



April 27th, 2015

Mr. Jerome Henin
President
HENIN Group
2300 Lee Road
Winter Park, FL 32789

**Re: Fort Florida Road Property
Volusia County, FL
ECS Project No. 010.04.15**

Dear Jerome:

On February 15th and 17th, 2006 and April 24th and 27th, 2015, a listed species survey was conducted on the above referenced project site. The project site is located adjacent to Fort Florida Road on the southern and western boundaries and south of Konomac Lake Drive. The site borders Lake Konomac on the eastern boundary. More specifically the project site is located at Section 31, Township 18 South and Range 30 East in Volusia County, Florida.

Historically this land has been an undeveloped forest. Currently, the majority of the property is densely forested without any access roads or trails. A deep roadside ditch prevents vehicular access to the property along the west side. The eastern boundary is fenced. Along the northern end of the project site there is a medium-quality forested wetland. There are also two more medium-quality forested wetlands in the center of the property.

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 Volusia County and their expected occurrence of the project site. The findings and conclusions of the survey are reported in this letter.

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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.

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

- Color aerial photographs (1" = 300), 2015, Google Earth, Volusia County, Florida.
- United States Geological Survey (USGS) 7.5 minute quadrangle map, Volusia County, Florida, (ArcGIS).
- Official Lists of Endangered and Potentially Endangered Fauna and Flora in Florida (USFWS and FWC).

Pedestrian and vehicular 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). Two land use types are present. A brief description of each FLUCFCS community is provided below.

414 – Pine Mesic Oak

This upland habitat dominates the entire subject site. This land type is usually found on moister sites where slash, longleaf, and loblolly pine grow in strong association with a wide variety of mesic oaks and other mesic hardwood species. Tree vegetation was dominated by slash pine (*Pinus elliottii*), loblolly pine (*Pinus echinata*), water oak (*Quercus nigra*), laurel oak (*Quercus hemisphaerica*), and dahoon holly (*Ilex cassine*). Understory vegetation was dominated by dense saw palmetto (*Serona repens*) with gallberry (*Ilex galbra*), wax myrtle (*Myrica cerifera*) and cat brier (*Smilax spp.*). The groundcover is sparse due to the thick pine needle and oak duff.

6201 – Wetland Coniferous Forest, canopy less than 30% crown

This wetland coniferous forest is a wetland which meets the crown closure requirements of less than 30% closure. These communities are usually found as interior wetlands in river flood plains with little to no standing water. The three onsite wetlands have a dominant canopy of slash pine, forming a cover of about 15%. Other tree species associated with the canopy vegetation include pond pine (*Pinus serotina*), dahoon holly, red bay (*Persea borbonia*), loblolly bay (*Gordonia lasianthus*), red maple (*Acer rubrum*), water oak, cabbage palm (*Sabal palmetto*), and scattered examples of sweetgum (*Liquidambar styraciflua*) and American elm (*Ulmus americana*). Understory vegetation is dominated by cordgrass (*Spartina alterniflora*) and sawgrass (*Cladium jamaicense*). Other understory vegetation includes soft rush (*Juncus spp.*), chain fern (*Woodwardia virginica*), gallberry, cat brier, and sphagnum moss (*Sphagnum cymbifolium*). These wetlands had a distinct saw palmetto edge.

Listed Species Survey

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).

Birds

Approximately 35 species (and sub-species) of birds found in Florida are protected by the FWC and/or the USFWS. For Volusia County, the USFWS federally lists 5 bird species. Overall, about fifteen (15) are expected to occur in central Florida. 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 property does not contain scrub habitat. Surveys were conducted for this species per the guidelines outlined in the *Ecology & Development-Related Habitat Requirements of the Florida Scrub Jay (April 1991)*. No scrub jays were observed or vocalizations heard.

Red-cockaded woodpeckers (*Picoides borealis*) are endangered (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 guarana*), snowy egret (*Egretta thula*), tricolored heron (*Egretta tricolor*) white ibis (*Eudocimus albus*) and the wood stork (*Mycteria americana*) were not observed. The lack of open water habitat within the onsite wetlands greatly reduces the possibility of any of these listed birds utilizing the project site. No listed wading birds were observed onsite.

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 to determine if any documented bald eagle nests are within 660 feet of the project site. There are no bald eagle nests in close proximity to the project site. The closest bald eagle nest is VO124 which is located over 2,000 feet to the south of the subject site. Therefore the project site is well outside of the 660 foot eagle nest protection zone and the development will not affect any bald eagle nests.

No other listed raptors such as Southeastern American kestrels (*Falco sparverius paulus*) or Arctic peregrine falcons (*Falco peregrinus tundrius*) were observed on or around the site. There is little foraging habitat for kestrels. 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. For Volusia County, the USFWS federally lists 7 reptile species. Only a few could occur on this site.

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

A cursory survey was conducted throughout the property for gopher tortoises (*Gopherus polyphemus*), a species listed by the FWC as a Threatened. No gopher tortoise burrows were observed. The upland portion of the property is overgrown and does not provide suitable habitat for gopher tortoises.

Several commensal species associated with gopher tortoise burrows, including the gopher frog (*Rana areolata aesopus*) 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 above-ground 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 period of October 01st through April 30th. There were little suitable refugia for the eastern indigo snake onsite. No eastern indigo snakes were observed.

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

Mammals

Thirty-three (33) mammals are currently protected in Florida. For Volusia County, the USFWS federally lists one mammal species. About four could occur in the region of this project site. None were observed on this site. We focused our search on fox squirrels (*Sciurus niger shermani*) and the Florida mouse (*Podomys floridanus*) and their possible den or nest sites. We did not observe any listed mammals or their potential den sites.

Listed Plants

There were no protected plant species found on the project site (Table 2). Protected plants are not expected to occur on the property since the uplands are pine flatwoods that are periodically timbered. 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, no listed animal or plant species were observed within the Fort Florida property.

During the listed species surveys, ECS did conduct visual observation for historic trees and these observations were consistent with the City of DeBary LDC tree preservation and protected species requirements.

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.

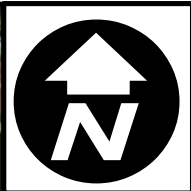
Sincerely,

ECOLOGICAL CONSULTING SOLUTIONS INC

A handwritten signature in black ink, appearing to read "Bill Griffy". The signature is written in a cursive style with a large, stylized "G" at the end.

Bill Griffy

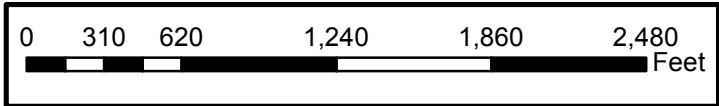
Attachments



MAP LEGEND	
SYMBOL	NAME
	Project Boundary
6201	Wetland Coniferous Forest
414	Pine - Mesic Oak

Source: Esri, DigitalGlobe, GeoEye, I-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

PROJECT #: 010.04.15 | DATE: 04/27/15 | FIGURE #: 1



**FORT FLORIDA PROPERTY
VOLUSIA COUNTY, FLORIDA
FLUCFCS MAP**

TABLE 1: PROTECTED FAUNA FOUND IN VOLUSIA COUNTY, FLORIDA AND THEIR EXPECTED OCCURRENCE ON THE FORT FLORIDA ROAD PROPERTY.

SPECIES	FWC STATUS (1)	USFWS STATUS (2)	PREFERRED HABITAT (3)	PROBABILITY OF OCCURRENCE (4)
REPTILES				
<u>Drymarchon corais couperi</u> Eastern indigo snake	T	T	Dry habitats bordered by water; often occupy <i>G. polyphemus</i> burrows	Low: some habitat available, gopher tortoise burrows not observed
<u>Gopherus polyphemus</u> Gopher tortoise	SSC	–	Well drained soil; xeric pine-oak hammocks and scrub; pine flatwoods	Low: little habitat available, no burrows observed
<u>Neoseps reynoldsii</u> Sand Skink	T	T	Well drained sandy soil, open areas, sand pine-rosemary scrub	Low: habitat not available, none sighted, outside of known range
<u>Pituophis melanoleucus mugitus</u> Florida pine snake	SSC	–	Dry, sandy barrens in xeric oak and pine-wooded sandhills	Low: habitat not present, none observed
<u>Stilosoma extenuatum</u> Short-tailed snake	T	–	Sandy upland ridges; xeric oak pine woods; xeric oak hammocks	Low: habitat not present, none sighted
AMPHIBIANS				
<u>Rana areolata aesopus</u> Florida gopher frog	SSC	-	Dry, xeric habitats with wetlands such as isolated permanent ponds and cypress domes	Low: no habitat available, gopher tortoise burrows not observed
BIRDS				
<u>Aphelocoma coerulescens</u> Florida scrub jay	T	T	Level, sterile, white sand with low, xeric oak scrub	Low: scrub not available on site, none sighted
<u>Aramus guarana</u> Limpkin	SSC	–	Densely vegetated swamps, lakeshores and slow streams	Low: open water habitat not available on site, none sighted
<u>Egretta caerulea</u> Little blue heron	SSC	–	Lake littorus; shallow ponds and marshes	Low: foraging habitat not available, no birds sighted
<u>Egretta thula</u> Snowy egret	SSC	–	Lake littorus; shallow ponds and marshes	Low: foraging habitat not available, no birds sighted

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SPECIES	FWC STATUS (1)	USFWS STATUS (2)	PREFERRED HABITAT (3)	PROBABILITY OF OCCURRENCE (4)
BIRDS (cont..)				
<u>Egretta tricolor</u> Tricolored heron	SSC	–	Lake littorus; shallow ponds and marshes	Low: foraging habitat not available, none sighted
<u>Eudocimus albus</u> White ibis	SSC	-	Beaches, mudflats, wet fields and prairies, forested wetlands and marshes	Low: foraging habitat not available, none sighted
<u>Falco peregrinus tundrius</u> Peregrine falcon	E	–	Coastal beaches, prairies, and marshes	Low: no habitat available, none sighted.
<u>Falco sparverius paulus</u> Southeastern American kestrel	T	–	Forest edges, and clearings; nests in mature pines	Low: no habitat available, none sighted
<u>Grus canadensis pratensis</u> Florida sandhill crane	T	–	Marshes, wet prairies, pastures, and open herbaceous rangeland	Low: no habitat available, no birds 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, no nests or birds sighted
<u>Mycteria americana</u> Wood stork	E	E	Nests in cypress swamps; forage sites range from shallow marshes to roadway borrow pits	Low: foraging habitat not available, none 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
MAMMALS				
<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 present, none sighted
<u>Sciurus niger shermani</u> Sherman's fox squirrel	SSC	–	Mature flatwoods of sandhills; occasional in tall cypress-bay forests	Low: little habitat available, none sighted
<u>Ursus americanus floridanus</u> Florida black bear	T	–	Nearly-impenetrable wooded thickets and swamps	Low: habitat 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 VOLUSIA COUNTY, FLORIDA AND THEIR EXPECTED OCCURRENCE ON THE FORT FLORIDA ROAD PROPERTY.

SPECIES	FDA STATUS (1)	USFWS STATUS (2)	PREFERRED HABITAT (3)	PROBABILITY OF OCCURRENCE (4)
<u>Calopogon barbatus</u> Bearded grass pink	T	–	Damp pinelands	Low: habitat not available, none found
<u>Calopogon multiflorus</u> Many-flowered grass pink	E	–	Open, damp, occasionally recently burned pinelands and meadows	Low: habitat not available, none found
<u>Deerinfothamnus rugelii</u> Rugel's pawpaw	E	E	Mesic flatwoods	Low: habitat not available, none found
<u>Encyclia tampensis</u> Butterfly orchid	CE	–	Cypress swamps, hardwood swamps and hammocks	Low: habitat available, none found
<u>Epidendrum conopseum</u> Greenfly orchid	CE	–	Cypress swamps, hardwood swamps and hammocks	Low: habitat available, none found
<u>Hartwrightia floridiana</u> Florida Hartwrightia	T	–	Wet, open areas, moist grasslands, and sphagnum bogs	Low: no habitat available, none found
<u>Lilium catesbaei</u> Southern red lily	T	–	Mesic flatwoods, wet prairies, usually in graminoid systems	Low: no habitat available, none found
<u>Listera australis</u> Southern tway blade	T	–	Hammocks, low moist woods in deep humus, ravines, shady stream banks, sphagnum	Low: habitat not available, none found
<u>Nemastylis floridana</u> Fall-flowering ixia	E	–	Marshes; grassy openings of wet hammocks moist flatwoods	Low: no habitat available, none found
<u>Platanthera blephariglottis</u> Large white fringed orchid	T	–	Inhabits sphagnum bogs, meadows, damp fields and woods	Low: no habitat available, none found
<u>Platanthera cristata</u> Golden fringed orchid	T	–	Low moist meadows and damp pine woods	Low: habitat 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 available, none found

TABLE 2: PROTECTED FLORA FOUND IN VOLUSIA COUNTY, FLORIDA AND THEIR EXPECTED OCCURRENCE ON THE FORT FLORIDA ROAD PROPERTY.

SPECIES	FDA STATUS (1)	USFWS STATUS (2)	PREFERRED HABITAT (3)	PROBABILITY OF OCCURRENCE (4)
<u>Platanthera integra</u> Southern yellow fringeless orchid	E		Marshes and wet pine flatwoods	Low: no habitat available, none found
<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 not available, none found
<u>Polygala lewtonii</u> Scrub (Lewton's) milkwort	E	E	Dry oak woodlands and scrub	Low: no habitat available, none found.
<u>Rhapidophyllum hystrix</u> Needle palm	CE	–	Wet to mesic woods and hammocks; spring fed stream bottoms	Low: habitat not available, none found
<u>Spiranthes brevilabris floridana</u> Florida Ladies' tresses	E	–	Open meadows and damp pinelands, road shoulders, ditches	Low: no habitat available, none found
<u>Spiranthes laciniata</u> Lace-tip ladies' tresses	T	–	Marshes and cypress swamps; road banks and ditches	Low: habitat available, none found
<u>Spiranthes longilabris</u> Long-tip ladies' tresses	T	–	Marshes and wet prairies	Low: habitat not available, 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 not available, none found
<u>Tillandsia fasciculata</u> Common wild pine	E	–	Cypress swamps and hammocks	Low: habitat available, none found
<u>Tillandsia utriculata</u> Giant wild pine	E	–	Hammocks and cypress swamps	Low: habitat available, none found
<u>Zephyranthes simpsonii</u> Simpson zephyr lily	T	–	Dome swamps, wet flatwoods, ditches, wet pastures, often burned-over areas	Low: habitat 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.