411E1	Pine Flatwoods Invaded by Exotics (10-25%)	2.06 ac.
414E	Pine - Mesic Oak Invaded by Exotics (5-9%)	0.40 ac.
510D	Ditches	0.23 ac.
619	Exotic Wetland Hardwoods	1.12 ac.
621E	Cypress Invaded by Exotics (5-9%)	0.65 ac.
625E	Hydric Pine Flatwoods Invaded by Exotics (5-9%)	1.34 ac.
625E1	Hydric Pine Flatwoods Invaded by Exotics (10-25%)	3.08 ac.
641E	Freshwater Marshes Invaded by Exotics (5-9%)	1.65 ac.
643E2	Wet Prairies Invaded by Exotics (26-50%)	5.24 ac.
		20.64 ac.

PERMIT USE ONLY
NOT FOR CONSTRUCTION
August 31, 2020 11:29:45 a.m.
Drawing: RWJG2PLAN.DWG

FLUCCS Code 310E, Dry Prairie Invaded by Exotics (5-9%)

This FLUCCS code contains widely scattered slash pine (*Pinus elliottii*), melaleuca (*Melaleuca quinquenervia*), and cabbage palm (*Sabal palmetto*).

FLUCCS Code 411E, Pine Flatwoods Invaded by Exotics (5-9%)

This upland community is dominated by slash pine with scattered melaleuca, myrsine (*Myrsine sp.*), wax-myrtle (*Myrica cerifera*), and dahoon holly (*Ilex cassine*). Saw palmetto (*Serenoa repens*) is the dominant ground cover along with wire grass (*Aristida stricta*) and grape vine (*Vitus sp.*).

FLUCCS Code 411E1, Pine Flatwoods Invaded by Exotics (10-25%)

This upland community is dominated by slash pine and melaleuca. Scattered wax-myrtle, Brazilian pepper (*Schinus terebinthifolius*), and cabbage palm are also present. Saw palmetto is the dominant ground cover.

FLUCCS Code 414E, Pine - Mesic Oak

Small sections of mesic upland pine flatwoods are located in the northeast and west portions of the property. The canopy is dominated by slash pine with a significant number of live oaks (*Quercus virginiana*), laurel oaks (*Quercus laurifolia*), and cabbage palms. Saw palmetto dominates the ground cover.

FLUCCS Code 510D, Ditches

Two ditches are located on the property. One ditch is located near the western property line running from the north property line to the south property line. The second ditch is located on the southern property line and leads into the freshwater marsh.

FLUCCS Code 619, Exotic Wetland Hardwoods

Melaleuca is the dominant species within this wetland community. Widely scattered slash pine, laurel oak, Brazilian pepper, and cypress (*Taxodium sp.*) are also present.

FLUCCS Code 621E, Cypress Invaded by Exotics (5-9%)

Two cypress wetlands are located on the property. Cypress dominates the canopy. Willow (*Salix caroliniana*), wax myrtle, scattered melaleuca and Brazilian pepper are present in the midstory.

FLUCCS Code 625E, Hydric Pine Flatwoods Invaded by Exotics (5-9%)

A 1.35± acre area of hydric pine flatwoods is located in the south eastern portion of the site. This wetland area is dominated by slash pine with scattered melaleuca. The midstory is open and the ground cover is dominated by transitional wetland species such as little blue maidencane (*Amphicarpum muhlenbergia*) and yellow-eyed grass (*Xyris sp.*).

FLUCCS Code 625E1, Hydric Pine Flatwoods Invaded by Exotics (10-25%)

This wetland area is dominated by slash pine and melaleuca. Cabbage palm, cocoplum (*Chrysobalanus icaco*), and myrsine are also present.

FLUCCS Code 641E, Freshwater Marshes Invaded by Exotics (5-9%)

This wetland area contains little blue maidencane, willow, and fire flag (*Thalia geniculata*). Located around the perimeter of the marsh is cypress and scattered melaleuca.

FLUCCS Code 643E2, Wet Prairies Invaded by Exotics (26-50%)

Located in the center of the site, this 5.08± acre wet prairie contains melaleuca, scattered slash pine, cocoplum, wax myrtle and cabbage palm.

SURVEY METHOD

Lee County Protected Species Ordinance No. 89-34 lists several protected species of animals that could potentially occur on-site based on the general vegetative associations found on the subject parcel. Each habitat type was surveyed for the occurrence of these and any other listed species likely to occur in the specific habitat types. The survey was conducted using meandering linear pedestrian belt transects. This survey methodology is based on the Lee County administratively approved Meandering Transect Methodology. As part of this survey all live trees and snags were inspected for the evidence of cavities that could potentially be used as roosts by the Florida bonneted bat (*Eumops floridanus*). In order to provide at least 80 percent visual coverage of habitat types listed in Ordinance No. 89-34, the transects were spaced approximately 100 feet apart. The approximate locations of all direct sighting or signs (such as tracks, nests, and droppings) of a listed species were denoted on the aerial photography. A Florida bonneted bat (*Eumops floridanus*) cavity survey has also been conducted. The transects for that survey were spaced approximately 100 feet apart. All live trees and snags were inspected for the evidence of cavities. The 1" = 150' scale aerial Protected Species Assessment map (Figure 1) depicts the approximate location of the survey transects and the results of the survey. The listed species survey was conducted during the mid-morning hours of August 20, 2020. During the survey the weather was cloudy and humid with a light breeze.

Species listed as endangered, threatened, or species of special concern by the Florida Fish and Wildlife Conservation Commission (FWC) or the United States Fish and Wildlife Service (FWS) that could potentially occur on the subject parcel according to the Lee County Protected Species Ordinance are shown in Table 2. This list from the Lee County Protected Species Ordinance is general in nature, contains species that were subsequently delisted by the state, does not necessarily reflect existing conditions within or adjacent to the 20± acre property, and is provided for general informational purposes only. The bald eagle (*Haliaeetus leucocephalus*) (which has been delisted by the FWC and FWS but is still protected by other regulations), the Florida black bear (*Ursus americanus floridanus*) (delisted in 2012 and still protected by the Florida Black Bear Management Plan), and the Florida bonneted bat (*Eumops floridanus*) (which was listed by the FWS after Ordinance No. 89-34 was adopted by Lee County) were also included in the survey.

Prior to conducting the protected species survey, a search of the FWC listed species database (updated in March 2020) was conducted to determine the known occurrence of listed species in the project area. This search revealed no known protected species occurring on or immediately adjacent to the site.

Table 2. Listed Species That Could Potentially Occur On-site

FLUCCS CODE	Percent Survey Coverage	Species Name	Present	Absent
310E	80	None		
411E	80	Gopher Frog (<i>Rana areolata</i>)*		√
		Eastern Indigo Snake (<i>Drymarchon corais couperi</i>)		√
		Gopher Tortoise (<i>Gopherus polyphemus</i>)		√
		Red-cockaded Woodpecker (<i>Picoides borealis</i>)		√
		Southeastern American Kestrel (<i>Falco sparverius paulus</i>)		√
		Big Cypress Fox Squirrel (<i>Sciurus niger avicennia</i>)		√
		Florida Black Bear (<i>Ursus americanus floridanus</i>)*		√
		Florida Panther (<i>Felis concolor coryi</i>)		√
		Beautiful Pawpaw (<i>Deeringothamnus pulchellus</i>)		√
		Fakahatchee Burmannia (<i>Burmannia flava</i>)		√
		Florida Coontie (<i>Zamia floridana</i>)		√
		Satinleaf (<i>Chrysophyllum olivaeforme</i>)		√

FLUCCS CODE	Percent Survey Coverage	Species Name	Present	Absent
411E1	80	Gopher Frog (<i>Rana areolata</i>)*		√
		Eastern Indigo Snake (<i>Drymarchon corais couperi</i>)		√
		Gopher Tortoise (<i>Gopherus polyphemus</i>)		√
		Red-cockaded Woodpecker (<i>Picoides borealis</i>)		√
		Southeastern American Kestrel (<i>Falco sparverius paulus</i>)		√
		Big Cypress Fox Squirrel (<i>Sciurus niger avicennia</i>)		√
		Florida Black Bear (<i>Ursus americanus floridanus</i>)*		√
		Florida Panther (<i>Felis concolor coryi</i>)		√
		Beautiful Pawpaw (<i>Deeringothamnus pulchellus</i>)		√
		Fakahatchee Burmannia (<i>Burmannia flava</i>)		√
		Florida Coontie (<i>Zamia floridana</i>)		√
		Satinleaf (<i>Chrysophyllum olivaeforme</i>)		√
414E	80	Gopher Frog (<i>Rana areolata</i>)*		√
		Eastern Indigo Snake (<i>Drymarchon corais couperi</i>)		√
		Florida Black Bear (<i>Ursus americanus floridanus</i>)*		√
		Florida Panther (<i>Felis concolor coryi</i>)		√
510D	80	American Alligator (<i>Alligator mississippiensis</i>)		√
		Limpkin (<i>Aramus guarauna</i>)*		√
		Little Blue Heron (<i>Egretta caerulea</i>)		√
		Reddish Egret (<i>Egretta rufescens</i>)		√
		Roseate Spoonbill (<i>Ajaia ajaja</i>)		√
		Snowy Egret (<i>Egretta thula</i>)*		√
		Tricolored Heron (<i>Egretta tricolor</i>)		√
		Everglades Mink (<i>Mustela vison evergladensis</i>)		√
619	80	None		

FLUCCS CODE	Percent Survey Coverage	Species Name	Present	Absent
621E	80	Gopher Frog (<i>Rana areolata</i>)*		√
		American Alligator (<i>Alligator mississippiensis</i>)		√
		Arctic Peregrine Falcon (<i>Falco peregrinus tundrius</i>)*		√
		Limpkin (<i>Aramus guarauna</i>)*		√
		Little Blue Heron (<i>Egretta caerulea</i>)		√
		Snowy Egret (<i>Egretta thula</i>)*		√
		Tricolored Heron (<i>Egretta tricolor</i>)		√
		Wood Stork (<i>Mycteria americana</i>)		√
		Big Cypress Fox Squirrel (<i>Sciurus niger avicennia</i>)		√
		Everglades Mink (<i>Mustela vison evergladensis</i>)		√
		Florida Black Bear (<i>Ursus americanus floridanus</i>)*		√
		Florida Panther (<i>Felis concolor coryi</i>)		√
		Twisted Air Plant (<i>Tillandsia flexuosa</i>)		√
625E	80	Gopher Frog (<i>Rana areolata</i>)*		√
		Eastern Indigo Snake (<i>Drymarchon corais couperi</i>)		√
		Arctic Peregrine Falcon (<i>Falco peregrinus tundrius</i>)*		√
		Little Blue Heron (<i>Egretta caerulea</i>)		√
		Red-cockaded Woodpecker (<i>Picoides borealis</i>)		√
		Snowy Egret (<i>Egretta thula</i>)*		√
		Tricolored Heron (<i>Egretta tricolor</i>)		√
		Big Cypress Fox Squirrel (<i>Sciurus niger avicennia</i>)		√
		Everglades Mink (<i>Mustela vison evergladensis</i>)		√
		Florida Black Bear (<i>Ursus americanus floridanus</i>)*		√
		Florida Panther (<i>Felis concolor coryi</i>)		√

FLUCCS CODE	Percent Survey Coverage	Species Name	Present	Absent
625E1	80	Gopher Frog (<i>Rana areolata</i>)*		√
		Eastern Indigo Snake (<i>Drymarchon corais couperi</i>)		√
		Arctic Peregrine Falcon (<i>Falco peregrinus tundrius</i>)*		√
		Little Blue Heron (<i>Egretta caerulea</i>)		√
		Red-cockaded Woodpecker (<i>Picoides borealis</i>)		√
		Snowy Egret (<i>Egretta thula</i>)*		√
		Tricolored Heron (<i>Egretta tricolor</i>)		√
		Big Cypress Fox Squirrel (<i>Sciurus niger avicennia</i>)		√
		Everglades Mink (<i>Mustela vison evergladensis</i>)		√
		Florida Black Bear (<i>Ursus americanus floridanus</i>)*		√
		Florida Panther (<i>Felis concolor coryi</i>)		√
641E	80	American Alligator (<i>Alligator mississippiensis</i>)		√
		Florida Sandhill Crane (<i>Grus canadensis pratensis</i>)		√
		Limpkin (<i>Aramus guarauna</i>)*		√
		Little Blue Heron (<i>Egretta caerulea</i>)		√
		Reddish Egret (<i>Egretta rufescens</i>)		√
		Snail Kite (<i>Rostrhamus sociabilis</i>)		√
		Snowy Egret (<i>Egretta thula</i>)*		√
		Tricolored Heron (<i>Egretta tricolor</i>)		√
		Wood Stork (<i>Mycteria americana</i>)		√
		Everglades Mink (<i>Mustela vison evergladensis</i>)		√
643E2	80	Florida Sandhill Crane (<i>Grus canadensis pratensis</i>)		√
		Limpkin (<i>Aramus guarauna</i>)*		√
		Little Blue Heron (<i>Egretta caerulea</i>)		√
		Reddish Egret (<i>Egretta rufescens</i>)		√
		Snail Kite (<i>Rostrhamus sociabilis</i>)		√
		Snowy Egret (<i>Egretta thula</i>)*		√
		Tricolored Heron (<i>Egretta tricolor</i>)		√
		Wood Stork (<i>Mycteria americana</i>)		√
		Everglades Mink (<i>Mustela vison evergladensis</i>)		√

* Species delisted subsequent to adoption of Lee County Protected Species Ordinance No. 89-34.

SURVEY RESULTS

No species listed by either the FWS or the FWC were observed on the site during the protected species survey. No trees containing potential Florida bonneted bat cavities were observed during our site inspection. In addition to the site inspection, a search of the FWC species database (updated in March 2020) revealed no known protected species within or immediately adjacent to the project limits.