



July 31<sup>st</sup>, 2020

Mr. Bob Dello Russo  
The Golf Group  
4100 Wekiva Club Court  
Longwood, FL 32779

**Re: Deer Run  
Seminole County, FL  
Listed Species Report  
ECS Project No. 134.02.20**

Dear Bob:

On June 8<sup>th</sup> and 9<sup>th</sup>, 2020 a listed species survey was conducted on the Deer Run project site. The proposed project site entrance is located immediately north of S Eagle Circle. Daneswood Way is the entrance to the Deer Run golf course in Casselberry, Florida. More specifically, the proposed project is located in Section 14, 15, 22 Township 21 South and Range 30 East of Seminole County, Florida (Figure 1).

The property is an abandoned golf course that is mowed and maintained. There are multiple ponds present throughout the property as well as a ditch system and marsh habitat.

A survey of the project boundaries was conducted to assess the potential occurrence of flora and fauna listed as threatened or endangered by the United States Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FWC), and the Florida Department of Agriculture (FDA). Tables 1 and 2 provide a listing of the species known to occur within Seminole County and their expected occurrence of the project site.

The findings and conclusions of the survey are reported in this letter. The survey was conducted by Ecological Consulting Solutions Inc (ECS) for the purpose of evaluating the site for the presence or absence of wetland habitat and protected flora and fauna or their habitat. The survey was conducted by means of pedestrian transects in the early morning to assure the potential of observing listed fauna as recommended by the FWC and the USFWS.

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The following resources were used for supporting information during the site assessment and letter preparation:

- Color aerial photographs (1" = 300), 2019, Google Earth, Seminole County, Florida
- United States Geological Survey (USGS) 7.5 minute quadrangle map, Seminole County, Florida
- National Wetlands Inventory Mapping, U.S. Fish and Wildlife Service
- Official Lists of Endangered and Potentially Endangered Fauna and Flora in Florida (FWC)

Pedestrian surveys of the project site were conducted in order to qualitatively document the existing vegetation and to assess the present land use patterns according to the *Florida Land Use, Cover and Forms Classification System, Department of Transportation* (FLUCFCS; DOT 1999). One (01) land-use types were determined for the project site. A brief description of each FLUCFCS community is provided below (Figure 2).

### **182 – Golf Course**

The property is an abandoned golf course. There is a club house in the south-central portion of the property with a parking lot. There are paved cart paths that run through the uplands located on site. The majority of the uplands are mowed bahia grass (*Paspalum notatum*) with no canopy cover. The areas where a canopy is present the dominate species are live oak (*Quercus virginiana*) and slash pine (*Pinus elliottii*). Other tree species observed in the uplands include sweetgums (*Liquidambar styraciflua*), laurel oak (*Quercus laurifolia*), and cabbage palms (*Sabal palmetto*). The edge of the golf course has areas that are not mowed and contain weedy species such as ragweed (*Ambrosia artemisiifolia*), dog fennel (*Eupatorium capillifolium*), and some cogon grass (*Imperata cylindrica*).

Thirteen (13) surface waters were located on site. Large ponds on site were predominately open water habitats with edge vegetation consisting of wax myrtle (*Myrica cerifera*), Carolina willow (*Salix caroliniana*), primrose willow (*Ludwigia peruviana*), netted-chain fern (*Woodwardia areolata*), cinnamon fern (*Osmunda cinnamomea*), cattail (*Typha spp.*) and soft rush (*Juncus effuses*). Some areas where a canopy was present although limited species observed include red maple (*Acer rubrum*) and slash pine. There are multiple culverts and drainage pipes connecting the ditches to offsite wetlands.

### **Listed Species Survey Results**

A survey was conducted using pedestrian transects throughout the site to assess the occurrence, or potential for occurrence, of flora and fauna listed as threatened, endangered, or as species of special concern (SSC) by the Florida Fish and Wildlife Conservation Commission (FWC), United States Fish and Wildlife Service (USFWS), and Florida Department of Agriculture (FDA).

On January 11, 2017, the FWC State listing status changes, originally proposed back in 2010, became official after the approval of Florida's Imperiled Species Management Plan by FWC Commissioners.

- 15 species were removed from Florida's Endangered and Threatened Species List: Eastern chipmunk, Florida mouse, brown pelican, limpkin, snowy egret, white ibis, peninsula ribbon snake (Lower Keys population), red rat snake (Lower Keys population), striped mud turtle (Lower Keys population), Suwannee cooter, gopher frog, Pine Barrens tree frog, Lake Eustis pupfish, mangrove rivulus, and Florida tree snail.
- 23 species changed from State-designated Species of Special Concern to State-designated Threatened species: Sherman's short-tailed shrew, Sanibel rice rat, little blue heron, tricolored heron, reddish egret, roseate spoonbill, American oystercatcher, black skimmer, Florida burrowing owl, Marian's marsh wren, Worthington's Marsh wren, Scott's seaside sparrow, Wakulla seaside sparrow, Barbour's map turtle, Florida Keys mole skink, Florida pine snake, Georgia blind salamander, Florida bog frog, bluenose shiner, saltmarsh top minnow, Southern tessellated darter, Santa Fe crayfish, and Black Creek crayfish.
- 14 species keep their State-designated Threatened status: Everglades mink, Big Cypress fox squirrel, Florida sandhill crane, snowy plover, least tern, white-crowned pigeon, Southeastern American kestrel, Florida brown snake (Lower Keys population), Key ringneck snake, short-tailed snake, rim rock crowned snake, Key silverside, blackmouth shiner, and crystal darter.
- Five species listed as State-designated Species of Special Concern: (list species): Homosassa shrew, Sherman's fox squirrel, osprey (Monroe County population), alligator snapping turtle, and harlequin darter.

On December 23, 2018, the State listing status changes that were proposed in 2011 as part of the newly implemented imperiled species management system became official after the approval of Florida's Imperiled Species Management Plan by FWC Commissioners.

- Four species were removed from Florida's Endangered and Threatened Species List as State Species of Special Concern: Harlequin darter, Osprey (Monroe County population), Homosassa shrew, and Sherman's fox squirrel.
- The Alligator snapping turtle was taxonomically reclassified into three subspecies. The Suwannee alligator snapping turtle was listed as a State-designated Threatened species.
- Two species were listed as Federally-designated Threatened species: Giant manta ray and Nassau grouper.
- Four species had changes in their scientific names: Short tailed snake, Bluetail mole skink, Florida Keys mole skink, and sand skink.

## **Birds**

Approximately 36 species (and sub-species) of birds found in Florida are protected by the FWC and/or the USFWS. Only about fifteen (15) are expected to occur in Central Florida.

The USFWS lists three bird species for Seminole County. No listed birds were observed at this site (Table 1).

Florida scrub jays (*Aphelocoma c. coerulescens*) were not observed on the project site. This species is listed as threatened at the state and federal levels. The onsite upland habitats do not contain suitable scrub habitat. The guidelines outlined in the *Ecology & Development-Related Habitat Requirements of the Florida Scrub Jay (April 1991)* were reviewed prior to the site visit. No scrub jays were observed or vocalizations heard.

Red-cockaded woodpeckers (*Picoides borealis*) are threatened (USFWS) and endangered (FWC). No red-cockaded woodpeckers were observed and the upland habitat type is not suitable. There were no open pine flatwoods with old-growth pines that characterize RCW nesting and foraging habitat.

Listed wading birds such as limpkin (*Aramus guarauna*), little blue heron (*Egretta caerulea*), snowy egret (*Egretta thula*), tricolored heron (*Egretta tricolor*), white ibis (*Eudocimus albus*) and wood stork (*Mycteria americana*) could use the onsite ponds as foraging or nesting habitat. The onsite ponds and herbaceous wetlands provide good habitat for wading birds due to the abandoned nature of the property the onsite wetlands have dense edge vegetation, multiple listed wading birds like the little blue heron, snowy egret, and tricolored heron were observed on site. No nest sites were observed during the site visit.

There is a ditch system that runs through the property which provides foraging habitat for wading birds like wood storks.

### **Bald Eagle**

Bald eagles (*Haliaeetus leucocephalus*) or their nests were not observed on the site. Bald eagles are protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The USFWS has established a 660 foot protection zone around a bald eagle nest.

ECS searched the FWC website as well as the Audubon Society Eagle Watch website to determine if any documented bald eagle nests are within 660 feet of the site. There is one nest (SE098a) located within the project boundary. This nest is listed as an alternate nest by the Audubon Society and its status was unknown for the 2020 nesting season. The primary nest (SE098) is located 1,600ft south west of the project site and is listed as being occupied for the 2020 nesting season. This nest is outside of the 660ft setback.

ECS searched for the alternate nest, reported onsite, and observed a partial or remnant nest structure in a pine tree. The nest was too small for a bald eagle nest and either the nest construction was never completed or a portion of the nest has fallen from the nest tree.

Concerning active or alternate nests, the USFWS has setbacks for development from the nest tree. The USFWS requires a 660 foot setback from the nest tree and requires a permit for any proposed development within the 660 foot setback. However, for this nest, it is listed as an alternative nest, most of the nest has fallen out of the tree and a new active nest was found offsite to the southwest.

ECS recommends contacting USFWS to report the current condition of the onsite nest. The USFWS will also allow the 660 foot setback to be reduced based on existing developments.

More specifically, if there is existing development within the 660 foot setback and the development has been present during a nesting season, then the 660 foot setback can be reduced to the distance to the closest development. Since there are existing single family residences immediately south of the nest tree, the USFWS will allow the reduction of the 660 foot setback to match the distance between the nest tree and the existing single family residences. This distance is no more than 50 feet. However, ECS first recommends contacting the USFWS to get the nest classified as abandoned so there are no restrictions.

### **Southeastern American Kestrel**

The southeastern American kestrel is listed as threatened by the Florida Fish and Wildlife Conservation Commission (FWC). It is not listed by the U.S. Fish and Wildlife Service. Habitat loss, specifically a lack of suitable nest cavities, is the primary reason for the decline of this species. Lack of fire also has reduced the quality of habitat.

Territory sizes for kestrels range from 50-317 hectares (124-783 acres) depending on habitat quality. Breeding densities also vary with habitat and can range from 0.14 pairs per kilometer-squared (km<sup>2</sup>) (0.36 pairs/mile<sup>2</sup>) to 0.67 pairs/km<sup>2</sup> (1.74 pairs/mile<sup>2</sup>). Open patches of grass or bare ground are needed since thick palmettos prevent detection of prey.

The southeastern American kestrel is the only subspecies of kestrel that breeds in Florida. They nest primarily in large dead trees in cavities previously excavated or hollowed out by woodpeckers. Breeding season ranges from mid-March to early June. Second nesting attempts occasionally occur, especially in Florida, when the first nest either fails or is completed early in the breeding season. All birds found in the breeding season (April through early September) should be considered as the listed subspecies.

ECS staff observed one kestrel while conducting the site assessment which took place on June 8<sup>th</sup>, 2020. Since the kestrel was observed in the breeding season it may be the listed Southeastern American kestrels (*Falco sparverius paulus*).

FWC may require a formal kestrel survey to be done during the breeding season.

No other listed raptors such as Arctic peregrine falcons (*Falco peregrinus tundrius*) were observed on or around the site. There is little foraging habitat for falcons. No birds were observed on or offsite at the time of the survey.

### **Amphibians and Reptiles**

About thirty (30) species of Florida's amphibians and reptiles are protected. The USFWS lists three amphibian and reptile species for Seminole County.

The property does not contain open sandy habitat for the presence of sand skinks (*Neoseps reynoldsi*). The known range of this species is west of the project site.

### **Gopher Tortoise**

A 100% survey was conducted throughout the property for gopher tortoises (*Gopherus polyphemus*), a species listed by the FWC as a Threatened. No gopher tortoises or their burrows were observed. The onsite habitat is poor for gopher tortoises.

Several commensal species associated with gopher tortoise burrows, including the gopher frog (*Rana capito*) and eastern indigo snake (*Drymarchon corais couperi*) also receive protection, but were not observed.

### **Eastern Indigo Snake**

Concerning the eastern indigo snake, ECS conducted survey transects to identify potential aboveground and underground refugia, which eastern indigo snakes may inhabit. Underground refugia includes active or inactive gopher tortoise burrows, mammal burrows, hollows at the base of trees and other similar formations. Above ground refugia includes thick shrub formations, stumps, the base of thick palmetto, ground litter, brush piles, trash piles, and abandoned structures, and crevices of rock-lined ditch walls and other similar refugia.

Surveys for eastern indigo snakes are recommended by the USFWS during the time of October 01<sup>st</sup> through April 30<sup>th</sup>. There were little suitable refugia for the eastern indigo snake onsite. No eastern indigo snakes were observed.

The USFWS has established new programmatic effect determination key (Key) as part of the eastern indigo snake management. The Key allows the USFWS to require mitigation for eastern indigo snake habitat if 25 or more acres of suitable habitat will be impacted for development.

The USFWS has established a fund that a developer can pay into for mitigation.

A developer can pay up front and then no surveys for the eastern indigo snakes are required. The survey is a minimum 5-day survey. To save time and monies associated with the surveys, the developer can pay a fee and expedite the permitting process.

To determine if the site has eastern indigo snake habitat will be up to the USFWS reviewer assigned to the project.

The Key only applies if a project has Army Corps of Engineers jurisdictional wetlands. It was designed to speed up the permitting process for indigo snakes when there are Army Corps of Engineers jurisdictional wetlands onsite. The idea is a developer pays into the fund and gets a permit quickly.

If a project site does not have Army Corps of Engineers jurisdictional wetlands, then the programmatic key cannot be used. Under this circumstance, formal consultation with the

USFWS would have to be conducted which can take up to 6 months to obtain a permit to impact eastern indigo snake habitat.

The USFWS requires the developer to notify the local field office via email at least **30 days prior** to any clearing/land alteration activities.

The notification has to include an eastern indigo snake protection/education plan. This notification can occur via email with the protection/education plan attached.

As long as the signatory of the e-mail certifies compliance with the protection/education plan (including use of the USFWS informational poster and brochure), no further written confirmation or “approval” from the USFWS is needed and the applicant may move forward with the project.

### **Mammals**

Thirty (30) mammals are currently protected in Florida. About six could occur in the region of this project site. The USFWS lists one mammal species for Seminole County.

None were observed on this site. We focused our search on fox squirrels (*Sciurus niger shermani*) and the Florida mouse (*Peromyscus floridanus*) and their possible den or nest sites. We did not observe any listed mammals or their potential den sites. The lack of gopher tortoise burrows decreases the probability of the Florida mouse occurring onsite.

### **Listed Plants**

There were no protected plant species found on the project site (Table 2). Currently, there are no technical reports available by the state or federal agencies mentioned in this letter report for the survey of the nearly 400 protected plant species. None of the agencies require relocation or mitigation for protected plant species.

The Department of Agriculture and Consumer Services (DACS) designates and regulates plants listed as “endangered”, “commercially exploited” and “threatened”. There is no statutory prohibition against a landowner from harvesting an endangered or threatened plant from his property.

However, it is unlawful for an individual to harvest an endangered or threatened species from the private land of another or any public land without first obtaining written permission of that landowner and a permit from DACS. Additionally, harvesting three or more commercially exploited plants from the private land of another or any public land will also require a DACS permit.

### **Summary**

In summary, wading birds were observed in several of the onsite ponds. No wading bird nests were observed. If any wading birds nest onsite, the nests cannot be disturbed.

There is an alternate bald eagle nest reported onsite. ECS recommends contacting the USFWS to attempt to get the nest classified as abandoned as a new active nest has been reported to the southwest of the project site and the onsite nest is too small for bald eagles. If the USFWS will not reclassify the nest, then ECS will reduce the 660 foot setback down to the closest existing single family residence which is an estimated 50 feet away.

Ecological Consulting Solutions Inc. appreciates the opportunity to provide you with our services. Should you have any questions or require additional information, please do not hesitate to contact me.

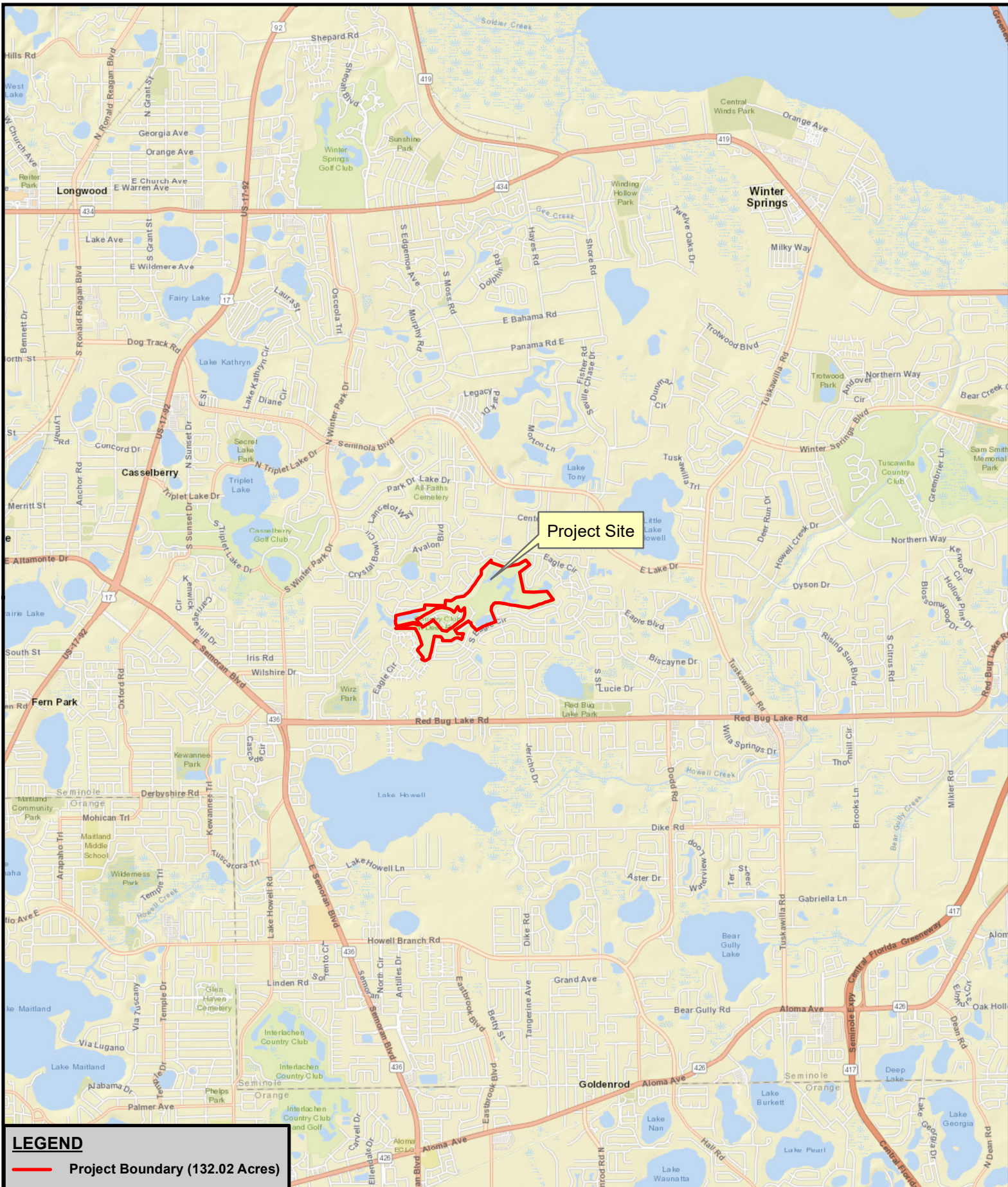
Sincerely,

ECOLOGICAL CONSULTING SOLUTIONS INC

A handwritten signature in cursive script, appearing to read "Chris Krack".

Chris Krack

## FIGURES



# LEGEND

— Project Boundary (132.02 Acres)

[www.ecologicalcs.com](http://www.ecologicalcs.com)



## DEER RUN GOLF COURSE SEMINOLE COUNTY, FLORIDA LOCATION MAP

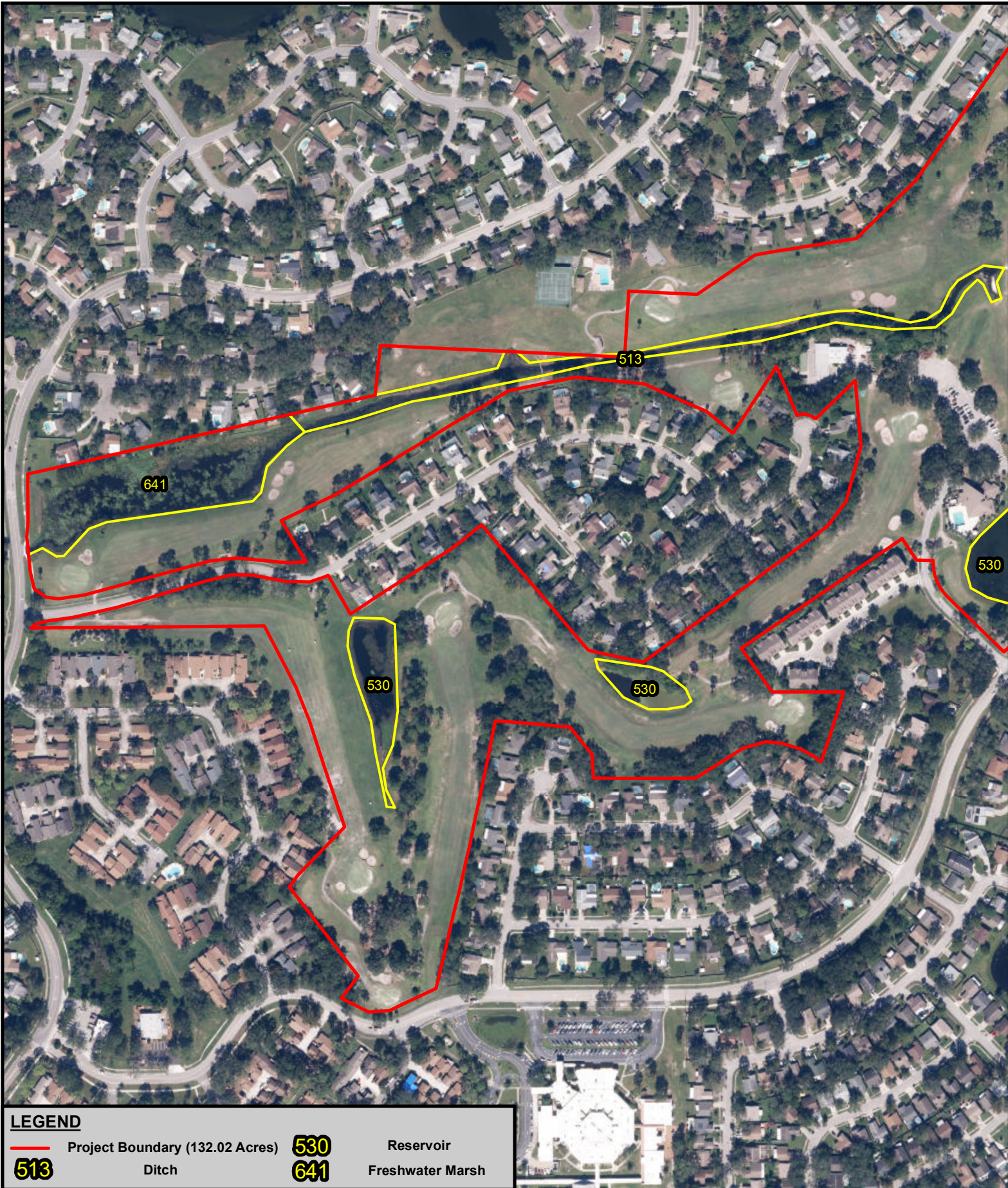
PROJECT #: 134.02.20 DATE: 06/01/20 FIGURE #: 1

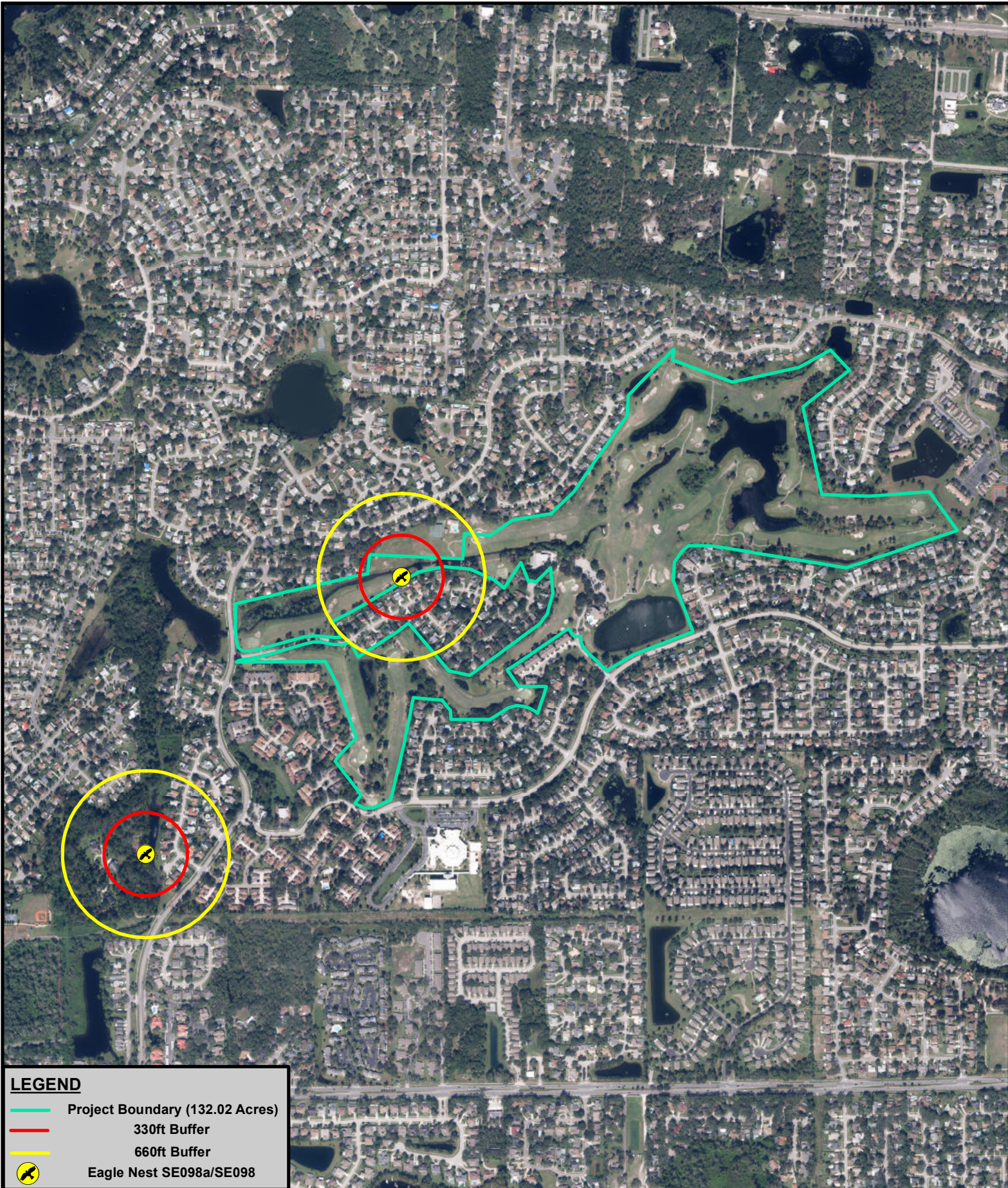
0 1,500 3,000 6,000 9,000 Feet




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# LEGEND

- Project Boundary (132.02 Acres)
- 330ft Buffer
- 660ft Buffer
-  Eagle Nest SE098a/SE098

[www.ecologicalcs.com](http://www.ecologicalcs.com)



## DEER RUN GOLF COURSE SEMINOLE COUNTY, FLORIDA NEST SE098a MAP

PROJECT #: 134.02.20 DATE: 06/01/20 FIGURE #: 4

0 1,200 2,400 Feet



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## TABLES

**TABLE 1: PROTECTED FAUNA FOUND IN SEMINOLE COUNTY, FLORIDA AND THEIR EXPECTED OCCURRENCE ON THE DEER RUN PROJECT SITE.**

SPECIES	FWC STATUS (1)	USFWS STATUS (2)	PREFERRED HABITAT (3)	PROBABILITY OF OCCURRENCE (4)
<b>REPTILES</b>				
<u>Alligator mississippiensis</u> American alligator	SSC	T	Vegetated lakes and deepwater swamps	Low: open water habitat available, none sighted
<u>Drymarchon corais couperi</u> Eastern indigo snake	T	T	Dry habitats bordered by water; often occupy <i>G. polyphemus</i> burrows	Low: habitat not available and gopher tortoise burrows not present
<u>Gopherus polyphemus</u> Gopher tortoise	T	—	Well drained soil; xeric pine-oak hammocks and scrub; pine flatwoods	Low: little habitat available, no burrows observed
<u>Eumeces egregius lividus</u> Bluetail mole skink	T	T	Dry, white sands of scrub, high pine and citrus grove in the Lake Wales Ridge system	Low: habitat not present, outside of ridge, none observed
<u>Neoseps reynoldsi</u> Sand skink	T	T	Dry, white sands of scrub, high pine and citrus grove in the Lake Wales Ridge system	Low: habitat not present, outside of ridge, none sighted
<u>Pituophis melanoleucus mugitus</u> Florida Pine Snake	SSC		Open, pine-turkey oak woodland, longleaf pine forests and abandoned fields.	Low: habitat not present, no snakes observed.
<b>AMPHIBIANS</b>				
<u>Rana capito aesopus</u> Florida gopher frog	SSC	-	Dry, xeric habitats with wetlands such as isolated permanent ponds and cypress domes	Low: habitat not available, no gopher tortoise burrow observed
<b>BIRDS</b>				
<u>Aphelocoma coerulescens</u> Florida scrub jay	T	T	Level, sterile, white sand with low, xeric oak scrub	Low: habitat not available, none sighted
<u>Aramus guarauna</u> Limpkin	SSC	—	Densely vegetated swamps, lakeshores and slow streams	Low: ditch habitat available, none sighted
<u>Egretta caerulea</u> Little blue heron	SSC	—	Lake littorus; shallow ponds and marshes	low: open water habitat available, none sighted

**TABLE 1: PROTECTED FAUNA FOUND IN SEMINOLE COUNTY, FLORIDA AND THEIR EXPECTED OCCURRENCE ON THE DEER RUN PROJECT SITE**

SPECIES	FWC STATUS (1)	USFWS STATUS (2)	PREFERRED HABITAT (3)	PROBABILITY OF OCCURRENCE (4)
<b>BIRDS (cont..)</b>				
<u>Ammodramus savannarum floridanus</u> Florida grasshopper sparrow	E	E	Dry prairie and wet prairies	Low: habitat not available, none sighted
<u>Polyborus plancus audubonii</u> Audubon's crested caracara	T	T	Mesic temperate hammock and pine flatwoods, dry prairie and wet prairies	Low: habitat not available, no birds sighted
<u>Falco peregrinus tundrius</u> Peregrine falcon	E	—	Coastal beaches, prairies, and marshes	Low: habitat not available, none sighted.
<u>Falco sparverius paulus</u> Southeastern American kestrel	T	—	Forest edges, and clearings; nests in mature pines	Low: habitat available, none sighted
<u>Grus canadensis pratensis</u> Florida sandhill crane	T	—	Marshes, wet prairies, pastures, and open herbaceous rangeland	Low: habitat available, birds not sighted
<u>Haliaeetus leucocephalus</u> Bald eagle	T	T	Open (<60% canopy cover), mature pine forests < 2 km from expansive open waters	Low: habitat not available, birds not sighted.
<u>Mycteria americana</u> Wood stork	E	E	Nests in cypress swamps; forage sites range from shallow marshes to roadway borrow pits	Low: ditch habitat available, no birds sighted
<u>Picoides borealis</u> Red-cockaded Woodpecker	E	E	Old-growth pine flatwoods with regular fire occurrence are required for nesting	Low: habitat not available, none sighted
<b>MAMMALS</b>				
<u>Podomys floridanus</u> Florida mouse	SSC	—	Sand pine scrub; xeric oak-pine flatwoods; often associated with <i>G. polyphemus</i> burrows	Low: habitat not available, none sighted
<u>Sciurus niger shermani</u> Sherman's fox squirrel	SSC	—	Mature flatwoods of sandhills; occasional in tall cypress-bay forests	Low: habitat not available, none sighted
<u>Ursus americanus floridanus</u> Florida black bear	T	—	Flatwoods, swamps, scrub-oak, ridges, bayheads, and hammock habitats	Low: habitat not available, none sighted

Footnotes to Table 1

- 1 FWC - Florida Fish and Wildlife Conservation Commission, formerly the Florida Game and Fresh Water Fish Commission; Official Lists of Florida's Endangered Species, Threatened Species and Species of Special Concern, published August 1997.
- 2 USFWS – United States Fish and Wildlife Service; List obtained from FWC's Florida's Endangered Species, Threatened Species and Species of Special Concern, published August 1997.

(E-endangered, T-threatened, SSC-species of special concern, CE-commercially exploited). C1 (candidate for federal listing, with enough substantial information on biological vulnerability and threats to support proposals for listing) and C2 (candidate for listing, with some evidence of vulnerability, but for which not enough data exists to support listing) are no longer official categories.

- 3 Habitats described by:

Ashton, R.E. and P.S. Ashton. 1985 Handbook of Reptiles and Amphibians of Florida (3 vols.). Windward Publ. Inc. Miami.

Conant, R. 1975 A Field Guide to Reptiles and Amphibians of Eastern/Central North America (2nd ed.). Houghton Mifflin Co. Boston 430 pp.

Kale, H.W. 1978. Volume Two; Birds. In P.C.H. Pritchard (ed.), Rare and Endangered Biota of Florida. University Presses of Florida. Gainesville. 121 pp.

Kale, H.W. and D.S. Maehr. 1990. Florida's Birds: A Handbook and Reference. Pineapple Press. Sarasota. 288 pp.

Layne, L.N. 1978 Volume One: Mammals. In P.C.H. Pritchard (ed.), Rare and Endangered Biota of Florida. University Presses of Florida. Gainesville, 52 pp.

McLane, W.M. 1985. The Fishes of the St. Johns River, Florida. Ph.D. diss. University of Florida, Gainesville. 361 pp.

Peterson, R.T. 1980. A Field Guide to the Birds of East of the Rockies (4th ed.). Houghton Mifflin Co. Boston. 384 pp.

- 4 Likelihood of occurrence: Low, Moderate or High, based on the best available data and selective field observations.

**TABLE 2: PROTECTED FLORA FOUND IN SEMINOLE COUNTY, FLORIDA AND THEIR EXPECTED OCCURRENCE ON THE DEER RUN PROJECT SITE**

SPECIES	FDA STATUS (1)	USFWS STATUS (2)	PREFERRED HABITAT (3)	PROBABILITY OF OCCURRENCE (4)
<u>Bonamia grandiflora</u> Florida bonamia	–	T	High pine, scrub, scrubby high pine	Low: habitat not available, none found
<u>Chionanthus pygmaeus</u> Pygmy fringe-tree	–	E	Scrub, scrubby high pine	Low: habitat not available, none found
<u>Cladonia perforate</u> Florida perforate cladonia	–	E	Scrub – Lake Wales Ridge system	Low: habitat not available, none found
<u>Clitoria fragrans</u> Pigeon wings	–	T	High pine, scrub, scrubby high pine, scrubby flatwoods	Low: little habitat available, none found
<u>Conradina brevifolia</u> Short-leaved rosemary	E	E	High pine, scrub	Low: habitat not available, none found
<u>Crotalaria avonensis</u> Avon Park harebells	–	E	Scrub – Lake Wales Ridge system	Low: habitat not available, none found
<u>Eriogonum long. var. gnaphalifolium</u> Scrub Buckwheat	–	T	High pine, scrub, scrubby high pine	Low: habitat not available, none found
<u>Hypericum cumulicola</u> Highlands scrub hypericum		E	Scrub – Lake Wales Ridge system	Low: habitat not available, none found
<u>Liatris ohlingerae</u> Scrub blazing star	–	E	High pine, scrub, scrubby flatwoods	Low: habitat not available, none found
<u>Nolina brittoniana</u> Britton's beargrass	–	E	High pine, scrub, scrubby high pine, scrubby flatwoods	Low: habitat not available, none found
<u>Paronychia chartacea</u> Papery whitlow-wort	–	T	High pine, scrub	Low: habitat not available, none found
<u>Platanthera cristata</u> Golden fringed orchid	T	–	Low moist meadows and damp pine woods	Low: habitat not available, none found
<u>Platanthera flava</u> Southern tubercled orchid	T	–	Very wet habitats such as swamps, bogs and wet forests with thick, black mud	Low: habitat not available, none found

**TABLE 2: PROTECTED FLORA FOUND IN SEMINOLE COUNTY, FLORIDA AND THEIR EXPECTED OCCURRENCE ON THE DEER RUN PROJECT SITE**

SPECIES	FDA STATUS (1)	USFWS STATUS (2)	PREFERRED HABITAT (3)	PROBABILITY OF OCCURRENCE (4)
<u>Platanthera nivea</u> Snowy orchid	T	–	Open bogs and sunny, wet meadows	Low: habitat not available, none found
<u>Pogonia ophioglossoides</u> Rose pogonia	T	–	Open, wet meadows and sphagnum bogs, poorly drained roadside ditches	Low: habitat available, none found
<u>Polygala lewtonii</u> Scrub (Lewton's) milkwort	E	E	Dry oak woodlands and scrub	Low: habitat not available, none found
<u>Polygonella basiramia</u> Wireweed	–	E	Scrub- Lake Wales Ridge system	Low: habitat not available, none found
<u>Polygonella myriophylla</u> Sandlace	–	E	Scrub, scrubby high pine	Low: habitat not available, none found
<u>Prunus geniculata</u> Scrub plum	E	E	High pine, scrub, scrubby high pine	Low: habitat not available, none found
<u>Spiranthes laciniata</u> Lace-tip ladies' tresses	T	–	Marshes and cypress swamps; road banks and ditches	Low: little habitat available, none found
<u>Spiranthes longilabris</u> Long-tip ladies' tresses	T	–	Marshes and wet prairies	Low: habitat limited, none found
<u>Stenorrhynchos lanceolatus</u> var. <u>lanceolatus</u> Leafless beaked orchid	T	–	Vacant lots, open pastures, pine flatwoods and mowed roadsides	Low: habitat available, none found
<u>Warea amplexifolia</u> Wide-leaf warea	E	E	High pine	Low: :habitat not available, none found
<u>Warea carteri</u> Carter's mustard	–	E	High pine, scrub, scrubby high pine, scrubby flatwoods, mesic pine flatwoods	Low :habitat not available, none found
<u>Ziziphus celata</u> Florida ziziphus	–	E	High pine, scrub	Low: habitat not available, none found

## Table 2 Footnotes

- 1 FDA – Florida Department of Agriculture and Consumer Services; List obtained from FWC’s Florida’s Endangered Species, Threatened Species and Species of Special Concern, published August 1997. Supporting information from FNAI - Florida Natural Inventory; Matrix of habitats and distribution by county of rare/endangered fauna and flora in Florida, published April 1990.
- 2 USFWS – United States Fish and Wildlife Service; List obtained from FWC’s Florida’s Endangered Species, Threatened Species and Species of Special Concern, published August 1997.  
  
[E-endangered, T-threatened, SSC- species of special concern, CE-commercially exploited.] C1 (candidate for federal listing, with enough substantial information on biological vulnerability and threats to support for listing) and C2 (candidate for listing with some evidence of vulnerability, but for which not enough data exist to support listing) are no longer official categories.
- 3 Habitats described by:  
  
Bell, C.R. and B.J. Taylor. 1982. Florida Wild Flowers and Roadside Plants. Laurel Hill Press, Chapel Hill, NC 308pp.  
FNAI - Florida Natural Inventory; Matrix of Habitats and Distribution by County of Rare/Endangered Species in Florida, published April 1990.  
Godfrey, R.K. 1988. Trees, Shrubs, and Woody Vines of Northern Florida, and Adjacent Georgia and Alabama. University Georgia Press. Athens, GA 734 pp.  
Ward, D.B. (publ. date not listed). Volume Five,. Plants, in P.C.H. Pritchard (ed.), Rare and Endangered Biota of Florida. University Presses of Florida, Gainesville. 175 pp.  
Wunderlin, R.P. 1982. Guide to Vascular Plants of Florida. University Presses of Florida, Gainesville, FL. 472 pp.
- 4 Likelihood of occurrence: Low, Moderate, or High, based on the best available data and selective field observations.