Royal Palm Academy PUD
Protected Species Assessment

Section 13, Township 48 South, Range 25 East
Collier County, Florida

February 2015

Prepared for:

Pulte Group, Inc.
24311 Walden Center Drive, Suite 300
Bonita Springs, FL 34134

Prepared by:

W. Dexter Bender & Associates, Inc.
4470 Camino Real Way, Suite 101
Fort Myers, FL 33966
(239) 334-3680

INTRODUCTION

The 15.35± acre parcel is located within a portion of Section 13, Township 48 South, Range 25 East, Collier County, Florida and is being added to the Royal Palm Academy PUD. The lands to the north of the site consist of the Barrington residential development which is under construction and undeveloped lands invaded by exotics. A power line easement is located to the east. The Verona Pointe residential development is located to the south. Barrington and Livingston Roads are located to the west.

SITE CONDITIONS

The site consists of hydrologically altered wetlands and uplands that have become dominated by exotics.

VEGETATIVE CLASSIFICATIONS

The predominant upland and wetland vegetation associations were mapped in the field on 2012 digital color 1" = 200' scale aerial photography. The approximate property boundary was obtained from Waldrop Engineering and inserted into the digital aerial. The entire property boundary was not clearly staked in the field at the time of our site inspection and was, therefore, estimated based on the overlay of the approximate boundary on the aerial photography. Five vegetation associations were identified using the Florida Land Use, Cover and Forms Classification System (FLUCCS). Figure 1 depicts the approximate location and configuration of these vegetation associations and Table 1 summarizes the acreages by FLUCCS Code. A brief description of each FLUCCS Code is also provided below.

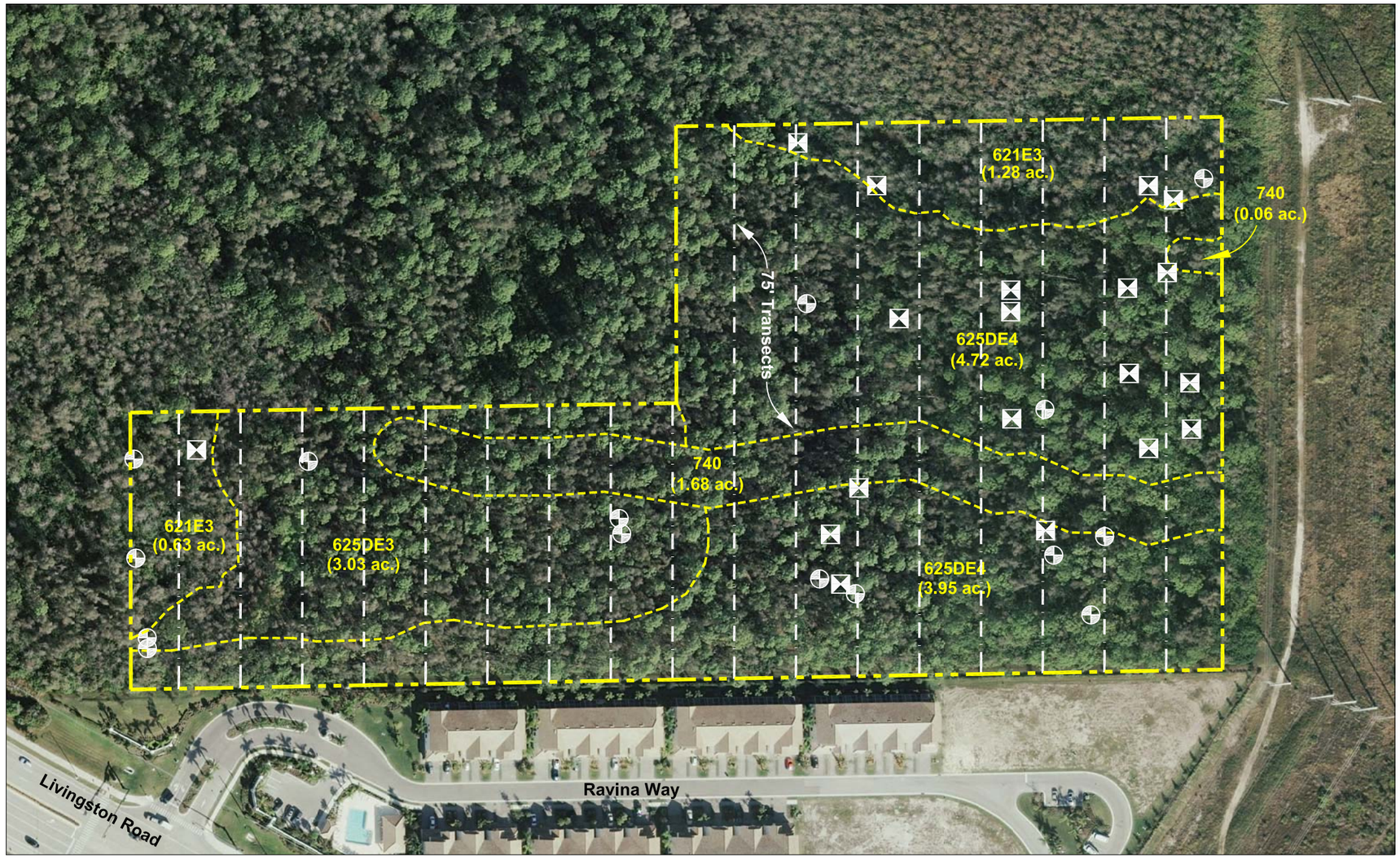
Table 1. Acreage Summary by FLUCCS Code

FLUCCS CODE	DESCRIPTION	ACREAGE
621E3	Cypress Invaded by Exotics (51 – 75%)	1.91
625DE3	Drained Hydric Pine Flatwoods Invaded by Exotics (51 – 75%)	3.03
625DE4	Drained Hydric Pine Flatwoods Invaded by Exotics (76 – 90%)	8.67
740	Disturbed Land	1.74
	Total	**15.35**

FLUCCS Code 621E3, Cypress Invaded by Exotics (51 – 75%)

Two bald cypress (*Taxodium distichum*) dominated wetlands are located on the site and extends off-site to the west and to the north. In addition to bald cypress, melaleuca (*Melaleuca quinquenervia*) and widely scattered slash pine (*Pinus elliottii*) are present in the canopy. The midstory is dominated by Brazilian pepper (*Schinus terebinthifolius*) and cabbage palm (*Sabal palmetto*) with scattered bald cypress. The groundcover consists primarily of swamp fern (*Blechnum serrulatum*).

SECTION: 13
TOWNSHIP: 48 S
RANGE: 25 E



0 75 150
SCALE FEET

- Butterfly Orchid (19)
- Stiff-Leaf Wild Pine (15)

FLUCCS	Description	Acreage
621E3	Cypress Invaded by Exotics (51-75%)	1.91 ac.
625DE3	Drained Hydric Pine Flatwoods Invaded by Exotics (51-75%)	3.03 ac.
625DE4	Drained Hydric Pine Flatwoods Invaded by Exotics (76-90%)	8.67 ac.
740	Disturbed Land	1.74 ac.
	TOTAL	15.35 ac.

Notes:
1. Property boundary and surveyed wetland lines provided by Waldrop Engineering.
2. Mapping based on photointerpretation of 2012 aerial photography and ground truthing in January 2015.
3. Delineation of jurisdictional wetlands is preliminary and subject to field review/approval by applicable regulatory agencies.

PERMIT USE ONLY, NOT FOR CONSTRUCTION

February 26, 2015 8:25:45 a.m.
Drawing: PULTE8PLAN.DWG

Figure 1. Protected Species Assessment Map

Royal Palm Academy PUD

W. DEXTER BENDER & ASSOCIATES, INC.
ENVIRONMENTAL & MARINE CONSULTING
FORT MYERS 239-334-3680

FLUCCS Code 625DE3, Drained Hydric Pine Flatwoods Invaded by Exotics (51 – 75%)
The majority of the western portion of the site consists of remnant drained transitional pine flatwoods that has been invaded by exotics. Slash pine and melaleuca are the predominant canopy species. Brazilian pepper is the dominant midstory species. Scattered bald cypress and earleaf acacia (*Acacia auriculiformis*) is also present in the midstory. Groundcover consists of swamp fern, Boston fern (*Nephrolepis* sp.), Caesar weed (*Urena lobata*), grape vine (*Vitis* sp.), areas of leaf duff, and very widely scattered small clumps of saw palmetto (*Serenoa repens*).

FLUCCS Code 625DE4, Drained Hydric Pine Flatwoods Invaded by Exotics (76 – 90%)
The eastern portion of the site is also remnant drained transitional pine flatwoods. The area is vegetatively similar to FLUCCS Code 625DE3 described above with a greater density of Brazilian pepper in the midstory and less melaleuca in the canopy.

FLUCCS Code 740, Disturbed Land
Two at grade trails have been recently created apparently to allow access for geotechnical investigation of the property. These areas consist of bare sand and vegetative debris piles (primarily exotic vegetation) on either side of the trail.

Based on the vegetation mapping, 4.94± acres (identified as FLUCCS Codes 621E3 and 625DE3) of the 15.35 acre site meets the Conservation and Coastal Management Element Policy 6.1.1(1) definition of native vegetation.

SURVEY METHOD

Based on the general habitat types (FLUCCS Codes) identified on-site, there is a very low potential for a limited number of species listed as endangered, threatened, or species of special concern by the Florida Fish and Wildlife Conservation Commission (FWC) or the United States Fish and Wildlife Service (FWS) to potentially occur on the subject parcel. These species include gopher tortoise (*Gopherus polyphemus*), eastern indigo snake (*Drymarchon corais couperi*), red-cockaded woodpecker (*Picoides borealis*), Big Cypress fox squirrel (*Sciurus niger avicennia*), Florida black bear (*Ursus americanus floridanus*), and Florida bonneted-bat (*Eumops floridanus*). The bald eagle (*Haliaeetus leucocephalus*), which has been delisted by the FWC and FWS, is still protected by other regulations and was therefore included in the survey. In addition, per Collier County regulations three species of orchids (*Cyrtopodium punctatum*, *Encyclia cochleata*, and *E. tampensis*) and four species of wild pine (*Tillandsia fasciculata*, *T. utriculata*, *T. balbisiana*, and *T. flexuosa*) which could potentially occur on-site were included in the survey.

In order to comply with FWC/FWS survey methodology guidelines, each habitat type was surveyed for the occurrence of listed species using meandering pedestrian belt transects. The meandering pedestrian belt transects were spaced approximately 75 feet apart. The approximate location of direct sighting or sign (such as tracks, nests, and droppings) of a listed species, when observed, was denoted on the aerial photography and recorded using a hand held GPS unit (Garmin GPSMAP64s,

estimated accuracy 5 - 10± feet). Figure 1 depicts the approximate location of the survey transects and the results of the survey. The listed species survey was conducted during the mid-day hours of January 28, 2015. The weather at the time of the survey was cool and sunny with a light breeze.

Prior to conducting the protected species survey, a search of the FWC listed species database (updated June 2014) was conducted to determine the known occurrence of listed species in the project area. This search revealed no known protected species occurring on or immediately adjacent to the site.

SURVEY RESULTS

Collier County Plants

Both butterfly orchids (*E. tampensis*) and stiff-leaved wild-pines (*T. fasciculata*) were observed in various locations across the site. Both species occur within the preserves and therefore, pursuant to Collier County LDC Section 3.04.03, there is no requirement to relocate butterfly orchids or stiff-leaved wild-pines into the preserves.

Other Listed Species

No other species listed by either the FWS or the FWC were observed on the site during the protected species survey. This is not unexpected due to the poor habitat on-site (significant exotic infestation and hydrologic alteration) and surrounding off-site developments. In addition to the site inspection, a search of the FWC species database (updated June 2014) revealed no additional known protected species within or immediately adjacent to the project limits.