Progress Energy

Levy Nuclear Plant Project
Listed Species Assessment
Crystal River Energy Complex Substation Expansion

March 2011
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1.0 INTRODUCTION

Progress Energy Florida, Inc. (PEF) is committed to providing safe, reliable, and affordable energy to its customers. PEF provides electric service to 1.7 million customers and a population of more than 5 million people. The company maintains a diverse mix of power generating facility resources to ensure affordable, efficient, and reliable service. The Levy Nuclear Plant (LNP) and associated facilities are components in PEF’s baseload generation plan. PEF is proposing to construct and operate two Westinghouse, AP1000 Reactors at the LNP site located in Levy County, Florida. Project requirements include several offsite linear facilities including a new blow down pipeline and approximately 180 miles of new transmission lines. PEF is continuing to pursue all licenses and permits necessary to construct and operate the LNP. These permits include a Combined Operating License (COL) from the Nuclear Regulatory Commission (NRC), a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers (USACE) and certification from the State under the Florida Electrical Power Plant Siting Act (PPSA).

On June 2, 2008, PEF submitted a Site Certification Application (SCA) to the Florida Department of Environmental Protection (FDEP) pursuant to the PPSA, Chapter 403, F.S., and Chapter 62-17, Florida Administrative Code (F.A.C.) requesting certification of the LNP, including the new transmission lines.

The Governor and Cabinet, sitting as the Siting Board, voted unanimously to approve the Administrative Law Judge’s Recommended Order to grant full and final certification to PEF for the construction and operation of the LNP and associated facilities. The Final Order on Certification of PEF LNP Units 1 and 2 was granted on August 11, 2009 (Final Order). The Final Order for the project approved by the Siting Board contains a set of conditions that the project must abide by during the construction and operation of the plant and associated facilities. These are collectively referred to as the LNP Conditions of Certification (COC).

PEF has also submitted a Combined Operating License Application (COLA) to the NRC in July 2008. The USACE is a cooperating agency with the NRC and has participated in the development of a Draft Environmental Impact Statement (DEIS) for the project. The NRC issued the DEIS on the project in August 2010. The public comment period for the DEIS has closed. The NRC expects to issue a Final Environmental Impact Statement (FEIS) on the project around April 2012.

PEF has also submitted a permit application for wetland impacts under Section 404 of the Clean Water Act to the USACE. PEF has been working with the USACE to address additional information needs for the Section 404 permit. The USACE anticipates issuing a Record of Decision on the project sometime after the FEIS. The preparation of these various regulatory documents required the review of the potential impacts to listed species for the project.
To support this effort, Golder Associates Inc. (Golder) conducted preliminary assessments of listed plant and animal species occurrence within each of the transmission line rights-of-way (ROW) and substation site. The purpose of the preliminary listed species assessments was to gather information regarding the existing habitat conditions within each transmission line ROW and substation site, document the occurrence of listed species, both plant and animal, and, based on the results of the field assessment and habitat conditions, develop species-specific surveys to be conducted prior to clearing and construction within each ROW and substation site, in consultation with the Florida Fish and Wildlife Conservation Commission (FWC) and the U.S. Fish and Wildlife Service (USFWS).

Listed plant species are those plants that are listed by the USFWS under Title 50, Part 17 of the Code of Federal Regulations (50 CFR 17), or by the Florida Department of Agriculture and Consumer Services (FDACS) as endangered, threatened, of special concern, or commercially exploited. Listed animal species are those animals that are classified as endangered, threatened, or of special concern by the USFWS under 50 CFR 11-12, or by the FWC under Chapter 68-27, F.A.C.

The following presents the listed species assessment for the Crystal River Energy Complex (CREC) Substation Expansion Site associated with the Levy-Crystal River (LCR) transmission line.

1.1 Crystal River Energy Complex Substation Expansion Site Description
The approximately 47-acre Crystal River Energy Complex (CREC) Substation Expansion Site is located north of the existing switchyard within the CREC in Citrus County (see Figure 1). The expansion area has been previously cleared and is currently maintained as an open grassed field with small areas of depressional wetlands. Illustrations of the CREC Substation Expansion Site on a USGS topographic map and on a habitat classification map are presented in Figures 2 and 3, respectively.
2.0 METHODOLOGY

Golder evaluated the likelihood of listed species occurrence within the CREC Substation Expansion Site through a combination of assessment of existing habitat type, quality, and extent, geographic information system (GIS) database queries, literature reviews, and field reconnaissance, described below.

2.1 Habitat Classification

Golder updated existing landuse/landcover data within the CREC Substation Expansion Site utilizing the Florida Department of Transportation’s 1999 Florida Land Use, Cover and Forms Classification System (FLUCFCS). The FLUCFCS classification system uses dominant components of the vegetative habitat or land use characteristics to assign landuse/landcover codes. Habitat classification is useful in the assessment of potential threatened and endangered species utilization of a site. Based upon the habitat present, inferences can be made regarding the potential for listed species occurrence.

Land use/land cover data was obtained from the Southwest Florida Water Management District (SWFWMD), dated 2007, and was updated based on field observations (see Figure 3).

2.2 Data Review

Prior to field surveys, county-specific information regarding the presence of listed species was obtained from the Florida Natural Areas Inventory (FNAI), which maintains a database of documented occurrences of listed species throughout the State of Florida, as well as lists of federally listed species by county from the USFWS (http://www.fws.gov/northflorida/CountyList). The FNAI GIS element occurrence data and the FWC bald eagle nest database were reviewed to assess the location of documented listed species occurrence within, adjacent to, or in the vicinity of the Site. These data were supplemented with field surveys to prepare maps illustrating the location of documented occurrences of listed species within the CREC Substation Expansion Site (Figure 4). In addition, a site-specific Element Occurrence Report from the FNAI was obtained, detailing known occurrences of listed species within and adjacent to the CREC Substation Expansion Site (see Appendix A). USFWS-designated consultation areas for species known to occur in Citrus and Hernando Counties were compiled and evaluated relative to the location of the CREC Substation Expansion Site (Appendix C).

In addition to review of FNAI, FWC, and USFWS data, references utilized for the listed species assessment include:


These data sources were used to prepare a comprehensive summary of listed species known to occur within Citrus County, their habitat preferences, and regulatory status, which were then updated with results of field surveys and presence of suitable habitat to determine individual species’ probability of occurrence within the CREC Substation Expansion Site (Table 2).

2.3 Preliminary Field Survey

A reconnaissance-level listed species survey was conducted within the CREC Substation Expansion Site concurrent with the jurisdictional wetland delineation field effort in October 2009, during which time the entire Site was traversed by pedestrian and vehicular surveys. Observations were made for the presence of listed species based upon sight, call, burrow, nest, track, scat, and probable habitat. Locations of observed listed species were marked upon aerial photographs and, where feasible, identified with flagging and coordinates recorded with a GPS receiver.
3.0 RESULTS

3.1 Habitat Classification

A summary of land use/land cover and corresponding acreages within the CREC Substation Expansion Site is summarized in Table 1. The location and extent of vegetative communities and land use/land cover classifications are depicted on Figure 3.

The majority of the Site (approximately 42 acres) is previously cleared, open grassed lawn with overhead transmission facilities and parking areas. Wetland habitats compose approximately 4 acres within the Site, and include mixed forest wetlands, freshwater marshes and wet prairies.

There is less than one acre of surface waters within the Site. Surface waters are limited to ditches and reservoirs less than 10 acres in size.

3.2 Data Review

Based on the lack of suitable habitat as described in Beever (2006); Coile and Garland (2003); FNAI (2001); Humphrey (1992); Moler (1992); and Rodgers et al. (1992); the Site location within the species' geographic ranges, and the on-going operations at the CREC Complex, listed species have a low likelihood of occurrence within the CREC Substation Expansion Site (Table 2). However, freshwater marsh, wet prairie, small reservoirs and ditches may provide potential low quality foraging habitat for listed species of birds, including little blue heron (*Egretta caerulea*), snowy egret (*Egretta thula*), tricolored heron (*Egretta tricolor*), white ibis (*Eudocimus albus*), Florida sandhill crane (*Grus canadensis pratensis*), and wood stork (*Mycteria americana*). No listed plants are likely to occur within the wetland habitats within the CREC Substation Expansion Site. There are no upland habitats within the CREC Substation Expansion Site.

According to the FNAI GIS database and the FNAI element occurrence report (Appendix B), listed species occurrences within or immediately adjacent to the Site are limited to a manatee aggregation site within the CREC discharge canal (Figure 4), outside of the CREC Substation Expansion Site.

The FWC bald eagle nest database (http://www.myfwc.com/eagle/eaglenests/nestlocator.aspx) includes the location of active and inactive bald eagle nests documented by the FWC. The information contained within this database is current through the 2008-2009 nesting season, with accuracy of the nest locations is estimated to be within 0.1 mile of the true location. According to the FWC bald eagle nest database, there are no bald eagle nests within one mile of the Site.

The following federally listed species are reported from Citrus County but are not expected to be observed within the CREC Substation Expansion Site due to lack of scrub habitat, mature pine forest, and marine or riverine habitat within the preferred ROW: Florida scrub-jay (*Aphelocoma coerulescens*), piping plover (*Charadrius melodus*), red-cockaded woodpecker (*Picoides borealis*), West Indian (Florida)*
manatee (*Trichechus manatus latirostris*), loggerhead sea turtle (*Caretta caretta*), green sea turtle (*Chelonia mydas*), leatherback sea turtle (*Dermochelys coriacea*), Kemp's ridley sea turtle (*Lepidochelys kempi*), and Gulf sturgeon (*Acipenser oxyrhynchus desotoi*).

USFWS-designated consultation areas for the scrub jay and West Indian (Florida) manatee include portions of the CREC Substation Expansion Site (Appendix C). The consultation area for the red-cockaded woodpecker is located approximately 3 miles to the east of the CREC Substation Expansion Site. No impacts to the West Indian manatee will occur as a result of the CREC Substation expansion, as no suitable habitat occurs on Site and no in-water work will be necessary during substation expansion. The Florida scrub jay is unlikely to occur on the CREC Substation Expansion Site due to lack of suitable habitat, as described below.

Florida scrub-jays historically were distributed throughout the Florida peninsula in suitable scrub habitat in 39 of the 40 counties south of, and including, Levy, Gilchrist, Alachua, Clay, and Duval counties (Fitzpatrick et al., 1991). The distribution and status of the Florida scrub-jay across its entire range was updated during 1992 and 1993 (Fitzpatrick et al., 1994), with overall Florida population of scrub-jays divided into five subregions corresponding to the major sand deposits located on the peninsula. The Florida scrub-jay has extremely specific habitat requirements, occurring on well drained to excessively well-drained sandy soils supporting oak-dominated scrub, or xeric oak scrub. This community type is adapted to nutrient poor soils, periodic drought, high seasonal rainfall and frequent fires (Abrahamson, 1984). Xeric oak scrub on the Lake Wales Ridge is predominantly comprised of four species of stunted, low-growing oaks: sand live oak (*Quercus geminata*), Chapman oak, (*Q. chapmanii*), myrtle oak, (*Q. myrtifolia*), and scrub oak, (*Q. inopina*) (Myers, 1990). In optimal habitat for scrub-jays, these oaks are 1 to 3 m high, interspersed with 10 to 50 percent unvegetated, sandy openings, and a sand pine (*Pinus clausa*) canopy of less than 20 percent (Woolfenden and Fitzpatrick, 1990). As no areas of suitable xeric oak scrub habitat occur within the CREC Substation Expansion Site and no occurrences of scrub jay have been documented in the vicinity of the Site, it is unlikely that any scrub jays occur within the CREC Substation Expansion Site.

### 3.3 Preliminary Field Survey

No listed species were observed by Golder during the field survey conducted in October 2009. Listed species known to occur in Citrus County, their suitable habitat, presence of suitable habitat within the CREC Substation Expansion Site, likelihood of occurrence, regulatory status, and any field observations are summarized in Table 2. Species observed during field surveys or likely to potentially occur based upon presence of suitable habitat are discussed below. FNAI species descriptions for species observed or likely to potentially occur are provided in Appendix B.
3.4 Birds

3.4.1 Little Blue Heron
The little blue heron is classified as a species of special concern by the FWC, but is not listed by the USFWS. The little blue heron is a medium-sized heron, with a purplish to maroon-brown head and neck, small white patch on throat and upper neck, and a slate blue body. The largest nesting colonies of little blue herons occur in coastal areas, but they prefer to forage in freshwater lakes, marshes, swamps, and streams. Little blue herons nest in a variety of woody vegetation types, including cypress, willow, maple, black mangrove, and cabbage palm. They usually breed in mixed-species colonies in flooded vegetation or on islands. Little blue herons are mostly resident throughout the year, but numbers in north Florida in winter are lower than numbers during spring, summer, and fall (FNAI, 2001). No individuals were observed within the CREC Substation Expansion Site.

3.4.2 Snowy Egret
The snowy egret is classified as a species of special concern by the FWC, but is not listed federally by the USFWS. The snowy egret is a medium sized, all-white wading bird with black legs and bright yellow feet. They occur in Florida in all seasons, nesting in both inland and coastal wetlands in woody shrubs, especially mangroves and willows. Almost all nesting is over shallow waters or on islands that are separated from shoreline by extensive open water. Snowy egrets feed in a variety of permanently and seasonally flooded wetlands, streams, lakes, and swamps, and in manmade impoundments and ditches. A wide variety of wetland types must be available within 7 miles to support breeding colonies (FNAI, 2001). Nesting may begin as early as January in southern Florida. Egg laying occurs primarily between late March and June, but may continue into August (Ogden, 1996b). No individuals were observed within the CREC Substation Expansion Site.

3.4.3 Tricolored Heron
The tricolored heron is classified as a species of special concern by the FWC, but is not listed by the USFWS. It is a medium sized heron with dark slate coloration on the head, neck, and body that contrasts with the white rump, belly, and undertail. Most tricolor nesting colonies occur on mangrove islands or in willow thickets in fresh water, but nesting sites include other woody thickets on islands or over standing water. Egg laying can begin as early as February in south Florida and continue into August (Ogden, 2001c). They prefer coastal environments, but will feed in a variety of permanently and seasonally flooded wetlands, mangrove swamps, tidal creeks, ditches, and edges of ponds and lakes. Tricolored herons are permanent residents and found throughout Florida in all seasons, except they are rare in winter in the western Panhandle and also somewhat less common inland during winter (FNAI, 2001). No individuals were observed within the CREC Substation Expansion Site.
3.4.4 White Ibis
The white ibis is classified as a species of special concern by the FWC, but is not listed by the USFWS. The white ibis is found throughout Florida in a wide variety of habitats, including freshwater and brackish marshes, salt flats and salt marsh meadows, many types of forested wetlands, wet prairies, swales, seasonally inundated fields, and man-made ditches. They typically nest in Florida from March to August in trees, shrubs, cactus, and grass clumps, from ground level to a height of approximately 50 feet. Eggs incubate for a period of approximately 22 days and young begin leaving the nest around 9 to 16 days of age, but complete independence from the parents does not occur until 40 to 50 days of age (FWC, 2003). No individuals were observed within the CREC Substation Expansion Site.

3.4.5 Florida Sandhill Crane
The Florida sandhill crane is classified as threatened by the FWC, but is not listed by the USFWS. The Florida sandhill crane is indistinguishable from the greater sandhill crane, which winters in Florida. Greater sandhill cranes generally arrive in Florida in October and leave in March. Florida sandhill cranes typically start nesting in late December and continue through June, creating nest mounds of plant material in herbaceous wetlands. The female will lay two eggs, which incubate for 28 to 32 days. Fledging occurs at about 67 days (FWC, 2003). No individuals were observed within the CREC Substation Expansion Site.

3.4.6 Bald Eagle
The bald eagle was removed from the USFWS endangered species list on June 28, 2007, and is no longer protected under the Endangered Species Act, but remains protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act (U.S. Department of Interior, 2007). The bald eagle was delisted by the FWC through adoption of the Bald Eagle Management Plan on April 9, 2008 (FWC, 2008). The FWC Bald Eagle Management Plan recommends maintaining a 660-ft buffer zone, with certain activities allowable within between 330 and 660 ft of an active nest outside of the nesting season. No individuals were observed within the CREC Substation Expansion Site; according to the FWC bald eagle nest database, there are no nests within a one mile radius of the CREC Substation Expansion Site.

3.4.7 Wood Stork
The wood stork is classified as endangered by the USFWS and the FWC. Wood storks utilize a variety of habitats, including cypress/gum ponds, forested wetlands, river swamps, marshes (freshwater and saltwater), and bays. The wood stork is highly gregarious in its nesting and feeding behavior. They are tactile feeders (vision is seldom used to locate or catch prey) and usually forage in shallow water (6 to 20 inches). Small fish are the primary food items, but storks also consume crustaceans, salamanders, tadpoles, and insects. The distance between nesting colonies and feeding areas can range up to 60 miles or more, although the average distance is typically 12 to 15 kilometers (km) (7 to 9 miles) (Ogden, 1996a). The USFWS has defined “core foraging areas” (CFAs) for wood storks in central Florida to be
that area within 15 miles of the colony, and within north Florida to be the area within 13 miles of the colony. Colonies are located on coastal islands and on willow islands in swamps, cypress swamps, impoundments, and other inundated areas. Nesting has been reported throughout the year. Nests are platforms of sticks formed in tall cypress trees and, less often, mangroves. Typically, three to five eggs are laid and incubate for 28 to 32 days before hatching, while the young fledge in 50 to 55 days. No individuals were observed within the CREC Substation Expansion Site; the Site does not occur within any wood stork colony CFAs (Appendix C).
4.0 LISTED SPECIES SURVEYS

The results of the preliminary listed species assessment will be used to develop a detailed listed species survey plan for the CREC Substation Expansion Site to support the permitting effort and federal and state requirements. PEF will consult with the FWC and the USFWS to review the listed species assessment and obtain consensus on the location, timing, and methodology for conducting the detailed species-specific surveys prior to clearing and construction.

Following FWC and USFWS consultation, additional evaluations will be conducted within the CREC Substation Expansion Site prior to clearing and construction. The results of those additional evaluations will be provided to the USFWS and FWC, and coordination will occur with the agencies regarding appropriate impact mitigation methodologies, if necessary.

Based upon the results of the preliminary listed species assessment and proposed impacts associated with construction of the CREC Substation Expansion Site, additional evaluations are limited to the bald eagle, as described below:

4.1 Bald Eagle

Prior to clearing and construction, PEF will update the bald eagle nest location and status (active/inactive) information within and adjacent to the CREC Substation Expansion Site. During clearing and construction, PEF will avoid impacts to bald eagle nests where possible. If impacts cannot be avoided within the 660-foot nest buffer zone, construction activities will be conducted consistent with the FWC-approved Bald Eagle Management Guidelines, outlined in the FWC-approved Bald Eagle Management Plan, dated April 9, 2008, or any subsequent FWC-approved versions. In areas where bald eagle nests are present, efforts will be made to avoid construction activities during the nesting season (October 1 - May 15), or when eagles are present before October 1 or after May 15.

In accordance with the FWC Eagle Management Guidelines, for construction areas that fall within 330 feet of an active or alternate bald eagle nest, construction activities will be conducted only during the non-nesting season (May 16 - September 30). Any construction activities that fall within 660 feet of the nest during the nesting season will be conducted following USFWS-approved Bald Eagle Monitoring Guidelines, dated 2007, or USFWS-approved subsequent versions.

In areas where adverse impacts to nests cannot be avoided, resulting in nest disturbance, PEF will obtain the information required for an FWC Eagle Permit from the FWC, as authorized by Section 372.072, F.S., and Rule 68A-16.002, F.A.C, and minimization and conservation measures outlined in the FWC Bald Eagle Management Plan will be followed, as applicable.
5.0 SUMMARY

To support the permitting effort and the regulatory process, Golder has prepared an evaluation of listed species occurrence within the CREC Substation Expansion Site. In consultation with the FWC and USFWS, this listed species evaluation will facilitate the development of detailed listed species surveys to be conducted prior to clearing and construction, including specific locations and protocols.

The CREC Substation Expansion Site contains approximately 4 acres of wetlands and less than 1 acre of surface waters, which provide low-quality habitat for listed species due to their disturbed nature and the surrounding industrial activity associated with the Crystal River Energy Complex. However, wading birds may occasionally utilize wetland areas with the Site.

Based on the results of the assessment, detailed listed species surveys are not recommended.

Prior to clearing and construction, PEF will update the bald eagle nest location and status information within and adjacent to the CREC Substation Expansion Site. In accordance with the FWC Eagle Management Guidelines, for construction areas that fall within 330 feet of an active or alternate bald eagle nest, construction activities will be conducted only during the non-nesting season (May 16 - September 30). Any construction activities that fall within 660 feet of the nest during the nesting season will be conducted following USFWS-approved Bald Eagle Monitoring Guidelines, dated 2007, or USFWS-approved subsequent versions. In areas where adverse impacts to nests cannot be avoided, resulting in nest disturbance, PEF will obtain the information required for an FWC Eagle Permit from the FWC, as authorized by Section 372.072, F.S., and Rule 68A-16.002, F.A.C, and minimization and conservation measures outlined in the FWC Bald Eagle Management Plan will be followed, as applicable.
6.0 REFERENCES


Florida Department of Transportation. 1999. Surveying and Mapping Office, Land Use, Cover, and Forms Classification System, Tallahassee, FL.


Florida Natural Areas Inventory. 2008. Element Occurrence GIS Data.


TABLES
TABLE 1
Progress Energy Florida – Levy Nuclear Plant Project
Crystal River Energy Complex Substation Expansion

Land Use/Land Cover Summary of the Crystal River Energy Complex Substation Expansion Site

<table>
<thead>
<tr>
<th>FLUCFCS Code</th>
<th>Description</th>
<th>Acreage within Substation Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>511</td>
<td>Ditches</td>
<td>0.09</td>
</tr>
<tr>
<td>534</td>
<td>Reservoirs Less Than 10 Acres</td>
<td>0.46</td>
</tr>
<tr>
<td>630</td>
<td>Wetland Forested Mixed</td>
<td>2.88</td>
</tr>
<tr>
<td>641</td>
<td>Freshwater Marshes</td>
<td>0.44</td>
</tr>
<tr>
<td>643</td>
<td>Wet Prairies</td>
<td>0.55</td>
</tr>
<tr>
<td>831</td>
<td>Electric Power Facilities</td>
<td>42.44</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>TOTAL</strong></td>
<td><strong>46.86</strong></td>
</tr>
</tbody>
</table>
### TABLE 2
Florida Power Corporation d/b/a Progress Energy Florida, Inc.
Crystal River Energy Complex Substation Expansion

Protected Plants and Animals Potentially Occurring within the Crystal River Energy Complex Substation Expansion Site
Citrus County, Florida

<table>
<thead>
<tr>
<th>Species</th>
<th>Habitat of Occurrence</th>
<th>Habitat Present on Site (Y/N)</th>
<th>Likelihood of Occurrence on Site</th>
<th>Status</th>
<th>Observed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AMPHIBIANS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| *Rana capito*  
Gopher frog | Sandhill and scrub with isolated wetlands or large ponds; commensal with gopher tortoises | No | Low | N | SSC | No |
| **BIRDS** |
| *Ammodramus maritimus peninsulae*  
Scott's seaside sparrow | Extensive stands of black needlerush, with smooth cordgrass and scattered areas of saltgrass | No | Unlikely | N | SSC | No |
| *Aphelocoma coerulescens*  
Florida scrub-jay | Low-growing oak scrub habitat | No | Unlikely | T | T | No |
| *Aramus guarauna*  
Limpkin | Freshwater marshes, swamps, springs, spring runs, pond, river, and lake margins | Yes | Low | N | SSC | No |
| *Athene cunicularia floridana*  
Florida burrowing owl | Dry prairie, sandhill, pastures | No | Unlikely | N | SSC | No |
| *Charadrius melodus*  
Piping plover | Open, sandy beaches and tidal mudflats | No | Unlikely | T | T | No |
| *Cistothorus palustris marianae*  
Marian's marsh wren | Tidal marshes dominated by black needlerush | No | Unlikely | N | SSC | No |
| *Egretta caerulea*  
Little blue heron | Freshwater lakes, marshes, swamps, and streams, cypress | Yes | Medium | N | SSC | No |
| *Egretta thula*  
Snowy egret | Wetlands, streams, lakes, and swamps, manmade impoundments, ditches | Yes | Medium | N | SSC | No |
| *Egretta tricolor*  
Tricolored heron | Wetlands, ditches, pond and lake edges, coastal areas | Yes | Medium | N | SSC | No |
| *Eudocimus albus*  
White ibis | Freshwater and brackish marshes, salt flats, forested wetlands, wet prairies, swales, manmade ditches | Yes | Medium | N | SSC | No |
| *Falco sparverius paulus*  
Southeastern American kestrel | Open pine habitats, woodland edges, prairies, pastures | No | Unlikely | N | T | No |
| *Grus canadensis pratensis*  
Florida sandhill crane | Prairies, freshwater marshes, and pastures | Yes | Medium | N | T | No |
## TABLE 2

Florida Power Corporation d/b/a Progress Energy Florida, Inc.
Crystal River Energy Complex Substation Expansion

Protected Plants and Animals Potentially Occurring within the Crystal River Energy Complex Substation Expansion Site
Citrus County, Florida

<table>
<thead>
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<th>Habitat of Occurrence</th>
<th>Habitat Present on Site (Y/N)</th>
<th>Likelihood of Occurrence on Site</th>
<th>Status</th>
<th>Observed</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Haematopus palliatus</em></td>
<td>American oystercatcher; Large areas of beach, sandbar, mudflats, and shellfish beds for foraging. Sparsely vegetated, sandy areas for nesting</td>
<td>No</td>
<td>Unlikely</td>
<td>N</td>
<td>SSC</td>
</tr>
<tr>
<td><em>Haliaeetus leucocephalus</em></td>
<td>Bald Eagle; Coastal areas, bays, rivers, lakes, or other bodies of water</td>
<td>Yes</td>
<td>Medium</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td><em>Mycteria americana</em></td>
<td>Wood stork; Cypress strands and domes, mixed hardwood swamps, freshwater marshes</td>
<td>Yes</td>
<td>Medium</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td><em>Pelecanus occidentalis</em></td>
<td>Brown pelican; Mainly coastal; feeds in shallow, estuarine waters and occasionally offshore. Nests mainly on small islands in open water</td>
<td>No</td>
<td>Unlikely</td>
<td>N</td>
<td>SSC</td>
</tr>
<tr>
<td><em>Picoides borealis</em></td>
<td>Red-cockaded woodpecker; Mature pine woodlands</td>
<td>No</td>
<td>Unlikely</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td><em>Platalea ajaja</em></td>
<td>Roseate spoonbill; Tidal flats, coastal and freshwater marshes</td>
<td>Yes</td>
<td>Low</td>
<td>N</td>
<td>SSC</td>
</tr>
<tr>
<td><em>Rynchops niger</em></td>
<td>Black skimmer; Coastal waters, including beaches, bays, estuaries, sandbars, tidal creeks (foraging), and also inland waters of large lakes, phosphate pits, and flooded agricultural fields</td>
<td>No</td>
<td>Low</td>
<td>N</td>
<td>SSC</td>
</tr>
<tr>
<td><em>Sternula antillarum</em></td>
<td>Least tern; Coastal areas throughout Florida; nesting limited to well-drained sand or gravel areas with little to no vegetation.</td>
<td>No</td>
<td>Low</td>
<td>N</td>
<td>T</td>
</tr>
</tbody>
</table>

### MAMMALS

<table>
<thead>
<tr>
<th>Species</th>
<th>Habitat of Occurrence</th>
<th>Habitat Present on Site (Y/N)</th>
<th>Likelihood of Occurrence on Site</th>
<th>Status</th>
<th>Observed</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Podomys floridanus</em></td>
<td>Florida mouse; Xeric upland communities with sandy soils, including scrub, sandhill, and ruderal sites; potential gopher tortoise burrow commensal</td>
<td>No</td>
<td>Unlikely</td>
<td>N</td>
<td>SSC</td>
</tr>
<tr>
<td><em>Puma concolor coryi</em></td>
<td>Florida panther; Extensive blocks of mostly forested communities; large wetlands that are generally inaccessible to humans are important for diurnal refuge; will tolerate improved areas in a mosaic of natural communities</td>
<td>No</td>
<td>Unlikely</td>
<td>E</td>
<td>E</td>
</tr>
</tbody>
</table>
TABLE 2
Florida Power Corporation d/b/a Progress Energy Florida, Inc.
Crystal River Energy Complex Substation Expansion

Protected Plants and Animals Potentially Occurring within the Crystal River Energy Complex Substation Expansion Site
Citrus County, Florida

<table>
<thead>
<tr>
<th>Species</th>
<th>Habitat of Occurrence</th>
<th>Habitat Present on Site (Y/N)</th>
<th>Likelihood of Occurrence on Site</th>
<th>Status</th>
<th>Observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sciurus niger shermani</td>
<td>Sandhills, pine flatwoods, pastures and other open, ruderal habitats with scattered pines and oaks</td>
<td>No</td>
<td>Unlikely</td>
<td>N</td>
<td>SSC</td>
</tr>
<tr>
<td>Sorex longirostris eionis</td>
<td>Moist areas, forested wetlands, riparian forests, fields, brushy areas; near Homosassa Springs area</td>
<td>Yes</td>
<td>Low</td>
<td>N</td>
<td>SSC</td>
</tr>
<tr>
<td>Trichechus manatus</td>
<td>Rivers, bays, canals, estuaries, Gulf of Mexico</td>
<td>No</td>
<td>Unlikely</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Ursus americanus floridanus</td>
<td>Large areas of forested uplands, forested wetlands</td>
<td>No</td>
<td>Unlikely</td>
<td>N</td>
<td>T</td>
</tr>
</tbody>
</table>

**REPTILES**

<table>
<thead>
<tr>
<th>Species</th>
<th>Habitat of Occurrence</th>
<th>Habitat Present on Site (Y/N)</th>
<th>Likelihood of Occurrence on Site</th>
<th>Status</th>
<th>Observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alligator mississippiensis</td>
<td>Most permanent bodies of fresh water, including marshes, swamps, lakes, and rivers</td>
<td>Yes</td>
<td>Low</td>
<td>T (SA)</td>
<td>SSC</td>
</tr>
<tr>
<td>Caretta caretta</td>
<td>Estuarine and marine coastal and oceanic waters; nests on sandy beaches</td>
<td>No</td>
<td>Unlikely</td>
<td>T</td>
<td>T</td>
</tr>
<tr>
<td>Chelonia mydas</td>
<td>Estuarine and marine coastal and oceanic waters; nests on sandy beaches</td>
<td>No</td>
<td>Unlikely</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Dermochelys coriacea</td>
<td>Estuarine and marine coastal and oceanic waters; nests on sandy beaches</td>
<td>No</td>
<td>Unlikely</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Drymarchon couperi</td>
<td>Broad range of habitats, from scrub and sandhill to wet prairies and mangrove swamps; often commensal with gopher tortoises</td>
<td>No</td>
<td>Low</td>
<td>T</td>
<td>T</td>
</tr>
<tr>
<td>Eretmochelys imbricata</td>
<td>Marine coastal and oceanic waters, commonly associated with coral reefs, keys, and mangroves</td>
<td>No</td>
<td>Unlikely</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Gopherus polyphemus</td>
<td>Dry upland habitats, including sandhills, scrub, xeric oak hammock, and dry pine flatwoods; also pastures, old fields</td>
<td>No</td>
<td>Unlikely</td>
<td>N</td>
<td>T</td>
</tr>
<tr>
<td>Lampropeltis extenuata</td>
<td>Sandhill, xeric hammock, sand pine scrub</td>
<td>No</td>
<td>Unlikely</td>
<td>N</td>
<td>T</td>
</tr>
<tr>
<td>Species</td>
<td>Habitat of Occurrence</td>
<td>Habitat Present on Site (Y/N)</td>
<td>Likelihood of Occurrence on Site</td>
<td>Status</td>
<td>Observed</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>---------------------------------------------------------------------------------------</td>
<td>-------------------------------</td>
<td>----------------------------------</td>
<td>--------------</td>
<td>----------</td>
</tr>
<tr>
<td><strong>Lepidochelys kempii</strong></td>
<td>Estuarine and marine coastal and oceanic waters; nests on sandy beaches</td>
<td>No</td>
<td>Unlikely</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Kemp’s ridley sea turtle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pituophis melanoleucus</strong></td>
<td>Sandhill, old fields and pastures, sand pine scrub, scrubby flatwoods; often commensal with gopher tortoises and pocket gophers</td>
<td>No</td>
<td>Unlikely</td>
<td>N</td>
<td>SSC</td>
</tr>
<tr>
<td><strong>mugetis</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Florida pine snake</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pseudemys concinna</strong></td>
<td>Rivers, large streams</td>
<td>No</td>
<td>Unlikely</td>
<td>N</td>
<td>SSC</td>
</tr>
<tr>
<td><strong>suwanniensis</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suwannee cooter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acipenser oxyrhynchos desotoi</strong></td>
<td>Forages in Gulf of Mexico and associated estuaries; spawns in most major coastal rivers in areas with limestone outcrops</td>
<td>No</td>
<td>Unlikely</td>
<td>T</td>
<td>SSC</td>
</tr>
<tr>
<td><strong>Gulf sturgeon</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Adiantum tenerum</strong></td>
<td>Limestone outcrops, grottoes, sinkholes</td>
<td>No</td>
<td>Unlikely</td>
<td>N</td>
<td>E</td>
</tr>
<tr>
<td>Brittle maidenhair fern</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Agrimonia incisa</strong></td>
<td>Sandhills and scrub</td>
<td>No</td>
<td>Unlikely</td>
<td>N</td>
<td>E</td>
</tr>
<tr>
<td><strong>Incised groove-bur</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Asplenium pumilum</strong></td>
<td>Shaded limestone boulders and ledges</td>
<td>No</td>
<td>Unlikely</td>
<td>N</td>
<td>E</td>
</tr>
<tr>
<td>Dwarf spleenwort</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Asplenium verecundum</strong></td>
<td>Rockland hammocks, limestone outcrops, grottoes, sinkholes</td>
<td>No</td>
<td>Unlikely</td>
<td>N</td>
<td>E</td>
</tr>
<tr>
<td><strong>Modest spleenwort</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Blechnum occidentale</strong></td>
<td>Moist woodlands, hammocks, rocky creek banks, woodlands with open shade</td>
<td>No</td>
<td>Unlikely</td>
<td>N</td>
<td>E</td>
</tr>
<tr>
<td><strong>Sinkhole fern</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Centrosema arenicola</strong></td>
<td>Sandhill, scrubby flatwoods, dry upland woods</td>
<td>No</td>
<td>Unlikely</td>
<td>N</td>
<td>E</td>
</tr>
<tr>
<td><strong>Sand butterfly pea</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cheilanthes microphylla</strong></td>
<td>Crevices of limestone outcrops and shell mounds in partial to full sun</td>
<td>No</td>
<td>Unlikely</td>
<td>N</td>
<td>E</td>
</tr>
<tr>
<td><strong>Southern tip fern</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Glandularia maritima</strong></td>
<td>Disturbed sandy areas, back dunes, dune swales, and coastal hammocks</td>
<td>No</td>
<td>Unlikely</td>
<td>N</td>
<td>E</td>
</tr>
<tr>
<td><strong>Coastal vervain</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Glandularia tampensis</strong></td>
<td>Live oak-cabbage palm hammocks and pine-palmetto flatwoods</td>
<td>No</td>
<td>Unlikely</td>
<td>N</td>
<td>E</td>
</tr>
<tr>
<td><strong>Tampa vervain</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>Habitat of Occurrence</td>
<td>Habitat Present on Site (Y/N)</td>
<td>Likelihood of Occurrence on Site</td>
<td>Status</td>
<td>Observed</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---------------------------------------------------------------------------------------</td>
<td>------------------------------</td>
<td>---------------------------------</td>
<td>--------</td>
<td>----------</td>
</tr>
<tr>
<td><strong>Matelea floridana</strong></td>
<td>Florida spiny-pod</td>
<td>No</td>
<td>Unlikely</td>
<td>USFWS</td>
<td>FWC</td>
</tr>
<tr>
<td></td>
<td>Pinelands, temperate forests</td>
<td></td>
<td></td>
<td>N</td>
<td>E</td>
</tr>
<tr>
<td><strong>Monotropis reynoldsiae</strong></td>
<td>Pygmy pipes</td>
<td>No</td>
<td>Unlikely</td>
<td>USFWS</td>
<td>FWC</td>
</tr>
<tr>
<td></td>
<td>Upland mixed hardwood forest, mesic and xeric hammock, sand pine and oak scrub</td>
<td></td>
<td></td>
<td>N</td>
<td>E</td>
</tr>
<tr>
<td><strong>Pecluma ptilodon</strong></td>
<td>Swamp plume polypody</td>
<td>No</td>
<td>Unlikely</td>
<td>USFWS</td>
<td>FWC</td>
</tr>
<tr>
<td></td>
<td>Rockland hammocks, strand swamps, wet woods</td>
<td></td>
<td></td>
<td>N</td>
<td>E</td>
</tr>
<tr>
<td><strong>Pteroglossaspis ecristata</strong></td>
<td>Giant orchid</td>
<td>No</td>
<td>Unlikely</td>
<td>USFWS</td>
<td>FWC</td>
</tr>
<tr>
<td></td>
<td>Sandhill, scrub, pine flatwoods, pine rocklands</td>
<td></td>
<td></td>
<td>N</td>
<td>T</td>
</tr>
<tr>
<td><strong>Spiranthes polyantha</strong></td>
<td>Green ladies'-tresses</td>
<td>No</td>
<td>Unlikely</td>
<td>USFWS</td>
<td>FWC</td>
</tr>
<tr>
<td></td>
<td>Rock outcrops in mesic hammock, rockland hammock, maritime hammock</td>
<td></td>
<td></td>
<td>N</td>
<td>E</td>
</tr>
<tr>
<td><strong>Stylisma abdita</strong></td>
<td>Scrub stylisma</td>
<td>No</td>
<td>Unlikely</td>
<td>USFWS</td>
<td>FWC</td>
</tr>
<tr>
<td></td>
<td>Pinelands, sandhills, scrub</td>
<td></td>
<td></td>
<td>N</td>
<td>E</td>
</tr>
<tr>
<td><strong>Thelypteris reptans</strong></td>
<td>Creeping maiden fern</td>
<td>No</td>
<td>Unlikely</td>
<td>USFWS</td>
<td>FWC</td>
</tr>
<tr>
<td></td>
<td>Limestone grottoes and sinkholes</td>
<td></td>
<td></td>
<td>N</td>
<td>E</td>
</tr>
<tr>
<td><strong>Triphora craigheadii</strong></td>
<td>Craighead's nodding-caps</td>
<td>No</td>
<td>Unlikely</td>
<td>USFWS</td>
<td>FWC</td>
</tr>
<tr>
<td></td>
<td>Mesic hardwood hammocks</td>
<td></td>
<td></td>
<td>N</td>
<td>E</td>
</tr>
</tbody>
</table>

**Notes:**
N = Not Listed
T = Threatened
E = Endangered
SSC = Species of Special Concern
T (SA) = Threatened due to similarity in appearance to a federally listed species
LEGEND

Substation Expansion Area

LAND USE/LAND COVER CODES

- 212, UNIMPROVED PASTURES
- 511, DITCHES
- 534, RESERVOIRS <10 ACRES
- 615, STREAM AND LAKE SWAMPS (BOTTOMLAND)
- 630, WETLAND FORESTED MIXED
- 631, WETLAND SCRUB
- 641, FRESHWATER MARSHES
- 643, WET PRARIES
- 812, RAILROADS
- 816, CANALS AND LOCKS
- 831, ELECTRIC POWER FACILITIES

REFERENCE

Manatee aggregation site

Substation Expansion Area

Florida Natural Areas Inventory Occurrence

NOTE: No portion of the Crystal River Energy Complex line lies within Wood Stork Core Foraging Areas.

PROGRESS ENERGY FLORIDA
LEVY NUCLEAR PLANT

CRYSTAL RIVER ENERGY COMPLEX
SUBSTATION EXPANSION
LISTED SPECIES MAP

REFERENCE
NOTE
See Figure 5 Soil Identification Table for Soil Definitions

REFERENCE
<table>
<thead>
<tr>
<th>SOIL ID</th>
<th>DESCRIPTION</th>
<th>COUNTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>Quartzipsaments, 0 to 5 percent slopes</td>
<td>Citrus</td>
</tr>
<tr>
<td>39</td>
<td>Hallandale-Rock outcrop complex, rarely flooded</td>
<td>Citrus</td>
</tr>
<tr>
<td>51</td>
<td>Boca-Pineda, limestone substratum complex</td>
<td>Citrus</td>
</tr>
<tr>
<td>59</td>
<td>Boca fine sand, depressional</td>
<td>Citrus</td>
</tr>
<tr>
<td>99</td>
<td>Water</td>
<td>Citrus</td>
</tr>
</tbody>
</table>
NOTE
There were no "Desirable" nor "Acceptable" soil types in the project area. The closest Acceptable Gopher Tortoise soil is located 3.11 miles northeast of the project site.

REFERENCE
NOTE: THIS ATTACHMENT INCLUDES FLORIDA NATURAL AREAS INVENTORY (FNAI) ELEMENT OCCURRENCE MAPS AND DATA FOR THE CRYSTAL RIVER ENERGY COMPLEX SUBSTATION EXPANSION AREA, EXTRACTED FROM THE LEVY-CRYSTAL RIVER FNAI ELEMENT OCCURRENCE REPORT.
Dear Ms. Rizzo,

Thank you for your request for information from the Florida Natural Areas Inventory (FNAI). We have compiled the following information for your project area.

**Project:** Proposed Citrus Substation – Crystal River Energy Complex  
**Date Received:** November 24, 2009  
**Location:** Citrus County

**Element Occurrences**  
A search of our maps and database indicates that currently we have several Element Occurrences mapped within the vicinity of the study area (see enclosed map and element occurrence table). Please be advised that a lack of element occurrences in the FNAI database is not a sufficient indication of the absence of rare or endangered species on a site.

The *Element Occurrences* data layer includes occurrences of rare species and natural communities. The map legend indicates that some element occurrences occur in the general vicinity of the label point. This may be due to lack of precision of the source data, or an element that occurs over an extended area (such as a wide ranging species or large natural community). For animals and plants, Element Occurrences generally refer to more than a casual sighting; they usually indicate a viable population of the species. Note that some element occurrences represent historically documented observations which may no longer be extant.

**Likely and Potential Rare Species**  
In addition to documented occurrences, other rare species and natural communities may be identified on or near the site based on habitat models and species range models (see enclosed Biodiversity Matrix Report). These species should be taken into consideration in field surveys, land management, and impact avoidance and mitigation.

*FNAI habitat models indicate areas, which based on land cover type, offer suitable habitat for one or more rare species that is known to occur in the vicinity. Habitat models have been developed for approximately 300 of the rarest species tracked by the Inventory, including all federally listed species.*

*FNAI species range models indicate areas that are within the known or predicted range of a species, based on climate variables, soils, vegetation, and/or slope. Species range models have been developed for approximately 340 species, including all federally listed species.*
The FNAI Biodiversity Matrix Geodatabase compiles Documented, Likely, and Potential species and natural communities for each square mile Matrix Unit statewide.

Florida Scrub-jay Survey – U.S. Fish and Wildlife Service
This survey was conducted by staff and associates of the Archbold Biological Station from 1992 to 1996. An attempt was made to record all scrub-jay (Aphelocoma coerulescens) groups, although most federal lands were not officially surveyed. Each map point represents one or more groups.

This data layer indicates that there are potential scrub-jay populations on or very near your site. For additional information:


The Inventory always recommends that professionals familiar with Florida’s flora and fauna should conduct a site-specific survey to determine the current presence or absence of rare, threatened, or endangered species.

Please visit www.fnai.org/trackinglist.cfm for county or statewide element occurrence distributions and links to more element information.

The database maintained by the Florida Natural Areas Inventory is the single most comprehensive source of information available on the locations of rare species and other significant ecological resources. However, the data are not always based on comprehensive or site-specific field surveys. Therefore, this information should not be regarded as a final statement on the biological resources of the site being considered, nor should it be substituted for on-site surveys. Inventory data are designed for the purposes of conservation planning and scientific research, and are not intended for use as the primary criteria for regulatory decisions.

Information provided by this database may not be published without prior written notification to the Florida Natural Areas Inventory, and the Inventory must be credited as an information source in these publications. FNAI data may not be resold for profit.

Thank you for your use of FNAI services. If I can be of further assistance, please give me a call at (850) 224-8207.

Sincerely,

Alicia C. Newberry
Data Services Coordinator

Encl
Map produced by ACN
Map Date: 30 NOV 2009

NOTE: Map should not be interpreted without accompanying documents.

Map produced by ACN
Map Date: 30 NOV 2009
<table>
<thead>
<tr>
<th>Map Label</th>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Global Rank</th>
<th>State Federal Rank</th>
<th>State Status</th>
<th>State Listing</th>
<th>Observation Date</th>
<th>Description</th>
<th>EO Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARIHAMM*204</td>
<td>Maritime hammock</td>
<td></td>
<td>G3</td>
<td>S2</td>
<td>N</td>
<td>N</td>
<td>2004</td>
<td>SMALL REMNANT SURROUNDED BY ESTUARINE TIDAL MARSH.</td>
<td>2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1991-10-10) (U05FNA02FLUS). REMNANT DOMINATED BY SABAL PALMETTO WITH PINUS ELLIOTTII, QUERCUS VIRGINIANA, JUNIPERUS SILICICOLA, DICHROMENA COLORATA, MYRIC</td>
</tr>
<tr>
<td>HYDRHAMM*17</td>
<td>Hydric hammock</td>
<td></td>
<td>G4</td>
<td>S4</td>
<td>N</td>
<td>N</td>
<td>2004</td>
<td>ISOLED OCCURRENCE WITH LIMESTONE BOULDERS AT THE SURFACE; SOME DEEPER POOLS OF WATER.</td>
<td>2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1991-11-12) (U05FNA02FLUS). DOMINATED BY SABAL PALMETTO AND ACER RUBRUM.</td>
</tr>
<tr>
<td>SCRUB****42</td>
<td>Scrub</td>
<td></td>
<td>G2</td>
<td>S2</td>
<td>N</td>
<td>N</td>
<td>2004</td>
<td>GRASSY PALMETTO SCRUB</td>
<td>2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1981-02-21) (U05FNA02FLUS). OCCURRENCE AT SITE</td>
</tr>
<tr>
<td>SCRUB****41</td>
<td>Scrub</td>
<td></td>
<td>G2</td>
<td>S2</td>
<td>N</td>
<td>N</td>
<td>1981-02-21</td>
<td>PALMETTO SCRUB, SCATTERED PALMS</td>
<td>OCCURRENCE AT SITE</td>
</tr>
<tr>
<td>ERETIMBR*7</td>
<td>Eretmochelys imbricata</td>
<td>Hawksbill</td>
<td>G3</td>
<td>S1</td>
<td>LE</td>
<td>LE</td>
<td>1997-04-02</td>
<td>Coastal hammock island.</td>
<td>1997-04-02: One adult turtle found dead, decomposing (U97MAI01FLUS).</td>
</tr>
<tr>
<td>HYDRHAMM*58</td>
<td>Hydric hammock</td>
<td></td>
<td>G4</td>
<td>S4</td>
<td>N</td>
<td>N</td>
<td>1997-04-07</td>
<td>This hammock is deep in the woods. Crystal River marshes and swamps are its south and west border. The north and east edges are flatwoods and sandhills, also within the preserve.</td>
<td>1997-04-07: Completely canopied by mature trees reaching over 100 feet; understory and ground layer fairly open from lack of light; succession dominated by light gaps; enormous, clearly old growth. Hammock is interspersed with shallow running streams and</td>
</tr>
<tr>
<td>MANASITE*2</td>
<td>Manatee Aggregation Site</td>
<td></td>
<td>GNR</td>
<td>SNR</td>
<td>N</td>
<td>N</td>
<td>1988</td>
<td>WARM-WATER EFFlUENT INTO GULF OF MEXICO (CRYSTAL BAY).</td>
<td>UP TO 5 MANATEES UTILIZE THIS AREA FOR SHORT PERIODS OF COOL WEATHER; MOST HEAVILY IN SPRING AS INDIVIDUALS DISPERSE NORTHWARD FROM CRYSTAL RIVER.</td>
</tr>
<tr>
<td>DRYMCOP*347</td>
<td>Drymarchon couperi</td>
<td>Eastern Indigo Snake</td>
<td>G3</td>
<td>S3</td>
<td>LT</td>
<td>LT</td>
<td>1973-10</td>
<td>No general description given</td>
<td>MUSEUM SPECIMEN: S. CHRISTMAN, OCT 1973, UF.</td>
</tr>
<tr>
<td>APHECOER*41</td>
<td>Aphelocoma coerulescens</td>
<td>Florida Scrub-jay</td>
<td>G2</td>
<td>S2</td>
<td>LT</td>
<td>LT</td>
<td>1981-02-21</td>
<td>PALMETTO SCRUB, SCATTERED PINES</td>
<td>1981-02-21: 2 SCRUB JAYS</td>
</tr>
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</table>

11/30/2009
<table>
<thead>
<tr>
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<th>Common Name</th>
<th>Global Rank</th>
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<th>State Status</th>
<th>State Listing</th>
<th>Observation Date</th>
<th>Description</th>
<th>EO Comments</th>
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<tbody>
<tr>
<td>Gopherus polyphemus</td>
<td>Gopher Tortoise</td>
<td>G3</td>
<td>S3</td>
<td>N</td>
<td>LT</td>
<td>1997-04-08</td>
<td>Planted slash pine; includes some relic sandhill planted with slash pine and turkey oak (NW1/4 of section 2 T18SR16E). 1997-04-08: One individual sighted on dirt road in NW1/4 section 1 T18SR16E (S. Blitch et al.). 1995-1997: S. Blitch made several sightings of tortoises at three different locations within element occurrence boundaries (see attached map).</td>
<td></td>
</tr>
<tr>
<td>Crotalus adamanteus</td>
<td>Eastern Diamondback Rattlesnake</td>
<td>G4</td>
<td>S3</td>
<td>N</td>
<td>N</td>
<td>1996</td>
<td>Planted pine</td>
<td>1996: S. Blitch observed one individual once or twice near state buffer preserve's shop.</td>
</tr>
<tr>
<td>Drymarchon couperi</td>
<td>Eastern Indigo Snake</td>
<td>G3</td>
<td>S3</td>
<td>LT</td>
<td>LT</td>
<td>1996-XX-XX</td>
<td>Planted slash pine and pine flatwoods (T17SR16E sec. 35); oak hammock and pasture (T18SR16E Sec. 1) (S. Blitch); mature slash pine plantation (G. Maidhoff). 1995-1996: Individuals observed at four different locations by S. Blitch (no specific dates). 1995-02-21: One snake observed by Ms. Yulee Commander basking in fire trail (U95MAI02).</td>
<td></td>
</tr>
<tr>
<td>Map Label</td>
<td>Scientific Name</td>
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<td>Global Rank</td>
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<td>Status</td>
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<td>Listing</td>
<td>Observation Date</td>
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<tr>
<td>PSEULUST*5</td>
<td>Pseudobranchus striatus</td>
<td>Gulf Hammock Dwarf</td>
<td>G5T1</td>
<td>S1</td>
<td>N</td>
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<td>N</td>
<td>1951-03-15</td>
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### Scientific Name | Common Name | Global Rank | State Rank | Federal Status | State Listing |
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<td>G3</td>
<td>S3</td>
<td>LT</td>
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<tr>
<td>Manatee aggregation site</td>
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<tr>
<td>Ursus americanus floridanus</td>
<td>Florida Black Bear</td>
<td>G5T2</td>
<td>S2</td>
<td>N</td>
<td>LT*</td>
</tr>
<tr>
<td><strong>Potential</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Acipenser oxyrinchus desotoi</td>
<td>Gulf Sturgeon</td>
<td>G3T2</td>
<td>S2</td>
<td>LT</td>
<td>LS</td>
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<tr>
<td>Ammodramus maritimus peninsulai</td>
<td>Scott's Seaside Sparrow</td>
<td>G4T3Q</td>
<td>S3</td>
<td>N</td>
<td>LS</td>
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<tr>
<td>Asplenium heteroresiliens</td>
<td>Wagner's Spleenwort</td>
<td>GNA</td>
<td>S1</td>
<td>N</td>
<td>N</td>
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<tr>
<td>Caretta caretta</td>
<td>Loggerhead</td>
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<td>Green Turtle</td>
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<td>S2</td>
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<td>Cistothorus palustris marianae</td>
<td>Marian's Marsh Wren</td>
<td>G5T3</td>
<td>S3</td>
<td>N</td>
<td>LS</td>
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<tr>
<td>Corynorhinus rafinesquii</td>
<td>Rafinesque's Big-eared Bat</td>
<td>G3G4</td>
<td>S2</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Forestiera godfreyi</td>
<td>Godfrey's Swampprivet</td>
<td>G2</td>
<td>S2</td>
<td>N</td>
<td>LE</td>
</tr>
<tr>
<td>Gopherus polyphemus</td>
<td>Gopher Tortoise</td>
<td>G3</td>
<td>S3</td>
<td>N</td>
<td>LT</td>
</tr>
<tr>
<td>Justiaca cooleyi</td>
<td>Cooley's Water-willow</td>
<td>G2</td>
<td>S2</td>
<td>LE</td>
<td>LE</td>
</tr>
<tr>
<td>Leitneria floridana</td>
<td>Corkwood</td>
<td>G3</td>
<td>S3</td>
<td>N</td>
<td>LT</td>
</tr>
<tr>
<td>Mustela frenata peninsulai</td>
<td>Florida Long-tailed Weasel</td>
<td>G5T3</td>
<td>S3</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Myotis auroriparius</td>
<td>Southeastern Bat</td>
<td>G3G4</td>
<td>S3</td>
<td>N</td>
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<tr>
<td>Neovison vison halliminetes</td>
<td>Gulf Salt Marsh Mink</td>
<td>G5T3</td>
<td>S3</td>
<td>N</td>
<td>N</td>
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<tr>
<td>Nerodia clarkii clarkii</td>
<td>Gulf Salt Marsh Snake</td>
<td>G4T4</td>
<td>S3?</td>
<td>N</td>
<td>N</td>
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<tr>
<td>Phyllanthus leibmannianus ssp. platylepis</td>
<td>Pinewood Dainties</td>
<td>G4T2</td>
<td>S2</td>
<td>LE</td>
<td>N</td>
</tr>
<tr>
<td>Podomyx floridanus</td>
<td>Florida Mouse</td>
<td>G3</td>
<td>S3</td>
<td>N</td>
<td>LS</td>
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<tr>
<td>Rallus longirostris scottii</td>
<td>Florida Clapper Rail</td>
<td>G5T3?</td>
<td>S3?</td>
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<tr>
<td>Spigelia loganioides</td>
<td>Pinkroot</td>
<td>G2Q</td>
<td>S2</td>
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<td>LE</td>
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<td>Trichechus manatus</td>
<td>Manatee</td>
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### Matrix Unit ID: 22046

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<tbody>
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<td><strong>Likely</strong></td>
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<td></td>
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<tr>
<td>Drymarchon couperi</td>
<td>Eastern Indigo Snake</td>
<td>G3</td>
<td>S3</td>
<td>LT</td>
<td>LT</td>
</tr>
<tr>
<td>Mesic flatwoods</td>
<td></td>
<td>G4</td>
<td>S4</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Ursus americanus floridanus</td>
<td>Florida Black Bear</td>
<td>G5T2</td>
<td>S2</td>
<td>N</td>
<td>LT*</td>
</tr>
<tr>
<td><strong>Potential</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Aimophila aestivalsis</td>
<td>Bachman's Sparrow</td>
<td>G3</td>
<td>S3</td>
<td>N</td>
<td>N</td>
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<tr>
<td>Asplenium heteroresiliens</td>
<td>Wagner's Spleenwort</td>
<td>GNA</td>
<td>S1</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Corynorhinus rafinesquii</td>
<td>Rafinesque's Big-eared Bat</td>
<td>G3G4</td>
<td>S2</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Forestiera godfreyi</td>
<td>Godfrey's Swampprivet</td>
<td>G2</td>
<td>S2</td>
<td>N</td>
<td>LE</td>
</tr>
<tr>
<td>Gopherus polyphemus</td>
<td>Gopher Tortoise</td>
<td>G3</td>
<td>S3</td>
<td>N</td>
<td>LT</td>
</tr>
<tr>
<td>Justiaca cooleyi</td>
<td>Cooley's Water-willow</td>
<td>G2</td>
<td>S2</td>
<td>LE</td>
<td>LE</td>
</tr>
<tr>
<td>Leitneria floridana</td>
<td>Corkwood</td>
<td>G3</td>
<td>S3</td>
<td>N</td>
<td>LT</td>
</tr>
<tr>
<td>Mustela frenata peninsulai</td>
<td>Florida Long-tailed Weasel</td>
<td>G5T3</td>
<td>S3</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Myotis auroriparius</td>
<td>Southeastern Bat</td>
<td>G3G4</td>
<td>S3</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Neovison vison halliminetes</td>
<td>Gulf Salt Marsh Mink</td>
<td>G5T3</td>
<td>S3</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Phyllanthus leibmannianus ssp. platylepis</td>
<td>Pinewood Dainties</td>
<td>G4T2</td>
<td>S2</td>
<td>N</td>
<td>LE</td>
</tr>
<tr>
<td>Podomyx floridanus</td>
<td>Florida Mouse</td>
<td>G3</td>
<td>S3</td>
<td>N</td>
<td>LS</td>
</tr>
<tr>
<td>Sciurus Niger shermani</td>
<td>Sherman's Fox Squirrel</td>
<td>G5T3</td>
<td>S3</td>
<td>N</td>
<td>LS</td>
</tr>
</tbody>
</table>

**Definitions:**
- **Documented** - Rare species and natural communities documented on or near this site.
- **Documented-Historic** - Rare species and natural communities documented, but not observed/reported within the last twenty years.
- **Likely** - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
- **Potential** - This site lies within the known or predicted range of the species listed.
<table>
<thead>
<tr>
<th>Scientific Name</th>
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<th>State Rank</th>
<th>Federal Status</th>
<th>State Listing</th>
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</thead>
<tbody>
<tr>
<td><strong>Spigelia loganioides</strong></td>
<td>Pinkroot</td>
<td>G2Q</td>
<td>S2</td>
<td>N</td>
<td>LE</td>
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</tbody>
</table>

**Matrix Unit ID:** 22288

**Documented**

- Crotalus adamanteus Eastern Diamondback Rattlesnake G4 S3 N N

**Likely**

- Drymarchon couperi Eastern Indigo Snake G3 S3 LT LT
- Ursus americanus floridanus Florida Black Bear G5T2 S2 N LT*

**Potential**

- Aimophila aestivalis Bachman's Sparrow G3 S3 N N
- Asplenium heteroresiliens Wagner's Spleenwort GNA S1 N N
- Corynorhinus rafinesquii Rafinesque's Big-eared Bat G3G4 S2 N N
- Forestiera godfreyi Godfrey's Swampprivet G2 S2 N LE
- Gopherus polyphemus Gopher Tortoise G3 S3 N LT
- Justicia cooleyi Cooley's Water-willow G2 S2 LE LE
- Leitneria floridana Corkwood G3 S3 N LT
- Mustela frenata peninsulare Florida Long-tailed Weasel G5T3 S3 N N
- Myotis austroriparius Southeastern Bat G3G4 S3 N N
- Neovison vison halilimnetes Gulf Salt Marsh Mink G5T3 S3 N N
- Phyllanthus leibmannianus ssp. platylepis Pinewood Dainties G4T2 S2 N LE
- Podomys floridanus Florida Mouse G3 S3 N LS
- Sciurus niger shermani Sherman's Fox Squirrel G5T3 S3 N LS
- Spigelia loganioides Pinkroot G2Q S2 N LE

**Matrix Unit ID:** 22531

**Likely**

- Drymarchon couperi Eastern Indigo Snake G3 S3 LT LT
- Mesic flatwoods
- Ursus americanus floridanus Florida Black Bear G5T2 S2 N LT*

**Potential**

- Aimophila aestivalis Bachman's Sparrow G3 S3 N N
- Asplenium heteroresiliens Wagner's Spleenwort GNA S1 N N
- Corynorhinus rafinesquii Rafinesque's Big-eared Bat G3G4 S2 N N
- Forestiera godfreyi Godfrey's Swampprivet G2 S2 N LE
- Gopherus polyphemus Gopher Tortoise G3 S3 N LT
- Justicia cooleyi Cooley's Water-willow G2 S2 LE LE
- Leitneria floridana Corkwood G3 S3 N LT
- Matelea floridana Florida Spiny-pod G2 S2 N LE
- Mustela frenata peninsulare Florida Long-tailed Weasel G5T3 S3 N N
- Myotis austroriparius Southeastern Bat G3G4 S3 N N
- Neovison vison halilimnetes Gulf Salt Marsh Mink G5T3 S3 N N
- Phyllanthus leibmannianus ssp. platylepis Pinewood Dainties G4T2 S2 N LE
- Podomys floridanus Florida Mouse G3 S3 N LS
- Pseudobranchus striatus lustricolus Gulf Hammock Dwarf Siren G5T1 S1 N N
- Sciurus niger shermani Sherman's Fox Squirrel G5T3 S3 N LS

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<tr>
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<th>State Rank</th>
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<th>State Listing</th>
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<tbody>
<tr>
<td>Spigelia loganioides</td>
<td>Pinkroot</td>
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<td>LE</td>
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<tr>
<td>Stilosoma extenuatum</td>
<td>Short-tailed Snake</td>
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<td>S3</td>
<td>N</td>
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</table>

**Matrix Unit ID:** 22775

**Likely**

- Drymarchon couperi
- Heterodon simus
- Mesic flatwoods
- Ursus americanus floridanus

**Potential**

- Aimophila aestivalis
- Asplenium heteroresiliens
- Corynorhinus rafinesquii
- Forestiera godfreyi
- Gopherus polyphemus
- Justicia cooleyi
- Leitneria floridana
- Matelea floridana
- Mustela frenata peninsulæ
- Myotis australiriparius
- Phyllanthus leibmannianus ssp. platylepis
- Podomys floridanus
- Pseudobranchus striatus lustricolus
- Sciurus niger sernahi
- Spigelia loganioides
- Stilosoma extenuatum

**Matrix Unit ID:** 23022

**Likely**

- Aphelocoma coerulescens
- Drymarchon couperi
- Heterodon simus
- Mesic flatwoods

**Potential**

- Agrimonia incisa
- Aimophila aestivalis
- Asplenium heteroresiliens
- Corynorhinus rafinesquii
- Forestiera godfreyi
- Gopherus polyphemus
- Justicia cooleyi
- Leitneria floridana
- Matelea floridana
- Mustela frenata peninsulæ
- Myotis australiriparius
- Notophthalmus perstriatus

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11/30/2009
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<th>Common Name</th>
<th>Global Rank</th>
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<th>State Listing</th>
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</thead>
<tbody>
<tr>
<td>Phyllanthus leibmannianus ssp. platylepis</td>
<td>Pinewood Dainties</td>
<td>G4T2</td>
<td>S2</td>
<td>N</td>
<td>LE</td>
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<tr>
<td>Podomys floridanus</td>
<td>Florida Mouse</td>
<td>G3</td>
<td>S3</td>
<td>N</td>
<td>LS</td>
</tr>
<tr>
<td>Sciurus niger shermani</td>
<td>Sherman's Fox Squirrel</td>
<td>G5T3</td>
<td>S3</td>
<td>N</td>
<td>LS</td>
</tr>
<tr>
<td>Spigelia loganioides</td>
<td>Pinkroot</td>
<td>G2Q</td>
<td>S2</td>
<td>N</td>
<td>LE</td>
</tr>
<tr>
<td>Stilosoma extenuatum</td>
<td>Short-tailed Snake</td>
<td>G3</td>
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Matrix Unit ID: 23023

Likely

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<td>Eastern Indigo Snake</td>
<td>G3</td>
<td>S3</td>
<td>LT</td>
<td>LT</td>
</tr>
<tr>
<td>Mesic flatwoods</td>
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Potential

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<th>Federal Status</th>
<th>State Listing</th>
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<td>Incised Groove-bur</td>
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<td>N</td>
<td>LE</td>
</tr>
<tr>
<td>Aimophila aestivalis</td>
<td>Bachman's Sparrow</td>
<td>G3</td>
<td>S3</td>
<td>N</td>
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<tr>
<td>Asplenium heteroresiliens</td>
<td>Wagner's Spleenwort</td>
<td>GNA</td>
<td>S1</td>
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<tr>
<td>Athene cunicularia floridana</td>
<td>Florida Burrowing Owl</td>
<td>G4T3</td>
<td>S3</td>
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<td>LS</td>
</tr>
<tr>
<td>Forestiera godfreyi</td>
<td>Godfrey's Swamp Privet</td>
<td>G2</td>
<td>S2</td>
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<tr>
<td>Gopherus polyphemos</td>
<td>Gopher Tortoise</td>
<td>G3</td>
<td>S3</td>
<td>N</td>
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<td>Heterodon simus</td>
<td>Southern Hognose Snake</td>
<td>G2</td>
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<td>N</td>
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<td>Cooley's Water-willow</td>
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<tr>
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<td>Florida Spiny-pod</td>
<td>G2</td>
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<td>G5T3</td>
<td>S3</td>
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<td>Southeastern Bat</td>
<td>G3G4</td>
<td>S3</td>
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<td>Striped Newt</td>
<td>G2G3</td>
<td>S2S3</td>
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<td>Pinewood Dainties</td>
<td>G4T2</td>
<td>S2</td>
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<td>Short-tailed Snake</td>
<td>G3</td>
<td>S3</td>
<td>N</td>
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Definitions:
- Documented - Rare species and natural communities documented on or near this site.
- Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
- Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
- Potential - This site lies within the known or predicted range of the species listed.
GLOBAL AND STATE RANKS

Florida Natural Areas Inventory (FNAI) defines an element as any rare or exemplary component of the natural environment, such as a species, natural community, bird rookery, spring, sinkhole, cave, or other ecological feature. FNAI assigns two ranks to each element found in Florida: the global rank, which is based on an element's worldwide status, and the state rank, which is based on the status of the element within Florida. Element ranks are based on many factors, including estimated number of occurrences, estimated abundance (for species and populations) or area (for natural communities), estimated number of adequately protected occurrences, range, threats, and ecological fragility.

GLOBAL RANK DEFINITIONS

G1 Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.

G2 Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.

G3 Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.

G4 Apparently secure globally (may be rare in parts of range).

G5 Demonstrably secure globally.

G#? Tentative rank (e.g., G2?)

G#G# Range of rank; insufficient data to assign specific global rank (e.g., G2G3)

G#T# Rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1)

G#Q Rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q)

G#T#Q Same as above, but validity as subspecies or variety is questioned.

GH Of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker)

GNA Ranking is not applicable because element is not a suitable target for conservation (e.g. as for hybrid species)

GNR Not yet ranked (temporary)

GNRTNR Neither the full species nor the taxonomic subgroup has yet been ranked (temporary)

GX Believed to be extinct throughout range

GXC Extirpated from the wild but still known from captivity/cultivation

GU Unrankable. Due to lack of information, no rank or range can be assigned (e.g., GUT2).

STATE RANK DEFINITIONS

Definition parallels global element rank: substitute "S" for "G" in above global ranks, and "in Florida" for "globally" in above global rank definitions.
FEDERAL AND STATE LEGAL STATUSES (U.S. Fish and Wildlife Service – USFWS)
PROVIDED BY FNAI FOR INFORMATION ONLY.

For official definitions and lists of protected species, consult the relevant state or federal agency.

FEDERAL LEGAL STATUS

Definitions derived from U.S. Endangered Species Act of 1973, Sec. 3. Note that the federal status given by FNAI refers only to Florida populations and that federal status may differ elsewhere.

LE  Listed as Endangered Species in the List of Endangered and Threatened Wildlife and Plants under the provisions of the Endangered Species Act. Defined as any species which is in danger of extinction throughout all or a significant portion of its range.

LE,XN A non essential experimental population of a species otherwise Listed as an Endangered Species in the List of Endangered and Threatened Wildlife and Plants. LE,XN for Grus americana (Whooping crane), Federally listed as XN (Non essential experimental population) refers to the Florida experimental population only. Federal listing elsewhere for Grus americana is LE.

PE Proposed for addition to the List of Endangered and Threatened Wildlife and Plants as Endangered Species.

LT Listed as Threatened Species, defined as any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

LT,PDL Species currently listed Threatened but has been proposed for delisting.

PT Proposed for listing as Threatened Species.

C Candidate Species for addition to the list of Endangered and Threatened Wildlife and Plants, Category 1. Federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened.

SAT Threatened due to similarity of appearance to a threatened species.

SC Species of Concern, species is not currently listed but is of management concern to USFWS.

N Not currently listed, nor currently being considered for addition to the List of Endangered and Threatened Wildlife and Plants.

FLORIDA LEGAL STATUSES (Florida Fish and Wildlife Conservation Commission – FFWCC/ Florida Department of Agriculture and Consumer Services – FDACS)


LE Listed as Endangered Species by the FFWCC. Defined as a species, subspecies, or isolated population which is so rare or depleted in number or so restricted in range of habitat due to any man-made or natural factors that it is in immediate danger of extinction or extirpation from the state, or which may attain such a status within the immediate future.

LT Listed as Threatened Species by the FFWCC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future.

LT* Indicates that a species has LT status only in selected portions of its range in Florida. LT* for Ursus americanus floridanus (Florida black bear) indicates that LT status does not apply in Baker and Columbia counties and in the Apalachicola National Forest. LT* for Neovison vison pop. 1 (Southern mink, South Florida population) state listed as Threatened refers to the Everglades population only (Note: species formerly listed as Mustela vison mink pop. 1. Also, priorly listed as Mustela evergladensis).

LS Listed as Species of Special Concern by the FFWCC, defined as a population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification,
environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species.

**LS** Indicates that a species has LS status only in selected portions of its range in Florida. LS* for Pandion haliaetus (Osprey) state listed as LS (Species of Special Concern) in Monroe County only.

**PE** Proposed for listing as Endangered.

**PT** Proposed for listing as Threatened.

**PS** Proposed for listing as a Species of Special Concern.

**N** Not currently listed, nor currently being considered for listing.

**Plants:** Definitions derived from Sections 581.011 and 581.185(2), Florida Statutes, and the Preservation of Native Flora of Florida Act, 5B-40.001. FNAI does not track all state-regulated plant species; for a complete list of state-regulated plant species, call Florida Division of Plant Industry, 352-372-3505 or please visit:  [http://DOACS.State.FL.US/PI/Images/Rule05b.pdf](http://DOACS.State.FL.US/PI/Images/Rule05b.pdf)

**LE** Listed as Endangered Plants in the Preservation of Native Flora of Florida Act. Defined as species of plants native to the state that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue, and includes all species determined to be endangered or threatened pursuant to the Federal Endangered Species Act of 1973, as amended.

**PE** Proposed by the FDACS for listing as Endangered Plants.

**LT** Listed as Threatened Plants in the Preservation of Native Flora of Florida Act. Defined as species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in such number as to cause them to be endangered. LT* indicates that a species has LT status only in selected portions of its range in Florida.

**PT** Proposed by the FDACS for listing as Threatened Plants.

**N** Not currently listed, nor currently being considered for listing.
FOR IMMEDIATE RELEASE

FNAI’s Biodiversity Matrix Online

The Biodiversity Matrix Map Server is a new screening tool from FNAI that provides immediate, free access to rare species occurrence information statewide. This tool allows you to zoom to your site of interest and create a report listing documented, likely, and potential occurrences of rare species and natural communities.

The FNAI Biodiversity Matrix offers built-in interpretation of the likelihood of species occurrence for each 1-square-mile Matrix Unit across the state. The report includes a site map and list of species and natural communities by occurrence status: Documented, Documented-Historic, Likely, and Potential.

Try it today:
www.fnai.org/biointro.cfm

Please note: FNAI will continue to offer our Standard Data Report service as always. The Standard Data Report offers the most comprehensive information available on rare species, natural communities, conservation lands, and other natural resources.
APPENDIX B
LISTED SPECIES DESCRIPTIONS
LITTLE BLUE HERON
_Egretta caerulea_

Order: Ciconiiformes
Family: Ardeidae
FNAI Ranks: G5/S4
U.S. Status: None
FL Status: Species of Special Concern

U.S. Migratory Bird Treaty Act and state Wildlife Code prohibit take of birds, nests, or eggs.

Description: Medium-sized heron, with purplish to maroon-brown head and neck; small white patch on throat and upper neck; and slate-blue body. Bill is black towards tip, especially during breeding season, with the other exposed areas on the head appearing dark gray to cobalt blue. Legs are grayish to green, becoming black in breeding season. Immature birds are mostly white with pale slate-gray tips on primary wing feathers. Legs of young birds are yellowish-green. Immature birds move into adult plumage during first spring and may be boldly white/blue, looking like tie-dyed shirts. Immature birds retain yellowish legs during second year.

Similar Species: Plumage and eye of reddish egret (_Egretta rufescens_; see species account) are lighter in color, and base of bill is pinkish. Reddish egret has distinctive foraging behavior. Snowy egret (_E. thula_; see species account) and cattle egret (_Bubulcus ibis_) may look like juvenile little blues,
but little blue has dark primary tips. Bill of snowy egret (*E. thula*) is solid black; snowy may have yellowish stripe up back of leg.

**Habitat:** Feeds in shallow freshwater, brackish, and saltwater habitats. Largest nesting colonies occur in coastal areas, but prefers foraging in freshwater lakes, marshes, swamps, and streams. Nests in a variety of woody vegetation types, including cypress, willow, maple, black mangrove, and cabbage palm. Usually breeds in mixed-species colonies in flooded vegetation or on islands.

**Seasonal Occurrence:** Mostly resident throughout year, but numbers in north Florida in winter are lower than numbers during spring, summer, and fall; becoming less abundant in Florida Keys.

**Florida Distribution:** Most recent population estimate is approximately 17,000 birds distributed among 240+ breeding colonies. Colonies are found nearly statewide, except rare in western panhandle and southern Florida Keys.

**Range-wide Distribution:** Breeds from Kansas, Missouri, and Tennessee to coastal Maine and south to Peru and central Brazil; range extends west to southern California and Sonora; winter range includes these areas and north to coastal Virginia; may wander to Canada after breeding season.

**Conservation Status:** Because the little blue heron lacks the showy plumes found on many other herons and egrets, this species did not suffer as much during the plume-hunting trade a century ago. Primary threats are alteration of natural hydroperiods in wetlands used for foraging and exposure to pesticides and heavy metal contamination. Population trends are downward, and breeding colonies have become smaller and more numerous. Illegal killings may occur since this species regularly forages at commercial fish farms and hatcheries. Long-term studies are needed on the possible adverse effects of cattle egrets, environmental contamination, and other threats.

**Protection and Management:** Protect breeding and foraging habitats through establishment of preserves and regulation of wetlands. Restore and maintain natural hydroperiods in degraded wetland areas. The Florida Fish and Wildlife Conservation Commission and the Department of Environmental Protection have developed setback distances around wading bird colonies of 330 ft. (100 m) to prevent human disturbance.

SNOWY EGRET

*Egretta thula*

**Description:** Medium-sized, all-white wading bird that has a “slight” appearance in comparison to other wading birds. Bill is black with a bright yellow, fleshy base, and the yellow extends back to the lores and eyes. Legs are black in adults; feet are bright yellow as though wearing gloves. Immatures have greenish legs that sometimes have a yellow streak on the back. Breeding-season adults have prominent plumes on shoulders, neck, and head.

**Similar Species:** Most often confused with juvenile little blue heron (*Egretta caerulea*; see species account), which is white with greenish-gray legs; however, tips of wing feathers are dusky, not pure white as in snowy egret. Little blue heron also has a bi-colored bill, not the solid black bill found on the snowy egret. Great egret (*Ardea alba*) has solid black legs and orangish bill; white morph of the reddish egret (*E. rufescens*; see species account) has two-toned bill and grayish legs; cattle egret (*Bubulcus ibis*) has orangish legs and bill.

**Habitat:** Nests both inland and in coastal wetlands with nests placed in many types of woody shrubs, especially mangroves and willows. Almost all nesting is over shallow waters or on islands that are separated from

© Tom Vezo
SNOWY EGRET

Egretta thula

shoreline by extensive open water. Feeds in many types of permanently and seasonally flooded wetlands, streams, lakes, and swamps, and in man-made impoundments and ditches. Usually prefers calm waters. A wide variety of wetland types must be available within 5 - 7 mi. (8 - 11 km) to support breeding colonies. Breeding success is tied to water-level fluctuations.

Seasonal Occurrence: Occurs in Florida in all seasons, but generally less common in winter, especially in western panhandle and northern counties.

Florida Distribution: Generally found throughout peninsular Florida; becoming less common inland in northern tier of counties (north of Alachua County) and in the western panhandle. Typically more common along coast throughout its range. Breeding documented for 43 Florida counties but more variable in western Florida panhandle and in some northern counties in the interior (north of Alachua County). Also rare or absent in southern Keys.

Range-wide Distribution: Northern limits of summer range extend from northern California to southern Montana, central Kansas, and Tennessee, east to Atlantic coast, and then north to coastal Maine; occurs south to southern Chile and central Argentina; winters in North America from northern California to Arizona, along the northern Gulf coast, and along Atlantic coast to South Carolina.

Conservation Status: Since the 1950s, numbers in Florida have been declining, possibly faster than declines of other herons and egrets. In 1989, this species was found in only 22 percent of the colonies where it formerly occurred. Persistent patterns of wetland destruction and alteration are probably eliminating large areas of essential habitat. Most impacts appear to affect quality of foraging habitat rather than areas immediately surrounding nesting colonies.

Protection and Management: Prevent rapid changes in water depth in managed wetlands that will likely adversely affect quality of foraging. Restore and maintain natural hydroperiods in degraded wetland areas. Protect breeding and foraging habitats through establishment of preserves and regulation of wetlands. The Florida Fish and Wildlife Conservation Commission and the Department of Environmental Protection have developed setback distances around wading bird colonies of 330 ft. (100 m) to prevent human disturbance.

TRICOLORED HERON
*Egretta tricolor*

Order:       Ciconiiformes  
Family:      Ardeidae  
FNAI Ranks:  G5/S4  
U.S. Status:  None  
FL Status:   Species of Special Concern  

U.S. Migratory Bird Treaty Act and state Wildlife Code prohibit take of birds, nests, or eggs.

**Description:** Medium-sized heron with a slender neck. Body color appears two-toned with dark slate coloration on head, neck, and body that contrasts with white rump, belly, and undertail. A reddish-brown and white streak extends along the front of the neck. During breeding season, adults have white head plumes and rufous to whitish shoulders. Young birds (<1 year) have more reddish-brown on head, neck, and mantle; otherwise similar to adults.

**Similar Species:** Little blue heron (*Egretta caerulea*; see species account) and reddish egret (*E. rufescens*; see species account) have solid dark colors; great blue heron (*Ardea herodias*) is larger and has white streak down neck but dark belly and underparts. Great blue heron also has a dark swath that extends back from eye and contrasts with lighter colored top of head.

**Habitat:** Most nesting colonies occur on mangrove islands or in willow thickets in fresh water, but nesting sites include other woody thickets on islands or over standing water. Prefers coastal environments. Feeds in a variety of permanently and seasonally flooded wetlands, mangrove swamps, tidal creeks, ditches, and edges of ponds and lakes. Seasonal variation in water levels are particularly critical to nesting success, so alteration of wetlands used during breeding season can have negative consequences.
TRICOLORED HERON  
*Egretta tricolor*

**Seasonal Occurrence:** Permanent resident and found throughout Florida in all seasons, except rare in winter in western Panhandle. Also somewhat less common inland in recent years, particularly during winter.

**Florida Distribution:** Most numerous along coast. Generally becoming less numerous in northern tier of counties (Alachua County northward). Nesting in panhandle and northern interior more variable and restricted leading to few inland reports in panhandle.

**Range-wide Distribution:** Occurs during breeding season from California to Texas and along northern Gulf coast; along Atlantic coast to Maine; south to central Brazil; leaves northern portion of range in winter.

**Conservation Status:** Once described as the most abundant heron in the state, but now much less common in interior. Long-term population trends are uncertain, but apparently declining. Need information on marked individuals to document in more detail the species’ movement and wetland utilization patterns.

**Protection and Management:** Approximately 25 percent of nesting colonies occur in disturbed water impoundments or dredge-material islands, so management opportunities exist. Create new nesting sites or stabilize established sites through management. Survey and monitor to document population trends.

WHITE IBIS
*Eudocimus albus*

Order: Ciconiiformes  
Family: Threskiornithidae  
FNAI Ranks: G5/S4  
U.S. Status: None  
FL Status: Species of Special Concern

U.S. Migratory Bird Treaty Act and state Wildlife Code prohibit take of birds, nests, or eggs.

**Description:** Medium-sized wading bird with long, downward-curving bill. Adults white except for black tips on wings and pink to reddish coloration on exposed flesh around face, bill, and legs. Young birds are dark brown on wings, neck, head, and tail, but noticeable white patches occur on back and belly. Juveniles begin to acquire adult coloration near end of first year but retain some brown feathers on head and neck until third year.

**Similar Species:** Glossy ibis (*Plegadis falcinellus*) also has a downward-curving bill but is uniformly dark. Adult glossy ibis has purplish coloration, and young birds are uniformly brown. An immature glossy ibis could be mistaken for a juvenile white ibis, but glossy ibis lacks the white patch on the back (best seen during flight) and belly is dark, not white. Bills of all egrets and herons are straight, not curved.

**Habitat:** Found in a wide variety of habitats, including freshwater and brackish marshes, salt flats and salt marsh meadows, many types of forested wetlands, wet prairies, swales, seasonally inundated fields, and man-made ditches. Adults prefer foraging in freshwater areas when feeding young. Young birds do not grow when fed a salty diet or when access to fresh water

[Image of a white ibis and a group of white ibises]© Karla Brandt
is limited. Forage by feeling with their bills and may forage effectively in turbid waters. Nests are placed on a variety trees, shrubs, and vines, and tend to be closer to ground than other colonially nesting wading birds.

Seasonal Occurrence: May be found throughout Florida during all seasons, but numbers in north Florida are smaller and diminish sharply in winter. Numbers also vary depending on local water levels and conditions. Spring and fall movements can be spectacular, with hundreds of individuals observed moving in long, V-shaped lines. Much of movement pattern seems nomadic; large-scale movements occur in other seasons in response to changing water levels. Dates of spring movements can be mid-February, and fall movements may begin in July and peak in September and October. In non-breeding season, Florida probably supports much of population that breeds to north in Georgia and North and South Carolina.

Florida Distribution: Found throughout Florida, but breeding season distributions more closely restricted to breeding colonies. Breeding sites rare in panhandle and may be less common in Keys. Seem to be nomadic when selecting annual nesting sites, so numbers can vary considerably from year to year.

Range-wide Distribution: Breeds from California south through Central America along Pacific coast; from northern South America through Caribbean and Antilles and north Gulf coast (with inland nesting in northern South America and southeastern U.S.); northward along Atlantic coast to Virginia.

Conservation Status: Population declines in Florida appear to have been pronounced over the past decades (around 50 percent from 1970 to 1990). However, declines in Florida have been offset to some degree by increasing numbers in other nearby states. Range-wide declines in Florida and neighboring states are believed to be occurring, but these can be difficult to document in the absence of thorough surveys.

Protection and Management: Protect colonial nesting sites from human disturbance. Florida Fish and Wildlife Conservation Commission and Department of Environmental Protection have developed setback distances around wading bird colonies of 330 ft. (100 m) to prevent such disturbance. These guidelines may serve to protect individual colonies, but primary long-term threat is degradation of wetlands through destruction, alteration, pollution, salinization, and other forms of disturbance. Large-scale restoration efforts in the Everglades, Lake Okeechobee, Kissimmee River, and elsewhere should prove beneficial.

**FLORIDA SANDHILL CRANE**

*Grus canadensis pratensis*

**Order:** Gruiformes  
**Family:** Gruidae  
**FNAI Ranks:** G5T2T3/S2S3  
**U.S. Status:** Endangered (nonmigratory subspecies in Cuba and Mississippi only)  
**FL Status:** Threatened

U.S. Migratory Bird Treaty Act and state Wildlife Code prohibit take of birds, nests, or eggs.

**Description:** A tall, long-necked, long-legged bird with a clump of feathers that droops over the rump. Adult is gray overall, with a whitish chin, cheek, and upper throat, and dull red skin on the crown and lores (lacking in immatures); feathers may have brownish-red staining resulting from preening with muddy bill. Immature has pale to tawny feathers on head and neck and a gray body with brownish-red mottling. Flies with neck extended. Their distinctive rolling call can be heard from far away.

**Similar Species:** Indistinguishable from greater sandhill crane (*Grus canadensis tabida*), which winters in Florida. Greater sandhill crane generally arrives in Florida in October and leaves in March, so the date observed or definite evidence of reproduction may be used to differentiate the two. Great blue heron (*Ardea herodias*) is sometimes mistakenly
Identified as a crane. This heron lacks the bald, red crown of the sandhill and flies with its neck tucked in, typical of herons and egrets. Whooping crane (G. americana) is white.

**Habitat:** Prairies, freshwater marshes, and pasture lands. Avoids forests and deep marshes but uses transition zones and edges between these and prairies or pasture lands. Will frequent agricultural areas like feed lots and crop fields, and also golf courses and other open lawns, especially in winter and early spring. Nest is a mound of herbaceous plant material in shallow water or on the ground in marshy areas. Favors wetlands dominated by pickerelweed and maidencane.

**Seasonal Occurrence:** Nonmigratory. Very sedentary, although may forage widely. Large influx of northern migratory subspecies in winter (October - March).

**Florida Distribution:** Most of peninsular Florida within appropriate habitat, though not as common south of Lake Okeechobee. Rarely reported west of Taylor County.

**Range-wide Distribution:** Florida range plus extreme southeastern Georgia (Okefenokee Swamp).

**Conservation Status:** Population estimate in 1975 of approximately 4,000 birds (25 percent are nonbreeding subadults) is still considered accurate. Habitat availability will become more and more of concern as Florida continues to lose open rangeland and native prairie to development and more intensive agricultural uses (e.g., citrus, row crops). Nesting success in human-altered areas is well below that of native areas. Shallow wetlands used by cranes are easily affected by drainage of adjacent uplands even if they are not directly disturbed. Florida sandhill cranes are found on federal and state lands and on local government lands (e.g., wellfields).

**Protection and Management:** Because of large home-range requirements, public lands do not protect large populations of cranes. Aquire land, through fee-simple acquisition and conservation easements on suitable ranchlands, in areas that bolster existing protected populations. Periodic fire important to retard invasion of woody vegetation in crane habitat. Filling drainage ditches to restore natural hydrological conditions important in some areas.

BALD EAGLE  
*Haliaeetus leucocephalus*

Order: Falconiformes  
Family: Accipitridae  
FNAI Ranks: G4/S3  
U.S. Status: Threatened  
(proposed for delisting in 1999)  
FL Status: Threatened  

U.S. Migratory Bird Treaty Act and state Wildlife Code prohibit take of birds, nests, or eggs.

**Description:** Adult has white head, white tail, and large, bright yellow bill; other plumage is dark. Immatures dark with variable amounts of light splotching on body, wings, and tail; head and bill are dark. In flight wings are broad and wide and held horizontally, presenting a flat profile when soaring and gliding. Flies with slow, powerful wing-beats.

**Similar Species:** At a distance, in flight, eagle’s size and lack of white in wings should help differentiate it from the crested caracara (*Caracara cheriway*; see species account), which also has a white head. Flattened aspect of the eagle’s wings is unlike the teetering, V-shaped flight of the turkey vulture (*Cathartes aura*).

**Habitat:** Most commonly includes areas close to coastal areas, bays, rivers, lakes, or other bodies of water that provide concentrations of food sources, including fish, waterfowl, and wading birds. Usually nests in tall trees (mostly live pines) that provide clear views of surrounding area. In Florida Bay, where there are few predators and few tall emergent trees, eagles nest in crowns of mangroves and even on the ground.

Field Guide to the Rare Animals of Florida  
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Florida Natural Areas Inventory, 2001
**BALD EAGLE**  *Haliaeetus leucocephalus*

**Seasonal Occurrence:** In extreme southern Florida, most adults are resident, but most birds in northern and central Florida migrate north out of state after breeding season (late May - July). Juveniles and younger birds mostly migrate north in summer and may range as far as Canada. Also, in winter, some birds from northern populations migrate to northern Florida.

**Florida Distribution:** Florida has largest breeding population of any state outside Alaska. Breeds throughout most of peninsular Florida and Keys, mainly along coast in eastern panhandle, and is rare in western panhandle. Greatest concentrations of nesting eagles occur around Lake Kissimmee in Polk and Osceola counties, around Lake George in Putnam, Volusia, and Lake counties, lakes Jessup, Monroe, and Harney in Seminole and Volusia counties, along Gulf coast north of Tampa, and Florida Bay and southwest peninsula area.

**Range-wide Distribution:** North America. Breeding range extends from Alaska, across Canada, south to Baja California, the Gulf coast and Florida Keys, although very local in the Great Basin and prairie and plains regions in interior U.S., where range has expanded to include Nebraska and Kansas. Non-breeding range is generally throughout breeding range except in far north, most commonly from southern Alaska and southern Canada southward.

**Conservation Status:** Original population in Florida could be found throughout state and likely numbered well over 1,000 pairs. Population declined sharply after late 1940s, reaching a low of 120 active nests in 1973, and by 1978 was considered rare as a breeder. Use of pesticide DDT and related compounds and development of coastal habitat are probably chief causes of decline. Numbers have steadily increased, especially since 1989. In 1993, 667 active territories were reported, and in 1999, 996 active nests were recorded. Major threats include habitat loss because of development and commercial timber harvest; pollutants and decreasing food supply are also of concern.

**Protection and Management:** Monitored annually by Fish and Wildlife Conservation Commission (FFWCC). Continue acquisition of breeding territories and protection of foraging and roosting sites. Incorporate information known about buffer zones around nesting areas into state and local development regulations to help mitigate losses as Florida’s human population continues to expand. Monitor pesticides and other environmental contaminants that affect reproduction and food supply.

WOOD STORK
*Mycteria americana*

Order: Ciconiiformes  
Family: Ciconiidae  
FNAI Ranks: G4/S2  
U.S. Status: Endangered  
FL Status: Endangered  

U.S. Migratory Bird Treaty Act and state Wildlife Code prohibit take of birds, nests, or eggs.

Description: Very large, white wader with black in wings and a short black tail. Soars with neck and legs extended, displaying its long, broad wings; black flight feathers contrast with white along length of wings. Legs are dark and feet are beige. Adults have bare, scaly, dark-gray heads and necks and long, heavy, decurved bills. Head and neck of immature storks have grayish brown feathering, and their bills are yellowish.

Similar Species: American white pelicans (*Pelecanus erythrorhynchos*) have a similar wing pattern and also soar but have short legs, white tail, and do not fly with necks extended. White ibis (*Eudocimus albus*; see species account) is much smaller and only has black on wing tips. Great egret (*Ardea alba*) lacks black on wings.

Habitat: Nests colonially in a variety of inundated forested wetlands, including cypress strands and domes, mixed hardwood swamps, sloughs,
WOOD STORK  

*Mycteria americana*

and mangroves. Increasingly nesting in artificial habitats (e.g., impoundments and dredged areas with native or exotic vegetation) in north and central Florida. Forages mainly in shallow water in freshwater marshes, swamps, lagoons, ponds, tidal creeks, flooded pastures and ditches, where they are attracted to falling water levels that concentrate food sources (mainly fish).

**Seasonal Occurrence:** Post-breeding dispersal carries large numbers from more southern locales to more northern parts of range; in winter, northern birds move south. Annual and long-term use of nesting sites is very dependent on feeding conditions, which may be affected dramatically by altered hydrologic patterns. Colonies may form late November - early March in south Florida and February - March in central and northern Florida.

**Florida Distribution:** Locally rare to abundant in the peninsula and Big Bend, but generally rare or lacking in panhandle and the Florida Keys. Uncommon to rare in winter in north.

**Range-wide Distribution:** In U.S., breeds locally in South Carolina, Georgia, and Florida (formerly west to Texas). South, locally in lowlands from Mexico and northern Central America to South America (to western Ecuador, eastern Peru, Bolivia, northern Argentina), and rarely in Cuba and the Dominican Republic. Winters throughout breeding range except in South Carolina and Georgia.

**Conservation Status:** Many known breeding sites occur within public and private conservation lands. Dramatic decline in the large colonies (>500 individuals) formerly found in south Florida, and trend toward fewer birds distributed among smaller, more numerous colonies in central and northern Florida. Very sensitive to manipulation of water regimes and loss of wetland habitat, which affect both nesting sites and feeding areas.

**Protection and Management:** Survey colony sites and important feeding areas regularly. Essential to protect wetland areas, closely monitor water quality, and manage hydrologic patterns that consider the needs of the wood stork.

APPENDIX C
LISTED SPECIES CONSULTATION AREAS
LEGEND

- Florida Wood Stork Nesting Colony
- US Road
- Substation Expansion Area
- State Road
- Wood Stork Forage Area
- County Road
- County Boundary

REFERENCE


PROGRESS ENERGY FLORIDA
LEVY NUCLEAR PLANT
CRYSTAL RIVER ENERGY COMPLEX
SUBSTATION EXPANSION
WOOD STORK NESTING COLONIES & FORAGE AREAS

FIGURE 1
LEGEND

- Substation Expansion Area
- US Road
- Red Cockaded Woodpecker Consultation Area
- State Road
- County Boundary
- County Road

REFERENCE
CRYSTAL RIVER ENERGY COMPLEX
SUBSTATION EXPANSION
WEST INDIAN MANATEE CONSULTATION AREA

LEGEND

- Substation Expansion Area
- US Road
- West Indian Manatee Consultation Area
- County Road

Counties:
- LEVY COUNTY
- CITRUS COUNTY

REFERENCE