



WILDLIFE & HABITAT IMPACT
EVALUATION REPORT
FOR
STATE ROAD 45 (US 41) EXPANSION

Submitted by:

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TABLE OF CONTENTS

LIST OF TABLES	ii
LIST OF FIGURES	iii
I. INTRODUCTION	1
II. DETERMINATION OF POTENTIAL SPECIES INVOLVEMENT	1
III. HABITAT SURVEY	3
A. Methods	3
B. Results	4
V. IMPACT EVALUATION	13
VI. CONCLUSION	21
APPENDIX A	23
APPENDIX B	24

LIST OF FIGURES

Figure 1. Project Location Map	2
Figure 2. Habitat Description Location Map	5
Figure 3. FLUCFCS Map - Potential RCW Critical Habitat	11

I. INTRODUCTION

The Florida Department of Transportation (FDOT), District 5, is proposing to improve S.R. 45 (U.S. 41) in Citrus County from Inverness in the south, to Dunnellon in the north (Figure 1). This expansion will be from the present two-lane roadway, to a proposed four-lane roadway. The construction will expand the roadway 24 feet eastward along approximately 17 miles of the roadway. The proposed improvements will follow the existing alignment, with additional land being purchased to provide a total of 100 feet of right-of-way in urban areas, and 200 feet of right-of-way in rural areas.

To comply with the interagency coordination requirements of the Endangered Species Act of 1973 (ESA), 50 CFR, Section 7, the FDOT must determine what impact, if any, the construction activity might or will have on any plant and animal species that are listed by the U.S. Fish & Wildlife Service (USFWS) as Endangered or Threatened species. To fulfill this obligation, Environmental Management Systems, Inc. (EMS) has conducted a habitat survey along the proposed construction route to find out if any listed species or their "critical habitat" are present. If any adverse impacts are determined likely to occur, then a Biological Assessment will need to be conducted for a formal consultation under Section 7 of the ESA. Additionally, observations were made of any state listed species that occur on the project. During the permitting phase of the project, coordination with appropriate state agencies will be required to obtain necessary permits.

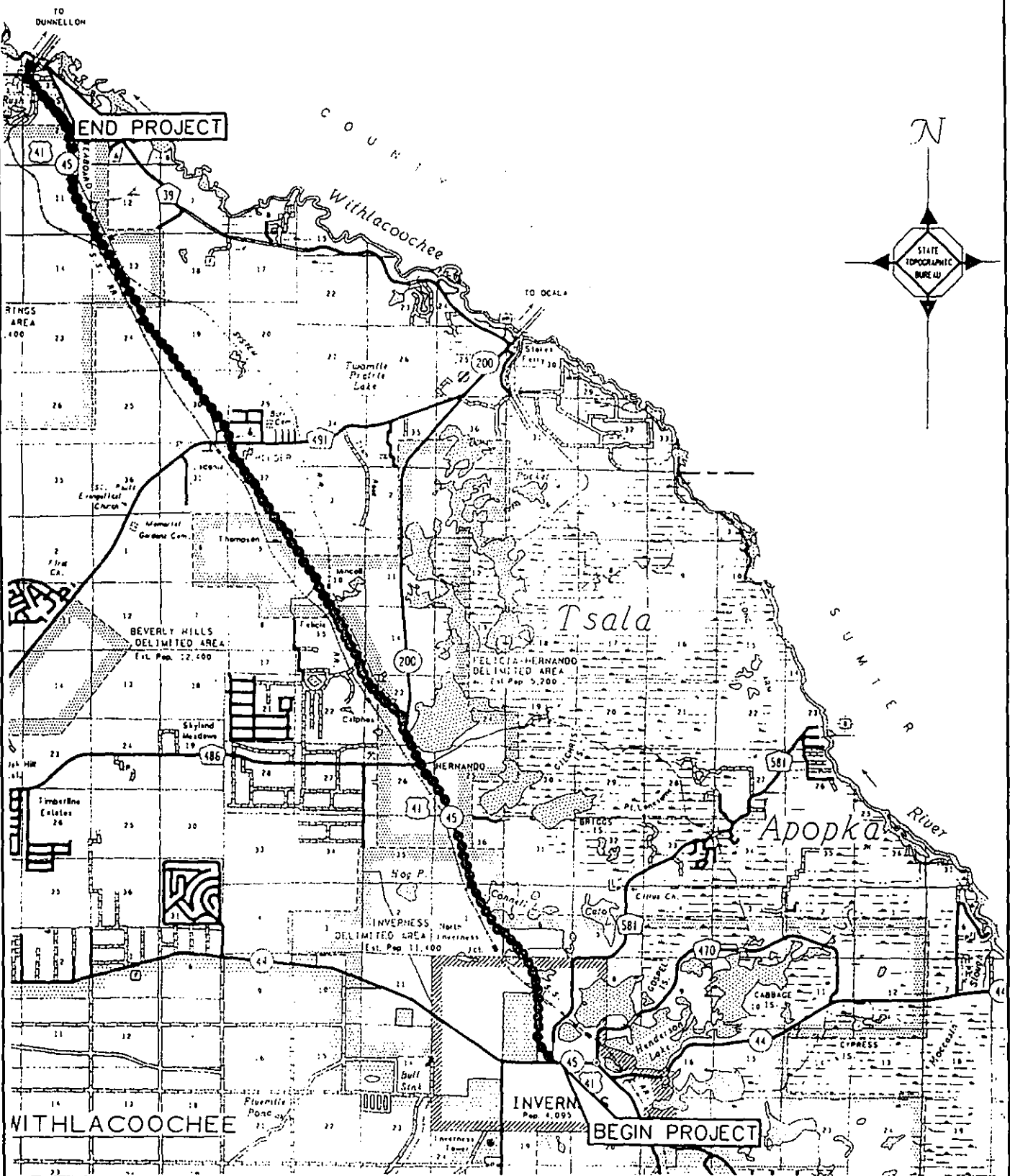
II. DETERMINATION OF POTENTIAL SPECIES INVOLVEMENT

Prior to the initiation of field work, a background literature search was conducted to determine the legally protected species that have the potential to occur in Citrus County. Plant and animal species lists were compiled by using computer databases maintained by both the FDOT and EMS, which contain species occurrence by county and habitat type. These databases were developed by consulting the most current observation and distribution records maintained by the Florida Natural Areas Inventory (FNAI), and by reviewing current scientific literature. A partial bibliography of sources used during the development of the EMS database is included in Appendix A.

Additional distribution and habitat information was obtained from the Florida Committee on Rare and Endangered Plants and Animals (FCREPA) publications, FNAI database searches for Citrus

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LOCATION MAP

S.R. 45-CITRUS COUNTY

FIGURE

1

DATE: 08-02-93

FILE NAME: 58002110

County, the Florida Game and Fresh Water Fish Commission (FGFWFC), the USFWS, Florida Audubon Society and through conversations with the staff of Whispering Pines City Park and the Division of Forestry. Appendix B contains copies of correspondence with these organizations.

III. HABITAT SURVEY

A. Methods

An EMS biologist visited the project site on 26 May, 1 and 2 June 1993, to conduct a survey of all natural habitat within the study area. This survey consisted of pedestrian transects meandered through representative natural areas within the construction zone of the S.R. 45 expansion. The survey was extended to 250 feet off the present roadway in the areas with natural habitat, and approximately 25 feet off the present roadway within the commercial and residential areas. The study area was primarily along the eastern edge of the present roadway, as the expansion will be to the east for most of the project. This is due to the presence of a Department of Natural Resources "Rails to Trails" project paralleling the road along its western edge. The majority of the natural habitat examined along the west side of the road was in the northernmost and southernmost areas of the project. The railway deviates from the roadway in the north, and a city park, Whispering Pines, is located to the south near Inverness.

All plant associations were recorded by dominant species for each vegetative stratum, and a complete species list of all observed plants was compiled. Observations were made along each transect for any listed plant species that have the potential to occur within the project boundaries. The habitats were also evaluated for their degree of disturbance as a measure of the potential for listed species occurrences. Habitat maps using the Florida Land Use, Cover and Forms Classification System (FLUCFCS) were developed for any listed wildlife species.

The occurrence of wildlife species was documented through direct visual observation of individual animals, hearing the species' vocalizations, or through observations of distinctive sign, such as tracks, scat, burrows, nests or food remains. A complete species list of all observed wildlife species was compiled. No attempts were made to estimate population sizes of any observed species although surveys were conducted of any identified potential habitat. The present survey was conducted solely to determine the potential of listed species usage based upon the on-site habitat conditions.

B. Results

The area of Citrus County encompassed by this habitat study was historically pine flatwoods and mixed pine and hardwood forests. Primary species that composed the dominant vegetation of these communities were longleaf pine (*Pinus palustris*), slash pine (*P. elliottii*), turkey oak (*Quercus laevis*) and live oaks (*Q. virginiana* and *Q. geminata*). Over the years, most of the longleaf pine was logged leaving areas dominated by oaks and other hardwoods. Slash pine colonized many former longleaf areas, so that presently, only scattered patches of longleaf pine remain. Very little natural, open land remains around the current roadway. Most prairies and savannas have been converted for pastoral and agricultural purposes, and much of the forest has been cleared for residential and commercial development.

The project begins in Inverness in the south and ends at the bridge that crosses the Withlacoochee River just south of Dunnellon in Marion County for a total of approximately 17 miles. The highway passes through various centers of commercial and residential development including Hernando, Felicia, Holder and Citrus Springs. Natural, undisturbed habitat is uncommon along the roadway corridor. The best remaining habitat occurs within Whispering Pines Park in the south, and about halfway between Inverness and Hernando, around Connel Lake.

No listed plant or wildlife species were observed during this survey, however, habitat conditions indicate the potential for several species to occur as described on this section. The only habitat identified on this project for a critically endangered species was a stand of mature longleaf pines just off the northwest shore of Connel Lake. This area seems to be potentially suitable nesting habitat for red-cockaded woodpeckers (*Picoides borealis*), although no cavity trees were observed. See below for a complete description of the area, which is designated as Area E.

Figure 2 shows the entire roadway with all areas of natural habitat indicated by letters that correspond with the following habitat descriptions. These descriptions identify the plant communities dominating the areas as marked, with any unusual features or observations described. Any listed wildlife species observed are presented in the appropriate section, and lists of all plant and wildlife species observed throughout the study are presented in Tables 1 and 2, respectively.

Area A

This area encompasses portions of Whispering Pines Park, which is leased from the Division of Forestry's Withlacoochee State Forest. This portion of the park is kept in a natural state, with unpaved walking trails cut through it. The portion of the park that is near the road is

Table 1. List of Wildlife Species Observed on The S.R. 45 Project Site, Citrus County, Florida.

<u>Species Name</u>	<u>Common Name</u>
<i>Hyla cinerea</i>	Green treefrog
<i>Anolis carolinensis</i>	Green anole
<i>Cnemidophorus s. sexlineatus</i>	Six-lined racerunner
<i>Gopherus polyphemus</i> *	Gopher tortoise
<i>Sceloporus u. undulatus</i>	Southern fence lizard
<i>Scincella lateralis</i>	Ground skink
<i>Cardinalis cardinalis</i>	Northern cardinal
<i>Cathartes aura</i>	Turkey vulture
<i>Chaetura pelagica</i>	Chimney swift
<i>Chordeiles minor</i>	Common nighthawk
<i>Colaptes auratus</i>	Northern flicker
<i>Colinus virginianus</i>	Northern bobwhite
<i>Corvus brachyrhynchos</i>	Common crow
<i>Corvus ossifragus</i>	Fish crow
<i>Cyanocitta cristata</i>	Bluejay
<i>Dryocopus pileatus</i>	Pileated woodpecker
<i>Lanius ludovicianus</i>	Loggerhead shrike
<i>Melanerpes carolinus</i>	Red-bellied woodpecker
<i>Mimus polyglottos</i>	Northern mockingbird
<i>Myiarchus crinitus</i>	Great-crowned flycatcher
<i>Parula americana</i>	Northern parula
<i>Parus bicolor</i>	Tufted titmouse
<i>Parus carolinus</i>	Carolina chickadee
<i>Picoides pubescens</i>	Downy woodpecker
<i>Pipilo erythrophthalmus</i>	Rufous-sided towhee
<i>Piranga rubra</i>	Summer tanager
<i>Stelgidopteryx serripennis</i>	Northern rough-winged swallow
<i>Sturnella magna</i>	Eastern meadowlark
<i>Thryothorus ludovicianus</i>	Carolina wren
<i>Toxostoma rufum</i>	Brown thrasher
<i>Vireo griseus</i>	White-eyed vireo
<i>Vireo solitarius</i>	Solitary vireo
<i>Zenaidura macroura</i>	Mourning dove
<i>Procyon lotor</i>	Raccoon
<i>Sciurus carolinensis</i>	Gray squirrel
<i>Sylvilagus floridanus</i>	Eastern cottontail

* Listed as a Species of Special Concern by the FGFWFC.

Table 2. List of Plant Species Observed During the S.R. 45 Habitat Survey, Citrus County, Florida.

<u>Species Name</u>	<u>Common Name</u>
<i>Ambrosia artemisiifolia</i>	Common ragweed
<i>Andropogon virginicus</i>	Broomsedge
<i>Aristida stricta</i>	Wiregrass
<i>Asclepias humistrata</i>	Milkweed
<i>Asclepias tuberosa</i>	Butterflyweed
<i>Baccharis halimifolia</i>	Groundsel tree
<i>Berlandiera subacaulis</i>	Greeneyes
<i>Callicarpa americana</i>	Beautybush
<i>Cenchrus sp.</i>	Sandspur
<i>Chamaecrista fasciculata</i>	Partidge pea
<i>Chrysopsis subulata</i>	Goldenaster
<i>Cladonia spp.</i>	Deer moss
<i>Cnidoscolus stimulosus</i>	Tread-softly
<i>Crotalaria lanceolata</i>	Rattlebox
<i>Croton argyranthemus</i>	Silver croton
<i>Dioscorea bulbifera</i>	Air potato
<i>Erigeron strigosus</i>	Daisy fleabane
<i>Erythrina herbacea</i>	Coral bean
<i>Eupatorium capillifolium</i>	Dog fennel
<i>Euthamia minor</i>	Fragrant goldenrod
<i>Galium tinctorium</i>	Bedstraw
<i>Gelsemium sempervirens</i>	Wild jessamine
<i>Imperata cylindrica</i>	Cogon grass
<i>Indigofera hirsuta</i>	Hairy indigo
<i>Lepidium virginicum</i>	Poor-man's pepper
<i>Licania michauxii</i>	Gopher apple
<i>Lolium perenne</i>	Ryegrass
<i>Lygodesmia aphylla</i>	Roserush
<i>Magnolia grandiflora</i>	Southern magnolia
<i>Melilotus alba</i>	White sweet clover
<i>Mikania scandens</i>	Climbing hempvine
<i>Monarda punctata</i>	Horsemint
<i>Myrica cerifera</i>	Wax myrtle
<i>Opuntia humifusa</i>	Prickly pear

Table 2. Continued.

<i>Panicum sp.</i>	Panic grass
<i>Parthenocissus quinquefolia</i>	Virginia creeper
<i>Passiflora incarnata</i>	Passion flower
<i>Penstemon australis</i>	Beardtongue
<i>Phlox drummondii</i>	Annual garden phlox
<i>Pinus elliotii</i>	Slash pine
<i>Pinus palustris</i>	Longleaf pine
<i>Prunus serotina</i>	Black cherry
<i>Pteridium aquilinum</i>	Bracken fern
<i>Pterocaulon virgatum</i>	Blackroot
<i>Pyrhoppa ppus carolinianus</i>	False dandelion
<i>Quercus geminata</i>	Sand live oak
<i>Quercus laevis</i>	Turkey oak
<i>Quercus laurifolia</i>	Laurel oak
<i>Quercus nigra</i>	Water oak
<i>Quercus stellata</i>	Post oak
<i>Quercus virginiana</i>	Live oak
<i>Rhus copallina</i>	Winged sumac
<i>Rubus cuneifolius</i>	Blackberry
<i>Sabal palmetto</i>	Cabbage palm
<i>Schrankia microphylla</i>	Sensitive briar
<i>Scleria sp.</i>	Nutrush
<i>Smilax bona-nox</i>	Catbriar
<i>Smilax sp.</i>	Catbriar
<i>Stillingia sylvatica</i>	Queen's-delight
<i>Tillandsia usneoides</i>	Spanish moss
<i>Urena lobata</i>	Cesarweed
<i>Vaccinium sp.</i>	Blueberry
<i>Verbascum virgatum</i>	Mullien
<i>Vitis rotundifolia</i>	Muscadine grape
<i>Yucca filamentosa</i>	Adam's needle

completely forested, with the exception of one small hill, which is open and contains an abandoned picnic pavilion.

The dominant canopy species in this part of the park are longleaf pine, slash pine and live oak. Additional canopy species include some sand live oak (*Quercus geminata*), post oak (*Q. stellata*) and black cherry (*Prunus serotina*) which is growing near the roadway. Subcanopy and shrub species include live oak, turkey oak, winged sumac (*Rhus copallina*), wax myrtle (*Myrica cerifera*), cabbage palm (*Sabal palmetto*), blackberry (*Rubus* sp.) and coral bean (*Erythrina herbacea*). Dominant groundcover species include wiregrass (*Aristida stricta*), gopher apple (*Licania michauxii*), prickly pear cactus (*Opuntia humifusa*), tread-softly (*Cnidioscolus stimulosus*), bracken fern (*Pteridium aquilinum*) and Virginia creeper (*Parthenocissus quinquefolia*). Additional groundcover species observed include catbriar (*Smilax bona-nox*), wild jessamine (*Gelsemium sempervirens*), an unidentified *Panicum* species, blackroot (*Pterocaulon virgatum*), silver croton (*Croton argyranthemus*) and a blueberry (*Vaccinium* sp.).

Several active and inactive gopher tortoise (*Gopherus polyphemus*) burrows were observed within the park, as was an individual tortoise. A 1964 record from the FNAI reported a Florida spiny-pod (*Matelea floridana*) growing within the park. This species was not observed during this study. John Blanchard from the Division of Forestry also searched for this species without locating it (see Appendix B). The apparent absence of this species is probably due to the elimination of periodic burning of the park vegetation.

Area B

This area is also part of the Withlacoochee State Forest, just north of Whispering Pines Park. It is composed primarily of very dense, young slash pine, with some occasional black cherry and cabbage palm growing near the roadway. Also growing in the area is laurel oak (*Quercus laurifolia*), wax myrtle, dense muscadine grape (*Vitis rotundifolia*), Virginia creeper, *Vaccinium* sp., catbriar, tread-softly, winged sumac, live oak seedlings and sweet bay (*Magnolia virginiana*) seedlings.

Area C

Across the highway, on the east side, the canopy is more open. There is no pine in this area, and it is dominated by live oak, sand live oak, cabbage palm and black cherry. Other plant species include groundsel tree (*Baccharis halimifolia*), muscadine, catbriar (*Smilax* sp.), beauty berry (*Callicarpa americana*), Virginia creeper, tread-softly, dog fennel (*Eupatorium capillifolium*), blackberry and broomsedge (*Andropogon virginicus*).

Area D

The dominant canopy vegetation in this area is composed of very large live oaks draped with Spanish moss (*Tillandsia usneoides*). The ground elevation is fairly low southwest of Connel lake, but as it begins to rise north and east of this region, slash pine begins to appear in greater densities. There are scattered cabbage palms growing throughout the live oaks, and the subcanopy and shrub stratum is dominated by blackberry, winged sumac and beauty berry. Groundcover species include ragweed (*Ambrosia artemisiifolia*), Virginia creeper, broomsedge, passion flower (*Passiflora incarnata*), and catbriar. Small, open areas within the oaks are vegetated with nutrush (*Scleria* sp.) and tread-softly.

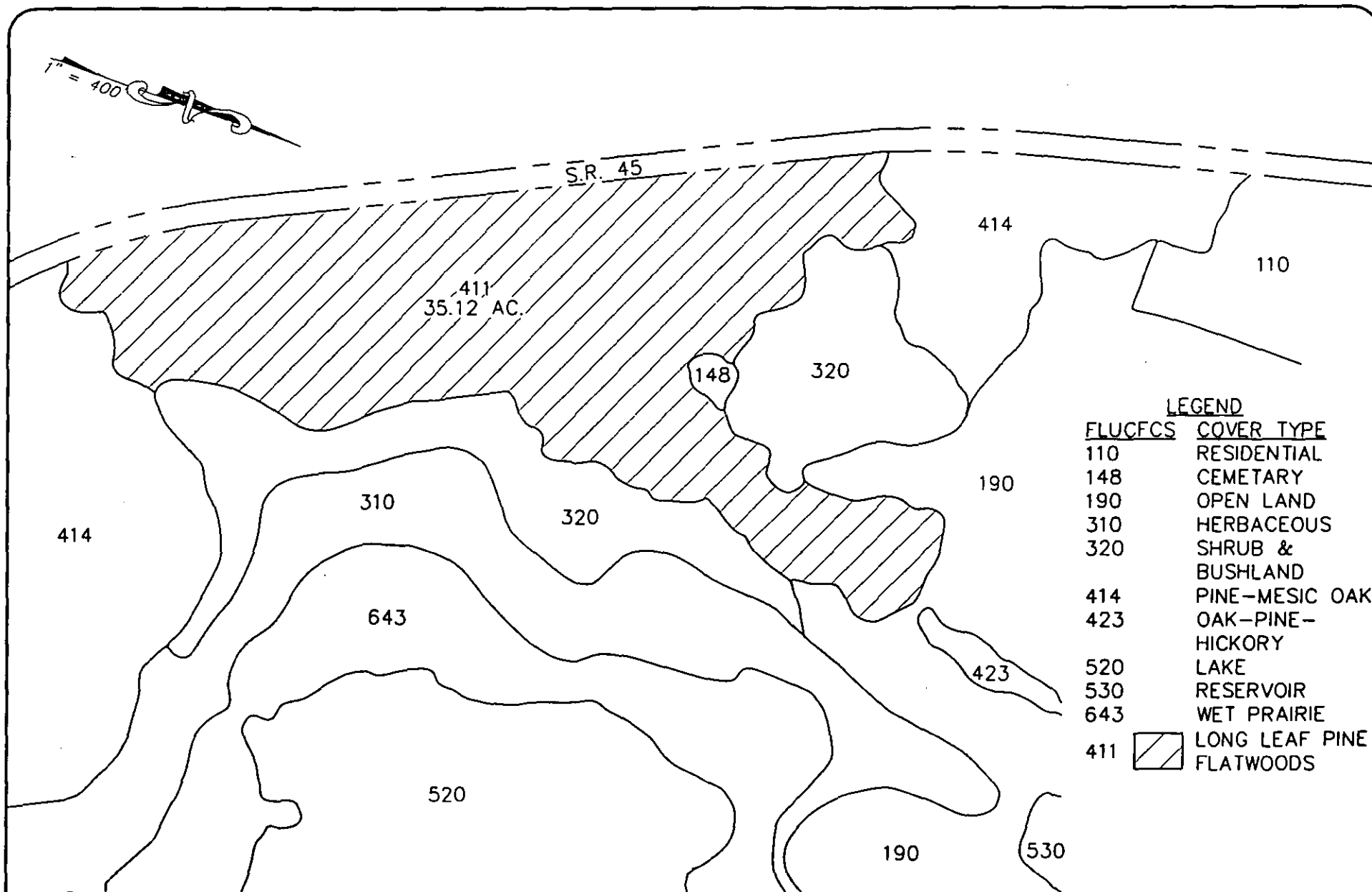
Area E

Just to the north of Area D, and west/northwest of Connel Lake, is a stand that contains several mature longleaf pines. The canopy is very open, with a sparse subcanopy of live oak and winged sumac. Open areas between the trees are covered with blackberry, broomsedge, Virginia creeper, white sweet clover (*Melilotus alba*), fragrant goldenrod (*Euthamia minor*), rattlebox (*Crotalaria lanceolata*), hairy indigo (*Indigofera hirsuta*), horsemint (*Monarda punctata*), ragweed and poor-man's pepper (*Lepidium virginicum*). There is a small, family cemetery, the Van Ness cemetery, located on the eastern fringe of the longleaf pines. This cemetery is approximately 400 feet from the roadway, so it should not be disturbed by road expansion.

This longleaf pine area has the potential for supporting a colony of red-cockaded woodpeckers. The pines are mature, some with flat tops that may suggest the presence of red-heart disease, which is necessary for the woodpeckers to construct cavities. The area of longleaf pine comprises approximately 35 acres, and it is bordered to the south by a stand of mixed live oak and slash pines which could provide foraging area if any woodpeckers are present. A typical RCW clan requires approximately 100 acres of suitable foraging habitat, which is scattered to the south and east of this site. Figure 3 presents a FLUCFCS map of the area immediately surrounding the longleaf pines. No birds or cavities were observed during this cursory evaluation.

Areas F and G

These are two very similar hardwood areas dominated by live oak and laurel oak, with a subcanopy of winged sumac and an occasional turkey oak. Groundcover species include Virginia creeper, catbriar, muscadine, beauty berry, wax myrtle, ryegrass (*Lolium perrene*), tread-softly, sensitive briar (*Schrankia microphylla*), gopher apple, partridge pea (*Chamaecrista*



LEGEND

FLUCFCS	COVER TYPE
110	RESIDENTIAL
148	CEMETARY
190	OPEN LAND
310	HERBACEOUS
320	SHRUB & BUSHLAND
414	PINE-MESIC OAK
423	OAK-PINE-HICKORY
520	LAKE
530	RESERVOIR
643	WET PRAIRIE
411	LONG LEAF PINE FLATWOODS



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POTENTIAL RCW HABITAT S.R. 45-CITRUS COUNTY

FILE NAME: 58001110

DATE: 08-02-93

SCALE: 1"=400'

FIGURE

3

fasciculata), butterfly weed (*Asclepias humistrata*) and ceasar weed (*Urena lobata*). Area G extends about one mile north of the area indicated on Figure 2. Gopher tortoise burrows were observed on the road shoulder in this area.

Area H

This area covers both sides of the roadway for a distance of about one mile, where the vegetation is a homogeneous mixture of mesic species. The dominant plant species are mixed slash pine and live oak, with some wax myrtle and winged sumac in the subcanopy. Groundcover consists of thick muscadine, air potato (*Dioscorea bulbifera*), catbriar, bracken fern and Virginia creeper. Thick Spanish moss is growing in several patches of trees.

Area I

This community is very similar to that described in Area H, except that it is more xeric than the previous area. It is a mixed forest of slash pine and turkey oak, with occasional sand live oak and wax myrtle as well. The groundcover is of tread-softly, greeneyes (*Berlandiera subacaulis*), white sweet clover, broomsedge, blackberry (*Rubus cuneifolius*) and milkweed (*Asclepias tuberosa*). This area is drier than most of the project site, and represents suitable fox squirrel (*Sciurus niger shermani*) habitat, though none were observed.

Area J

The canopy of this area is predominantly slash pine and occasional cabbage palm, with a subcanopy of sand live oak, slash pine, turkey oak and wax myrtle. The groundcover is composed of catbriar, broomsedge, tread-softly, deer moss (*Cladonia* sp.), climbing hempvine (*Mikania scandens*), roserush (*Lygodesmia aphylla*), queen's delight (*Stillingia sylvatica*), wiregrass and an unidentified *Panicum*. Blackberry is growing very thickly throughout.

Area K

Another xeric area, on the east and west sides of the roadway, area K is dominated by sand live oak, turkey oak and slash pine. Also scattered throughout are some longleaf pine and black cherry. Blackberry is thick in this area. Groundcover species include prickly pear, dog fennel, broomsedge, bracken fern, deer moss, tread-softly, beard tongue (*Penstemon australis*), blackroot, gopher apple and green eyes. The FNAI has a record from 1976 of a Florida pine snake (*Pituophis melanoleucus mugitus*) from this area. No observations of this species were made during this evaluation, but the habitat in this area is suitable for this snake. An active tortoise burrow was observed in this area.

Area L

The final natural area of this project, just south of the Withlacoochee bridge on the west side of the roadway, is a mesic hardwood stand dominated by laurel oak. There are a few slash pine and live oak in both the canopy and subcanopy, and several pine snags as well. The subcanopy also contains winged sumac and beauty berry. The groundcover is of Virginia creeper, muscadine, catbriar, nutrush, gopher apple and bedstraw (*Galium tinctorium*).

Pastures and Open Fields

Several areas on Figure 2 are labeled as pastures and open fields. These are vegetated by a variety of herbaceous plants including the following species: white sweet clover, prickly pear, broomsedge, fragrant goldenrod, blackberry, milkweed, annual garden phlox (*Phlox drummondii*), gopher apple, daisy fleabane (*Erigeron strigosus*), mullien (*Verbascum virgatum*), tread-softly, blackroot, goldenaster (*Chrysopsis subulata*), sandspur (*Cenchrus* sp.), butterfly weed, Adam's needle (*Yucca filamentosa*) and false dandelion (*Pyrrophappus carolinianus*). Scattered canopy-size trees occur, mainly from the following species: live oak, slash pine, sand live oak, water oak, southern magnolia (*Magnolia grandiflora*), turkey oak and black cherry.

These open areas would be considered Type I or Type II kestrel habitat by the FGFWFC. Type I habitat must have < 10% canopy cover, and ≥ 60% herbaceous groundcover less than 25 cm in height. Type II is similar, but with > 10% and < 25% canopy cover. All of the open areas observed on this project site, however, are lacking enough suitable perch and nest sites for the kestrels, so these areas are not considered "critical habitat" for this species.

V. IMPACT EVALUATION

Table 3 presents a list of all protected animal species that have the potential to occur within the S.R. 45 project boundaries. A total of five species is listed as Endangered or Threatened by the USFWS, 12 others are candidates for listing (C2) and one is not listed by the USFWS, but is listed as a Species of Special Concern by the FGFWFC. Individual species accounts are presented below with their associated habitat requirements.

Endangered Species

Kirtland's warbler (*Dendroica kirtlandii*)

This warbler is an extreme habitat specialist and has one of the most restricted breeding ranges of any North American bird. It only breeds in approximately 500 mi² of the open jack pine (*Pinus banksiana*) plains of central Michigan. The

bird overwinters in the Bahamas, so it only passes through Florida during the spring and fall migrations. While in this state, it will utilize a variety of upland and wetland habitats as stopover locations during migration, so none of the on-site habitat is considered significant for the warbler. Additionally, the likelihood of occurrence for this species is low, so impact from this project will be negligible. This species is also listed as Endangered by the FGFWFC.

Bald Eagle (*Haliaeetus leucocephalus*)

The bald eagle is a species of primary concern in this state, due to its status as a national symbol, and its sensitivity to environmental disturbances. Eagles can be seen flying over many habitat types, but they require water bodies for feeding, and large trees near feeding areas for nesting. Some portions of this site have suitable nesting trees for eagles that feed in the Tsala-Apopka series of lakes to the east, but no nests were observed during the field visits, and none have been reported within the project vicinity. There is a low to moderate likelihood of occurrence for this species on the project, and potential impact to eagles would be low. This species is listed as Threatened by the FGFWFC.

Red-cockaded woodpecker (*Picoides borealis*)

The colonial red-cockaded woodpecker (RCW) is a habitat specialist, requiring stands of over-mature longleaf pine that have contracted the red-heart disease for cavity building. These stands need to be open, with a sparse subcanopy to allow for easy flight, and ample foraging habitat of younger pines surrounding the cavity trees. Habitat suitable for RCW's has been identified on-site, but no woodpeckers or their cavities were observed. Because this habitat is present, and RCW colonies exist or have recently existed near the project site in the past, this species has been given a moderate likelihood of occurrence. It does not have a high likelihood due to the limited amount of foraging habitat on-site. The RCW is listed as Threatened by the FGFWFC.

Bachman's warbler (*Vermivora bachmanii*)

One of the rarest of America's birds, possibly even extinct, the Bachman's warbler breeds in deciduous swamps in isolated localities in southern states, north of Florida, and winters in the West Indies. It passes through this state as a migrant, and as such, likely uses a variety of forested habitats as stopover points during its migrations. Due to the extreme rarity of this bird (last confirmed sighting in the U.S. was in the mid-1980's), it has been assigned a low likelihood of occurrence on this project site. This species is also listed as Endangered by the FGFWFC.

Threatened Species

Eastern indigo snake (*Drymarchon corais couperi*)

The indigo snake is a habitat generalist, using a variety of habitats from mangrove swamps to xeric uplands. During winter months, however, it can typically be found in uplands utilizing the burrows of gopher tortoises (*Gopherus polyphemus*) as shelter. These snakes require large tracts of natural, undisturbed habitat, so it is not likely that they will be found in the more urbanized portions of this project. Consequently, it has been given a moderate likelihood of occurrence for the project. The FGFWFC lists the indigo snake as Threatened.

Arctic peregrine falcon (*Falco peregrinus tundrius*)

Florida is an important wintering spot for this subspecies of peregrine, and it can be found here from September through May. These falcons feed primarily on wetland birds along the coastal regions of the state, and near inland lakes and herbaceous wetlands. They have been known to utilize agricultural areas, as well. Due to the proximity of this project to the Tsala-Apopka series of lakes, this bird is given a low likelihood of occurrence on this site. Impact to this species will be low due the seasonal presence and limited amount of habitat on the project site. This subspecies is listed as Endangered by the FGFWFC.

Candidate Species (C2)

Gopher frog (*Rana capito*)

The gopher frog is a gopher tortoise burrow commensal organism, utilizing the burrows for shelter, and breeding in nearby wetlands. Prime gopher frog habitat includes xeric uplands, especially longleaf pine-turkey oak associations, with nearby (within one mile), seasonally flooded marshes or ponds. While several upland habitats on the project would be suitable for this frog, there are no on-site wetlands, and off-site wetlands are limited as well. There were several tortoise burrows observed during site evaluations, and there are some marshes and lakes near the center of the project, so this species has been determined to have a moderate likelihood of occurrence in that area. The FGFWFC lists the gopher frog as a Species of Special Concern.

Gopher tortoise (*Gopherus polyphemus*)

This species is a key component in the determination of habitat suitability for endangered species because of the large number of other animals that will use tortoise burrows for one or more of their life requisites. While it is common to

find tortoise burrows in most types of upland communities, the preferred habitats of the gopher tortoise are xeric uplands and disturbed, ruderal areas. One tortoise and several active tortoise burrows were observed within the project boundaries during the field evaluations for this site, mostly in the dryer portions of the longleaf pine-turkey oak cover type and along the roadsides. The tortoise is listed as a Species of Special Concern by the FGFWFC.

Florida pine snake (*Pituophis melanoleucus mugitus*)

This snake is another tortoise burrow commensal organism, utilizing both tortoise burrows and the tunnels of pocket gophers (*Geomys pinetis*) as well. Preferred habitat of the pine snake is xeric uplands, and to a lesser extent, flatwoods and other mesic uplands. Suitable habitat is plentiful on the site, but the species is not very common. It has been determined to have a moderate likelihood of occurrence on the site, and is listed as a Species of Special Concern by the FGFWFC.

Short-tailed snake (*Stilosoma extenuatum*)

The short-tailed snake belongs to a monotypic genus that is endemic to Florida. It is restricted to xeric uplands, primarily longleaf pine-turkey oak sandhills for its habitat requirements. While suitable habitat is plentiful on this project, this is not an especially common species, thus, it has been assigned only a moderate likelihood of occurrence rating. It is listed as a Threatened species by the FGFWFC.

Bachman's sparrow (*Aimophila aestivalis*)

The Bachman's sparrow is a year round resident of this area, and can be found in pine-dominated woodlands, primarily longleaf pine and saw palmetto flatwoods. Suitable habitat is present on the project, but the species is not common, so it only has a moderate likelihood of occurrence. This species is not listed by the FGFWFC.

Southeastern American kestrel (*Falco sparverius paulus*)

This is the resident subspecies of the kestrel, to be distinguished from its larger cousin, *Falco s. sparverius*, which is a winter visitor to Florida. The Southeastern kestrel requires three components for optimal habitat: large, open fields for foraging, snags for nesting, and snags, fencelines or telephone poles as perching sites from which to hunt. The only areas on-site that have these characteristics are the pasture and agricultural lands, but even these areas have only limited perch sites and snags. Thus, the kestrel only has a low likelihood

of occurrence on this project. This subspecies is listed as Threatened by the FGFWFC.

Migrant loggerhead shrike (*Lanius ludovicianus migrans*)

As its name implies, this is a winter visitor of Florida, as distinguished from our year round resident shrike, *Lanius l. ludovicianus*. This migrant can be found in typical shrike habitat, i.e., open woodlands and disturbed ruderal sites such as roadsides and agricultural land. It has a moderate likelihood of occurrence on this project during winter months, and is not listed by the FGFWFC.

Florida weasel (*Mustela frenata peninsulae*)

The Florida weasel is one of the two subspecies of the long-tailed weasel that occurs in this state. This small predator can be found in many forested landscapes from scrub to swamps. While this weasel has wide habitat preferences, it is extremely rare in the state, so it has only a low likelihood of occurrence on the site. It is not listed by the FGFWFC.

Southeastern brown bat (*Myotis austroriparius*)

In Florida, the Southeastern brown bat is primarily a cave dweller. Almost all nurseries have been reported in caves. This bat will occasionally dwell in old buildings, and has also been observed roosting within culverts. It only rarely roosts in trees, and is not a very common species, so it has been determined to have a low likelihood of occurrence on this project site. The southeastern brown bat is not listed by the FGFWFC.

Florida mouse (*Peromyscus floridanus*)

This mouse is one of the two mammal species that are endemic to Florida. It typically lives within gopher tortoise burrows in fire-maintained, xeric uplands. Because fire is rare, if not nonexistent, within the project area, optimal habitat is not present on-site. Marginal habitat exists in the form of the xeric longleaf pine communities that contain gopher tortoises. Due to the natural flexibility of habitat requirements of most animal species, however, this mouse is still given a likelihood of occurrence, albeit low. The FGFWFC lists the Florida mouse as a Species of Special Concern.

Sherman's fox squirrel (*Sciurus niger shermani*)

The Sherman's is the largest of the three fox squirrel subspecies that occur in Florida. Optimum habitat for this subspecies is composed of longleaf pine-turkey oak sandhills, although they will also be found in more mesic forested areas, as

well. While its population is declining, this squirrel is still fairly common, so it has been assigned a high likelihood of occurrence within this project site. This fox squirrel is listed by the FGFWFC as a Species of Special Concern.

Florida black bear (*Ursus americanus floridanus*)

Although the black bear usually occurs within Citrus County west of S.R. 45, it is a wide ranging species, so it has been included in this evaluation. Preferred habitat of the black bear is dense forest, both upland and wetland, but it is often encountered in other areas during its seasonal movements. Extremely dense forest is not common on this project, and the high degree of urbanization of the landscape around S.R. 45 implies a low likelihood of occurrence in this region. The Florida black bear is considered Threatened by the FGFWFC.

Other

Florida Burrowing Owl (*Athene cunicularia floridana*)

Representing a disjunct population of a western U.S. species, these owls are most common in Florida west and north of Lake Okeechobee, but scattered breeding populations do exist elsewhere around the central portion of the state. They occupy burrows within dry prairies, agricultural land, and disturbed, urbanized areas. Citrus County is outside their normal range, but there has been a record of the owl nesting in the county, and suitable habitat exists on-site. Thus, it has been determined to have a low potential for occurrence. This owl is listed by the FGFWFC as a Species of Special Concern, but it is not listed by the USFWS.

Only one plant species, the pigmy fringe tree (*Chionanthus pygmaea*), is protected by the USFWS and has the potential for occurring on-site. It is listed as Endangered, and only one record exists of its occurrence in this county. Due to the lack of optimal sand pine (*Pinus clausa*) scrub habitat on the site, this plant has been given a low potential for occurrence. Eight additional plant species that are candidates for listing (C2), have the potential to occur within the project boundaries. These species are presented in Table 4 (see below) with their associated habitat requirements and likelihoods of occurrence.

Based upon the observations in the field, the literature search of listed species' natural histories, consultation with agency personnel, and the habitat conditions on-site, lists of protected species that have the potential of occurring within the S.R. 45 project area were generated. Table 3 presents listed wildlife species with their associated legal status, and Table 4 presents listed plant species with their associated legal status. These two tables also list the status of each species

Table 3. Legal Status of Protected Fauna That May Potentially Occur on the S.R. 45 Project Site, Citrus County, Florida.

Species Name	Common Name	USFWS	FGFWFC	FNAI	FCREPA	Likelihood of	
						Occurrence	Habitat
<u>Amphibians</u>							
<i>Rana capito</i>	Gopher frog	C2	SSC	S3	T	Mod	Xeric uplands; breeds in ephemeral ponds and cypress heads
<u>Reptiles</u>							
<i>Drymarchon corais couperi</i>	Eastern indigo snake	T	T	S3	SSC	Mod	Variety of habitats; winters in tortoise burrows in higher areas
<i>Gopherus polyphemus</i>	Gopher tortoise	C2	SSC	S3	T	Obs	Xeric uplands, hammocks, flatwoods, mixed forests and ruderal
<i>Pituophis melanoleucus mugitus</i>	Florida pine snake	C2	SSC	S3	SU	Mod	Xeric uplands and ruderal habitats
<i>Stilosoma extenuatum</i>	Short-tailed snake	C2	T	S3	T	Mod	Longleaf pine-turkey oak, sand pine scrub and xeric hammocks
<u>Birds</u>							
<i>Aimophila aestivalis</i>	Bachman's sparrow	C2		S3		Mod	Open pine woods, dry prairies and old fields
<i>Athene cunicularia floridana</i>	Florida burrowing owl		SSC	S3	SSC	Low	Sandhills, dry prairies and ruderal habitats
<i>Dendroica kirtlandii</i>	Kirtland's warbler	E	E	S1	E	Low	Migrant utilizing various terrestrial and palustrine habitats
<i>Falco peregrinus tundrius</i>	Arctic peregrine falcon	T	E	S2	E	Low	Wide variety of open habitats
<i>Falco sparverius paulus</i>	Southeastern American kestrel	C2	T	S3?	T	Low	Open, or partly open habitats with scattered trees
<i>Haliaeetus leucocephalus</i>	Bald eagle	E	T	S2S3	T	Low-Mod	Coasts, rivers and large lakes in open areas
<i>Lanius ludovicianus migrans</i>	Migrant loggerhead shrike	C2				Mod	Open areas with scattered trees, open woodland and scrub
<i>Picoides borealis</i>	Red-cockaded woodpecker	E	T	S2	E	Mod	Open, mature pine woodlands
<i>Vermivora bachmanii</i>	Bachman's warbler	E	E	SH	E	Low	Lowland forests; breeds in hardwood swamps
<u>Mammals</u>							
<i>Mustela frenata peninsulae</i>	Florida weasel	C2		S3?	R	Low	Scrub, sandhills, flatwoods, swamps and hammocks
<i>Myotis austroriparius</i>	Southeastern brown bat	C2			SU	Low	Caves, buildings and trees
<i>Peromyscus floridanus</i>	Florida mouse	C2	SSC	S3	T	Low	Scrub, flatwoods, pine-turkey oak sandhills, and hammocks
<i>Sciurus niger shermani</i>	Sherman's fox squirrel	C2	SSC	S2	T	High	Longleaf pine-turkey oak, flatwoods, dome swamps and baygalls
<i>Ursus americanus floridanus</i>	Florida black bear	C2	T	S2	T	Low	Variety of forested landscapes

Notes:

USFWS=U.S. Fish & Wildlife Service

E=Endangered; T=Threatened; C2=Candidate for Listing

FGFWFC=Florida Game & Fresh Water Fish Commission

E=Endangered; T=Threatened; SSC=Species of Special Concern

FNAI=Florida Natural Areas Inventory

S1=Critically Imperiled Due to Extreme Rarity; S2=Imperiled Due to Rarity; S3=Very Rare and Local; SH=Historically Occurred in Area; ?=Tentative Ranking

FCREPA=Florida Committee on Rare and Endangered Plants and Animals

E=Endangered; T=Threatened; SSC=Species of Special Concern; R=Rare; SU=Status Undetermined

Likelihood of Occurrence

Low=Low likelihood; Mod=Moderate likelihood; High=High likelihood; Obs=Observed

Table 4. List of Protected Flora That May Potentially Occur on the S.R. 45 Project Site, Citrus County, Florida.

<u>Species Name</u>	<u>Common Name</u>	<u>USFWS</u>	<u>FDA</u>	<u>FNAI</u>	<u>FCREPA</u>	<u>Likelihood of Occurance</u>	<u>Habitat</u>
<i>Agrimonia incisa</i>	Incised groove-bur	C2		S2		Mod	Woods and thickets
<i>Asplenium plenum</i>	Double spleenwort	C2	T	S1		Low	Limestone hammocks
<i>Chionanthus pygmaea</i>	Pigmy fringe tree	E	E	S3	E	Low	Sand pine scrub
<i>Glandularia (Verbena) tamensis</i>	Tampa vervain	C2	E	S1		Mod	Moist pinelands
<i>Lechea cernua</i>	Nodding pinweed	C2	E	S3		Low	Scrub
<i>Matelea floridana</i>	Florida spiny-pod	C2	E	S2		Mod	Upland mixed and upland hardwood forests
<i>Pteroglossapsis (Eulophia) ecristata</i>	Wild coco	C2	T	S2		Low	Sand pine scrub and sandhills
<i>Spiranthes polyantha</i>	Green ladies' tresses	C2	E	S1S2		Mod	Hammocks
<i>Triphora craigheadii</i>	Craighead's nodding-caps	C2	T	S1		Mod	Deciduous woods

Notes:

USFWS=U.S. Fish & Wildlife Service

E=Endangered; T=Threatened; C2=Candidate for Listing

FDA=Florida Department of Agriculture

E=Endangered; T=Threatened; CE=Commercially Exploited

FNAI=Florida Natural Areas Inventory

S1=Critically Imperiled Due to Extreme Rarity; S2=Imperiled Due to Rarity; S3=Very Rare and Local;

FCREPA=Florida Committee on Rare and Endangered Plants and Animals

E=Endangered; T=Threatened; R=Rare;

Likelihood of Occurance

Low= Low likelihood; Mod=Moderate likelihood; High=High likelihood;

as designated by FNAI and FCREPA, but these two organizations do not impart any legal protection with their classifications. These classifications are presented only to provide additional information on the opinions of other professionals within the biological field concerning the status and abundance of these species. Other protected species that occur within Citrus County, but cannot be supported by the types of on-site habitat (such as wetland-dependent species), have been left off the lists. The lists of protected species were confirmed through consultations with USFWS and FGFWFC biologists.

No species were observed that are listed as Endangered or Threatened by the USFWS. Only one species, the gopher tortoise, was observed that is listed by the FGFWFC, and is a Candidate for listing (C2) by the USFWS. Several gopher tortoise (listed as a Species of Special Concern by the FGFWFC) burrows were observed throughout the project, and a tortoise was observed within Whispering Pines Park. This species was present in fairly abundant numbers, although detailed surveys were not conducted to find its population size.

Based upon the above descriptions of on-site habitat, and the habitat requirements of potentially occurring federally listed species, it has been determined that no listed species have the potential for being negatively affected by this project. Suitable habitat for red-cockaded woodpeckers has been located on the project, and RCW's have been observed near the project site. The present survey, however, revealed no evidence of past or present occupancy by RCW's, so there will be no negative impact to the species by this project.

VI. CONCLUSION

The FDOT is proposing a widening of S.R. 45 (U.S. 41) in Citrus County from Inverness to the Withlacoochee River, just south of Dunnellon. This widening will involve the addition of two travel lanes and the extension of the right-of-way to 100 feet in urban areas and to 200 feet in rural areas. Very little undisturbed, natural habitat remains along this roadway corridor, and several areas of commercial and residential development occur throughout the project.

On-site plant communities were surveyed and a literature search was conducted to calculate the likelihood of occurrence of federally protected species on the project site. Six protected wildlife species, and one protected plant species have low to high likelihoods of occurrence on the project, and 12 wildlife species and eight plant species that are candidates for listing (C2) also have the potential to occur on the project. No federally protected species were observed on-site.

Habitat surveys along the proposed right-of-way have revealed only one location that may potentially provide habitat for a federally listed species. A stand of mature longleaf pines has

been identified as suitable habitat for red-cockaded woodpeckers. RCW's have been recorded nesting near the project site in the past, but a comprehensive evaluation to determine the presence or absence of this species on the site has revealed no evidence of occupancy. This project will have no adverse impact to federally listed plant or animal species.

APPENDIX A

Sources Used for the EMS Endangered Species Database

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APPENDIX B

Documentation of Correspondence and Agency Coordination



FLORIDA AUDUBON SOCIETY

June 23, 1993

Mr. Douglas J. Chaltry
Environmental Management Systems, Inc.
393 Whooping Loop, Suite 1483
Altamonte Springs, FL 32701

Dear Mr. Chaltry:

Enclosed are quad/block printouts of the breeding birds found in Quads Inverness, Holder, Dunnellon, and Stokes' Ferry during the period of the Florida Breeding Bird Atlas Project, 1986-1991. Enclosed also is a field data card showing the species whose alphacodes are listed on the printouts, and the breeding criteria codes.

Each quad was divided into 6 blocks, thusly:

1	4
2	5
3	6

The "HI" column lists the highest code found for the species in the quad. Columns 1-6 are the six blocks. Ignore Column "7"-it was a special category that we had to establish when some atlasers (who should have known better) in the panhandle failed to record the block they were in when they were doing some last minute atlasing in their quad. The "Q#" column lists the highest breeding code for a species found in the neighboring quads (listed at top of printout page).

The cost for processing, copying, and mailing these data came to \$17.17 (copying, \$0.40, Postage \$0.52, Labor \$16.25. An invoice is enclosed).

If you have any questions, don't hesitate to contact me.

Sincerely yours,

Herbert W. Kale II, Ph.D.
Vice President, Ornithology

Encl:
-a/s

The Voice of Conservation Since Nineteen Hundred

460 HWY. 436 • SUITE 200 • CASSELBERRY, FL 32707-4939 • (407) 260-8300 • FAX (407) 260-9652

RECYCLED PAPER

FLORIDA NATURAL AREAS INVENTORY

1018 Thomasville Road, Suite 200-C • Tallahassee, Florida 32303 • (904) 224-8207

23 July 1993

Environmental Management Systems, Inc.
Cranes Roost
393 Whooping Loop, Suite 1483
Altamonte Springs, FL 32701
Attention: Douglas J. Chaltry, Environmental Scientist

Subject: SR 45 (US 41) Project, Citrus Co., Florida

Dear Mr. Chaltry:

I have examined the FNAI data base with respect to known and potential occurrences of natural communities or rare and endangered species of plants and animals for the project area that you requested. A search of our maps and computerized data base indicates that we currently have 9 "Element Occurrence Records" mapped near the specified project area. Printouts are attached.

Scientific Name	Common Name	GRANK	SRANK	FED Status	STATE	TOWNRANGE:	SECTION:
PSEUDOBANCHUS STRIATUS LUSTRICOLUS	GULF HAMMOCK DWARF SIREN	G5T1	S1	C2	N	016S018E	34
TRICHECHUS MANATUS	WEST INDIAN MANATEE	G2?	S2?	LE	LE	018S016E	17
PSEUDEMYIS CONCINNA SUWANNIENSIS	SUWANNEE COOTER	G5T3	S3	N	LS	016S019E	18
GOPHERUS POLYPHEMUS	GOPHER TORTOISE	G3	S3	C2	LS	016S018E	34
PITUOPHIS MELANOLEUCUS MUGITUS	FLORIDA PINE SNAKE	G5T3?	S3	C2	LS	017S018E	02
SANDHILL		G2G3	S2	N	N	019S020E	07
UPLAND MIXED FOREST		G?	S4	N	N	016S018E	34
MATELEA FLORIDANA	FLORIDA SPINY-POD	G2	S2	C2	LE	019S020E	07
STYLISMA ABDITA	SCRUB STYLISMA	G2G4	S2	N	N	019S020E	07

A summary listing of Element Occurrence Records for Citrus County is enclosed. This list includes those records that we currently have in our data base for the county and may help you arrive at a listing of potential species and natural community occurrences for the site. Please note that these lists will change as we update old records and add new records to the data base.

Also included is the matrix for Citrus County. This list provides habitat and seasonality information to aid in determining species likely to occur in the county. See the attached guide for a full explanation.

Mr. Douglas Chaltry
23 July 1993
Page 2

The quantity and quality of data collected by the Florida Natural Areas Inventory are dependent on the research and observations of many individuals and organizations. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Florida have never been thoroughly surveyed. The FNAI data base represents a compilation of information extracted from published and unpublished literature, museums and herbaria, field surveys, personal communications, and other sources. Records for new occurrences of plants and animals are continuously being added to the database and older occurrence records may change as new information is gathered.

For these reasons, the FNAI cannot provide a definitive statement on the presence, absence, or condition of biological elements in any part of Florida. Florida Natural Areas Inventory reports summarize the existing information known to FNAI at the time of the request regarding the biological elements or locations in question. **They should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments.**

Information provided by this data base may not be published without prior written notification to the Florida Natural Areas Inventory, and FNAI must be credited as an information source in these publications. We also request that the above underlined sentence be included in acknowledgements of the data. FNAI data may not be sold for profit.

Thank you for your interest in the Florida Natural Areas Inventory. I hope this information proves helpful. Please let me know if you have any additional questions.

Sincerely,

John Amoroso



Assistant Data Manager

encls.
ja/fnaists\drss\citrus41.dr



RECORD OF CONVERSATION

PROJECT NAME S.R.45 Habitat Survey
PROJECT LOCATION Citrus Co.

With Candace Martino
of U.S.F.W.S. - Jacksonville

DATE 7/22/93

☒ TELEPHONE CALL

☐ MEETING

Address
or Phone# _____

Subject Confirmation of Potential Species Involvement List

Candace called to give verbal confirmation of the accuracy of the potential listed species involvement tables that I had sent to her office.

She said the list looked complete, and suggested removing the pygmy fringe tree due to ~~the~~ project not being within the species' range.

The FWS cannot, of course, make any conclusions concerning the presence or absence of any of the species.

Copies to: File

Signed Doug



RECORD OF CONVERSATION

PROJECT NAME S.R. 45 Habitat Survey
PROJECT LOCATION Citrus Co

With John Blanchard
of Division of Forestry

DATE 6/7/93

☒ TELEPHONE CALL

☐ MEETING

Address
or Phone# _____

Subject End. species sightings @ Whispering Pines Park

Spoke with John about any records of
Endangered species within Whispering Pines Park,
which is part of the Withlacootchee State Forest.

The only record he had was an old FVAI
record of Matelea floridana. He searched for it,
but could not find it, probably because the
park has not burned for such a long time.

Copies to: File

Signed Doug C.



FLORIDA GAME AND FRESH WATER FISH COMMISSION

MRS. GILBERT W. HUMPHREY
Miccosukee

JOE MARLIN HILLIARD
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Sarasota

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Miami

ROBERT M. BRANTLY, Executive Director
ALLAN L. EGBERT, Ph.D., Assistant Executive Director

CENTRAL REGION
1239 SW 10th Street
Ocala, FL 34474-2797
(904) 732-1225

July 13, 1993

Mr. Douglas J. Chantry
Environmental Management Systems, Inc.
Crane's Roost
393 Whooping Loop, Suite 1483
Altamonte Springs, FL 32701

Dear Mr. Chantry:

Pursuant to your request, I have reviewed the list of protected species that may potentially occur on the SR 45 project site in Citrus County and found it to be fairly complete. I also checked the Commission's databases and could find no records of any bald eagle nests, scrub jay habitats, or wading bird rookeries within the immediate vicinity of the project site. However, on-site field investigations by you or your staff may prove otherwise.

Thank you for the opportunity to comment. If I can be of further assistance, please feel free to contact me at 904-732-1225.

Sincerely,

Julie A. Hovis
Regional Nongame Biologist

WLD 4-3-5
cc: Mr. Brian Millsap
Mr. Don Wood

1943 - 1993

50 YEARS AS STEWARD OF FLORIDA'S FISH AND WILDLIFE