

THREATENED & ENDANGERED SPECIES BIOLOGICAL ASSESSMENT COBB ROAD (CR 485) / US 98 PD&E STUDY

From SR 50 to Suncoast Parkway in Hernando County, Florida

WPI Nos. 257299 1 & 405017 1; FAP Nos: 2891 007 P & 2891 008 P



***Florida Department of Transportation
District Seven***

April 2003

THREATENED & ENDANGERED SPECIES BIOLOGICAL ASSESSMENT

**Cobb Road (CR 485) / US 98
Project Development and Environment Study**

**Cobb Road (CR 485), from SR 50 to US 98
and
US 98, from Cobb Road to Suncoast Parkway
Hernando County, Florida**

**WPI Segment Nos.: 257299 1 & 405017 1
FAP Nos.: 2891 007 P & 2891 008 P**

**This proposed action consists of capacity and safety improvements to
Cobb Road (CR 485), a two-lane undivided arterial,
from SR 50 to US 98 and US 98, a two-lane undivided arterial,
from Cobb Road to Suncoast Parkway**

**FLORIDA DEPARTMENT OF TRANSPORTATION
District Seven**

April 2003

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1.0 INTRODUCTION

This *Threatened & Endangered Species Biological Assessment (TESBA)* is one in a series of reports prepared as a part of the Project Development and Environment (PD&E) study undertaken by the Florida Department of Transportation (FDOT) for the planned widening of Cobb Road (CR 485) and US 98 in Hernando County, Florida. The purpose of this study is to collect data which will help determine the location and design of the facility and the potential impacts associated with the build and no-build alternatives.

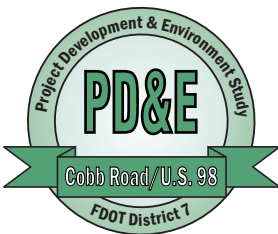
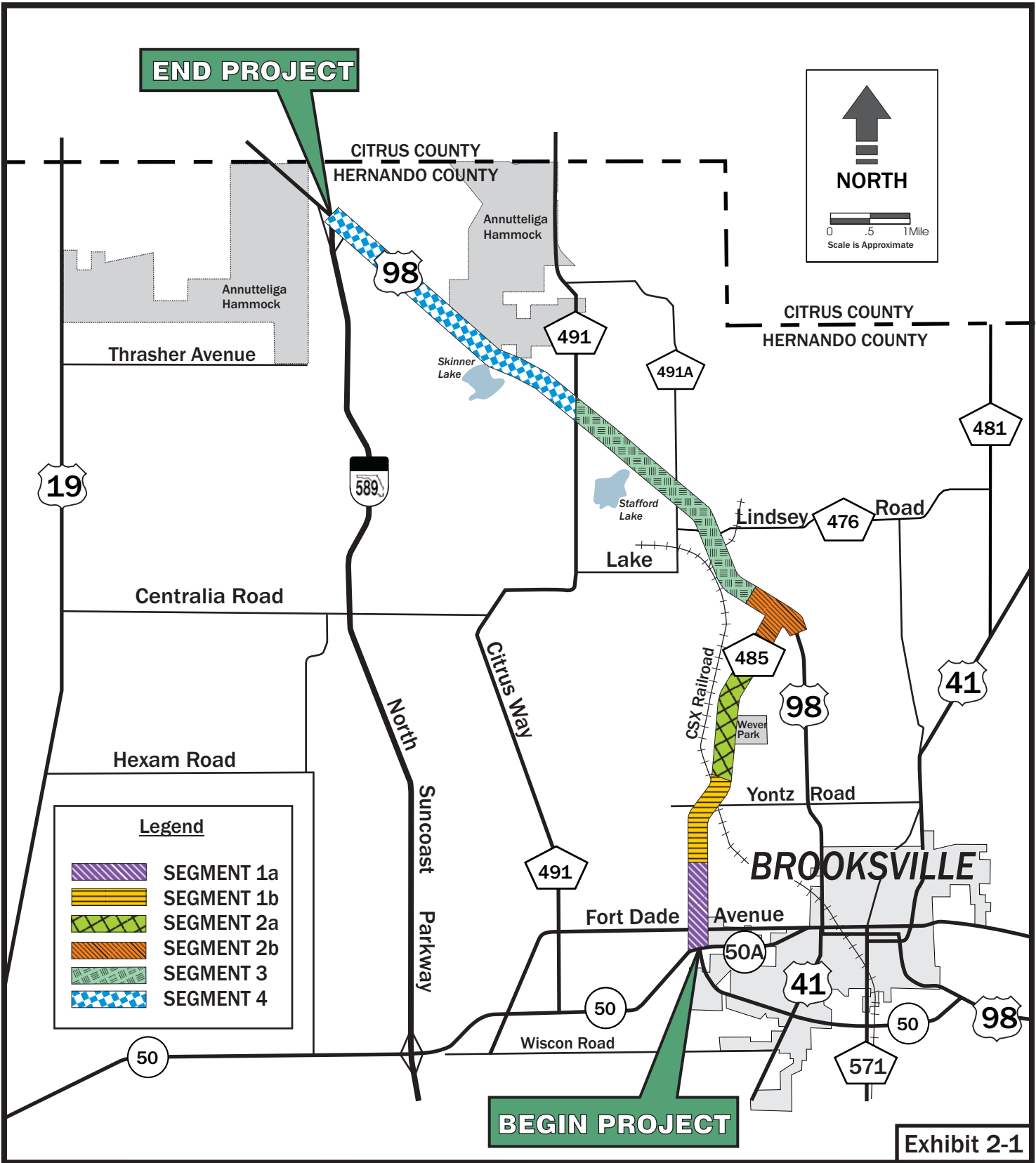
The goal of this *TESBA* is to assess the project corridor for the potential occurrence and impact to state and federally protected listed threatened and endangered species. Additionally, existing habitats will be evaluated to determine if they will be affected by the construction of the planned project, and coordination with environmental and regulatory agencies will be initiated.

2.0 PURPOSE OF THIS REPORT

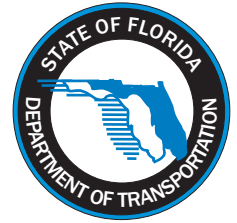
This *TESBA* is one in a series of reports prepared as part of the Project PD&E study undertaken by the FDOT for the planned Cobb Road (CR 485) and US 98 improvement project in Hernando County, Florida. This report will discuss federal and state listed threatened and endangered species and address impacts, avoidance, minimization and compensation.

2.1 Project Description

The planned project will improve the capacity and safety of the existing two-lane Cobb Road (CR 485) and a portion of US 98 in Hernando County, Florida. The project study area begins on Cobb Road at SR 50 in the City of Brooksville and extends northward 4.5 miles to US 98. The study area then proceeds 7 miles westward along US 98 to the Suncoast Parkway. These segments of Cobb Road and US 98 are currently two-lane undivided rural arterials. The total length of the planned project is approximately 11.5 miles. Exhibit 2-1 presents the location of the project.



Project Location Map
Cobb Road (CR 485) / US 98 PD&E Study
 WPI Segment Nos: 257299 1 & 405017 1
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The existing Cobb Road / US 98 corridor provides traffic flow around the west side of the City of Brooksville, ultimately connecting SR 50 with the Suncoast Parkway (SR 589). Traffic growth in Hernando County and in the vicinity of the City of Brooksville will cause Cobb Road and US 98 to become congested if traffic capacity is not added to the system. The need to provide a safer designated bypass route around the City of Brooksville is vital, particularly for the large volume of truck traffic associated with three major rock mines and other industrial facilities situated along the project corridor.

Capacity and safety improvements to Cobb Road and US 98, along with the designation of Cobb Road as US 98, represents a long-standing goal of the City of Brooksville and Hernando County. This goal has been incorporated into the Hernando County Metropolitan Planning Organization (MPO) *2025 Long Range Transportation Plan*, which calls for widening the existing roadways to a continuous four-lane divided, controlled access facility.

2.2 Need for Improvement

The Hernando County Metropolitan Planning Organization (MPO) identified the need for capacity improvements to Cobb Road and US 98 in 1998 during development of the adopted *2025 Long Range Transportation Plan*.

2.2.1 Deficiencies

2.2.1.1 Capacity: Existing and Future Levels of Service

Six levels of service (LOS) are defined for each type of facility with LOS A representing the best operating conditions and LOS F representing the worst conditions. Based on the Traffic Report (November 2001) for Cobb Road and US 98, which was prepared as part of this study, the existing segments and most of the existing intersections within the PD&E study limits are operating at adequate LOS (A and B) based on the Annual Average Daily Traffic (AADT). The segment of the roadway displaying the worst conditions is the segment from SR 50 to Yontz Road, which currently operates at LOS C during both the AM and PM peak hours. By the design year (2025), US 98 is projected to be operating at LOS C, with the exception of the segment from Cobb Road to CR 491, which is projected to be operating at LOS D for the No-Build Alternative. Cobb Road is projected to be operating at LOS D, with the exception of the segment from Yontz Road to US 98, which is projected to be operating at LOS B for the No-Build Alternative.

2.2.1.2 Evacuation Routes and Emergency Services

According to Hernando County's Comprehensive Plan, Cobb Road is intended to serve as a future evacuation route. The existing two-lane undivided arterial would not provide an efficient or safe evacuation due to capacity deficiencies. US 98 is currently identified as an evacuation route.

2.3 Safety

Crash records from Hernando County's CARS 2000 (Computerized Accident Record System 2000) indicated that 53 crashes occurred within the Cobb Road portion of the project study area

over the five-year period between 1995 and 1999. This accounts for approximately 10 crashes per year. In addition, during the five-year period, there were 12 injuries and no fatalities.

Summary crash data was obtained from the FDOT, reporting a total of 48 crashes occurring on US 98 from Cobb Road to the Suncoast Parkway during the years from 1995 to 1999. These crashes resulted in two fatalities and 68 injuries.

2.4 Consistency with Transportation Plans

The planned capacity improvements to Cobb Road and US 98 are consistent with the Hernando County MPO's *2025 Long Range Transportation Plan*. Cobb Road and US 98 are essential elements of the State Transportation Plan. Cobb Road and US 98, which are not limited-access facilities, will meet state design criteria and standards, including level of service standards and right-of-way protection.

2.5 Social and Economic Demands

Hernando County experienced substantial growth over the past two decades and will continue to experience growth in population and in residential and commercial development according to population projections. Hernando County is part of the 4-county Tampa-St. Petersburg-Clearwater Metropolitan Statistical Area (MSA), sharing close economic and commuter ties with Hillsborough, Pasco and Pinellas Counties to the south. The counties have recently become additionally linked through the construction of the Suncoast Parkway, which provides a direct route from the Veterans Expressway in Tampa to US 98 in northern Hernando County. Hernando County is expected to experience further growth with the implementation of the Suncoast Parkway, which provides additional commuter ties with the Tampa Bay area. Corresponding development will demand acceptable levels of police and fire protection, emergency medical vehicle response time, and access to employment, shopping, schools, churches, community centers, and social service agencies. Furthermore, an alternate route for vehicles, particularly trucks, traveling around the City of Brooksville will come into demand. For Hernando County, particularly around the City of Brooksville, many of these social and economic demands will be better served with the planned capacity improvements of Cobb Road

and US 98 and the associated designation of an alternate route around the City of Brooksville. As such, capacity improvements associated with this project will have a positive social and economic impact on the citizens of Hernando County by improving local and regional accessibility.

2.5.1 Population and Employment Trends

Hernando County's population has increased consistently over the past 20 years, with dramatic growth occurring in the 1980's. According to the Hernando County Economic Development Study of April 2001, Hernando County's population grew by 125% between 1980 and 1990. This rapid growth slowed between 1990 and 2000 with an overall increase of 30%. Growth rates are projected to be 37% between 2000 and 2015 and 18% between 2015 and 2025. Major employment centers within and adjacent to the study area consist mainly of the D.S. Parrott Middle School and three major mining facilities.

3.0 STUDY ALTERNATIVES

3.1 Project Segmentation

For this PD&E Study, the project was divided into segments for analysis. The segments of Cobb Road were chosen based on surrounding characteristics such as land use and environmental constraints, as well as the potential need for realignments. The segments of US 98 were chosen to match FDOT resurfacing project limits for consistency. The project segmentation is shown on the Project Location Map in Exhibit 2-1. The segments of the project are identified as follows:

Segment 1a: Cobb Road from north of SR 50 to north of the Brooksville Water Reclamation Facility (WRF) driveway

Segment 1b: Cobb Road from north of the Brooksville WRF driveway to north of Yontz Road

Segment 2a: Cobb Road from north of Yontz Road to south of US 98

Segment 2b: Cobb Road/US 98 Intersection

Segment 3: US 98 from north of Cobb Road to CR 491

Segment 4: US 98 from CR 491 to Suncoast Parkway

3.2 Recommended Build Alternative

3.2.1 Segment 1a – Urban, Fit within Existing Right-of-Way

The proposed typical section for Segment 1a is an urban typical section consisting of two 12-ft. travel lanes in each direction, a 6-ft. sidewalk on the left (west) side and a 12-ft. shared use path on the right (east) side. This typical section utilizes a 17.5-ft. median and fits within the existing right-of-way width (minimum 100 ft.). The proposed design speed is 45 mph.

3.2.2 Segment 1b – Suburban Left

The proposed typical section for Segment 1b is a suburban typical section consisting of two 12-ft. travel lanes in each direction with 8-ft. outside shoulders (5 ft. paved) and a 12-ft. shared use path on the right (east) side. This typical section utilizes a 30-ft. median (22-ft. curb to curb and

4-ft. offsets to edge of inside travel lanes). The proposed minimum right-of-way width required is 158 ft. The proposed design speed is 55 mph. A left alignment is proposed for this segment.

3.2.3 Segment 2a – Suburban Left Transitioning to Rural Left

Two typical sections are proposed for Segment 2a. The proposed typical section for the portion of Segment 2a south of Youth Drive is a suburban typical section as described above in Section 3.2.2. North of Youth Drive, a transition would take place to a rural typical section consisting of two 12-ft. travel lanes, 8-ft. outside shoulders (5-ft. paved) and 6-ft. inside shoulders (4-ft. paved) in each direction and a 12-ft. shared use path on the right (east) side. The proposed minimum right-of-way width required is 240 ft. The proposed design speed is 70 mph. A left alignment is proposed for this segment.

3.2.4 Segment 2b – Rural Realign

The proposed typical section for Segment 2b is a rural typical section as described above in Section 3.2.3. This proposed rural typical section would be utilized on a new alignment to create a through movement between Cobb Road and US 98 to the north. The existing US 98 to the south would be realigned to a “T” intersection with the new alignment.

3.2.5 Segment 3 – Rural Left

The proposed typical section for Segment 3 is a rural typical section as described above in Section 3.2.3. A left alignment is proposed for this segment.

3.2.6 Segment 4 – Rural Left

The proposed typical section for Segment 4 is a rural typical section as described above in Section 3.2.3. A left alignment is proposed for this segment.

3.3 No Build Alternative

Under the No Build Alternative, no action would be taken with respect to improving Cobb Road and US 98 within the limits of the project study area. Based on the No Build Alternative having major deficiencies, it is not recommended.

4.0 VEGETATIVE COMMUNITIES

Upland and wetland communities that occur within the study area were identified during preliminary field surveys using National Wetlands Inventory (NWI) maps, the Natural Resources Conservation Service's (NRCS (formerly the Soil Conservation Service)) *Soil Survey for Hernando County* Soil Surveys, U.S Geological Survey (USGS) topographical maps, and aerial photographs.

The field studies included an evaluation of vegetation associations and conditions of the communities within the project area. The upland and wetland communities were classified according to the Florida Land Use, Cover and Forms Classification System (FLUCFCS) and U.S. Fish and Wildlife Service (USFWS) Classification (see Table 4-1) in accordance with the "Classification of Wetlands and Deepwater Habitats of the United States" (Cowardin, et al., 1979). Descriptions of these communities are provided in the following sections.

4.1 Plant Communities

Several different plant communities are found, with many of them interspersed with each other. The plant communities are differentiated between upland and wetland communities. These include four upland categories and five wetland categories. These are described below:

4.1.1 Upland Communities

Hardwood - Conifer Mixed - Upland forests co-dominated by conifers and hardwoods. These areas contain vegetation such as slash pine (*Pinus elliottii*), laurel oak (*Quercus laurifolia*), live oak (*Quercus virginiana*), water oak (*Quercus nigra*) and sweetgum (*Liquidambar styraciflua*). The FLUCFCS Code is 434.

Upland Hardwood Forests - Upland forests dominated by hardwood species and which contain the same vegetation as above except that the pine component is very small to non-existent. The FLUCFCS Code is 420.

Improved Pastures - Agricultural lands which have been cleared, tilled, and reseeded and contain vegetation such as bahia grass (*Paspalum notatum*). Improved pasture also provides suitable habitat for livestock grazing. The FLUCFCS Code is 211.

Other Open Lands – Rural sparsely vegetated agricultural lands whose intended usage cannot be determined. These areas are located within rural areas. The FLUCFCS Code is 260.

4.1.2 Wetland Communities

Creek - This wetland type consists primarily of intermittent drainage-ways scattered throughout the study area. Some contain no vegetation, one runs through a pasture and has pasture grasses in it, while others have hardwood species, such as sweetgum and red maple (*Acer rubrum*), growing in the channel.

Forested Floodplain Wetland - Wetland hardwood communities which contain a diverse mix of species such as red maple, cabbage palm (*Sabal palmetto*), sweetgum, blackgum (*Nyssa sylvatica*), various oaks, and some of which have small amounts of slash pine.

Pond/Lake - Natural water bodies with very little vegetation except for scattered amounts of cattail (*Typha sp.*), buttonbush (*Cephalanthus occidentalis*), willow (*Salix sp.*), and some pickerelweed (*Pontederia cordata*) found within open water areas.

Freshwater Marsh - Ephemeral and permanently flooded areas that have a diverse vegetative mix which includes smartweed (*Polygonum sp.*), saltbush (*Baccharis sp.*), willow, buttonbush, sedge (*Caryx sp.*), red maple, and cattail.

Man-Made Conveyance and Retention Areas - This wetland type includes ditches, swales and retention ponds/sumps.

See Exhibit 4-1 for the location of project wetlands.

**THREATENED & ENDANGERED SPECIES BIOLOGICAL ASSESSMENT
COBB ROAD (CR 485) / US 98 PD&E STUDY**

TABLE 4-1 - Project Wetlands USFWS Classifications and FLUCFCS Codes

Wetland No.	USFWS Classification	FLUCFCS Code	Wetland Type
1	R2UBHx	510	Creek
2	PFO1C	610	Forested Floodplain Wetland
3	PFO1C	610	Forested Floodplain Wetland
4	PEM1F	641	Freshwater Marsh
5	PEM1Ax	742	Man-Made Retention Area (Ditch)
6	PFO1C	610	Forested Floodplain Wetland
7	PEM1Ax/PFO1Ax	742	Man-Made Retention Area (Ditch)
8	PEM1Ax/PFO1Ax	742	Man-Made Retention Area (Ditch)
9	PEM1A/PFO1A	641/610	Freshwater Marsh/Forested Floodplain Wetland
10	PFO1C/PUBH	610/523	Forested Floodplain Wetland/Lake
11	PEM1F	641	Freshwater Marsh
12	PFO1F	610	Forested Floodplain Wetland
13	PUBF	610	Forested Floodplain Wetland
14	PEM1Cx	510	Man-Made Retention Area (Ditch)
15	R4SBC	510	Creek
16	PEM1C	641	Freshwater Marsh
17	PFO1C	613	Forested Floodplain Wetland
18	PEM1A	641	Freshwater Marsh
19	PEM1A	641	Freshwater Marsh
20	PFO1C	610	Forested Floodplain Wetland
21	PFO1C/R4SBC PEM1F/R4SBCx	610/510 641/510D	Forested Floodplain Wetland/Creek Freshwater Marsh/Ditch
22	PFO1C	610	Forested Floodplain Wetland
23	PFO1C	610	Forested Floodplain Wetland
24	PFO1C	613	Forested Floodplain Wetland
25	PFO1Ax	510	Man-Made Retention Area (Ditch)
25A	PEM1H	641	Freshwater Marsh
26	L1AB4H	522	Pond/Lake
27	R4SBC	510	Creek
28	PFO1C	610	Forested Floodplain Wetland
28A	PEM1H	641	Freshwater Marsh
29	R4SBC	510	Creek
30	PFO1A	610	Forested Floodplain Wetland
31	PEM1C/R4SBC	610/510	Forested Floodplain Wetland/Creek
32	PEM1C	641	Freshwater Marsh
33	R4SBC	510	Creek
34	PEM1C	510	Creek
35	PFO1C	610	Forested Floodplain wetland
36	PEM1C	641	Freshwater Marsh
37	PEM1C	641	Freshwater Marsh
38	PFO1C/PAB4H	610/613	Forested Floodplain Wetland
39	PEM1F/PFO1C	616/610	Pond/Forested Floodplain Wetland
40	PFO1A	610	Forested Floodplain Wetland
41	PUBCx	510	Man-Made Retention Area (Pond)
42	PEMIAx	742	Man-Made Retention Area (Ditch)
43	PEMIC	510	Creek
44	PUBHx	534	Man-Made Retention Area (Pond)

**THREATENED & ENDANGERED SPECIES BIOLOGICAL ASSESSMENT
COBB ROAD (CR 485) / US 98 PD&E STUDY**

The descriptions of the USFWS Classification codes used to identify the wetland areas within the Cobb Road./US 98 widening project limits are listed below:

<u>USFWS Classification Code</u>	<u>Description</u>
System - P, R, L	Palustrine, Riverine, Lacustrine
Class - EM, FO, UB, SB, AB	Emergent, Forested, Unconsolidated bottom, Stream bed, Aquatic bed
Subclass - 1	Persistent, Broad-leaved deciduous
Subclass - 3	Rooted vascular
Subclass - 4	Floating vascular
Water Regime - A	Temporarily flooded
C	Seasonally flooded
E	Seasonally flooded/saturated
F	Semipermanently flooded
H	Permanently flooded
Special Modifier - x	Excavated

The descriptions of the FLUCFCS codes used to identify the wetland areas within the Cobb Road/US 98 widening project limits are listed below:

510	Streams and Waterways - This category includes creeks and linear ditches.
522	Lakes larger than 100 acres.
534	Reservoirs less than 10 acres which are dominant features.
610	Wetland Hardwood Forests.
613	Gum swamps - Forested wetlands with a standing water component and a preponderance of blackgum and sweetgum.
616	Inland ponds and sloughs.
641	Freshwater marshes.
742	Borrow areas - small, non-linear, water retention areas.



NORTH

Legend

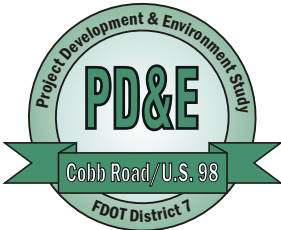


Wetlands



Wetland Site Number

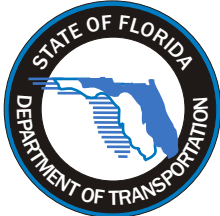
Exhibit 4-1



Location of Project Wetlands

Cobb Road (CR 485) / US 98 PD&E Study

WPI Segment Nos: 257299 1 & 405017 1
 FAP Nos: 2891 007 P & 2891 008 P



5.0 PROTECTED SPECIES

5.1 Methodology

This section describes the methodology used to evaluate the habitat, wildlife and protected species that may occur within the project area. The following briefly lists project methods and materials used for these tasks, which are further discussed in the following sections:

- USFWS, Florida Fish & Wildlife Conservation Commission (FWC) agency and responses;
- Florida Natural Areas Inventory (FNAI) Hernando County Inventory;
- USGS Quad Sheet, NWI maps; project aerials;
- Discussions with agency personnel and knowledgeable parties;
- Reference materials, and information from previous studies;
- Field surveys and observations; and
- Correspondence with agencies and other organizations.

5.2 Preliminary Data Collection

Using the response received from the FNAI, a preliminary literature search was conducted to determine the habitat requirements of the protected or listed species, or critical habitats that have been documented by the FNAI within the project area. Additionally, project biologists consulted standard references such as the *Rare and Endangered Biota of Florida*, and other studies to help determine potential listed species in the project area. Detailed review of project aerial photographs was undertaken and a preliminary field survey was conducted to determine the various habitat types within the project study area. The FNAI list was used as the list of species which may potentially occur within the project study area. The list of potentially occurring protected species has been continually updated to reflect recent changes in listings.

5.3 Determination of Survey Methodology

Field review and surveys for all potentially occurring species were conducted. During field surveys, the presence of potential habitat was evaluated. Approved USFWS and FWC

guidelines and methodologies were used to conduct all surveys.

Coordination with the FWC was initiated during the Advanced Notification process and has continued throughout the project. Preliminary field reviews for verification of existing habitats were conducted by project biologists on various days in October and November of 2001. The various upland and wetland habitats within the study area were ground-truthed and depicted in FLUCFCS categories.

5.4 Results of General Corridor Surveys

Project biologists performed meandering pedestrian transects within the survey area and visually scanned adjacent areas. Surveys were conducted throughout the day. During these surveys, all indications of wildlife in the study area were recorded. These indications typically included observation of actual animals or signs of their presence including tracts, burrows, dens, scat, nests, and calls (typically with avian fauna).

Appropriate habitats were surveyed for listed species. The surveys for avifauna were conducted in the late afternoon and in the early morning during peak foraging times. The following sections include brief discussions of protected species for which there is a special concern or that are known to occur in this area of Hernando County.

See Table 5-1 for the listed species that potentially occur within the project study area.

There was evidence of the presence of whitetail deer and armadillos in the study area. No feral hog sign was evident. One alligator was observed in Wetland 10, which is a large pond in the southern portion of the study area. Three wood storks and a great egret were seen foraging in Wetland 17. One fox squirrel was seen foraging on the side of the road in the northern portion of the study area. Pocket gopher mounds are ubiquitous in the northern reaches of the project corridor. Two inactive gopher tortoise burrows were observed in the extreme northern portion of the study area. One gopher tortoise was seen walking down the side of the road adjacent to a wetland area. Various species of hawks were seen on a regular basis throughout the project area. One dead amphiuma was seen at the edge of Wetland 35. A few crayfish burrows were found in the area wetlands. A cluster of four small dens was noticed in the central portion of the study

area. These were possibly constructed by grey fox. Sandhill cranes were noticed flying over the project area on two occasions. Various songbirds and crows and grackles are plentiful. One cotton rat was observed in a roadside ditch. One water moccasin was observed sunning itself on a culvert. See Exhibit 5-1 for a map of the protected species observed in the project study area.

5.5 State and Federally Listed Species

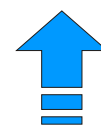
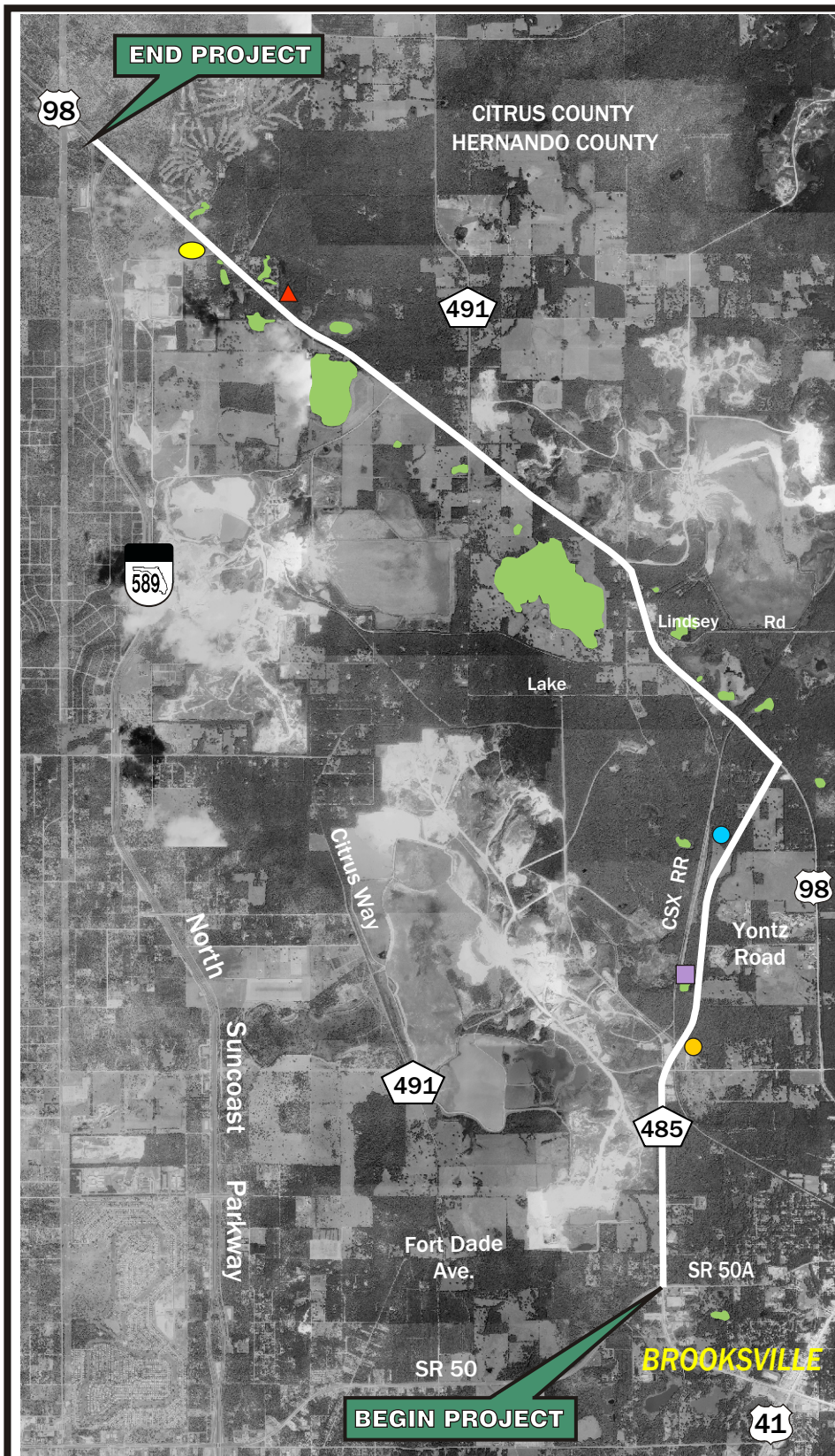
Surveys for state and federally listed plants or animals were conducted on various days in October and November of 2001 by qualified biologists with H.W. Lochner, Inc. No designated critical habitats and federally endangered or threatened species are known to occur within the project limits with the exception of Cooley's water willow (*Justicia cooleyi*) and American alligator (*Alligator mississippiensis*). However, federally listed species that possibly occur in the project vicinity include the eastern indigo snake (*Drymarchon corais couperi*), bald eagle (*Haliaeetus leucocephalus*), red-cockaded woodpecker (*Picoides borealis*), and wood stork (*Mycteria americana*). State listed species with known or possible occurrences in the project vicinity include red-cockaded woodpecker, bald eagle, eastern indigo snake, gopher tortoise (*Gopherus polyphemus*), Sherman's fox squirrel (*Sciurus niger shermani*), Florida black bear (*Ursus americanus floridanus*), Cooley's water willow, brittle maidenhair fern (*Adiantum tenerum*), sand butterfly pea (*Centrosema arenicola*), Curtiss' Milkweed (*Asclepias curtissii*), southeastern American kestrel (*Falco sparverius paulus*), wood stork, and other wading birds. The project's possible involvement with these listed species is described in the following pages.

**THREATENED & ENDANGERED SPECIES BIOLOGICAL ASSESSMENT
COBB ROAD (CR 485) / US 98 PD&E STUDY**

TABLE 5-1 - Listed Species Potentially Occurring Within Project Study Area

Common Name	Scientific Name	Status	
		FDA	USFWS
Flora			
Curtiss' Milkweed	<i>Asclepias curtissii</i>	E	--
Sand Butterfly Pea	<i>Centrosema arenicola</i>	E	--
Cooley's Water Willow	<i>Justicia Cooleyi</i>	E	E
Brittle Maiden Hair Fern	<i>Adiantum tenerum</i>	E	--
Fauna			
American Alligator	<i>Alligator mississippiensis</i>	SSC	T (S/A)
Eastern Indigo Snake	<i>Drymarchon corais couperi</i>	T	T
Florida Black Bear	<i>Ursus americanus floridanus</i>	T	--
Gopher Tortoise	<i>Gopherus polyphemus</i>	SSC	--
Wood Stork	<i>Mycteria americana</i>	E	E
Red-cockaded Woodpecker	<i>Picoides borealis</i>	T	E
Sherman's Fox Squirrel	<i>Sciurus niger shermani</i>	SSC	--
Bald Eagle	<i>Haliaeetus leucocephalus</i>	T	T
Southeastern American Kestrel	<i>Falco sparverius paulus</i>	T	--
Little Blue Heron	<i>Egretta ceulea</i>	SSC	--
Snowy Egret	<i>Egretta thula</i>	SSC	--
White Ibis	<i>Eudocimus albus</i>	SSC	--
Limpkin	<i>Aramus guarauna</i>	SSC	--
Tricolored Heron	<i>Egretta tricolor</i>	SSC	--

LEGEND: E = Endangered
T = Threatened
SSC = Species of Special Concern
S/A = Similarity of Appearance



NORTH

Legend

-  Inactive Gopher Tortoise Burrow
-  Wood Stork (feeding)
-  Alligator
-  Potential Alligator Habitat
-  Cooley's Water Willow
-  Sherman's Fox Squirrel (foraging)

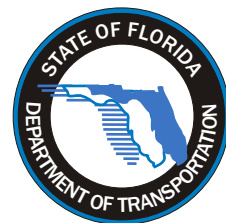
Exhibit 5-1



Project Protected Species

Cobb Road (CR 485) / US 98 PD&E Study

WPI Segment Nos: 257299 1 & 405017 1
 FAP Nos: 2891 007 P & 2891 008 P



5.5.1 Avian

5.5.1.1 Red-Cockaded Woodpecker

Pine stands, or pine-dominated pine/hardwood stands, with a low or sparse understory and ample old-growth pines, constitute primary red-cockaded woodpecker nesting and roosting habitat. The low or sparse understory affords unimpeded access to cavities. Red-cockaded woodpeckers (*Picoides borealis*) will abandon otherwise suitable nesting/roosting areas when the understory approaches cavity height.

No individual red-cockaded woodpeckers were observed during field surveys. The plant communities within the study area are mesic, hardwood dominated systems. The area is lacking the open, pine dominated community necessary for this species occupation. There will be no impact to this species as a result of this project.

5.5.1.2 Wood Stork

The wood stork (*Mycteria americana*) is primarily associated with freshwater and estuarine habitats for nesting, roosting, and foraging. Wood storks typically construct their nests in medium to tall trees that occur in stands located either in swamps or on islands surrounded by relatively broad expanses of open water. In one study of wood stork nesting throughout Florida, which was conducted prior to the 1960s, more than half of all wood stork nests were located in large bald cypress stands, 13 percent were located in red mangrove, eight percent in partially harvested bald cypress stands, six percent in dead oaks (*Quercus* spp.), and five percent in small pond cypress (*T. distichum* var. *nutans*).

Three wood storks were observed flying out of Wetland 17 upon our approach. Nesting and roosting habitat for this species are not present in the project area. Foraging habitat is available depending on the existing water levels in ditches and swales, and other wetlands.

5.5.1.3 Other Wading Birds

Other wading birds include the little blue heron (*Egretta ceulea*), the snowy egret (*Egretta thula*), white ibis (*Eudocimus albus*), the limpkin (*Aramus guarauna*), and the tricolored heron (*Egretta tricolor*). All of these species are listed as Species of Special Concern (SSC) by the

FWC and potentially could occur. While each species is distinct, wading birds are discussed collectively since they occupy similar habitats and have similar life styles.

The populations of these five species of wading birds have been historically adversely affected by plume hunting, the destruction of wetlands due to development, and by the drainage of wetlands for flood control or agriculture. However, it is assumed that these species may utilize wetland areas within the project area, and contact with the USFWS and FWC report no known nesting sites within the project area.

The primary concern for the impacts to these wading birds would be the loss of feeding habitat, i.e. wetlands. As part of the project, all impacts to wetland areas will be mitigated to prevent a net loss of functional wetland area. The exact type of mitigation will be coordinated with the USACOE, FDEP, and Southwest Florida Water Management District (SWFWMD). These agencies work closely with USFWS and FWC in reviewing the effect of wetland impacts on protected faunal species. The mitigation accepted by these agencies will be designed to provide replacement for any wading bird feeding habitat lost due to project impacts. Therefore, the project should have no adverse impact on these species.

5.5.1.4 Bald Eagle

Considered to be threatened by the USFWS and by the FWC, the bald eagle (*Haliaeetus leucocephalus*) is a large blackish bird with a white head and tail. Juveniles resemble the adult golden eagle, but have a pale wing lining and a more massive bill. Primarily riparian, bald eagles build their nests near the shores of bodies of water or in marsh areas where they feed on fish and small waterfowl. Nests can usually be found in the larger pine and/or cypress trees in the eagles' territory. A nesting pair will often use alternate nests in different years with both nests in close proximity to one another. Clutches usually consist of two to three eggs and are laid in late fall or winter. Both parents will care for the offspring.

Because the bald eagle is wide ranging, it has been seen in a diverse range of habitats from pine flatwoods to hardwood forests to agricultural areas. Its preferred habitat during the nesting season (October-May) includes the shores of fresh water lakes and rivers, marshes, wet prairies, salt marshes and coastal beaches, where food is readily available.

Active nests are most easily spotted during nesting season, when activity in and around a nest area increases. All surveying will be accomplished outside of the primary zone distance, 750 to 1500 ft., during the nesting season in accordance with established USFWS guidelines.

According to the FWC's database there is one known eagle nest within one mile of the project (HN010). This project is well outside the secondary protection zone for this nest. No impacts to this species are expected as a result of the planned project.

5.5.1.5 Southeastern American Kestrel

The southeastern American kestrel (*Falco sparverius paulus*), a member of the Falconidae family, is the smallest falcon in the United States and is similar in size to the common morning dove. The sexes are distinctive with the male having blue-gray wings and the female having a more uniformly rufous back and wings. The females are larger than the males and both sexes have a mustached black and white facial pattern with strong perpendicular lines extending below the eye and near the ear. Both sexes have a black band at the end of a rufous tail. Falcons in general have long pointed wings and long tails.

The southeastern American kestrel can be found in open pine habitats, woodland edges, prairies, and pastures throughout much of Florida. The availability of suitable nesting sites is key during breeding season. Kestrels are cavity nesters with suitable nest sites occurring in tall dead trees or utility poles that have an unobstructed view of the surrounding area. Sandhill habitats seem to be the preferred habitat type, but the kestrel will also utilize flatwoods. Open patches of grass or bare ground are needed in flatwoods settings, since dense palmettos inhibit the detection of prey items.

Southeastern American kestrels can be found year-round throughout Florida, but seasonal occurrence can be complicated by the arrival of northern migrants in the winter months. The sub-species that breeds in Florida is listed by the FWC as "Threatened", but the northern migrants are not listed. Northern migrants usually arrive in September and depart by March. All birds encountered during the breeding season (April through early September) should be treated as the listed sub-species.

There are no known kestrel nest sites within the project corridor; however, the FNAI data show a southeastern American kestrel was observed on the powerline that is northwest of the project's northern terminus in 1986. This project will have no impact on this species.

5.5.2 Reptiles

5.5.2.1 Eastern Indigo Snake

The Eastern indigo snake (*Drymarchon corais couperi*) is a large, black, non-venomous snake found in the southeastern U.S. It is widely distributed throughout central and south Florida, but primarily occurs in sandhill habitats in northern Florida and southern Georgia.

Wherever the Eastern indigo snake occurs in xeric habitats, it is closely associated with the gopher tortoise, the burrows of which provide shelter from winter cold and desiccation. In wetter habitats that lack gopher tortoises, Eastern indigo snakes may take shelter in hollowed root channels, hollow logs, or the burrows of rodents, armadillo (*Dasypus novemcinctus*), or land crabs (*Cardisoma guanhumi*). Throughout peninsular Florida, this species may be found in all terrestrial habitats which have not suffered high-density urban development. In central and coastal Florida, Eastern indigo snakes are mainly found within many of the state's high, sandy ridges. They are especially common in the hydric hammocks throughout this region.

Only the northern tip of the project has any xeric habitat which is preferred by the Eastern indigo snake in this part of the state. However, this fact does not eliminate the possibility that Eastern indigo snakes could be found in most of the study area. During field surveys, no individual Eastern indigo snakes were observed.

Due to the possible presence of the Eastern indigo snake, provisions in the construction contract documents will require the contractor to follow precautionary measures. Standard FDOT precaution specifications for construction are included in Appendix C.

5.5.2.2 Gopher Tortoise

The gopher tortoise (*Gopherus polyphemus*) has suffered a large population decline over most of its historic range, which includes the sandy coastal plain of the southeastern U.S., and Florida is

now the last stronghold for this species. Habitat loss is the main cause of decline. The gopher tortoise requires well-drained and loose sandy soils for burrowing, and low-growing herbs and grasses for food. These habitat conditions are best provided in the sandhill (longleaf pine-xeric oak) community, although tortoises are known to use many other habitats, including sand pine scrub, xeric oak hammocks, dry prairies, pine flatwoods, and ruderal sites. The gopher tortoise is considered a keystone species, since its burrows harbor and protect a number of commensal species, such as the Florida mouse (*Podomys floridanus*) and the gopher frog (*Rana capito*).

Any plan to protect these tortoises will be in effect and implemented before construction begins. Surveys for gopher tortoises will follow the methodology as specified by the FWC guidelines established in Technical Report #4. The FDOT will commit to resurvey the project area during the design phase, and prior to construction, and secure any and all permits needed regarding the gopher tortoise.

Two inactive gopher tortoise burrows were discovered adjacent to the right-of-way in the extreme northern portion of the project corridor and one live tortoise was observed walking down the side of the road in the vicinity of Wetland 31. Habitat for this species is severely lacking throughout the majority of the project area. There should be no impact to this species as a result of this project.

5.5.2.3 American Alligator

The American alligator (*Alligator mississippiensis*) is finally recovering from uncontrolled poaching and hunting which severely depleted populations in the 1960s. The increase in populations, particularly in Florida, has been recognized by a relaxation of the species protected status in recent years and by the opening of controlled hunting for management purposes in some parts of the state. Current management efforts are also underway to minimize the conflicts between man and alligator that are occurring in populated areas.

The American alligator is not described in detail due to its adaptive nature and its mobility. This species is capable of utilizing a variety of wetland areas, including those within the project area. As the project will not cause any net loss of wetland area, it will not affect the overall habitat area available to the alligator. Given the opportunity to do so, the alligator will avoid the noise

and disturbance that occurs during construction. The mobility of the alligator and its ability to utilize habitats adjacent to the project area should prevent any impact to the species during construction or due to the project.

A large amount of alligator habitat exists in the project area. No FWC conservation or survey guidelines currently exist for the American alligator. The one individual observed in the field, in Wetland 10, will not be affected by the planned improvements. No impacts to this species are expected as a result of this project.

5.5.3 Mammals

5.5.3.1 Florida Black Bear

Florida black bears (*Ursus americanus floridanus*) have large home ranges and require expansive habitat of forested landscapes. Some of the more important forest types include pine flatwoods, hardwood swamp, cypress swamp, cabbage palm forest, sand pine scrub, and mixed hardwood hammock. Fragmented Florida black bear populations occur throughout the state. The FWC has not prepared any survey guidelines for the Florida black bear. Occurrence is typically reported from incidental sighting of animals or discovery of paw prints.

There are known sightings of black bears in the project area. The Chassahowitzka population of black bears resides in the National Wildlife Refuge and Wildlife Management Area of the same name. These areas are north and west of the northern portion of the project area.

No individual bears or bear signs were found during the surveys conducted for the planned US 98/Cobb Road project. The increase in traffic volume that may result from this project may have an impact on some larger more mobile species, such as the black bear or fox squirrel. Construction activities, however, will have minimal impact on this species.

5.5.3.2 Sherman's Fox Squirrel

Sherman's fox squirrel (*Sciurus niger shermani*) is quite different in size and appearance from the gray squirrel (*Sciurus carolinensis*). The fox squirrel is considerable larger, measuring 23.6 to 27.6 in. in total length and weighing from 2.0 to 2.6 lbs. The top of the head is typically

black, with white nose and ears. The rest of the pelage is variable in color ranging from agouti to black, light agouti to tan, or dark over tan, or tan over dark. Fox squirrels utilize large leaf nests, most build in large oaks. Typically two breeding seasons occur each year, one in the winter and one in the summer. Habitat dependent, the fox squirrel may skip a breeding season, depending on resource abundance. This species depends on a variety of food sources for its survival. Major food resources include turkey oak acorns, longleaf pine seeds, and live oak acorns. Other acorns and nuts, fungi, bulbs, vegetative buds, insects and staminate pinecones also are eaten.

To accommodate the squirrel's large home range and varied food resources, suitable habitat must be fairly extensive. The mature, fire-maintained longleaf pine-turkey oak sandhills and flatwoods are the optimal habitat for Sherman's fox squirrel.

One fox squirrel was seen foraging alongside the road in the extreme northern portion of the project corridor; however, no nests were observed. This project is not expected to impact this species due to the absence of suitable habitat in the project area.

5.5.4 Plants

5.5.4.1 Cooley's Water Willow

Cooley's water willow (*Justicia cooleyi*), a member of the *Acanthaceae* family, is a perennial herb that grows up to 16 inches in height. It has erect, square, hairy stems with few branches. Its leaves are oppositely arranged with short stalks. The leaves are up to 2 inches long, ovate or lanced shaped with long hairs and short brown lines on the upper surface. The flowers can be found in zigzag clusters that are usually 2-branched on long stalks emerging from the angle of the leaf and the stem. The flowers are about 0.5 inches long and are dark pink with purple and white spots. The flowers are glandular-hairy and two lipped with the lower lip being 3 lobed and it has 4 sepals. The fruit is a 0.5 inch long hairy capsule.

This plant can be found in mesic hardwood hammocks over limestone. The habitat for this species has been greatly diminished by limerock mining, clearcutting, agriculture, and residential development. Seventeen populations have been documented according to the FNAI database, about half of which are in conservation areas. Of the populations in conservation areas, most are

threatened by exotic plant invasion.

This species is listed as “Endangered” by both the USFWS and the FDA. One population of this species can be found in the project area adjacent to Wetland 9. This location is a previously unknown population whose existence has been reported to the FNAI. Detailed information regarding this population can be found in Appendix B. This group of plants is adjacent to the east side (northbound lane). The conceptual design is maintaining the existing right-of-way of Cobb Road for the northbound traffic. Right-of-way will be acquired from the west side (southbound travel lane) of the existing right-of-way. Therefore, no impacts are anticipated to occur to this population with the construction of the roadway.

In addition, a previously documented population of this species was located adjacent to Wetland 32. No members of this species were found during recent surveys of Wetland 32 and this population seems to be extirpated from the site.

5.5.4.2 Brittle Maidenhair Fern

The brittle maidenhair fern, a member of the *Pteridaceae* family, is found in limestone sinkholes and rocky hammocks. The probability of occurrence is medium due to the availability of suitable habitat in the study area. However, pedestrian transects did not reveal any members of this species.

5.5.4.3 Sand Butterfly Pea

The sand butterfly pea (*Centrosema arenicola*), a member of the *Fabaceae* family, is a perennial vine with long, twining stems that can reach 10 feet in length. It has 3 oval or lanced shaped leaflets that are dark green and somewhat leathery. It has purplish-blue (rarely pink or white) 1.5 inch wide flowers which are twisted so that the large notched banner petal is lowest. Its calyx has 4 triangular lobes, the lower of which are forked and longer than the upper lobes.

This plant can be found in sandhill, scrubby flatwoods and dry upland woods; however, very few plants have been seen in the last twenty years and only one population is protected. This plant is considered “Endangered” by the State of Florida, Department of Agriculture.

During field surveys, no individuals of this species were identified. The study area does not seem to support the habitat needs of this plant. This plant is not expected to be impacted by this project.

5.5.4.4 Curtiss' Milkweed

Curtiss milkweed (*Asclepias curtissii*), a member of the *Apocynaceae* family, grows in scrub areas having leached, excessively well drained, white sands. This plant is considered "Endangered" by the State of Florida, Department of Agriculture. The probability of occurrence is low due to the absence of available habitat within the project study corridor.

5.6 Protected Species Conclusions

Five protected species were observed during field studies. These are the Cooley's water willow, American alligator, gopher tortoise, wood stork and Sherman's fox squirrel. The wood stork was feeding (not nesting) in a wetland near the project corridor and the fox squirrel was feeding on the right of way and its nesting site remains unknown. The habitats and natural features in most of the project corridor north of Yontz Road have been lightly impacted by human activity allowing for continued biological viability. The extreme southern portion of the study area, which includes industrial and urban uses, have impacted habitats and natural features which have been transformed by these human activities. Due to these conditions, a fair amount of wildlife is likely present throughout most of the study area with the exception of the urbanized area.

5.6.1 Recommended Alternative Impacts

This section of the document addresses potential impacts to the known listed and protected species within the project study area as a result of the potential implementation of the recommended alternative.

General wildlife and floral surveys of existing habitats within the project corridor were conducted to determine the presence or potential occurrence of threatened and endangered floral and faunal species. No adverse impacts are expected to these or any species. One bald eagle nest is within the project study area (approx. 4000 ft.). However, no impacts to the bald eagle are expected to occur. This nest was not ground-truthed in the field due to its distance from the

project and was the only nest indicated within one mile of the project corridor by the FWC.

No active or inactive red-cockaded woodpecker (RCW) cavities or cavity start holes were found in the survey area. The pine community within this area is not representative of optimal RCW habitat due to the density of hardwoods and immaturity of the pine trees. Consequently, this project is not expected to result in adverse impacts to the RCW.

The only protected mammal observed within the project area was one fox squirrel.

Four protected faunal species were observed during the field reviews: the American alligator sighted in Wetland 10, Sherman's fox squirrel, gopher tortoise, and wood stork. The wood stork was feeding in a wetland just outside the project impact zone and the fox squirrel was observed in the right-of-way. The field investigations conducted to date have not revealed the existence of the Eastern indigo snake. However, upon the recommendation of the USFWS, construction precautions for this species will be implemented. With these precautions, no impact on the Eastern indigo snake is expected. The gopher tortoise was observed. Two inactive burrows were observed and one individual was observed walking down the side of the road in the northern reach of the project corridor. Habitat for this species is lacking throughout the majority of the study area. There is some habitat in the very northern portion of the study area. The FDOT will resurvey the affected project area prior to construction.

One USFWS listed plant (Cooley's water willow) is found within the project area. No other protected plant species were observed during the field reviews, and none are expected to occur in the study area due to the lack of preferred habitat.

The study area was also evaluated for the potential of Critical Habitat. USFWS has been delegated authority as a Federal agency to protect from destruction or adverse modification the biological or physical constituent elements essential to the conservation of the listed species within the Critical Habitat. No Critical Habitat(s) were identified within the study area for any species.

Of the 15 viable alternatives proposed for this project, four have possible involvement with listed species. All four of these alternatives could possibly affect American alligator habitat. Due to

the mobility of this species and its avoidance of humans, no individuals of this species should be affected. One alternative could impact the gopher tortoise; however, the burrows that were observed in this segment were inactive, and it is not known whether they are inhabited. All state guidelines for this species will be followed and coordination with the FWC will be initiated prior to construction, allowing for the least possible impact to this species.

6.0 SUMMARY AND RECOMMENDATIONS

A Threatened & Endangered Species Biological Assessment was prepared for the planned improvements for Cobb Road and US 98 in Hernando County, due to concerns regarding potential protected species in the project area.

Due to the current ecological condition of the project's forested pine flatwoods, there is minimal habitat for the red-cockaded woodpecker. Existing pine areas have a well defined and dense subcanopy and shrub layer, and contain few older pines (greater than 60 years old). Additionally, there is no supporting habitat, and the actual amount of forested pine coverage is not sufficient. As a result, the FDOT has concluded that the project area does not have RCW habitat. No RCW individuals were observed and no impacts to this species will occur from this project.

Because of concerns for the occurrence of the Eastern indigo snake, standard protection measures for the Eastern indigo snake have been included in this document, in Appendix C. Additionally, the USFWS has also recommended that an Eastern indigo snake protection plan be prepared.

Given the above commitment, the data collection and analysis, it has been determined that the planned project will not adversely affect or jeopardize the existence of any threatened or endangered species, with the possible exception of Cooley's water willow. There is no officially designated Critical Habitat for threatened and endangered species in the project vicinity. In addition, the planned project will not substantially impact other wildlife species or their habitats.

Based upon the findings of the preliminary data collection, the general and species-specific surveys, and ongoing coordination with the USFWS and FWC, the following commitment is made:

- It has been determined that the Eastern indigo snake could be present within the project area. To satisfy USFWS and FWC concerns about this species, the Department will implement the provisions in Appendix C.

Given the above conclusions and commitment, it can be stated that the planned project will not adversely affect, or jeopardize the existence of the previously mentioned listed species, even though they are known or are expected to occur in the project vicinity.

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Appendix A - Agency Correspondence and Coordination

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION



JAMES L. "JAMIE" ADAMS, JR.
Bushnell

BARBARA C. BARSH
Jacksonville

QUINTON L. HEDGEPETH, DDS
Miami

H.A. "HERKY" HUFFMAN
Deltona

DAVID K. MEEHAN
St. Petersburg

JULIE K. MORRIS
Sarasota

TONY MOSS
Miami

EDWIN P. ROBERTS, DC
Pensacola

JOHN D. ROOD
Jacksonville

LL. L. EGBERT, Ph.D., Executive Director
C. J. HELLER, Assistant Executive Director

WILDLIFE RESEARCH LABORATORY
4005 SOUTH MAIN STREET
GAINESVILLE FLORIDA 32601-9099
(352)955-2230 TDD (850) 488-9542

October 20, 2000

Mr. Roger Menendez
H.W. Lochner, Inc.
13577 Feather Sound Drive, Suite 600
Clearwater, FL 33762

Re: Bald Eagle Nest Inquiry for CR 485 Cobb Road / US 98: Ranges 18 and 19 East, Townships 21 and 22 South and multiple Sections; Hernando County, Florida

Dear Mr. Menendez:

This is in reference to your request for bald eagle nest location information. There is one nest within one mile of your project area. It is Nest Number HN 010 which is located at latitude / longitude coordinates $28^{\circ} 39.10' / 82^{\circ} 28.20'$. This nest has been active from 1984 - 1999 (Year 2000 data not yet available). I have enclosed a map detailing the location of the nest in relation to your project Sections.

This information represents only the general locations of bald eagle nests and nesting territories for which you have requested information. There may be additional nests in this area of which we are unaware. Such nests would be afforded the same protection. This information was obtained during routine aerial surveys, in most cases; consequently, the location information is only accurate to within ± 0.10 mile. The specific site of the nest must be determined from the ground, if a more precise location is required. Information provided by FWC does not confer access to the site, and active nests should not be approached during the nesting season (October 1 - May 15). Permission to trespass on private property should be obtained from the land owner.

*** I would like to take this opportunity to introduce a new FWC website which contains all the bald eagle nest locations within the state of Florida current through the 1999 breeding season. To access this site, go to the FWC homepage at www.state.fl.us/fwc/. Then, double-click on the heading titled "Bald Eagle Nest Locator" found on the left hand side of the homepage. Once at the site, please read the introduction carefully for information regarding the proper use of the site and proper use of the information provided by the site. Also, it is very important that you search all areas up to one mile radius around your site in order to locate any nests that are within one mile. For instance, if you are querying for a particular Section, Township and Range, be sure to query for all Sections surrounding your particular Section of interest. If you have any question or problems concerning the site, please feel free to call.

October 20, 2000

Mr. Roger Menendez

If you would like more information regarding technical assistance or application of the US Fish and Wildlife *Habitat Management Guidelines for the Bald Eagle in the Southeast Region*, you can contact Tom Logan at (850)921-5987. Thank you for your inquiry.

Sincerely,

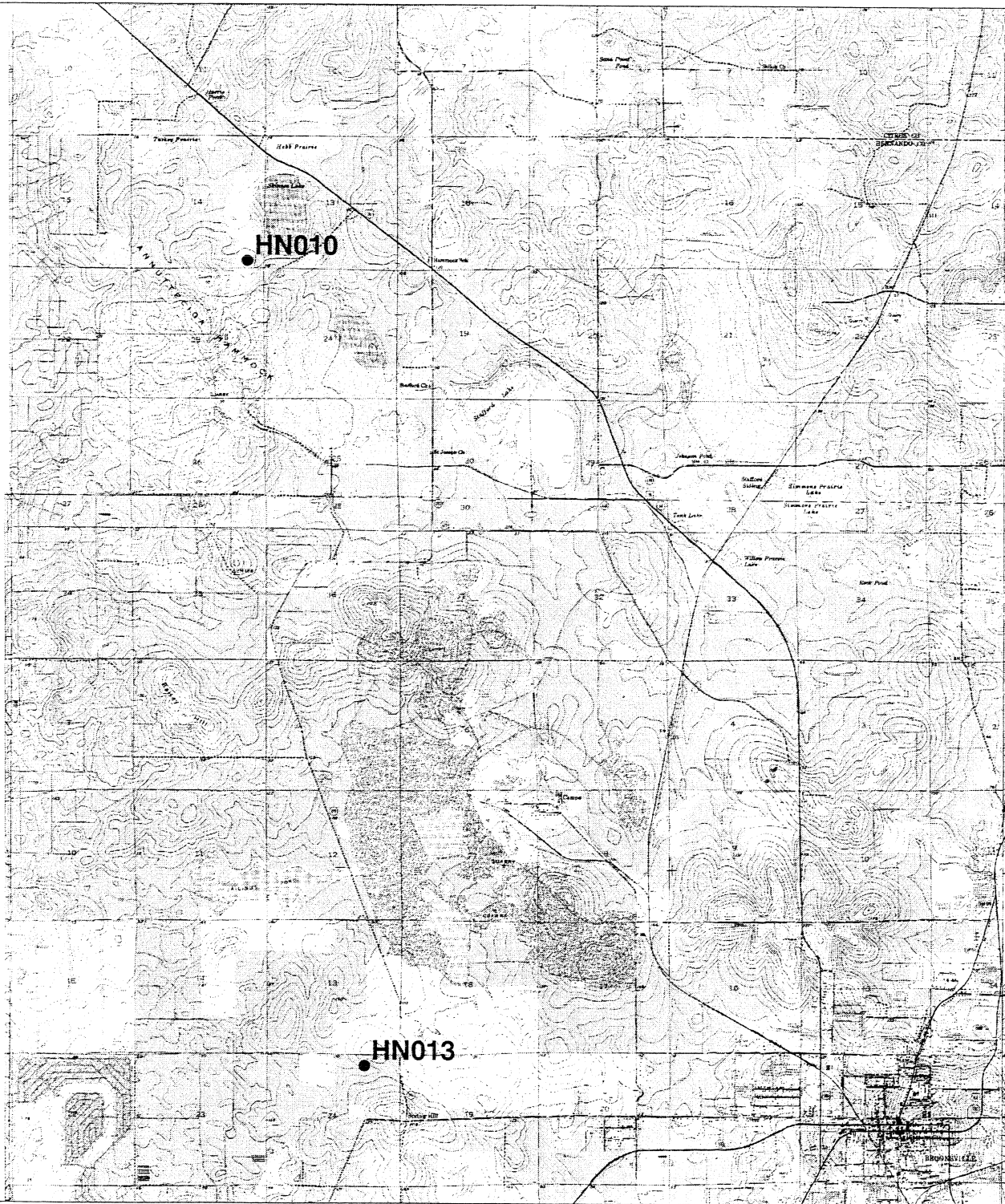


Julia B. Dodge

Enclosure (1)

cc: Tom Logan, FWC

ESC 6-1 Nest Number HN010



HN010

HN013

TANIGUANO

BROOKVILLE

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

Cobb Road

1-110



JULIE K. MORRIS
Sarasota

DAVID K. MEEHAN
St. Petersburg

H.A. "HERKY" HUFFMAN
Deitona

JOHN D. ROOD
Jacksonville

QUINTON L. HEDGEPEETH, DDS
Miami

EDWIN P. ROBERTS, DC
Pensacola

RODNEY BARRETO
Miami

AN L. EGBERT, Ph.D., Executive Director
FOR J. HELLER, Assistant Executive Director

WILDLIFE RESEARCH LABORATORY
4005 SOUTH MAIN STREET
GAINESVILLE, FLORIDA 32601-9099
(352) 955-2230 FAX (352) 376-5359

September 19, 2001

Mr. David Petti
H.W. Lochner, Inc.
13577 Feather Sound Drive, Suite 600
Clearwater, FL 33762

Re: Bald Eagle Nest Site Inquiry for US Route 98 (Ponce de Leon Boulevard) Widening Project; Hernando County, Florida

Dear Mr. Petti:

This is in reference to your request for bald eagle nest location information. There are two nests in the vicinity of your road widening project in Hernando County. They are Nest Numbers HN 010 and HN 013. Nest HN 010 is located at latitude / longitude coordinates of 28° 39.00' / 82° 28.20', and has been active from 1984 - 2001. Nest Number HN 013 is located at 28° 33.70' / 82° 27.40', and has been active from 1995 - 2001. I have enclosed two maps detailing the locations of these nests in relation to your project site.

This information represents only the general locations of bald eagle nests and nesting territories for which you have requested information. There may be additional nests in this area of which we are unaware. Such nests would be afforded the same protection. This information was obtained during routine aerial surveys, in most cases; consequently, the location information is only accurate to within \pm 0.10 mile. The specific site of the nest must be determined from the ground, if a more precise location is required. Information provided by FWC does not confer access to the site, and active nests should not be approached during the nesting season (October 1 - May 15). Permission to trespass on private property should be obtained from the land owner.

*** I would like to take this opportunity to introduce a FWC website which contains all the bald eagle nest locations within the state of Florida current through the 2000 breeding season. To access this site:

- Go to the FWC homepage at www.floridaconservation.org
- Double-click on the heading titled 'Wildlife' found on the left hand side of the homepage
- Double-click on the 'Eagle' heading.
- Double-click on the 'Eagle Nest Locator' heading

September 19, 2001

Mr. David Petti

Once at the site, please read the introduction carefully for information regarding the proper use of the site and proper use of the information provided by the site. Also, it is very important that you search all areas up to one mile radius around your site in order to locate any nests that are within one mile. For instance, if you are querying for a particular Section, Township and Range, be sure to query for all Sections surrounding your particular Section of interest. If you have any question or problems concerning the site, please feel free to call. ***

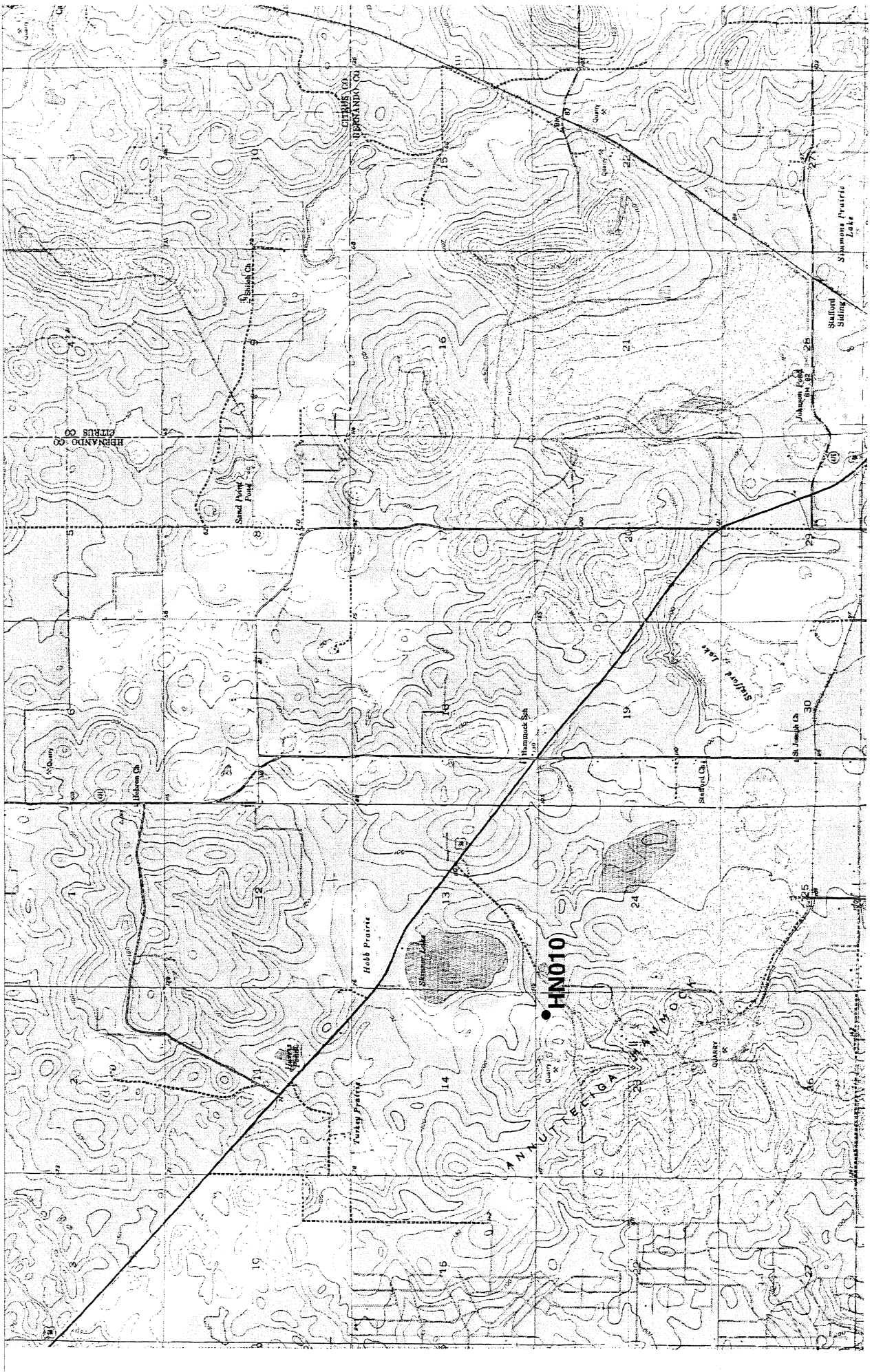
If you would like more information regarding technical assistance or application of the US Fish and Wildlife *Habitat Management Guidelines for the Bald Eagle in the Southeast Region*, you can contact Tom Logan at (850)921-5987. Thank you for your inquiry.

Sincerely,



Julia B. Dodge
Enclosure (2)

ESC 6-1 Nest Numbers HN010, HN013
cc: Tom Logan, FWC



HOBBS CO
HOBBS CO

HOBBS CO
HOBBS CO

HN010

Hobbs Prairie

Stuffed Lake

Simmons Prairie Lake

Stuffed Siding

Johnson Field

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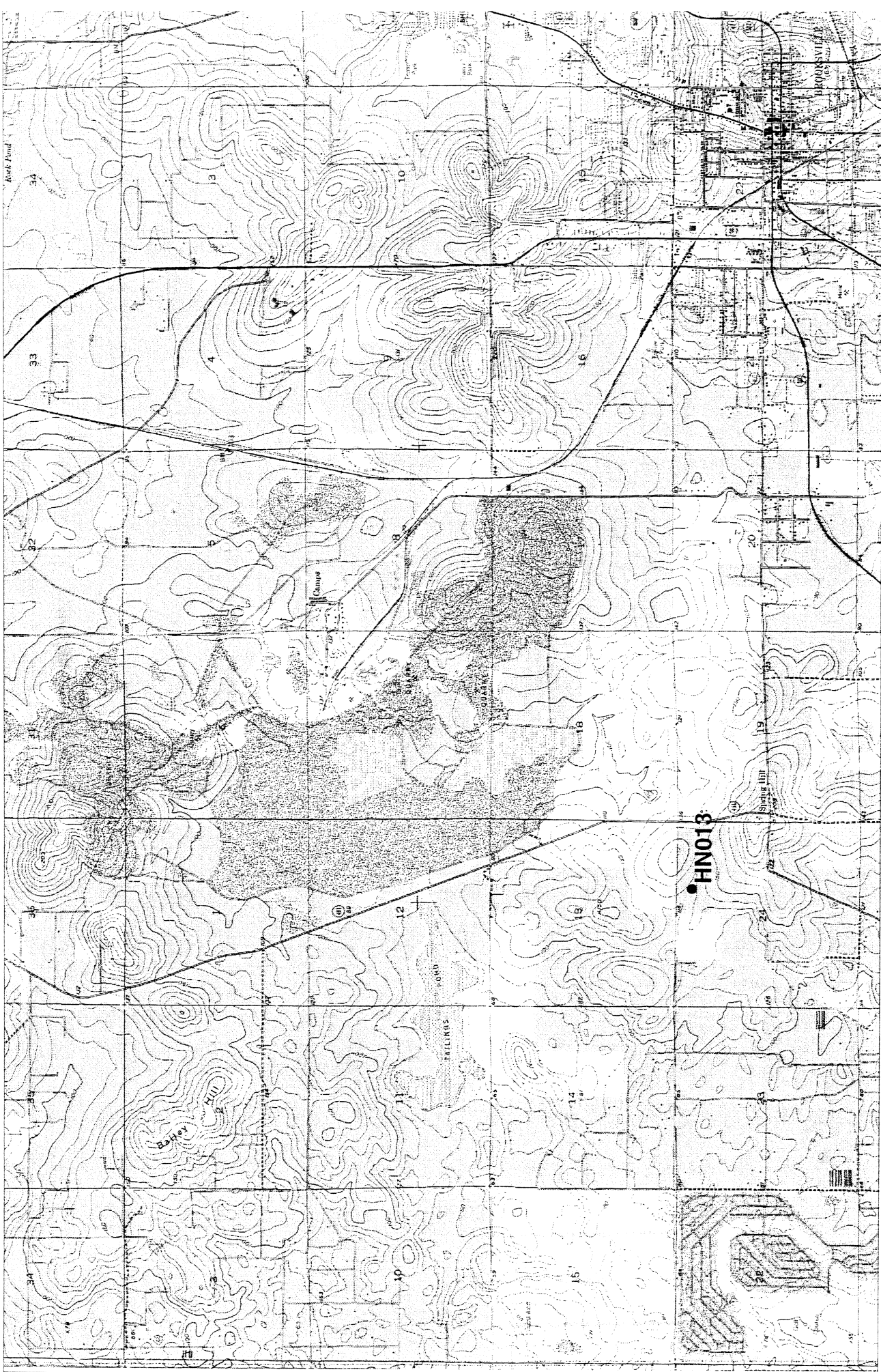
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FLORIDA NATURAL AREAS INVENTORY

1018 Thomasville Road, Suite 200-C · Tallahassee, Florida 32303 · (850) 224-8207 · FAX (850) 681-9364 · www.fnai.org

October 26, 2000

Roger J. Menendez
H.W. Lochner, Inc.
13577 Feather Sound Drive, Suite 600
Clearwater, FL. 33762

Dear Mr. Menendez:

Thank you for your request for information from the Florida Natural Areas Inventory (FNAI). Your data request, received on October 20, 2000, specified an area located from CR 485/SR 50 to US 98 and US 98/CR 485 to North Suncoast Parkway Study, in Hernando County.

A search of our maps and database indicates that currently we have several Element Occurrence Records mapped within one mile of the study area (see enclosed map and table). The map legend indicates the precision of the element occurrence location, defined as second (within about 300 feet), minute (within about one mile), or general (within about 5 miles). Also note the locations of breeding colony sites identified by the Florida Game and Fresh Water Fish Commission Breeding Bird Atlas Project, and scrub jay locations identified by the U.S. Fish & Wildlife Service Scrub Jay Survey.

Several of the species and natural communities tracked by the Florida Natural Areas Inventory are considered data sensitive. Occurrence records for these elements contain information which we consider sensitive due to collection pressures, extreme rarity, or at the request of the source of the information. The Element Occurrence Record has been marked "Data Sensitive." We request that you please not publish or release specific locational data about these species or communities without consent from the Inventory. If you have any questions concerning this please do not hesitate to call.

Please note that Potential Natural Areas and Areas of Conservation Interest are located near the site. These are private lands which are not managed for conservation, but which may have features of environmental significance, as determined by FNAI scientists. Potential Natural Areas and Areas of Conservation Interest should be considered useful information for planning purposes. Please see the enclosed explanation sheet for more information.

The Inventory always recommends that a site specific survey be conducted to determine the current presence or absence of rare, threatened, or endangered species. Surveys should be

Roger J. Menendez
October 26, 2000
Page 2

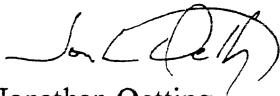
conducted by individuals familiar with Florida's flora and fauna. For your convenience, a summary of the elements recorded for Hernado County is enclosed.

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. A copy of the invoice is enclosed for your information; the original will be mailed to your accounts payable department. If I can be of further assistance, please give me a call at (850) 224-8207.

Sincerely,



Jonathan Oetting
Information Coordinator

JO:stk

encl

FNAI ELEMENT OCCURRENCE RECORDS ON OR NEAR SITE

GIS ID	SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	STATE RANK	FEDERAL RANK	STATUS	STATUS	STATUS	DATE OBSERVED	DESCRIPTION	COMMENTS
282530014	SANDHILL		G2G3	S2	N	N	N	N	1983-01-04	LONGLEAF FOREST W/ PATCHES OF LIVE OAK > SAW PALMETTO & LAUREL OAK. SANDY SOIL. DRAINS TO N INTO BURNS PRAIRIE, FORESTS, HOMES & PASTURES NEARBY.	LONGLEAF PINE SUFFERING FROM SOUTHERN PINE BEETLE; LIGHTNING, WIND DAMAGE, ETC. EXOTIC IMPERATA GRASS WELL ESTABLISHED, LIKELY TO OUTCOMPETE NATIVES.
282530015	DRYMARCHON CORAIS COUPERI	EASTERN INDIGO SNAKE	G4T3	S3	LT	LT	LT	LT	1991-11-14	1991-11-14: SANDHILL WITH LARGE LONGLEAF PINES, HEAVY DUFF LAYER, AND NUMEROUS SMALL TO MEDIUM HARDWOODS (F91MUL01).	ONE SNAKE SEEN 1975-1976 BY ALLAN WOODWARD (GFC) - U82MUL01. A SECOND CA. 5 FOOT LONG INDIVIDUAL CAPTURED, EXAMINED, AND RELEASED 1991-11-14 (F91MUL01).
282530017	CENTROSEMA ARENICOLA	SAND BUTTERFLY PEA	G2Q	S2	N	N	N	LE	1961-07-26	NO GENERAL DESCRIPTION GIVEN	COLL. BY LAKEA (24483) 26 JULY 1961 (USF)
282540002	DATA SENSITIVE		GH	SH	N	N	N	LE	1967-08-23		
282540005	DATA SENSITIVE		G7	S2	N	N	N	N	1983-02-17		
282540006	JUSTITIA COOLEYI	COOLEY'S WATER-WILLOW	G1G2	S1S2	LE	LE	LE	LE	1983-02-17	FLAT RELIEF, 1 OR 2 SINKHOLES NEARBY; UPLAND HARDWOOD FOREST, ASSOC. SPECIES: PAEDERIA FOETIDA, THELYPTERIS KUNTHII, SALVIA LYRATA, ELEPHANTOPUS SP, OPLISMENUS SETARIUS, CHASMANTHIUM, VIOLA.	1983-02-17: FRUITING. OCCURS MOSTLY AT SOUTH END OF PRESERVE AND NEAR SINKHOLE.
282540007	DIGITARIA FLORIDANA	FLORIDA CRABGRASS	G1	S1	N	N	N	N	1960-09-30	IN HEAPS OF POT SOIL AND ALONG PATHS, MOSTLY IN SAWDUST ON THE GROUNDS OF NINA'S NURSERY.	1960-09-30: FRUITING, ABUNDANT, SOME PLANTS WITH LEAFY STOLONS.
282540008	DRYMARCHON CORAIS COUPERI	EASTERN INDIGO SNAKE	G4T3	S3	LT	LT	LT	LT	1983-02-17	RELATIVELY FLAT BUT SMALL SINKHOLE AT SE CORNER; PINE PREDOMINATES N END, GRADES INTO HARDWOODS IN S HALF; DENSE SHRUBLAYER W/ MODERATE GROUND COVER TOWARD S END.	LEONARD REPORTED SEEING TWO INDIGOS ON TRACT, BETWEEN 1300 H AND 1500 H, 17 FEB. 1983.
282540013	DRYMARCHON CORAIS COUPERI	EASTERN INDIGO SNAKE	G4T3	S3	LT	LT	LT	LT	1936-12-06	NO GENERAL DESCRIPTION GIVEN	MUSEUM SPECIMEN: A. LAESSLE, 6 DEC 1936 (UF 910).
282640001	JUSTITIA COOLEYI	COOLEY'S WATER-WILLOW	G1G2	S1S2	LE	LE	LE	LE	1994-07-29	Shaded fence line along small wood lot, in mowed highway right-of-way, low wet area. 1992: Disturbed mixed forest and cleared roadway. Oaks, sweetgum, and hickory dominant. Justicia growing just east of wet area, between fence and right-of-way (F92CH03FL)	Hansen photographed plants at this site 1979-09-11; 84 plants in population occupying an area 10 X 30 feet (1986: 15 X 40 feet); 19 plants flowering 1979-09-11, many others with closed flower buds. 1986: 100+ plants, a few in flower on 20 Aug. 1988: 5 pl
282640003	DATA SENSITIVE		G4G5	S1	N	N	N	LE	1947-02-03		

10/26/00

FNAI ELEMENT OCCURRENCE RECORDS ON OR NEAR SITE

GIS ID	SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK		STATE RANK		FEDERAL RANK		DATE OBSERVED	DESCRIPTION	COMMENTS
			G1G2	S1S2	G1	S1	G1	S1			
282640004	JUSTICIA COOLEYI	COOLEY'S WATER-WILLOW	G1G2	S1S2	LE	LE	LE	LE	1959-02-10	Wet woods; deciduous woods. F92CH02FLUS observed from road that most of the area is now abandoned quarries and active mines, and this species may no longer exist here.	Flowers purple; common to abundant.
282640005	DATA SENSITIVE		G5	S1	N	LE			1982-12-31		1959-09-13 FLOWERING/FRUITING.
282640006	PYCNANTHEMUM FLORIDANUM	FLORIDA MOUNTAIN-MINT	G3	S3	N	LT			1959-09-13	HAMMOCK.	LIVE OAK, SWEETGUM, HACKBERRY, BASKET OAK > HOPHORNBEAM >
282640008	UPLAND HARDWOOD FOREST		G7	S3	N	N			1982-12-28	ROCKY HARDWOOD HAMMOCK W/ SANDY LOAM/CLAY OVER LIMESTONE. 0-1" LITTER. MANY LOW BOULDERS. ONE SINKHOLE-LIKE DEPRESSION. SURROUNDINGS WOODS, PASTURE, GROVES.	MAGNOLIA BEAUTYBERRY, YAUPON > PTERIS CRETICA VAR. ALBOLINEATA (ONLY SITE-EXOTIC?), ELEPHANTOPUS NUDATUS, ALSO PIGNUT HICKORY, BUCKTHORN, LAUREL OAK, WINGED ELM, MUSCADINE, WILD COFFEE, PILEA MICROPHYLL
282640012	HALIAEETUS LEUCOCEPHALUS	BALD EAGLE	G4	S3	(PS)	LT			1988	NO GENERAL DESCRIPTION GIVEN	NEST: 1984-1988 ACTIVE; FLEDGED YOUNG 1984-1985, UNKNOWN 1986
282640013	GOPHERUS POLYPHEMUS	GOPHER TORTOISE	G3	S3	(PS)	LS			1997-07-26	Large area of sandhill and pasture rapidly being developed residentially.	1997-07-26: One adult observed (PNDMA01FLUS); 1990-08-17: 1 adult male observed leaving vegetable farm (PNDOST01FLUS); 1990-06-24: 1 adult female skeleton found; 1990-04-29: 1 female observed, poachers observed with tortoises; 1989-07-15: 1 DOR individual
282640014	NEOFIBER ALLENI	ROUND-TAILED MUSKRAT	G3	S3	N	N			1977-02	CIRCULAR BAY OF ABOUT 1.25 HA., CONNECTED TO MAIN BODY OF LAKE BY A SHORT, NARROW CHANNEL, WATER DEPTH UP TO 1 M IN FEB 1977. CHOKED WITH PANICUM, PONTEDARIA, SAGITTARIA AND OTHER EMERGENTS; BAY ALMOST TOTALLY DRY BY JULY 1977.	GOOD POPULATION; USF 1977 MAMMALOGY CLASS TRAPPED 18 AT 40 NESTS IN 1 NIGHT IN FEB, COUNTED 187 NESTS IN APRIL WHEN BAY HAD DRIED (RATS HAD ABANDONED MANY); RATS APPARENTLY BURROWED IN MUCK DURING DRY PERIOD.
282640027	JUSTICIA COOLEYI	COOLEY'S WATER-WILLOW	G1G2	S1S2	LE	LE			1992-08-29	Oaks, sweetgum, and hickory; winged elm in understory; bw grasses and herbs including several mints, hawkweed, beggar-ticks and sparrowwort. Rich, rocky soils.	200-300 flowering and fruiting individuals.
282640028	JUSTICIA COOLEYI	COOLEY'S WATER-WILLOW	G1G2	S1S2	LE	LE			1992-08-29	Wooded pasture with mixed broadleaves. Winged elm occurs along fence line.	20-30 flowering and fruiting plants.

FNAI ELEMENT OCCURRENCE RECORDS ON OR NEAR SITE

GIS ID	SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK		FEDERAL STATUS		STATE STATUS		DATE OBSERVED	DESCRIPTION	COMMENTS
			RANK	RANK	STATUS	STATUS	STATUS	STATUS			
282640029	ADIANTUM TENERUM	BRITTLE MAIDENHAIR FERN	G5	S3	N	LE	LE	LE	1982-12-31	1982-12-31: Rocky banks of wet-weather stream through hammock (S. W. Leonard).	1982-12-31: Specimen taken (S. W. Leonard).
282640030	ADIANTUM TENERUM	BRITTLE MAIDENHAIR FERN	G5	S3	N	LE	LE	LE	1980-08-16	West side of old phosphate test pit, in hammock (S80BEC5FFLUS).	1980-08-16: Ca. 4 plants; specimen collected [spore] (S80BEC5FFLUS).
282640031	DATA SENSITIVE	WHITE IBIS	G5	S1	N	LE	LE	LE	1982-12-31		1988/05/11: D.E. Runde, GFC. Viewed from old RR right-of-way to SE of cobny and RI.476. No abundance estimates. Primarily CAEG cobny and winter roost site. Sink hole draining this part of lake.
282641610	EUDOCIMUS ALBUS	WHITE IBIS	G5	S4	N	LS	LS	LS	1988-05-11	Lake	SNEG, GBHE, LBHE, GRHE, WHIB, ANHI also present. 2 subcoob
282641622	EGRETTA THULA	SNOWY EGRET	G5	S4	N	LS	LS	LS	1988-05-11	Lake	1988/05/11: D.E. Runde, GFC. Viewed from old RR right-of-way to SE of cobny and RI.476. No abundance estimates. Primarily CAEG cobny and winter roost site. Sink hole draining this part of lake. SNEG, GBHE, LBHE, GRHE, WHIB, ANHI also present. 2 subcoob
282642219	EGRETTA CAERULEA	LITTLE BLUE HERON	G5	S4	N	LS	LS	LS	1989-05-08	Lake	1989/05/08: J.A. Howis, GFC, observation. Cobny very spread out. 2 subcolonies in 2 ponds combined here. Surveyed from helicopter. Site not visited by plane in 1989. *Tolar* = G (includes GREG, CAEG, LBHE, ANHI). 1987/06/16: D.E. Runde, GFC, Count of GREG nests (with large young) from photo, CAEG count of 1
282642475	ARDEA ALBA	GREAT EGRET	G5	S4	N	N	N	N	1987-06-16	Pond	1989/05/08: J.A. Howis, GFC; Cobny very spread out. Surveyed from helicopter. Site not visited by plane in 1989. Total = G (includes GREG, CAEG, LBHE, ANHI). 1987/06/16: D.E. Runde, GFC, Count of GREG nests (with large young) from photo, CAEG count of 1
282650012	FALCO SPARVERIUS PAULUS	SOUTHEASTERN AMERICAN KESTREL	G5T3T4	S3T	N	LT	LT	LT	1986-07-16	POWERLINE RIGHT OF WAY, SURROUNDING HABITAT CONSISTS OF SAND PINE PLANTATION (APPROX. 15-25' HT.) ON FORMER SANDHILL SITE. POWERLINE RIGHT-OF-WAY APPROXIMATELY 400' IN WIDTH WITH LOW UNDERSTORY OF GRASSES AND FORBES.	OBSERVED ON SITE ON 2 OCCASIONS PERCHING AND ACTIVELY FEEDING.

FLORIDA NATURAL AREAS INVENTORY

1018 Thomasville Road, Suite 200-C, Tallahassee, FL 32303 (850) 224-8207

April, 1998

Page 1

Hernando County Summary Rare Species and Natural Communities

Occurrence		Global	State	Federal	State	
Scientific Name	Common Name	Rank*	Rank*	Status*	Status*	Status†
AMPHIBIANS						
<i>Ambystoma tigrinum</i>	tiger salamander	G5	S3	N	N	P
<i>Amphiuma pholeter</i>	one-toed amphiuma	G3	S3	N	N	C
<i>Notophthalmus perstriatus</i>	striped newt	G2G3	S2S3	N	N	P
<i>Pseudobranchius striatus lustricolus</i>	Gulf Hammock dwarf siren	G5T1	S1	N	N	C
<i>Rana capito</i>	gopher frog	G4	S3	N	LS	C
REPTILES						
<i>Alligator mississippiensis</i>	American alligator	G5	S4	T(S/A)	LS	C
<i>Caretta caretta</i>	loggerhead	G3	S3	LT	LT	N
<i>Chelonia mydas</i>	green turtle	G3	S2	LE	LE	N
<i>Dermodochelys coriacea</i>	leatherback	G3	S2	LE	LE	N
<i>Drymarchon corais couperi</i>	eastern indigo snake	G4T3	S3	LT	LT	C
<i>Gopherus polyphemus</i>	gopher tortoise	G3	S3	N	LS	C
<i>Lepidochelys kempii</i>	Kemp's ridley	G1	S1	LE	LE	P
<i>Nerodia clarkii clarkii</i>	Gulf salt marsh snake	G4T3	S3?	N	N	P
<i>Pituophis melanoleucus mugitus</i>	Florida pine snake	G5T3?	S3	N	LS	C
<i>Pseudemys concinna suwanniensis</i>	Suwannee cooter	G5T3	S3	N	LS	P
<i>Stilosoma extenuatum</i>	short-tailed snake	G3	S3	N	LT	P
BIRDS						
<i>Accipiter cooperii</i>	Cooper's hawk	G4	S3?	N	N	P
<i>Aimophila aestivalis</i>	Bachman's sparrow	G3	S3	N	N	P
<i>Ajaia ajaja</i>	roseate spoonbill	G5	S2S3	N	LS	P
<i>Ammodramus maritimus peninsulae</i>	Scott's seaside sparrow	G4T2	S2	N	LS	C
<i>Aphelocoma coerulescens</i>	Florida scrub-jay	G3	S3	LT	LT	C
<i>Aramus guarauna</i>	limpkin	G5	S3	N	LS	P
<i>Ardea alba</i>	great egret	G5	S4	N	N	C
<i>Buteo brachyurus</i>	short-tailed hawk	G4?	S3	N	N	P
<i>Charadrius melodus</i>	piping plover	G3	S2	LT	LT	P
<i>Cistothorus palustris marianae</i>	Marian's marsh wren	G5T3	S3?	N	LS	P
<i>Dendroica discolor paludicola</i>	Florida prairie warbler	G5T3	S3	N	N	P
<i>Egretta caerulea</i>	little blue heron	G5	S4	N	LS	C
<i>Egretta thula</i>	snowy egret	G5	S4	N	LS	P
<i>Egretta tricolor</i>	tricolored heron	G5	S4	N	LS	P
<i>Elanoides forficatus</i>	swallow-tailed kite	G4	S2S3	N	N	P
<i>Eudocimus albus</i>	white ibis	G5	S4	N	LS	C
<i>Falco columbarius</i>	merlin	G5	SU	N	N	P
<i>Falco peregrinus</i>	peregrine falcon	G4	S2	LE	LE	P
<i>Falco sparverius paulus</i>	southeastern American kestrel	G5T3T4	S3?	N	LT	C
<i>Grus canadensis pratensis</i>	Florida sandhill crane	G5T2T3	S2S3	N	LT	P
<i>Haliaeetus leucocephalus</i>	bald eagle	G4	S3	LT	LT	C
<i>Ixobrychus exilis</i>	least bittern	G5	S4	N	N	P
<i>Laterallus jamaicensis</i>	black rail	G4	S3?	N	N	P
<i>Mycteria americana</i>	wood stork	G4	S2	LE	LE	P
<i>Nyctanassa violacea</i>	yellow-crowned night-heron	G5	S3?	N	N	P

Hernando County Summary
Rare Species and Natural Communities

Occurrence		Global	State	Federal	State	
Scientific Name	Common Name	Rank*	Rank*	Status*	Status*	Status†
<i>Nycticorax nycticorax</i>	black-crowned night-heron	G5	S3?	N	N	P
<i>Pandion haliaetus</i>	osprey	G5	S3S4	N	LS**	P
<i>Pelecanus occidentalis</i>	brown pelican	G4	S3	N	LS	P
<i>Picoides borealis</i>	red-cockaded woodpecker	G3	S2	LE	LT	C
<i>Picoides villosus</i>	hairy woodpecker	G5	S3?	N	N	P
<i>Plegadis falcinellus</i>	glossy ibis	G5	S2	N	N	P
<i>Rallus longirostris scottii</i>	Florida clapper rail	G5T3?	S3?	N	N	P
<i>Rynchops niger</i>	black skimmer	G5	S3	N	LS	P
<i>Speotyto cunicularia floridana</i>	Florida burrowing owl	G4T3	S3	N	LS	C
<i>Sterna antillarum</i>	least tern	G4	S3	N	LT	P
<i>Sterna caspia</i>	Caspian tern	G5	S2?	N	N	P
<i>Sterna maxima</i>	royal tern	G5	S3	N	N	P
<i>Sterna sandvicensis</i>	sandwich tern	G5	S2	N	N	P
<u>MAMMALS</u>						
<i>Corynorhinus rafinesquii</i>	Rafinesque's big-eared bat	G3	S3?	N	N	P
<i>Mustela frenata peninsulæ</i>	Florida long-tailed weasel	G5T3	S3?	N	N	C
<i>Mustela vison halilimnetes</i>	Gulf salt marsh mink	G5T3	S3	N	N	P
<i>Neofiber alleni</i>	round-tailed muskrat	G3	S3	N	N	C
<i>Podomys floridanus</i>	Florida mouse	G3	S3	N	LS	C
<i>Sciurus niger shermani</i>	Sherman's fox squirrel	G5T2	S2	N	LS	C
<i>Sorex longirostris longirostris</i>	southeastern shrew	G5T5	S4	N	N	P
<i>Trichechus manatus</i>	manatee	G2?	S2?	LE	LE	C
<i>Ursus americanus floridanus</i>	Florida black bear	G5T2	S2	C	LT**	C
<u>INVERTEBRATES</u>						
<i>Crangonyx grandimanus</i>	Florida cave amphipod	G2	S2	N	N	C
<i>Crangonyx hobbsi</i>	Hobbs' cave amphipod	G2G3	S2S3	N	N	C
<i>Procambarus leitheuseri</i>	coastal lowland cave crayfish	G2	S2	N	N	C
<i>Troglocambarus maclanei</i>	north Florida spider cave crayfish	G2	S2	N	N	C
<u>VASCULAR PLANTS</u>						
<i>Adiantum tenerum</i>	brittle maidenhair fern	G5	S3	N	LE	C
<i>Agrimonia incisa</i>	incised groove-bur	G3	S2	N	N	C
<i>Asclepias curtissii</i>	Curtiss' milkweed	G3	S3	N	LE	C
<i>Asplenium auritum</i>	auricled spleenwort	G5	S2	N	LE	C
<i>Asplenium pumilum</i>	dwarf spleenwort	G4G5	S1	N	LE	C
<i>Blechnum occidentale</i>	sinkhole fern	G5	S1	N	LE	C
<i>Campanula robinsiae</i>	Brooksville bellflower	G1	S1	LE	LE	C
<i>Centrosema arenicola</i>	sand butterfly pea	G2	S2	N	N	C
<i>Chamaesyce cumulicola</i>	sand-dune surge	G2	S2	N	LE	C
<i>Coelorachis tuberculosa</i>	piedmont jointgrass	G3	S3	N	N	C
<i>Digitaria floridana</i>	Florida crabgrass	G1	S1	N	N	C
<i>Glandularia tampensis</i>	Tampa vervain	G1	S1	N	LE	C
<i>Justicia cooleyi</i>	Cooley's water-willow	G1G2	S1S2	LE	LE	C
<i>Lechea cernua</i>	nodding pinweed	G3	S3	N	LT	C

FLORIDA NATURAL AREAS INVENTORY

1018 Thomasville Road, Suite 200-C, Tallahassee, FL 32303 (850) 224-8207

April, 1998

Page 3

Hernando County Summary

Rare Species and Natural Communities

Occurrence		Global	State	Federal	State	
Scientific Name	Common Name	Rank*	Rank*	Status*	Status*	Status†
<i>Lechea divaricata</i>	pine pinweed	G2	S2	N	LE	C
<i>Malaxis unifolia</i>	green adder's-mouth	G5	S3	N	LE	C
<i>Matelea floridana</i>	Florida spiny-pod	G2	S2	N	LE	C
<i>Monotropis reynoldsiae</i>	pigmy pipes	G1Q	S1	N	LE	C
<i>Nolina brittoniana</i>	Britton's beargrass	G2	S2	LE	LE	C
<i>Pteroglossaspis ecristata</i>	wild coco	G2G3	S2	N	LT	C
<i>Pycnanthemum floridanum</i>	Florida mountain-mint	G3	S3	N	N	C
<i>Schizachyrium niveum</i>	scrub bluestem	G1	S1	N	N	C
<i>Spiranthes elata</i>	tall neottia	G4G5	S1	N	LE	R
<i>Spiranthes polyantha</i>	green ladies'-tresses	G3G5	S1S2	N	LE	C
<i>Thelypteris reptans</i>	creeping fern	G5	S2	N	LE	C
<i>Triphora craigheadii</i>	Craighead's noddling-caps	G1	S1	N	LE	C
<i>Triphora latifolia</i>	broad-leaved noddling-caps	GH	SH	N	LE	C
<i>Ulmus crassifolia</i>	cedar elm	G5	S1	N	N	C
<u>NATURAL COMMUNITIES</u>						
	Aquatic Cave	G3	S2	N	N	C
	Basin Swamp	G4?	S3	N	N	C
	Dome Swamp	G4?	S3?	N	N	C
	Hydric Hammock	G?	S4?	N	N	C
	Marine Tidal Marsh	G4	S4	N	N	C
	Sandhill	G2G3	S2	N	N	C
	Scrub	G2	S2	N	N	C
	Sinkhole	G?	S2	N	N	C
	Upland Hardwood Forest	G?	S3	N	N	C
	Upland Mixed Forest	G?	S4	N	N	C
<u>OTHER</u>						
	Bird rookery			N	N	C

Hernando County Summary
Rare Species and Natural Communities

Occurrence		Global	State	Federal	State
Scientific Name	Common Name	Rank*	Rank*	Status*	Status* Status†

* See attached *FNAI Rank Explanations* sheet for definitions of **Global and State Ranks**, and **State and Federal Status**

** See attached *FNAI Rank Explanations* sheet, *Special Animal Listings - State and Federal Status* section

† **COUNTY OCCURRENCE STATUS**

Vertebrates and Invertebrates:

C = **(Confirmed)** Occurrence status derived from a documented record in the FNAI data base.

P = **(Potential)** Occurrence status derived from a reported occurrence for the county, or the occurrence lies within the published range of the taxon.

N = **(Nesting)** For sea turtles only; occurrence status derived from documented nesting occurrences.

Plants, Natural Communities, and Other:

C = **(Confirmed)** Occurrence status derived from a documented record in the FNAI data base or from a herbarium specimen.

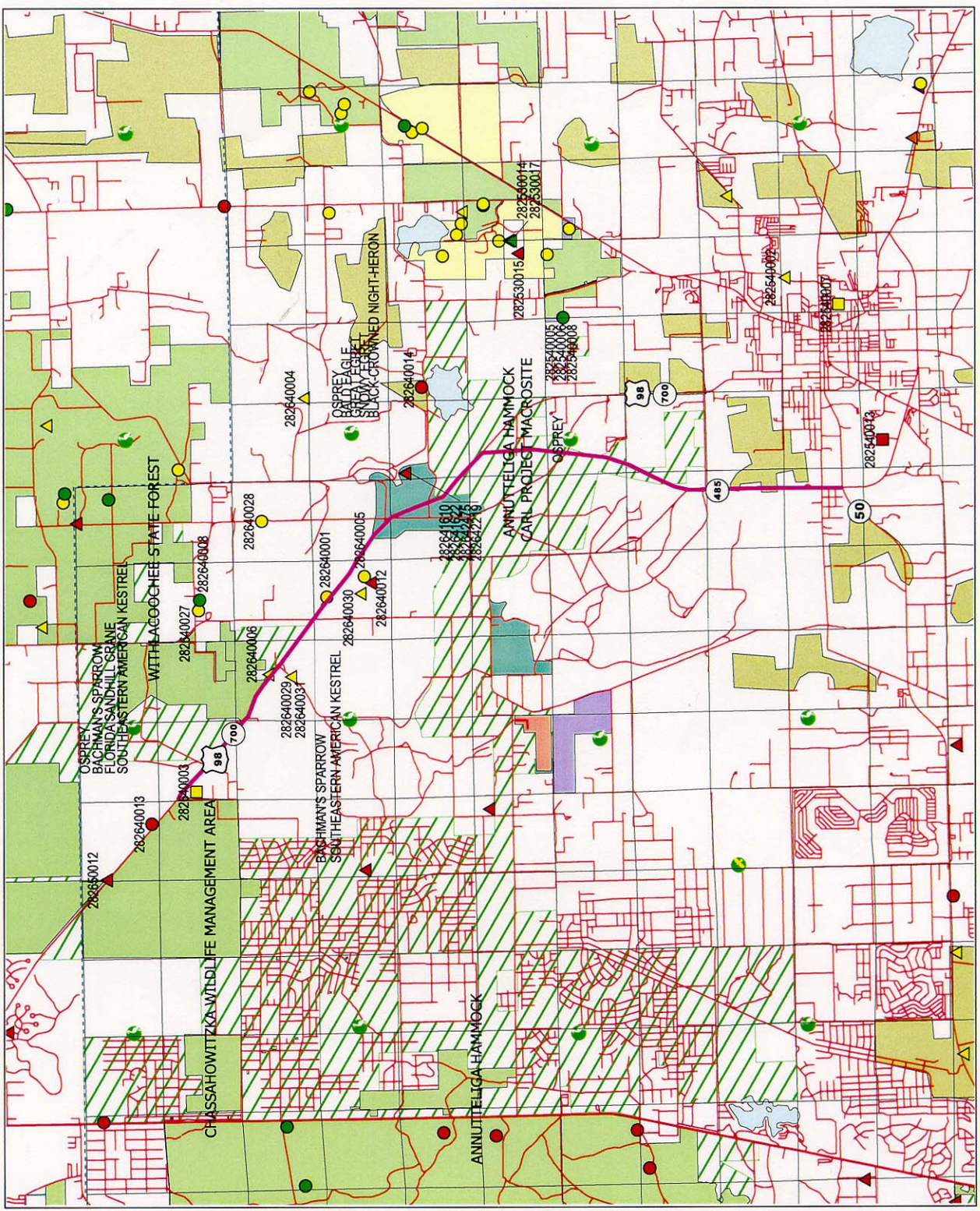
R = **(Reported)** Occurrence status derived from published reports.



Florida Natural Areas Inventory

1018 Thomasville Road, Suite 200-C
Tallahassee, FL 32303
(850) 224-8207

CR 485/SR50 to US 98 and US 98/CR 485 to North Suncoast Parkway Study, Hernando County



LEGEND

Element Occurrences:

Precision:
sec min gen

- Animals: Red triangle
- Plants: Yellow triangle
- Natural Communities: Green triangle
- Other: Orange triangle

- FL Game & Fresh Water Fish Breeding Bird Atlas Project: Green circle
- US Fish & Wildlife Service Scrub Jay Survey: Green circle

Managed Areas:

- Federal: Yellow
- State: Light green
- Local: Orange
- Private: Purple
- Aquatic Preserves: Blue hatched

Land Acquisition Projects:

- Water Management District: Light blue
- Save Our Rivers Projects: Green hatched
- Conservation and Recreation Lands (CARL) 2000 Projects: Green hatched

Non-managed Areas:

- Potential Natural Areas: Yellow
- Areas of Conservation Interest: Green

Other Features:

- Principal highways: Thick red line
- Secondary highways: Medium red line
- Local roads: Thin red line
- County boundaries: Dashed blue line
- Water: Light blue

Prepared by S. Krupenevich
26 October 2000
Data Source: FNAI 700

NOTE: Map should not be interpreted without accompanying documents.

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION



JAMES L. "JAMIE" ADAMS, JR.
Bushnell

BARBARA C. BARSH
Jacksonville

QUINTON L. HEDGEPEETH, DDS
Miami

H.A. "HERKY" HUFFMAN
Deltona

DAVID K. MEEHAN
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JULIE K. MORRIS
Sarasota

TONY MOSS
Miami

EDWIN P. ROBERTS, DC
Pensacola

JOHN D. ROOD
Jacksonville

J. N. L. EGBERT, Ph.D., Executive Director
G. J. HELLER, Assistant Executive Director

OFFICE OF ENVIRONMENTAL SERVICES
BRADLEY J. HARTMAN, DIRECTOR
(850)488-6661 TDD (850)488-9542
FAX (850)922-5679

October 31, 2000

Mr. Roger Menindes
Lochner Inc.
13577 Feather Sound Dr.
Suite 600
Clearwater, FL 33762

Dear Mr. Menindes:

Per your request enclosed are 8.5 x 11" hardcopy maps of Florida black bear potential habitat and road kills for Hernando County. If you have any questions or further requests, please contact me at (850) 488-6661 or kawular@fwc.state.fl.us.

Sincerely,

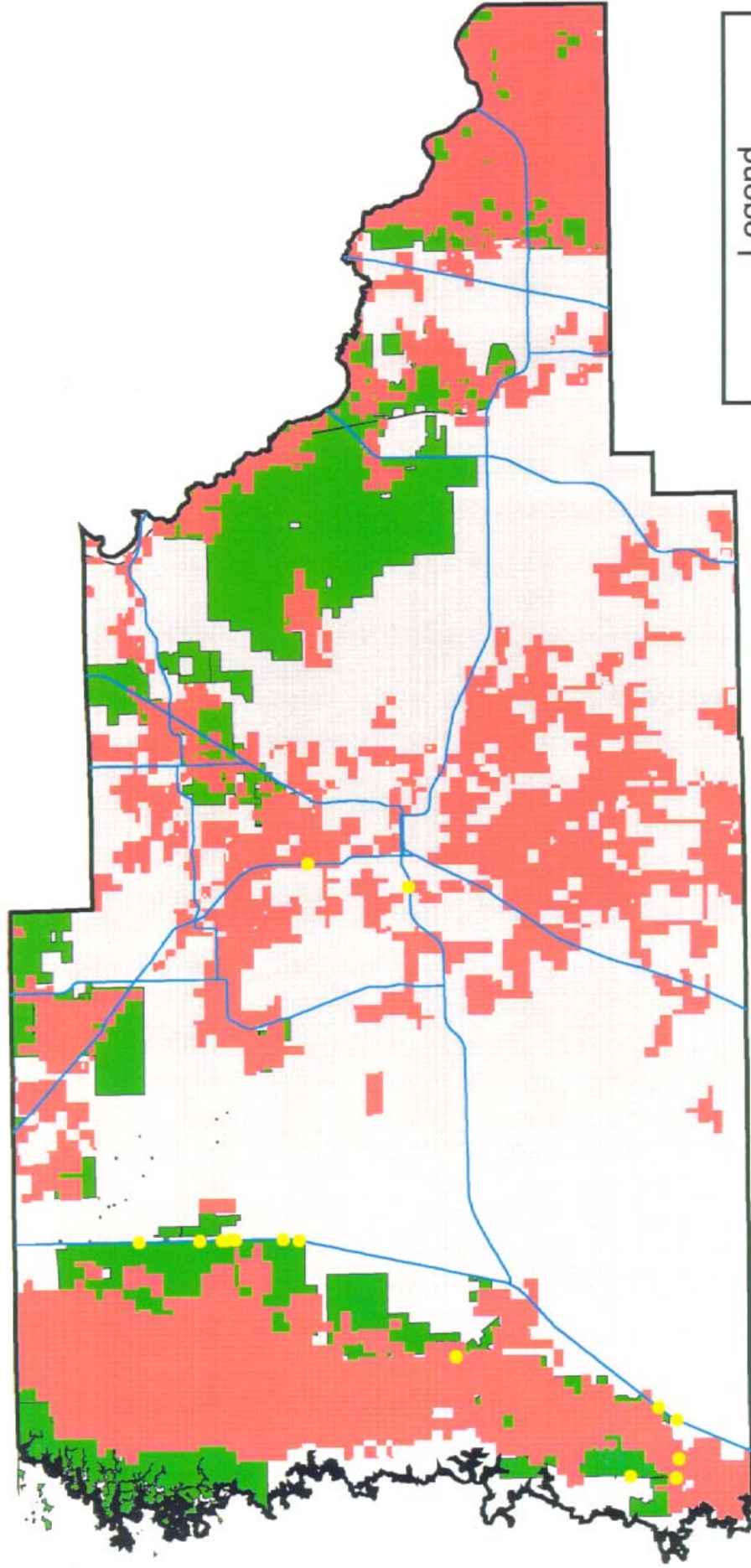
A handwritten signature in cursive script that reads "Robert J. Kawula".

Robert J. Kawula
Biological Scientist

RJK
ENV 8-7/8
rkawula/correspondence/menindes1.doc
Enclosures

Florida Black Bear - Potential Habitat and Road Kill Locations

Hernando County



Legend

- Black Bear Road Kill (Yellow dot)
- Potential Habitat (Red area)
- Public Lands (Green area)
- Major Roads (Blue line)





Florida Natural Areas Inventory

1018 Thomasville Road, Suite 200-C

Tallahassee, Florida 32303

(850) 224-8207 fax (850) 681-9364

www.fnai.org

August 27, 2001

David S. Petti
Environmental Scientist
H.W. Lochner, Inc.
13577 Feather Sound Drive, Suite 600
Clearwater, FL 33762

Dear Mr. Petti:

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: CR485 / US98
Date Received: January 1, 2001
Location: Hernando County

Based on the information available, this site appears to be located within a significant region of natural areas and habitat for several rare species. Extra consideration should be taken to avoid and/or mitigate impacts to these natural resources, and to design land uses that are compatible with these resources.

Element Occurrences

A search of our maps and database indicates that currently we have several Element Occurrences mapped within one mile of the study area (see enclosed map and table).

The Element Occurrences data layer includes occurrences of rare species and natural communities. The map legend indicates the precision of the element occurrence location, defined as second (within about 300 feet of the point), minute (within about one mile), or general (within about 5 miles). For animals and plants, Element Occurrences generally refer to more than a casual siting; they usually indicate a viable population of the species. Note that some element occurrences represent historically documented observations which may no longer be extant.

Several of the species and natural communities tracked by the Inventory are considered **data sensitive**. Occurrence records for these elements contain information which we consider sensitive due to collection pressures, extreme rarity, or at the request of the source of the information. The Element Occurrence Record has been labeled "Data Sensitive." We request that you not publish or release specific locational data about these species or communities without consent from the Inventory. If you have any questions concerning this please do not hesitate to call.

David S. Petti
August 27, 2001
Page 3

Potential Habitat is not a regulatory designation, and should not be confused with "critical habitat", which is an official designation made by the U.S. Fish and Wildlife Service. Information on critical habitats can be found in the Code of Federal Regulations, 50 CFR 17.95, which lists all critical habitats which have been designated. The Code of Federal Regulations can be accessed through the following website: "www.access.gpo.gov/nara/cfr/cfr-table-search.html".

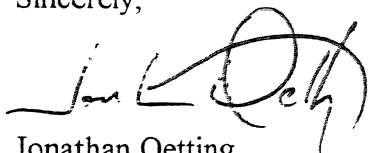
The Inventory always recommends that a site specific survey be conducted to determine the current presence or absence of rare, threatened, or endangered species. Surveys should be conducted by persons familiar with Florida's flora and fauna. For your convenience, a summary of the elements recorded for Hernando County is enclosed.

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. A copy of the invoice is enclosed for your information; the original will be mailed to your accounts payable department. If I can be of further assistance, please give me a call at (850) 224-8207.

Sincerely,

A handwritten signature in black ink, appearing to read "Jonathan Oetting", written over a horizontal line.

Jonathan Oetting
Information Coordinator

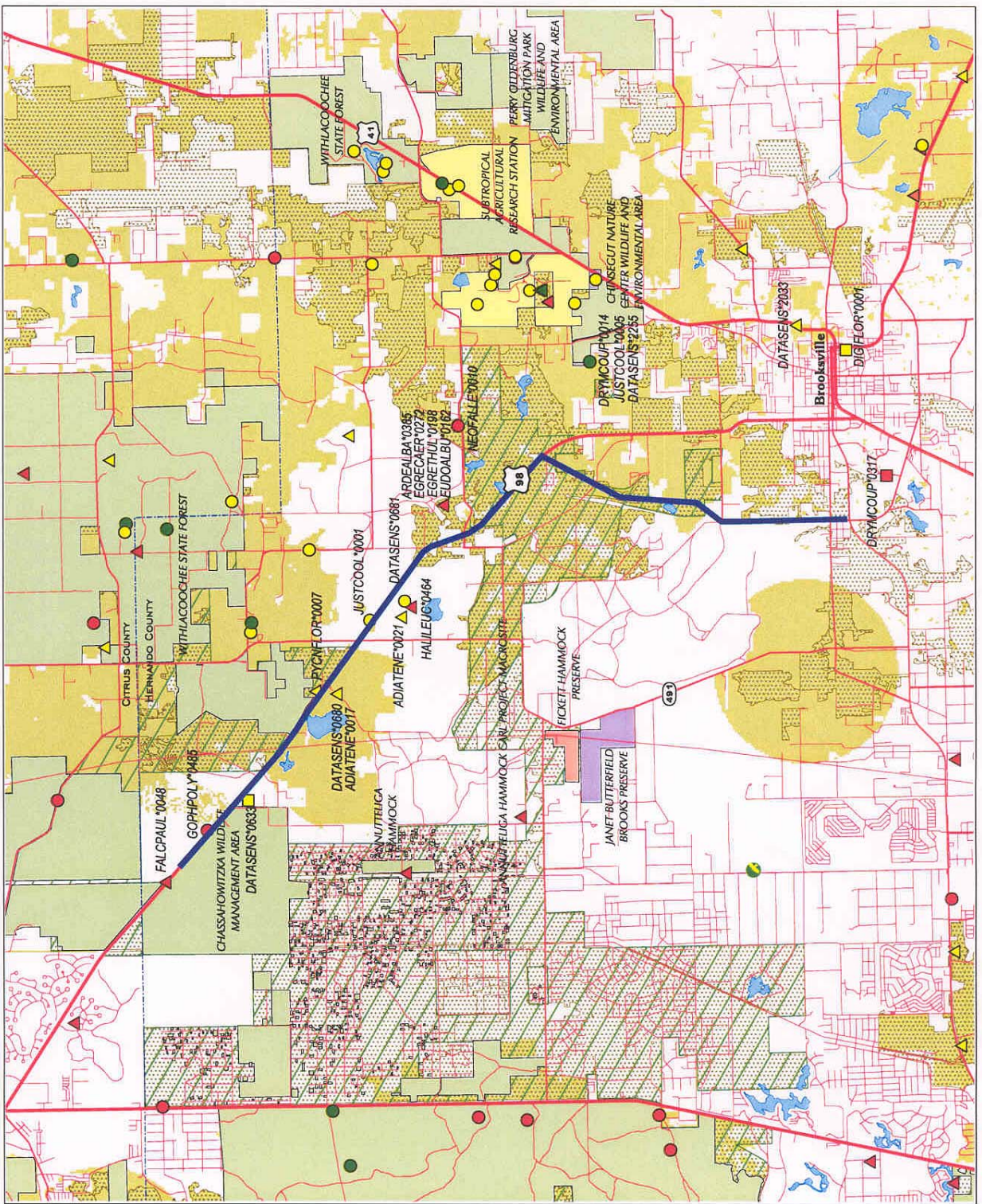
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Florida Natural Areas Inventory

1018 Thomasville Road, Suite 200-C
Tallahassee, FL 32303
(850) 224-8207

CR485 / US98, Hernando County



LEGEND

Element Occurrences:

Precision:
sec min gen

- Animals
- Plants
- Natural Communities
- Other

FL Game & Fresh Water Fish Breeding Bird Atlas Project

US Fish & Wildlife Service Scrub Jay Survey

Managed Areas:

- Federal
- State
- Local
- Private
- Aquatic Preserves

Land Acquisition Projects:

- Conservation and Recreation Lands (CARL) 2000 Projects
- Potential Natural Areas
- FNAI Potential Habitat for Rare Species

Non-managed Natural Areas:

- Principal highways
- Secondary highways
- Local roads
- County boundaries
- Water

Prepared by J. Oetting
27 August 2001
Data Source: FNAI 03/01

NOTE: Map should not be interpreted without accompanying documents.

Appendix B - Cooley's Water Willow Information



FLORIDA DEPARTMENT OF TRANSPORTATION
 DISTRICT 7 - SURVEY - G.P.S. UNIT
 PROTECTED PLANT LOCATION DATABASE
 SHEET 1 OF 2



RETRIEVAL DATE 01/02/02 09:02:57

STATE PLANE COORDINATES (FLORIDA WEST ZONE - NAD83 90 ADJUSTMENT)

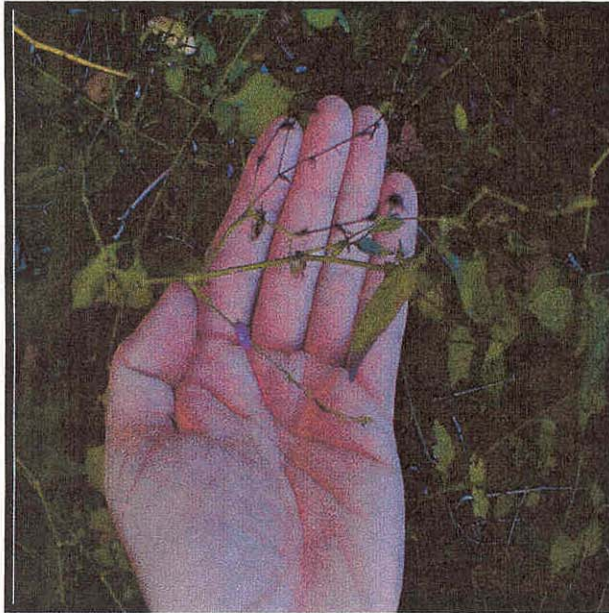
Species :	<i>Justicia cooleyi</i>
Fin. Proj. No.	4050172101
County	HERNANDO
State Road	N/A
County Road	CR 485
LATITUDE	28° 34' 51.92"
LONGITUDE	82° 25" 00.06"
Northing (y)	470,675.2 METERS
Easting (x)	159,146.4 METERS

Data Verified by:

Alex W. Parnes, PSM
 (DISTRICT 7 GPS COORDINATOR)

Todd Mecklenborg
 (DISTRICT 7 BIOLOGIST)

DIGITAL PHOTO TAKEN AT SITE



AERIAL LOCATION PHOTO (N.T.S)



To reach this location from :

the intersection of Yontz Road and Cobb Road in Hernando county proceed approximately 450 meters northeasterly on Cobb Road.

Details of Species:

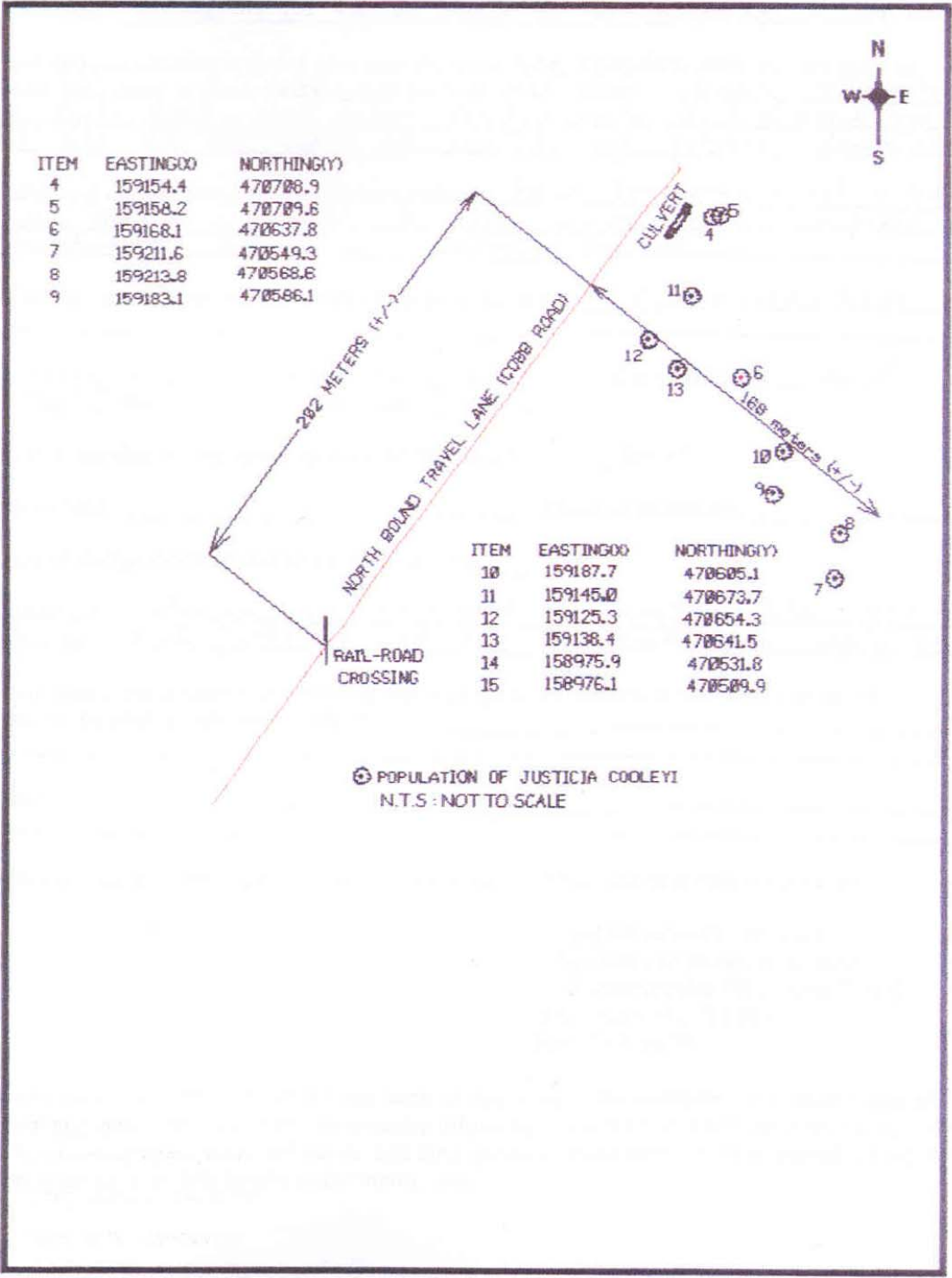
A population of *Justicia cooleyi* containing more than an estimated 2000 individual plants is found on the east side of the road covering an area approximately 5 acres.



FLORIDA DEPARTMENT OF TRANSPORTATION
 DISTRICT 7 - SURVEY - G.P.S. UNIT
 PROTECTED PLANT LOCATION DATABASE
 SHEET 2 OF 2



LATITUDE : 28° 34' 51.920" X (EASTING) : 470675.2 METERS
 LONGITUDE : 82° 25' 00.060" Y (NORTHING) : 159146.4 METERS



Area of Coverages of : *Justicia cooley*
 FIGURE 2

FLORIDA NATURAL AREAS INVENTORY

FIELD REPORT FORM - STATIONS FOR RARE PLANTS

Quad Name: Brooksville
 Code on Map: _____
 Source Code: _____

Investigator: Todd Mecklenburg
 Date Seen: 19 November 2001
 County: Hernando
 T-225 R-19E S-8 SE

Scientific Name: Justicia cooleyi Monachino + Leonard
 Common Name: Cooley's Water-willow
 Basis for Identification: Guide to the Vascular Plants of Central Florida - R.P. Wunderlin

Location of Plant (please attach map and give specific directions; if possible, mark site on copy of USGS 7.5 minute topo map or draw detailed map on back of this page): roughly 450 meters (1476') north of Yantz Road, 202 meters (662') north of railroad tracks on the east side of the road at the drainage culvert (maps attached)

Describe habitat/plant community, list dominant species: Mesic, deciduous forest - Liquidambar styraciflua, Quercus laurifolia, Q. nigra, Ulmus alata, Juniperus virginiana, Prunus serotina, Smilax sp., Paederia foetida

Estimated Size of Population (no. of individuals & area occupied): < 2000 individuals, ~ 5 acres

Flowering? Yes No In leaf? Yes No Dormant? Yes No
 Fruiting? Yes No In bud? Yes No

Have you seen this species at the same location in the past? Yes No

If yes, please give date: _____ Previous condition: _____

Is there evidence of disturbance at the site? Yes No

If yes, please describe: clearing activities prior to 'discovery' date, more clearing observed on site (12/3/01) and some land/earth work again on (12/18/01)

Comments (other useful information concerning the ecological conditions at the site; names of individuals might be helpful, publications, etc.): _____

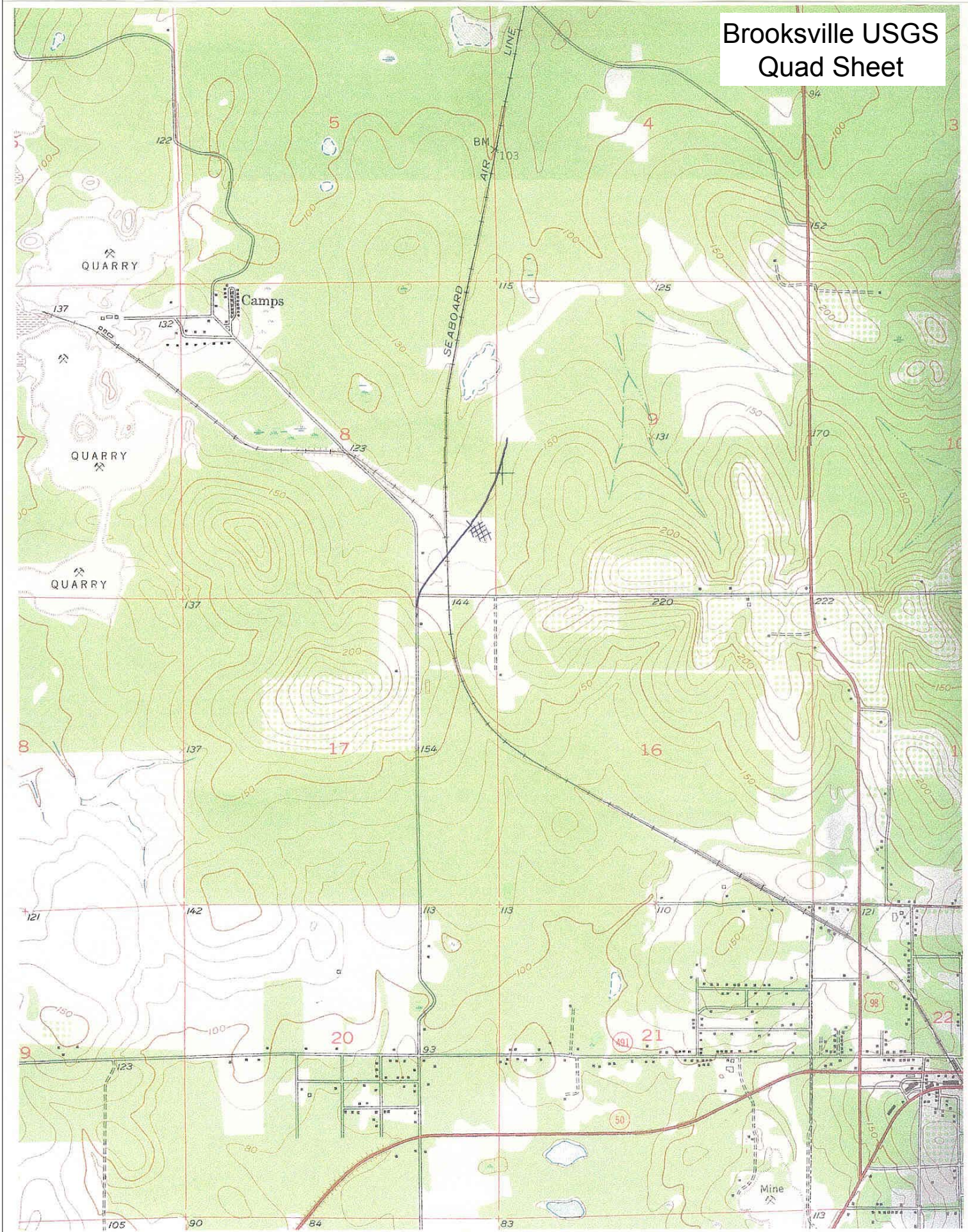
Conservation need: _____

Additional forms may be obtained upon request. Please send completed field report forms to:

Richard Hilsenbeck, Botanist
 Florida Natural Areas Inventory
 1018 Thomasville Rd., Suite 200-C
 Tallahassee, FL 32303
 (904) 224-8207

Please include any additional information on the back of this sheet. For example: the percentage of seedlings, mature and senescent species; community information such as land use history, aspect, i.e., open understory, shrub thicket, exposed sands and pine canopy, grass cover with scattered pines; were specimen taken?; do other members of this genus occur here?; etc.

Brooksville USGS Quad Sheet





Aerial Photograph of Cobb Road and Yontz Road Intersection
Justicia Cooleyi Site is in NE Quadrant of Intersection



Drainage ditch adjacent to Justicia Cooleyi habitat



Justicia Cooleyi Habitat in Background Adjacent to Drainage Ditch



Close-up of Justicia Cooleyi

Appendix C – Eastern Indigo Snake Standard Protection Procedures

Eastern Indigo Snake Standard Protection Procedures

The Eastern indigo snake is a threatened species that occurs throughout peninsular Florida. This species is actually characteristic of moist habitats, but inhabits sandy xeric habitats in conjunction with gopher tortoises (*Gopherus polyphemus*). In the drier habitats, the Eastern indigo snake will occupy gopher tortoise burrows. The preferred habitats include pine flatwoods, xeric oak stands, palmetto scrub, and tropical hammocks.

No Eastern indigo snakes were observed within the study area during any of the field surveys. The prevalence of potential habitat within the corridor could potentially involve the Eastern indigo snake. However, to minimize any impacts to any individual Eastern indigo snakes during construction, the following special provision will be included in the construction contract to advise the contractor of the potential presence of this species and its protected status:

- If an Eastern indigo snake is sighted during construction, the contractor will be required to cease all operation(s) which might cause harm to the snake.
- If the snake does not move away from the construction area, a state or federal biologist will be contacted to capture and relocate the snake to suitable habitat either adjacent to the project area or off-site to an acceptable donor site.
- If an Eastern indigo snake is killed or found dead within the construction area, the snake should be frozen and the USFWS Jacksonville Field Office [(904) 232-2580] via the FDOT PD&E Department will be notified immediately at (813) 975-6457.
- In addition, educational signs with pictures shall be posted throughout the project prior to initiation of construction.

Due to the condition of the surrounding area, the abundance of habitat in the project area, and the special provisions to protect transient individuals encountered during construction, the planned project is not anticipated to affect the Eastern indigo snake.

Appendix D – FLUCFCS Mapping

FLUCFCS

End Project

98

589

485

98

Begin Project

50

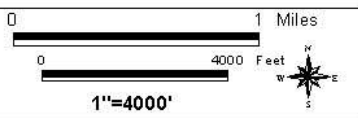
Legend

Baseline

Right of Way

FLUCFCS

- 110-130 Residential
- 140 Commercial and Services
- 150 Industrial
- 160 Mining
- 170 Institutional
- 180 Recreational
- 190 Open Land
- 200 Agriculture
- 300 Rangeland
- 400 Upland Forests
- 500 Water
- 600 Wetlands
- 700 Barren Land
- 800 Transportation



Source: South Florida Water Management District
Florida Geographic Data Library
H.W. Lochner