

The Haven at North Naples: VEGETATION ASSOCIATIONS (FLUCFCS) AND LISTED SPECIES SURVEY

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1. INTRODUCTION

Johnson Development (applicant) seeks to develop an apartment complex west of Airport Rd that will be associated with the existing Carlisle community. The proposed project is a multi-family residential development with associated amenities and infrastructure. There have been no prior federal or state environmental permits authorized for the undeveloped portion of the proposed project. Permits have been issued for the existing development. The project will be required to obtain an Environmental Resource Permit (ERP) from the South Florida Water Management District (SFWMD) as well go under review for Collier County approvals that would allow for construction to start.

The properties consist of approximately 27.94 acres in Collier County. The project is located immediately to the west of Airport Road and approximately 1.25 miles north of Pine Ridge Road. The northeast third of the proposed project will occur on an existing developed parcel that contains stormwater facilities and an access road into an existing residential community. The properties are bordered to the south by multi-family residences, and to the west by a pond and single-family residence. The remaining two thirds of the project site is a former agricultural property that has been fallow for more than 30 years and has recolonized with predominately exotic vegetation. The properties can be identified by folio #'s 00238040007 and 00238240001.

This report documents the results of the habitat mapping and listed species/wildlife surveys conducted by Turrell, Hall and Associates (THA). In reviewing this report, the reader should refer to the various Figures attached to this report.

2. EXISTING VEGETATION ASSOCIATIONS, LAND FORMS, & LAND USES (FLUCFCS)

2.1 METHODOLOGY

These observations were recorded during the meandering pedestrian transects across the lands documenting vegetation community characteristics as well as recording location points where any listed species observations were made.

The methods and class descriptions found in the Florida Land Use, Cover and Forms Classification System (FLUCFCS) manual (FDOT, 1999) were generally followed when delineating areas and assigning areas to an appropriate FLUCFCS category (class) or “code”. Level III classifications were generally employed. Certain modifications and/or additions were made to the FLUCFCS class definitions and numeric codes presented in this manual in order to better describe and differentiate both plant communities and land uses. Since an emphasis was placed on plant communities and the type and quality of habitats formed by these communities, the vegetation association present was given more weight than the prevailing land use in some cases.

The sections that follow list and describe the FLUCFCS categories mapped within the project lands and in other adjacent lands. Major FLUCFCS categories are presented first. The FLUCFCS code number for each category is indicated followed by the brief name (description) of the category. Alphabet modifiers have also been added to differentiate the different polygons that have the same FLUCFCS codes. If applicable, plants common to each significant vegetation stratum present are indicated. A general description of the FLUCFCS category is then provided together with any nuances specific to the project site that are worthy of mention.

Following the major categories, additional FLUCFCS category modifiers may also be included. For example, the major FLUCFCS category of 411 (pine flatwoods) might be modified by using the suffix code “E4”. In this example, a FLUCFCS E4 would indicate a pine flatwoods which has exotic plants present which form a cover ranging from 75 to 100 percent (the “E4” modifier). Modifiers are used when the effects of disturbance or exotic species have significantly altered common characteristics of a major FLUCFCS class.

One should note that the standard FLUCFCS system labels certain groups of vegetation associations (FLUCFCS categories) as “uplands” and others as “wetlands”. In assigning FLUCFCS categories, THA uses the FLUCFCS category which best describes the dominant vegetation association, generally without regard to whether the FLUCFCS system considers the community as an “upland” or “wetland”.

2.2 MAJOR FLUCFCS CATEGORIES

Figure 2 illustrates the FLUCFCS map polygons present on the project lands. A FLUCFCS map unit is a unique area (or polygon) mapped using either a major FLUCFCS category code only (ex., FLUCFCS 621), a major FLUCFCS category code together with a unique identifier (ex., FLUCFCS 621(A)), or a major FLUCFCS category code together with one or more modifiers (ex., FLUCFCS 621 E2). Table 1 lists each of the FLUCFCS map unit codes present on the property and total acreage encompassed by each unique FLUCFCS type.

In certain instances, the most appropriate major FLUCFCS code to assign to an area may be a code that generally implies the area is an upland or otherwise does not seem to indicate the area may be a wetland. There are cases where the particular area may indeed classify as a wetland, however. When this occurs and there is no proper existing wetland FLUCFCS code available, the best fitting FLUCFCS code is assigned but is also given a suffix of "H" indicating hydric conditions are present and the area likely classifies as a wetland. For example, there can be actively managed areas within larger fallow fields (FLUCFCS 216) that are depressions. Some of these depressions can have wetland characteristics and may have several wetland plant species present. Such depressions would be mapped as FLUCFCS 216 H indicating these areas are part of a fallow field but have hydric characteristics.

Table 1. Existing FLUCFCS categories present on the Airport Road property.

| FLUCFCS Code | FLUCFCS Description | Acres | % of Total Property |
|--------------------|---|--------------|---------------------|
| 134 | Multi-Family Residential 9high density) | 13.10 | 46.9 |
| 190 | Open Land | 1.84 | 6.6 |
| 422 | Brazilian Pepper | 1.62 | 5.8 |
| 427E2 | Live Oak (Exotics 25% to 50%) | 1.55 | 5.5 |
| 437 | Australian Pines | 0.15 | 0.5 |
| 439 | Earleaf Acacia | 6.38 | 22.8 |
| 513 | Ditch | 0.40 | 1.5 |
| 520 | Lake | 1.99 | 7.1 |
| 814 | Roadway and Sidewalk | 0.91 | 3.3 |
| TOTAL ACRES | | 27.94 | |

Of the total 27.94 acres contained within the property boundary, 91.4% classify as uplands (25.55 ac.) and 8.6% classify as surface waters (2.39 ac.). There are no wetlands present on the site.

The following sub-sections describe each major FLUCFCS category mapped on the project lands. Modifiers attached to these categories are described separately. One should read both the major FLUCFCS categories and their modifiers to understand the FLUCFCS map units present.

134: Multi-family Residential – 13.10 Acres

Comments:

This area has undergone past clearing and construction activities and is currently developed as an existing residential complex.

190: Open Land – 1.84 Acres

Comments:

This area has undergone past clearing and construction activities and surrounds the stormwater ponds and access drive into the existing residential complex.

422 Brazilian Pepper – 1.62 Acres

Canopy – Brazilian pepper, earleaf acacia, cabbage palm, Laurel oak, and java plum

Subcanopy – earleaf acacia, Brazilian pepper, cabbage palm

Ground Cover – sword fern, carrotwood

Comments:

The Brazilian pepper community is an upland community of these small, shrub-like trees that are often established along borrow-pits, levees, dikes, and in old, disturbed fields. Brazilian Pepper is an aggressive invader of Florida's plant communities.

427E2: Live Oak (Exotics 25% to 50%) – 1.55 acres

Canopy – earleaf acacia, cabbage palm, live oak, java plum

Subcanopy – earleaf acacia and carrotwood

Comments:

The canopy and midstory are comprised of earleaf acacia, live oak, and cabbage palm. Exotics exceed 25 percent. With the dense layer of leaves found in the canopy, limited ground coverage is present.

437: Australian Pines -0.15 Acres

Canopy – Australian pine

Comments:

The Australian pine community is an upland community common on disturbed sites, forming dense thickets, and is frequently planted as wind breaks and soil stabilizers. The plant exhibits allelopathic qualities which limits groundcover.

439: Earleaf Acacia – 6.38 Acres

Canopy – earleaf acacia, cabbage palm, live oak, Brazilian pepper

Subcanopy – earleaf acacia, coco plum, blue mistflower, and carrotwood

Ground Cover – carrotwood, blue mistflower

Comments:

The canopy and midstory are primarily comprised of earleaf acacia and cabbage palm. With the dense layer of leaves found in the canopy, limited ground coverage is present.

513: Ditch – 0.40 Acres

Canopy – earleaf acacia, cabbage palm, Brazilian pepper

Subcanopy – earleaf acacia, Brazilian pepper, coco plum, blue mistflower, and carrotwood

Ground Cover – carrotwood, blue mistflower

Comments:

The canopy and midstory are primarily comprised of earleaf acacia and cabbage palm. The ditches appear to be old agriculture ditches. The two ditches are isolated from other wetlands or other surface waters.

520: Lake– 1.99 Acres

Comments:

There are two existing manmade lakes present on site that are found in the northeast portion of the proposed project area.

814: Roadway and Sidewalk– 0.91 Acres

Comments:

There are existing roadways and sidewalks present on site that were constructed for the retirement homes and miscellaneous residences found on the property.

3. LISTED SPECIES SURVEYS

Wildlife and listed species surveys were conducted by THA on the project lands. As used herein, the term "listed animal species" refers to those animals listed as endangered or threatened by the US Fish and Wildlife Service (FWS) or the Florida Fish and Wildlife Conservation Commission (FWC) as well as those animal species listed as species of special concern by the FWC. The term "listed plant species" refers to those plants listed as endangered or threatened by the FWS. Several animal species listed by FWC are also classified (listed) by the South Florida Water Management District (SFWMD) as wetland dependent species. THA's wildlife/listed species surveys were supplemented by research concerning listed species. The following subsections document these efforts and the results of these efforts.

3.1 DATABASE RESEARCH

Prior to field investigations, aerial photos, soils maps, and prior mapping for the Airport Rd. properties were reviewed to identify the various vegetation associations potentially present on and adjacent to project lands. Various publications and databases were reviewed to determine listed plant and wildlife species which could occur and those that had been previously documented on or near the project lands as well as to gather information concerning listed species (see listed references in Section 4).

Based on the habitat types identified, existing knowledge of the project area, contacts with other consultants, and review of publications and databases, a preliminary list of listed plant and animal species with the potential to occur within or near the project lands was determined.

3.2 FIELD BIOTIC SURVEY METHODOLOGY

A series of transects were walked to search for any evidence of listed species utilization of the proposed project.

The field surveys consisted of biologists walking a series of meandering paths through the various habitats found on the project lands. The methodology follows that of the "Meandering Strip Census" survey as described in the Collier County approved methodologies. Space between transect lines was generally established at 100 feet apart in a north/south orientation. Observers were equipped with compass, aerials, wildlife and plant identification books and notes, binoculars, field notebooks, and hand-held GPS units. Between the transect lines, observers walk a meandering path crisscrossing the transect strip (See Exhibit 4). The frequency and distance between the meanders is determined by the density of the vegetation. Meanders are walked in an east/west pattern and in forested areas they are walked twice in opposite directions to aid in the search for tree cavities that could support Florida bonneted bat roosting.

Along the transects, the biologists periodically stopped, looked for wildlife and signs of wildlife, looked for listed plant species in appropriate habitats, and listened for wildlife vocalizations. The approximate location of observed listed wildlife and plant species and their numbers were mapped on aerials and recorded in field notebooks as were signs of listed wildlife species that were noted. Any listed species sighting locations are also documented with the handheld GPS unit. In the same fashion, observed non-listed wildlife species encountered or signs of such species were also recorded. Tree cavities and nests observed within or adjacent to the project boundary were also documented with the

handheld GPS unit.

The field survey methodologies utilized on the project lands were consistent with Collier County methodology and generally consistent with those prescribed by the Florida Fish and Wildlife Conservation Commission (FWC).

Table 2: Survey time Frames

| Survey Date | Survey Staff | Weather Conditions | Survey Time Period | Total Survey Man-Hours |
|-------------------------------|--------------|--|--------------------|------------------------|
| 05/24/2022 | TH, MO | Clear and Calm. Low 73° High 82° | 0700 - 1000 | 6 |
| 06/09/2022 | TH | Cloudy to overcast, Light rain. Low 79° High 85° | 1600 - 1800 | 2 |
| 07/07/2022 | TH | Cloudy. Heavy rain ended survey Low 76° High 93° | 1500 - 1800 | 3 |
| Total Survey Man-Hours | | | | 11 |

The surveys were performed by the following THA personnel:

Tim Hall

Education: B.S. in Forest Resources and Conservation, M.S. in Wildlife Ecology from University of Florida. Experience: 32 years as an environmental consultant with emphasis on listed species surveys and management plans, environmental impact analyses and assessments, wetland delineation, environmental permitting, and various other environmental topics.

Megan O'Connor

Education: B.S. in Environmental Science from Nova Southeastern University. Experience: 3 years as a professional environmental consultant with emphasis on ecological assessments, wildlife surveys, and environmental permitting.

3.3 RESULTS

3.3.1 Research Results

The review conducted of the various existing databases concerning documented listed species (FWC, FWS, IPAC, FNAI) did not reveal records of any listed plant or animal species documented on the project lands. THA's review of these existing databases included searching records for documented listed species occurring within approximately 1,000 feet of the subject property boundary. There were no records of any listed plant species occurring in the query area.

3.3.2 Listed Animal Species Observed

Several different animal species were observed during the course of THA's wildlife/listed species surveys. Various songbirds were observed during the site survey. Armadillo burrows were observed along the edges of the ditches. Table 3 provides a listing of all the wildlife (animal) species observed on the Airport Rd. properties during the course of THA's surveys.

3.3.3 Listed Animal Species Which Have the Potential to Occur but Were Not Observed

Although not observed on the project lands during the listed species surveys, additional state and/or federally listed faunal species could potentially occur on the Airport Rd. properties or on lands adjacent to the property. Based on habitats present within these areas, land uses, species observed near the project during biotic surveys, habitats present in the general area, review of various sources of information previously, and personal experience of project biologists, assessments were made as to the probability of occurrence of other listed species on the project lands.

Big Cypress Fox Squirrel

The Big Cypress fox squirrel (*Sciurus niger avicennia*) (BCFS) is considered a threatened species by the FWC and is classified as a wetland dependent species by SFWMD. BCFS typically reside in pine flatwoods and mixed pine and cypress forests and prefer mature forests that are open and "park-like" (e.g., have a scattered subcanopy and a ground cover not dominated by woody species or vines). BCFS can also be found in melaleuca infested forests provided some desirable habitat remains in the general area and can also forage areas containing hardwoods such as oaks and cabbage palms.

No BCFS were observed during the course of any of the on-site investigations. The habitat has been overrun with exotics to densities which make the site generally unsuitable for BCFS utilization. Additional survey efforts will be undertaken prior to any clearing work to ensure that no BCFS use is occurring on the site. There is a very limited possibility that BCFS may occasionally forage in semi-appropriate habitats.

Florida Bonneted Bat

The Florida bonneted bat (*Eumops floridana*) is listed as Endangered by FWS and FWC. Bonneted bats roost in tree cavities, roof overhangs, bridges, rock crevices and other similar sites. The property was thoroughly inspected during the field surveys for any dead snags or cavities within trees on or adjacent to the site. No signs of current or past roosting activity were observed and no other evidence of bonneted bats was seen.

Gopher Tortoise

The gopher tortoise (*Gopherus polyphemus*) is listed as a Threatened Species by the FWC and as a candidate species by the FWS. A single collapsed (potential) gopher tortoise burrow was observed on the property, however, no additional evidence of gopher tortoises was observed on the Airport Rd. properties or on adjacent lands. Several other burrows were also observed but were determined to be armadillo burrows (one in use by a rabbit).

Gopher tortoises prefer upland habitats, particularly xeric scrub communities and higher

elevation pine flatwoods. They can also be found in disturbed upland areas including fallow and abandoned agricultural fields, open urban lands, perimeters of active crop fields, and pastures. It is deemed unlikely that this species currently resides on the Airport Rd. properties as the majority of the site does not provide suitable habitat for gopher tortoises and is overrun with dense exotics and heavy surficial root systems.

Eastern Indigo Snake

The eastern indigo snake (*Drymarchon corais couperi*) is listed as Threatened by FWS and FWC. Generally, this species lives and hunts in a wide variety of habitats and its territory can cover large areas. They can be associated with gopher tortoise burrows (as a commensal) and favor pine flatwoods, palmetto prairies, and scrub habitats as well as wetland edges. They are relatively reclusive in nature and observations in the wild are rather rare.

There is a low to moderate probability that one or more eastern indigo snakes may occasionally utilize different habitats present in the project lands. Indigo snakes could theoretically reside on the property; however, chances seem remote.

Red-cockaded Woodpecker

The red-cockaded woodpecker (*Picoides borealis*) is listed as Endangered. Red-cockaded woodpeckers were not observed during the initial site survey. The red-cockaded woodpecker utilizes southern slash pine flatwoods as nesting and foraging habitat in south Florida. Red-cockaded woodpeckers have unique nesting behaviors and nest in self-made cavities in live pine trees. There were no pine trees located on the property and likewise no evidence of any RCW cavities or cavity construction in living pines was observed.

Listed Wading Birds

Various listed wading birds though not observed on-site could theoretically visit the pond shorelines within the project lands for foraging. Little blue herons (*Egretta caerulea*) and tricolor herons (*Egretta tricolor*) are two species with a moderate probability of foraging along the stormwater pond shorelines. Such birds are opportunistic feeders and travel substantial distances to find potential foraging areas.

It is unlikely that any of the mentioned species' nest on the Airport Rd. properties or on adjacent land as it is not suitable habitat. No impacts to any listed species are expected as a result of the project.

3.3.4 Listed Animal General Wildlife Observations

During the biotic surveys conducted on the project lands, biologists recorded sightings and signs of non-listed wildlife in addition to listed species. Table 2 contains all wildlife observed on the project lands.

No signs of larger mammals, such as bobcat, feral dog, and white-tailed deer, were observed on the Airport Rd. properties. Other mammal sign observed on the Airport Rd. properties included raccoon tracks and armadillo burrows along the ditches.

Observations of non-listed bird species were widely scattered and low in number and were

particularly infrequent in the densest exotic areas. Although several species of non-listed birds are indicated in Table 5, the actual number of individuals and number of species observed during any given period of wildlife observations was typically low.

3.3.5 Listed Plant Species

No listed plant species were observed on the project lands during the course of the listed species/wildlife surveys conducted and a review of pertinent databases concerning listed plant species found no records of such plants occurring on project lands or within 5,000 feet of these lands. Considering these points, it seems highly improbable that any plant species currently listed by FWS may be present on project lands.

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APPENDIX 1

TABLES

Appendix 1: Tables

Table 1. Existing FLUCFCS categories present on the Airport Rd. properties.

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Table 2: Survey time Frames

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| 07/07/2022 | TH | Cloudy. Heavy rain ended survey Low 76° High 93° | 1500 - 1800 | 3 |
| Total Survey Man-Hours | | | | 11 |

Appendix 1: Tables

Table 3. Wildlife species observed on the Airport Rd. properties and/or within off-site adjacent areas.

| COMMON NAME | SCIENTIFIC NAME | STATUS | | |
|----------------------|------------------------|--------|-----|-------|
| | | FWC | FWS | SFWMD |
| BIRDS | | | | |
| Gray catbird | Dumetella carolinensis | -- | -- | -- |
| Northern cardinal | Cardinalis cardinalis | -- | -- | -- |
| Northern mockingbird | Mimus polyglottos | -- | -- | -- |
| Boat-tailed grackle | Quiscalus major | -- | -- | -- |
| Blue jay | Cyanocitta cristata | -- | -- | -- |
| MAMMALS | | | | |
| Raccoon | Procyon lotor | -- | -- | -- |
| Armadillo | Dasypus novemcinctus | -- | -- | -- |

FWC = Florida Fish and Wildlife Conservation Commission

FWS = United States Fish and Wildlife Service

SFWMD = South Florida Water Management District

E = Endangered

SSC = Species of Special Concern

T = Threatened

T (S/A) = Threatened (due to similarity of appearance to crocodile)

WDS = Wetland dependent species

-- = Not Listed

* = Indicates species not directly observed but signs of the species (i.e. scat, tracks, etc.) were documented.

Note: This table is based on species the results of listed species/wildlife surveys conducted by THA, Inc.

Appendix 1: Tables

Table 4. Animal species listed by FWS and FWC that were not observed on-site but could utilize or reside on the Airport Rd. properties, along with their relative probability of occurrence.

| COMMON NAME | SCIENTIFIC NAME | STATUS | | PROBABILITY OF OCCURRENCE |
|--------------------------|------------------------------------|--------|-----|---------------------------|
| | | FWS | FWC | |
| REPTILES & AMPHIBIANS | | | | |
| Eastern indigo snake | <i>Drymarchon corais couperi</i> | T | T | Moderate |
| Gopher tortoise | <i>Gopherus polyphemus</i> | -- | T | Low / Very Low |
| BIRDS | | | | |
| Red-cockaded woodpecker | <i>Picoides borealis</i> | -- | E | Very Low |
| Little blue heron | <i>Egretta caerulea</i> | | | Moderate |
| Tri color heron | <i>Egretta tricolor</i> | | | Moderate |
| MAMMALS | | | | |
| Big Cypress fox squirrel | <i>Sciurus niger avicennia</i> | -- | T | Low |
| Florida black bear | <i>Ursus americanus floridanus</i> | -- | - | Low |

FWC = Florida Fish and Wildlife Conservation Commission

FWS = United States Fish and Wildlife Service

E = Endangered

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T = Threatened

-- = Not Listed

Probability of Occurrence = Relative probability of indicated species inhabiting or utilizing the sites as based on the following scale: Very High, High, Moderate, Low, Very Low. A rating of "none" indicates it is highly unlikely that the species may inhabit or utilize the area (no probability).