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December 18, 2017

Naples Select Senior Development, LLC  
c/o Evergreen Senior Housing  
2040 W. 17<sup>th</sup> Street, 3<sup>rd</sup> Floor  
Denver, CO 80211

Attention: Mr. Bill Henry, President

Reference: Protected Species Assessment  
Proposed Memory Care Cottages of Naples Property  
5867 Whitaker Road  
Naples, Collier County, FL  
UES Project No. 0140.1700455.0000  
Report No. 1516665

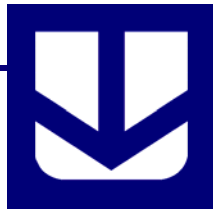
Dear Mr. Henry:

Based on the results of the assessment conducted at the subject property there was no evidence of protected wildlife observed on the subject property. It appears the development of the property is not likely to adversely affect any species of protected wildlife. There are no federally listed critical habitat areas found on site. Further explanation can be found in the attached summary report.

Please contact me at (407)423-0504 if you have any questions regarding this report.

Respectfully submitted,  
**Universal Engineering Sciences, Inc.**

David S. Whitney  
Senior Environmental Scientist



## UNIVERSAL ENGINEERING SCIENCES

**PROTECTED SPECIES ASSESSMENT  
MEMORY CARE COTTAGES OF NAPLES PROPERTY  
5867 WHITAKER ROAD  
NAPLES, COLLIER COUNTY, FL**

**UES Project No. 0140.1700455.0000  
Report No. 1516665  
Date: December 18, 2017**

**Prepared For:**

**Naples Select Senior Development, LLC  
c/o Evergreen Senior Housing  
2040 W. 17<sup>th</sup> Street, 3<sup>rd</sup> Floor  
Denver, CO 80211**

**Prepared By:**

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**Prepared By:**

**David S. Whitney  
Senior Environmental Scientist**

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- B. FNAI, FFWCC, & USFWS Data/Maps
- C. USFWS Indigo Snake Protection Plan/Guidelines

## 1.0 GENERAL SITE DESCRIPTION

The subject property is approximately 8.74± acres in size and includes Collier County parcel numbers 00428200602, 00428200505, & 00427080001. The property is located at 5867 Whitaker Road, in Naples, Collier County, FL. The site is generally located at the southwest corner of Whitaker Road and Santa Barbara Boulevard in Section 17, Township 50 South, and Range 26 East. The subject property was vacant and forested at the time of the assessment.

## 2.0 EXISTING CONDITIONS

**On-site land uses:** The land uses described in this report are based on the Florida Department of Transportation's handbook "Florida Land Use Cover and Forms Classification System" 1999 edition.

Currently there are two (2) land uses on the project site including uplands and wetlands (Figure 2). Photographs of each land use can be found in Appendix A. On-site habitat descriptions are as follows:

- FLUCCS 411: Pine Flatwoods, with 0-25% Exotics (3.16 acre/36%)

The perimeter of the property consists of a pine flatwoods community. The dominant canopy species include melaleuca (*Melaleuca quinquenervia*), slash pine (*Pinus elliottii*) and pond pine (*Prunus serotina*). Subdominant species include live oak (*Quercus laurifolia*), earleaf acacia (*Acacia auriculiformis*) and cabbage palm (*Sabal palmetto*). Shrubs in this habitat include Brazilian pepper (*Schinus terebinthifolia*), saw palmetto (*Serenoa repens*), and tree saplings. Groundcover includes mostly bracken fern (*Pteridium aquilinum*)

- FLUCCS 624: Pine, Cypress, Cabbage Palm, with >50% Exotics (5.58 acres/64%)

The central portion of the subject property consists a mixed forested wetland area. The dominant canopy species include melaleuca, slash pine, and pond pine. Subdominant species include earleaf acacia and cabbage palm. Shrubs in this habitat include tree saplings and Brazilian pepper. A few bald cypress trees (*Taxodium distichum*) are scattered throughout this habitat, but most are dead or severely stressed. Groundcover was very minimal in most areas but includes swamp fern (*Blechnum serrulatum*) and southern bob buttons (*Lachnocaulon beyrichianum*).

**Topography:** The vicinity of the site has generally flat topography. The subject property is also generally flat with a slight depression toward the center of the site. Based on the data from Google Earth, the property is approximately 43 to 50 feet above sea level.

**Soils:** According to the Soil Conservation Service, Collier County Soil Survey, surficial soils at the subject property are classified as Malabar fine sand (0-2% slopes), Hallandale fine sand (0-2% slopes), & Pineda fine sand (limestone substratum, 0-2% slopes). See Figure 3 for soils map.

A brief description of the on-site soil type is as follows:

*3. Malabar Fine Sand (0-2% slopes):*

This soil is classified as poorly drained and is found on drainageways and flats of marine terraces. The seasonal high water table is at a depth of 0 to 12 inches under normal conditions.

*11. Hallandale Fine Sand (0-2% slopes):*

This soil is classified as poorly drained and is found on flatwoods of marine terraces. The seasonal high water table is at a depth of 6 to 18 inches under normal conditions.

*14. Pineda Fine Sand (Limestone Substratum, 0-2% slopes):*

This soil is classified as poorly drained and is found on drainageways and flats of marine terraces. The seasonal high water table is at a depth of 0 to 12 inches under normal conditions.

**Drainage:** The site has no formal drainage system in place. Runoff likely percolates into the ground on-site due to the perimeter of the site being higher than the center of the site. There is a swale in the right of way of Whitaker Road on the north end of the site.

**Adjacent Land Uses:** The site is in a moderately developed residential area. The adjoining properties to the east include a new 4-lane highway (Santa Barbara Blvd.). The adjoining property to the south includes a residential townhome community. The adjoining property to the west includes undeveloped land and a youth housing community. The adjoining properties to the north include Whitaker Road and undeveloped lands.

### **3.0 WILDLIFE ASSESSMENT METHODOLOGY**

UES staff scientists reviewed the property for signs of utilization or presence of any flora or fauna listed as protected by the U.S. Fish and Wildlife Service (FWS) and the Florida Fish & Wildlife Conservation Commission (FFWCC), and Florida Department of Agriculture and Consumer Services (FDACS) based on known habitat preference and geographical distribution. The field assessment was performed on December 12. Weather conditions were partly cloudy and 70 to 75 degrees with little to no wind during the field assessment.

The protected species assessment included:

- (1) A review of aerial photographs to assess past uses and the potential for protected wildlife based on geographic area and ecological significance.

- (2) A review of numerous databases and reference materials including, but not limited to, those provided by the USFWS, FFWCC, and FNAI to determine the potential species of protected wildlife that may inhabit or utilize the subject property (Appendix B).
- (3) Site reconnaissance to evaluate existing site conditions. This included quiet observation for 15-20 minutes at various locations on the property. The assessment covered approximately 75% of the subject property via pedestrian transects.
- (4) A review of the FFWCC eagle nest database website for nearby bald eagle nesting sites and the waterbird colony locator for known wading bird nesting areas (Appendix B).
- (5) A review of the species occurrence data available from the FFWCC and Fish and Wildlife Research Institute.

#### 4.0 **ASSESSMENT RESULTS:**

##### 4.1 **POTENTIAL PROTECTED WILDLIFE**

Based on the existing habitat found on site, the surrounding land uses, field observations, and the data obtained from the USFWS, FNAI, and FFWCC (Appendix B), the site has minimal potential to provide adequate habitat to support nesting and/or foraging by a few listed species. The species of protected wildlife that are most likely to be found utilizing the site include the gopher tortoise, eastern indigo snake, and the Florida burrowing owl. The site provides poor to fair burrowing and/or foraging habitat for the tortoise and burrowing owl. The site is in an area with a mosaic of uplands and wetlands with large undeveloped properties generally contiguous with the exception of Whitaker Road as a developed barrier. The presence of large undeveloped tracts increases the potential for the eastern indigo snake to be found utilizing the subject property. The current listed status and potential for specific species to utilize the site are discussed in Table 1 below.

TABLE 1: Potential for individual listed species to occur on the subject property.

Common Name	Scientific Name	Status *(FWC/USFWS)	Potential (low, moderate, high)	Comments
Gopher Tortoise	<i>Gopherus polyphemus</i>	T/None	Low	The shallow water table and density of rooted vegetation significantly reduces the potential for this species to be found on-site. Uplands on adjacent properties could currently have tortoise populations. No evidence of tortoises was observed during the assessment.

FL Burrowing Owl	<i>Athene cunicularia floridana</i>	SSC/None	Low-Moderate	The open areas along the east and south edges of the site could be utilized for burrowing by this species. Burrowing owls have not been well documented in the vicinity of the subject property in the past. No burrows were observed on the property at the time of the assessment.
Eastern Indigo Snake	<i>Drymarchon couperi</i>	T/T	Moderate	The site has potential foraging and nesting habitat for this species. The large undeveloped areas to the north and east of the subject property increase the potential to see this species foraging or nesting around/on the subject property. The residential, and transportation uses surrounding the site likely reduce the potential for this species to be found utilizing the site.
Bald Eagle	<i>Haliaeetus leucocephalus</i>	N/N Protected under Bald and Golden Eagle Act	Low-Moderate	The subject property has very few larger pines that could provide a nesting opportunity for this species. The closest known nesting site is located approximately 2.14 miles west of the property.
Florida Panther	<i>Puma concolor coryi</i>	E/E	Low	The FWC database indicates that this species has been documented near the subject property in the past. No evidence of this species was observed on the subject property. Surrounding development likely reduces the potential for this species to be found utilizing the subject property.

\*SSC-species of special concern, T-threatened, E-endangered

## 4.2 OBSERVED PROTECTED WILDLIFE/PLANTS

The results of the assessment found no direct evidence that the subject property is inhabited or utilized by any species of protected wildlife. There were no nests, dens, tracks, or scat

observed indicate any protected species could be found on-site. No listed plant species were observed during the assessment. The closest known eagle nest is located approximately 2.14 miles west of the subject property (Appendix A).

UES observed multiple listed plant species on-site during the assessment. Listed plants observed included common wild pine (*Tillandsia fasciculata*), giant wild pine (*Tillandsia utriculata*), and northern needleleaf (*Tillandsia balbisiana*). The giant wild pine and common wild pine species are listed as endangered by the FDACS. The northern needleleaf is listed as threatened by the FDACS. No other listed plant species were observed during the assessment.

### **4.3 NON-PROTECTED WILDLIFE OBSERVATIONS/EVIDENCE**

Non-protected wildlife evidence observed on-site during the site visit included direct observations of the blue-gray gnatcatcher, gray squirrel, black vulture, and brown anole.

## **5.0 SUMMARY:**

The results of the assessment found that there is minimal potential for development of the subject property to affect a few protected species. These concerns are described in more detail below.

*Eastern Indigo Snake:* The site does contain potential nesting and foraging habitat for the eastern indigo snake. The eastern indigo snake is listed as “Threatened” pursuant to the Endangered Species Act of 1973 (state and federal level). The USFWS may recommend that the Standard Protection Measures for the Eastern Indigo Snake be implemented on the site during future construction activities. On properties where indigo snakes may be found, and protection measures are going to be implemented during construction, no further action is required as long as the standard measures for protection are utilized. The standard measures typically include placing of signage at construction site entrances and in the construction office, along with educating construction staff on how to identify the indigo snake and what steps to take if one is observed or one is found injured/dead during construction activities. A copy of the “standard protection measures for eastern indigo snakes” is included in Appendix C of this report. Summaries of recommended actions and samples of signage and pamphlets that can be utilized on the project site can be found on-line on the USFWS website.

[http://www.fws.gov/northflorida/IndigoSnakes/20130812\\_Eastern\\_indigo\\_snake\\_Standard\\_Protection\\_Measures.htm](http://www.fws.gov/northflorida/IndigoSnakes/20130812_Eastern_indigo_snake_Standard_Protection_Measures.htm)

*Gopher Tortoise & FL Burrowing Owl:* The subject property contains poor to fair quality burrowing and foraging habitat for the gopher tortoise (*Gopherus polyphemus*). This species is listed as “Threatened” by the FFWCC and is not federally listed in Florida by the USFWS. No evidence of this species was observed during this assessment. There is also very limited potential for this species to be present on adjoining properties, which would allow them to relocate to the subject property. Because there is at least some potential for tortoises to relocate from adjoining properties, UES recommends a 100% survey of the



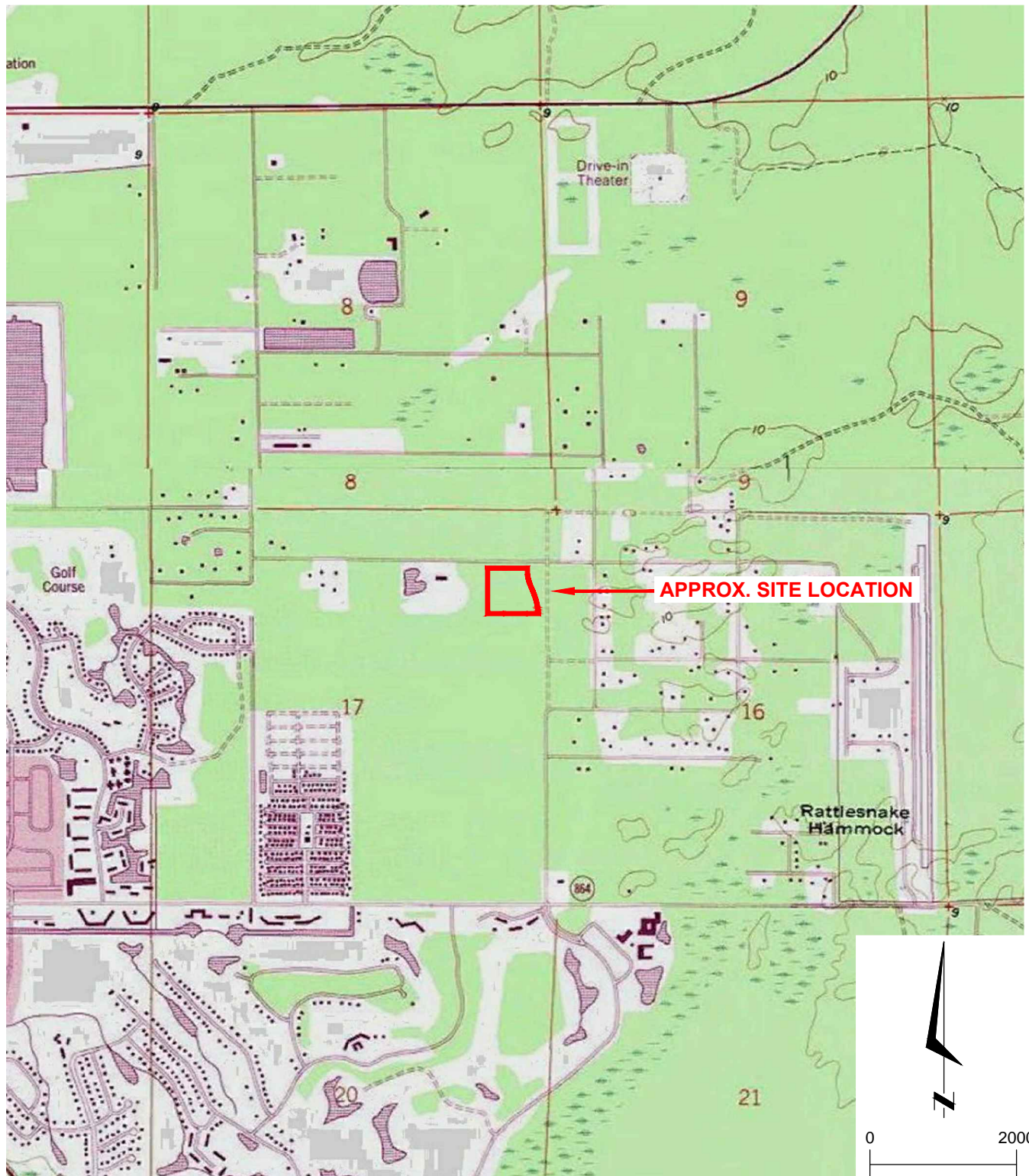
upland areas on the property prior to construction commencement or land clearing activities. If any burrows are found prior to construction activities, the appropriate gopher tortoise relocation permit should be obtained from the FFWCC, and the tortoises with burrows located within 25' of areas to be disturbed should be relocated to an off-site recipient site. The site can be surveyed for FL burrowing owl (*Athene cunicularia floridana*) burrows at the same time as the tortoise burrows. Owls have not been well documented in the area of the subject property in the past.

In summary, the results of the assessment found no direct evidence that the subject property is currently being utilized by any species of protected wildlife. There are no critical habitat areas on site. Three listed plant species were observed on-site. Based on the existing habitat found on site, the surrounding land uses, field observations, and the data obtained from the FNAI and FWC (Appendix B), it appears the development of the subject property has very minimal potential to have an adverse effect a few listed species. A gopher tortoise burrow survey within 100% of the upland areas on the site is recommended within 90 days prior to future development/clearing on the site to confirm if any tortoises or FL burrowing owls are present at that time. The site appears to provide potential habitat for the Eastern indigo snake and therefore the standard measures for the protection of the indigo snake should be implemented on-site during land clearing activities. The development of the subject property is not likely to have an adverse effect on any other species of protected wildlife other than those previously discussed above.

This assessment represents the results of our review on the date indicated. UES accepts no responsibility for recruitment of protected wildlife to the site following the date(s) of this assessment. The USFWS, FFWCC, and local government agencies may request additional assessments and/or surveys at any time. Universal Engineering Sciences is pleased to provide this preliminary protected species assessment report for the above referenced site. If there are any comments and/or questions regarding this report, please contact David Whitney at (407) 423-0504.

**FIGURE 1**

**VICINITY/TOPO MAP**



SOURCE: USGS QUADRANGLE MAP OF "BELLE MEADE, FLORIDA".

SCALE (FT.)



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ENGINEERING SCIENCES

PROTECTED SPECIES ASSESSMENT  
PROPOSED MEMORY CARE COTTAGES OF NAPLES  
5867 WHITAKER ROAD  
NAPLES, COLLIER COUNTY, FLORIDA

SITE LOCATION MAP

DRAWN BY: N.F.	DATE: 12 - 8 - 17	CHECKED BY: D.W.	DATE: - -
SCALE: AS SHOWN	PROJECT NO: 0140.1700455.0000	REPORT NO: #	PAGE NO: A-1

17-0583-01

**FIGURE 2**

**AERIAL/LAND USE MAP**

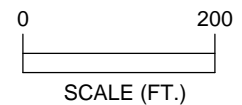




#### FLUCCS LEGEND

411 - PINE FLATWOODS [0-25% EXOTICS] ( 3.16 ac / 36%)

624 - PINE, CYPRESS, CABBAGE PALM [>50% EXOTICS] ( 5.58 ac / 64%)



AERIAL PHOTO SOURCE: GOOGLE EARTH



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### PROTECTED SPECIES ASSESSMENT PROPOSED MEMORY CARE COTTAGES OF NAPLES 5867 WHITAKER ROAD NAPLES, COLLIER COUNTY, FLORIDA

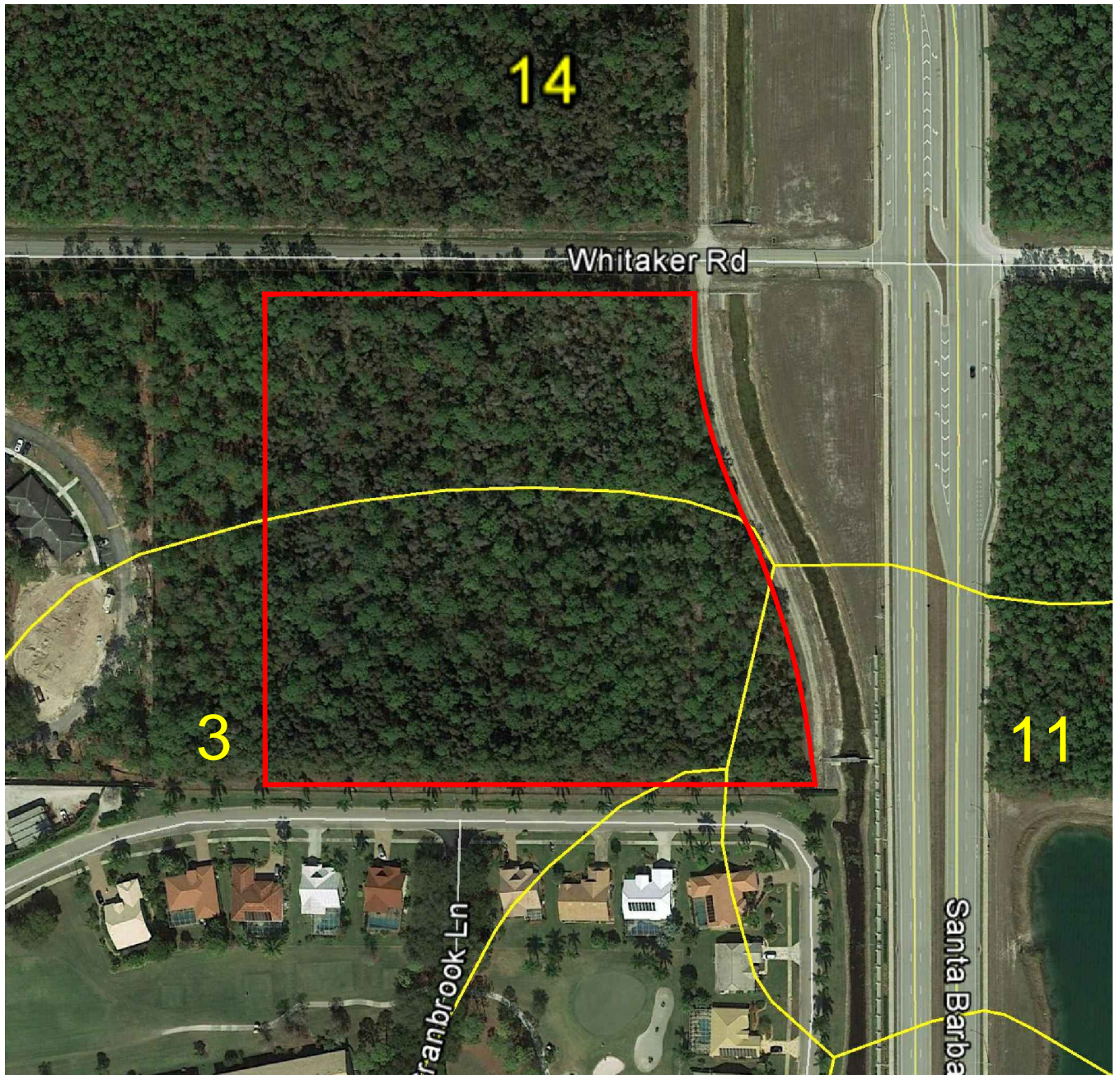
#### FLUCCS MAP / 2017 AERIAL PHOTOGRAPH

DRAWN BY: N.F.	DATE: 12 - 8 - 17	CHECKED BY: D.W.	DATE:
SCALE: AS SHOWN	PROJECT NO: 0140.1700455.0000	REPORT NO:	FIGURE NO: FIGURE 2

17-0583-01

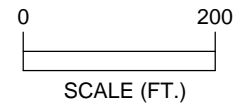
**FIGURE 3**  
**SOILS MAP**





#### SOILS LEGEND

- 3 - MALABAR FINE SAND, 0 - 2 % SLOPES
- 11 - HALLANDALE FINE SAND, 0 - 2 % SLOPES
- 14 - PINEDA FINE SAND, LIMESTONE SUBSTRATUM, 0 - 2 % SLOPES



SOIL DATA SOURCE: USDA-NRCS WEB SOIL SURVEY  
AERIAL PHOTO SOURCE: GOOGLE EARTH



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### PROTECTED SPECIES ASSESSMENT PROPOSED MEMORY CARE COTTAGES OF NAPLES 5867 WHITAKER ROAD NAPLES, COLLIER COUNTY, FLORIDA

#### USDA - NRCS SOIL SURVEY MAP

DRAWN BY: N.F.	DATE: 12 - 8 - 17	CHECKED BY: D.W.	DATE:
SCALE: AS SHOWN	PROJECT NO: 0140.1700455.0000	REPORT NO:	PAGE NO: FIGURE 3

**APPENDIX A**

**SITE PHOTOS**





**PHOTO #1 – View from the northwest property corner facing east along the north property boundary.**



**PHOTO #2 - View from the northeast property corner facing south along the west property boundary.**





**PHOTO #3 – View within the central wetland area on the property.**



**PHOTO #4 - View of the wetland and pine flatwood upland edge in the northwest portion of the property.**





**PHOTO #3 – View from the center of the south property boundary facing east.**



**PHOTO #4 - View from the center of the south property boundary facing west.**





**PHOTO #5 – View from the southeast property corner facing north along the east property boundary.**



**PHOTO #6 - View from the northeast property corner facing south along the east property boundary.**





**PHOTO #7 – View from the northeast property corner facing west along the north property boundary.**



**PHOTO #8 - View of the pine flatwood upland fringe (front of photo) and the forested wetland (at rear of photo).**

## **APPENDIX B**

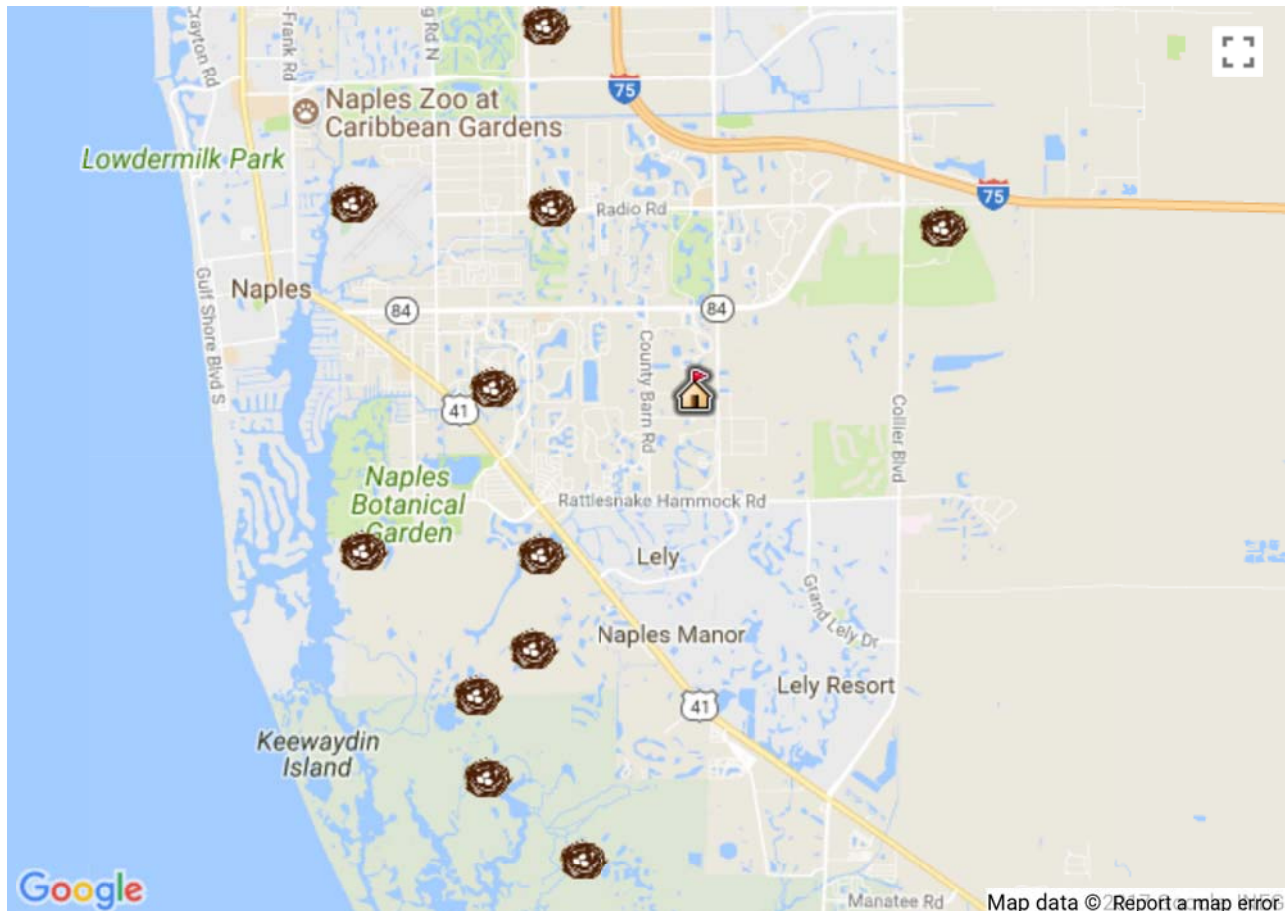
### **FNAI, FFWCC, USFWS DATA/MAPS**

This report was generated using the bald eagle nest locator at <https://public.myfwc.com/FWRI/EagleNests/nestlocator.aspx> on 12/11/2017 9:34:05 AM.

**Search Entered:** Within 5 miles of 5867 whitaker road, naples, fl (latitude 26.121059 and longitude -81.722195);  
All Search Results

11 record(s) were found; 11 record(s) are shown

### Bald Eagle Nest Map:



### Bald Eagle Nest Data Search Results:

Results per page: All

Nest ID	County	Latitude	Longitude	Township	Range	Section	Gaz Page	Last Known Active	Last Surveyed	Act 12	Act 13	Act 14	Act 15	Act 16	Dist. (Mi)
CO003	Collier	26 03.05	81 44.48	51S	26E	06	111	2013	2013	*	Y	*	*	*	4.99
CO009	Collier	26 05.90	81 46.75	50S	25E	23	111	2013	2013	*	Y	*	*	*	3.86
CO010	Collier	26 05.00	81 45.00	50S	25E	25	111	1980	2013	*	-	*	*	*	3.12
CO023	Collier	26 09.08	81 44.82	50S	26E	06	111	2016	2016	*	*	*	*	Y	2.59
CO024	Collier	26 05.86	81 44.91	50S	26E	19	111	2013	2013	*	Y	*	*	*	2.30
CO027	Collier	26 09.13	81 46.85	50S	25E	02	111	2014	2014	*	Y	Y	*	*	4.22
CO028	Collier	26 04.58	81 45.57	50S	25E	36	111	2014	2014	*	Y	Y	*	*	3.86
CO035	Collier	26 03.82	81 45.47	51S	25E	01	111	2013	2013	*	Y	*	*	*	4.54
CO040	Collier	26 07.42	81 45.40	50S	25E	13	111	2016	2016	*	*	*	*	Y	2.14
CO054	Collier	26 10.75	81 44.88	49S	26E	30	111	2015	2015	*	*	Y	Y	*	4.33

CO056	Collier	26 08.91	81 40.77	50S	26E	02	111	2016	2016	*	*	*	*	Y	3.25
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"Y" denotes an active nest

"U" denotes a nest that was visited but status was undetermined

"N" denotes an inactive nest

"\*" denotes a nest that was not surveyed

"-" denotes an unobserved nest





FLORIDA  
**Natural Areas**  
INVENTORY

1018 Thomasville Road  
Suite 200-C  
Tallahassee, FL 32303  
850-224-8207  
850-681-9364 fax  
www.fnai.org

## Florida Natural Areas Inventory

### Biodiversity Matrix Query Results

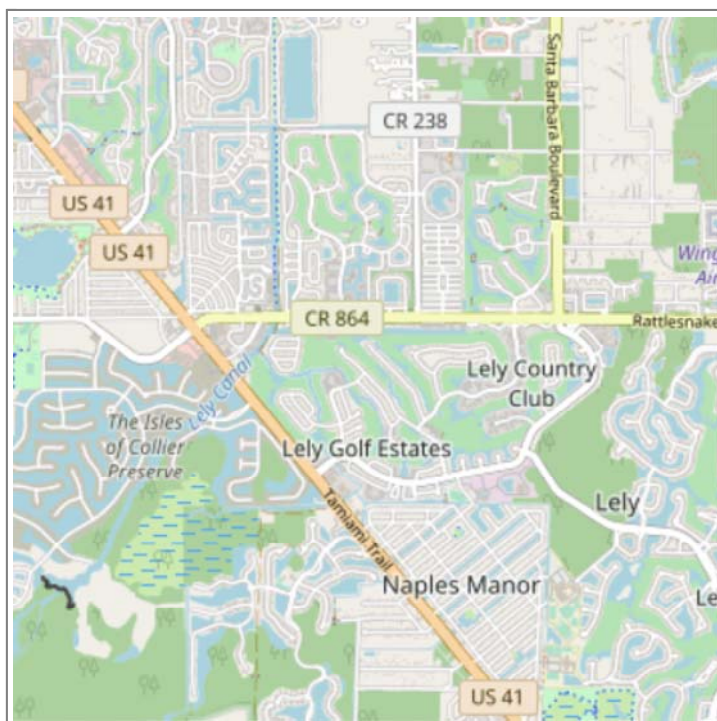
#### UNOFFICIAL REPORT

Created 12/11/2017

(Contact the FNAI Data Services Coordinator at 850.224.8207 for information on an official Standard Data Report)

NOTE: The Biodiversity Matrix includes only rare species and natural communities tracked by FNAI.

#### Report for 1 Matrix Unit: 40535



#### Descriptions

**DOCUMENTED** - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit.

**DOCUMENTED-HISTORIC** - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit; however the occurrence has not been observed/reported within the last twenty years.

**LIKELY** - The species or community is *known* to occur in this vicinity, and is considered likely within this Matrix Unit because:

1. documented occurrence overlaps this and adjacent Matrix Units, but the documentation isn't precise enough to indicate which of those Units the species or community is actually located in; or
2. there is a documented occurrence in the vicinity and there is suitable habitat for that species or community within this Matrix Unit.

**POTENTIAL** - This Matrix Unit lies within the known or predicted range of the species or community based on expert knowledge and environmental variables such as climate, soils, topography, and landcover.

#### Matrix Unit ID: 40535

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

4 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Mesic flatwoods</i>	G4	S4	N	N
	G3	S2	LE	FE

<a href="#"><i>Picoides borealis</i></a> Red-cockaded Woodpecker				
<a href="#"><i>Sciurus niger avicennia</i></a> Mangrove Fox Squirrel	G5T2	S2	N	ST
<a href="#"><i>Ursus americanus floridanus</i></a> Florida Black Bear	G5T2	S2	N	N

**Matrix Unit ID: 40535****16 Potential** Elements for Matrix Unit 40535

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Andropogon arctatus</i> Pine-woods Bluestem	G3	S3	N	T
<a href="#"><i>Athene cunicularia floridana</i></a> Florida Burrowing Owl	G4T3	S3	N	SSC
<a href="#"><i>Drymarchon couperi</i></a> Eastern Indigo Snake	G3	S3	LT	FT
<i>Elytraria caroliniensis</i> var. <i>angustifolia</i> Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
<a href="#"><i>Eumops floridanus</i></a> Florida bonneted bat	G1	S1	LE	FE
<a href="#"><i>Gopherus polyphemus</i></a> Gopher Tortoise	G3	S3	C	ST
<i>Lechea cernua</i> Nodding Pinweed	G3	S3	N	T
<a href="#"><i>Linum carteri</i> var. <i>smallii</i></a> Small's Flax	G2T2	S2	N	E
<i>Mustela frenata peninsulae</i> Florida Long-tailed Weasel	G5T3	S3	N	N
<a href="#"><i>Nemastylis floridana</i></a> Celestial Lily	G2	S2	N	E
<a href="#"><i>Patachioenas leucocephala</i></a> White-crowned Pigeon	G3	S3	N	ST
<i>Polyrrhiza lindenii</i> Ghost Orchid	G2G4	S2	N	E
<a href="#"><i>Puma concolor coryi</i></a> Florida Panther	G5T1	S1	LE	FE
<i>Rostrhamus sociabilis</i> Snail Kite	G4G5	S2	LE	N
<i>Roystonea elata</i> Florida Royal Palm	G2G3	S2	N	E
<a href="#"><i>Sceloporus woodi</i></a> Florida Scrub Lizard	G2G3	S2S3	N	N

**Disclaimer**

The data maintained by the Florida Natural Areas Inventory represent the single most comprehensive source of information available on the locations of rare species and other significant ecological resources statewide. 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. FNAI shall not be held liable for the accuracy and completeness of these data, or opinions or conclusions drawn from these data. FNAI is not inviting reliance on these data. 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.

**Unofficial Report**

These results are considered unofficial. FNAI offers a [Standard Data Request](#) option for those needing certifiable data.

**IPaC** Information for Planning and Consultation **U.S. Fish & Wildlife Service**

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Collier County, Florida



## Local office

South Florida Ecological Services Field Office

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Vero Beach, FL 32960-3559

<http://fws.gov/verobeach>

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

## Listed species

<sup>1</sup> are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service.

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.

The following species are potentially affected by activities in this location:

## Mammals

NAME	STATUS
Florida Bonneted Bat <i>Eumops floridanus</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/8630">https://ecos.fws.gov/ecp/species/8630</a>	Endangered
Florida Panther <i>Puma (=Felis) concolor coryi</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/1763">https://ecos.fws.gov/ecp/species/1763</a>	Endangered

Puma (=mountain Lion) *Puma* (=Felis) concolor (all subsp. except coryi) SAT

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6049>

West Indian Manatee *Trichechus manatus*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.

Marine mammal

<https://ecos.fws.gov/ecp/species/4469>

## Birds

NAME

STATUS

Cape Sable Seaside Sparrow *Ammodramus maritimus mirabilis*

Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.

<https://ecos.fws.gov/ecp/species/6584>

Everglade Snail Kite *Rostrhamus sociabilis plumbeus*

Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.

<https://ecos.fws.gov/ecp/species/7713>

Florida Grasshopper Sparrow *Ammodramus savannarum floridanus*

Endangered

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/32>

Florida Scrub-jay *Aphelocoma coerulescens*

Threatened

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6174>

Ivory-billed Woodpecker *Campephilus principalis*

Endangered

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/8230>

Kirtland's Warbler *Setophaga kirtlandii* (= *Dendroica kirtlandii*)

Endangered

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/8078>

Piping Plover *Charadrius melodus*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.

<https://ecos.fws.gov/ecp/species/6039>



Red Knot <i>Calidris canutus rufa</i>	Threatened
No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/1864">https://ecos.fws.gov/ecp/species/1864</a>	
Red-cockaded Woodpecker <i>Picoides borealis</i>	Endangered
No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/7614">https://ecos.fws.gov/ecp/species/7614</a>	
Wood Stork <i>Mycteria americana</i>	Threatened
No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/8477">https://ecos.fws.gov/ecp/species/8477</a>	

## Reptiles

NAME	STATUS
American Alligator <i>Alligator mississippiensis</i>	SAT
No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/776">https://ecos.fws.gov/ecp/species/776</a>	
American Crocodile <i>Crocodylus acutus</i>	Threatened
There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/6604">https://ecos.fws.gov/ecp/species/6604</a>	
Eastern Indigo Snake <i>Drymarchon corais couperi</i>	Threatened
No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/646">https://ecos.fws.gov/ecp/species/646</a>	
Loggerhead Sea Turtle <i>Caretta caretta</i>	Threatened
There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/1110">https://ecos.fws.gov/ecp/species/1110</a>	

## Fishes

NAME	STATUS
Atlantic Sturgeon (gulf Subspecies) <i>Acipenser oxyrinchus</i> (=oxyrhynchus) <i>desotoi</i>	Threatened
There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/651">https://ecos.fws.gov/ecp/species/651</a>	

## Insects

NAME	STATUS
Bartram's Hairstreak Butterfly <i>Strymon acis bartrami</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/4837">https://ecos.fws.gov/ecp/species/4837</a>	Endangered
Florida Leafwing Butterfly <i>Anaea troglodyta floralis</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/6652">https://ecos.fws.gov/ecp/species/6652</a>	Endangered
Miami Blue Butterfly <i>Cyclargus (=Hemiargus) thomasi bethunebakeri</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/3797">https://ecos.fws.gov/ecp/species/3797</a>	Endangered

## Flowering Plants

NAME	STATUS
Florida Prairie-clover <i>Dalea carthagenensis floridana</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/2300">https://ecos.fws.gov/ecp/species/2300</a>	Endangered
Garber's Spurge <i>Chamaesyce garberi</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/8229">https://ecos.fws.gov/ecp/species/8229</a>	Threatened

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service



3. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured. Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or are known to have particular vulnerabilities in your project location. To learn more about the levels of concern for birds on your list, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your specific project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the [E-bird data mapping tool](#) (search for the scientific name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain time-frame) and the [E-bird Explore Data Tool](#) (perform a query to see a list of all birds sighted in your county or region and within a certain time-frame). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found [below](#).

NAME	BREEDING SEASON
<b>American Oystercatcher</b> <i>Haematopus palliatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/8935">https://ecos.fws.gov/ecp/species/8935</a>	Breeds Apr 15 to Aug 31
<b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC), but is of concern in this area either because of the Eagle Act, or for potential susceptibilities in offshore areas from certain types of development or activities. <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a>	Breeds Mar 20 to Sep 15
<b>Black Skimmer</b> <i>Rynchops niger</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/5234">https://ecos.fws.gov/ecp/species/5234</a>	Breeds May 20 to Sep 15

Black-whiskered Vireo <i>Vireo altiloquus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 1 to Aug 15
Henslow's Sparrow <i>Ammodramus henslowii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/3941">https://ecos.fws.gov/ecp/species/3941</a>	Breeds elsewhere
King Rail <i>Rallus elegans</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/8936">https://ecos.fws.gov/ecp/species/8936</a>	Breeds May 1 to Sep 5
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9679">https://ecos.fws.gov/ecp/species/9679</a>	Breeds elsewhere
Limpkin <i>Aramus guarauna</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 15 to Aug 31
Magnificent Frigatebird <i>Fregata magnificens</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Oct 1 to Apr 30
Mangrove Cuckoo <i>Coccyzus minor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Prothonotary Warbler <i>Protonotaria citrea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Reddish Egret <i>Egretta rufescens</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/7617">https://ecos.fws.gov/ecp/species/7617</a>	Breeds Mar 1 to Sep 15

Semipalmated Sandpiper <i>Calidris pusilla</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Short-billed Dowitcher <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9480">https://ecos.fws.gov/ecp/species/9480</a>	Breeds elsewhere
Short-tailed Hawk <i>Buteo brachyurus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/8742">https://ecos.fws.gov/ecp/species/8742</a>	Breeds Mar 1 to Jun 30
Swallow-tailed Kite <i>Elanoides forficatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/8938">https://ecos.fws.gov/ecp/species/8938</a>	Breeds Mar 10 to Jun 30
Whimbrel <i>Numenius phaeopus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9483">https://ecos.fws.gov/ecp/species/9483</a>	Breeds elsewhere
White-crowned Pigeon <i>Patagioenas leucocephala</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/4047">https://ecos.fws.gov/ecp/species/4047</a>	Breeds May 1 to Sep 30
Willet <i>Tringa semipalmata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 5
Wilson's Plover <i>Charadrius wilsonia</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Aug 20

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

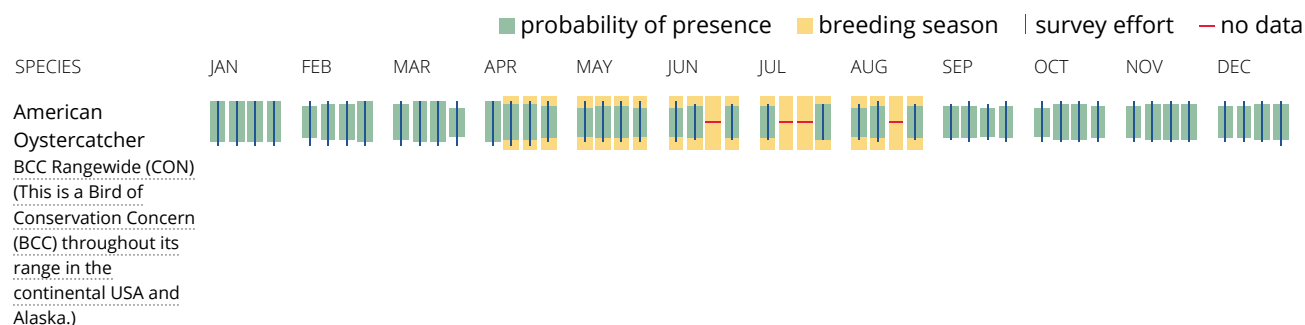
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

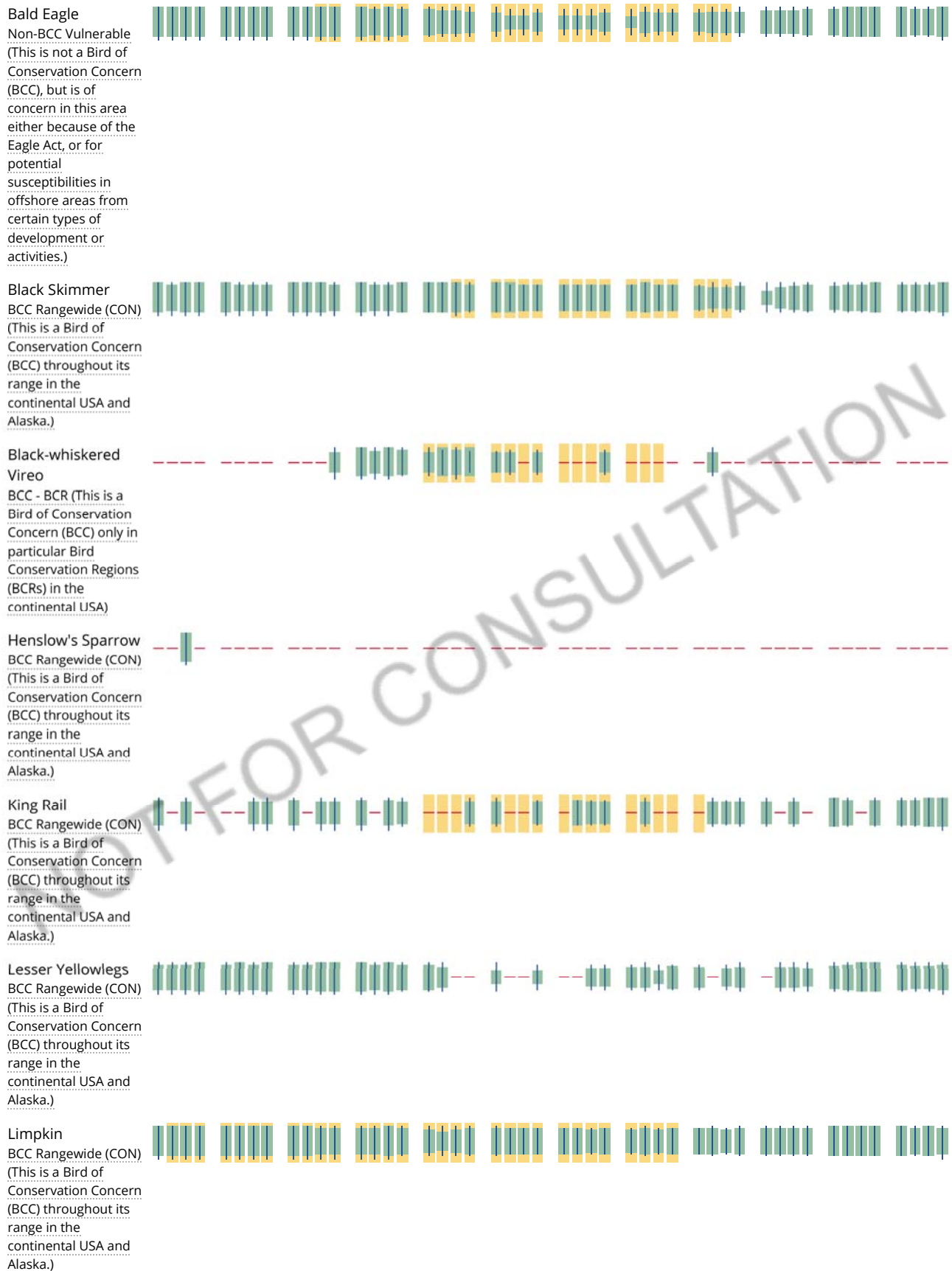
### No Data (—)

A week is marked as having no data if there were no survey events for that week.

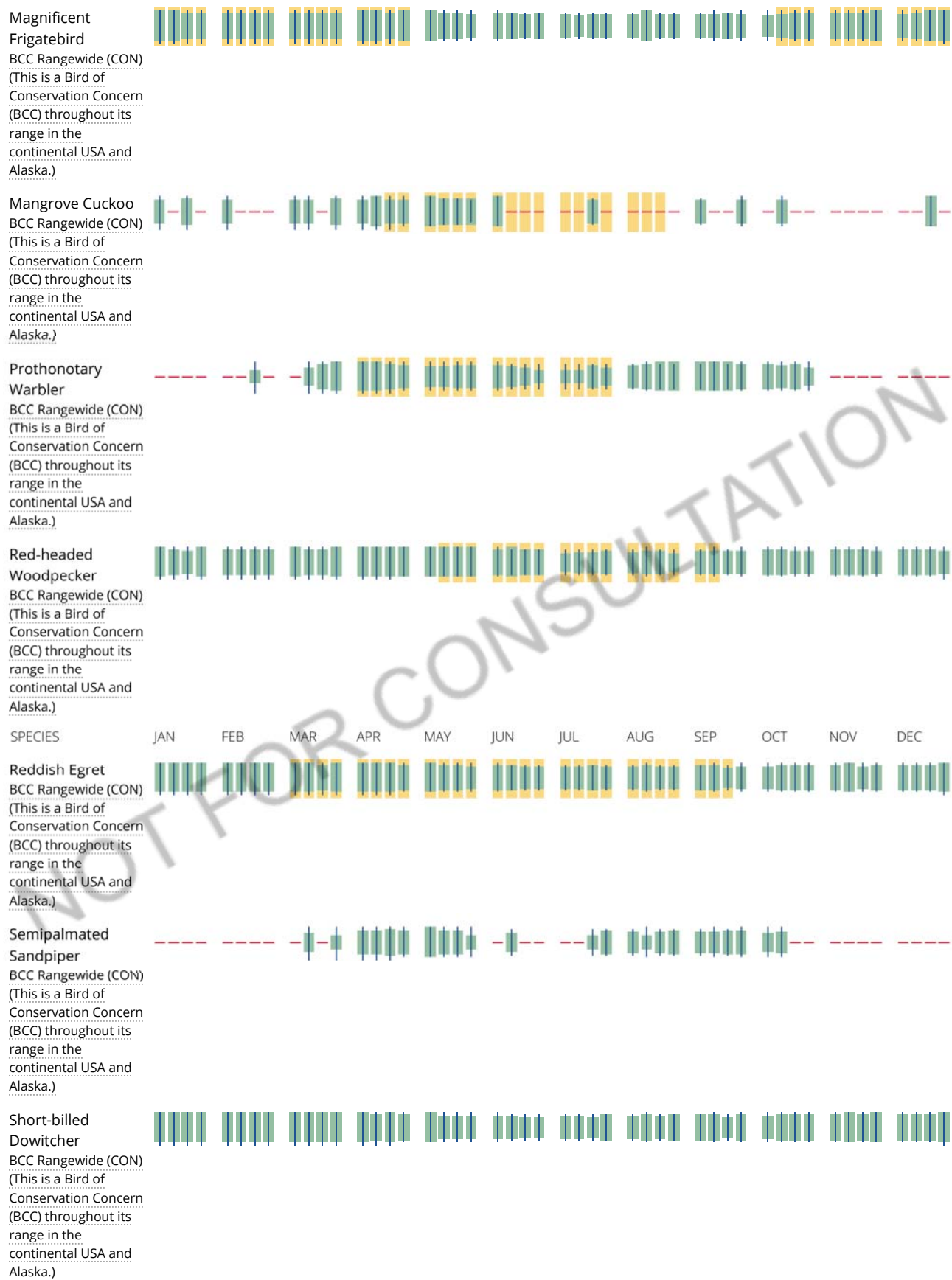
### Survey Timeframe

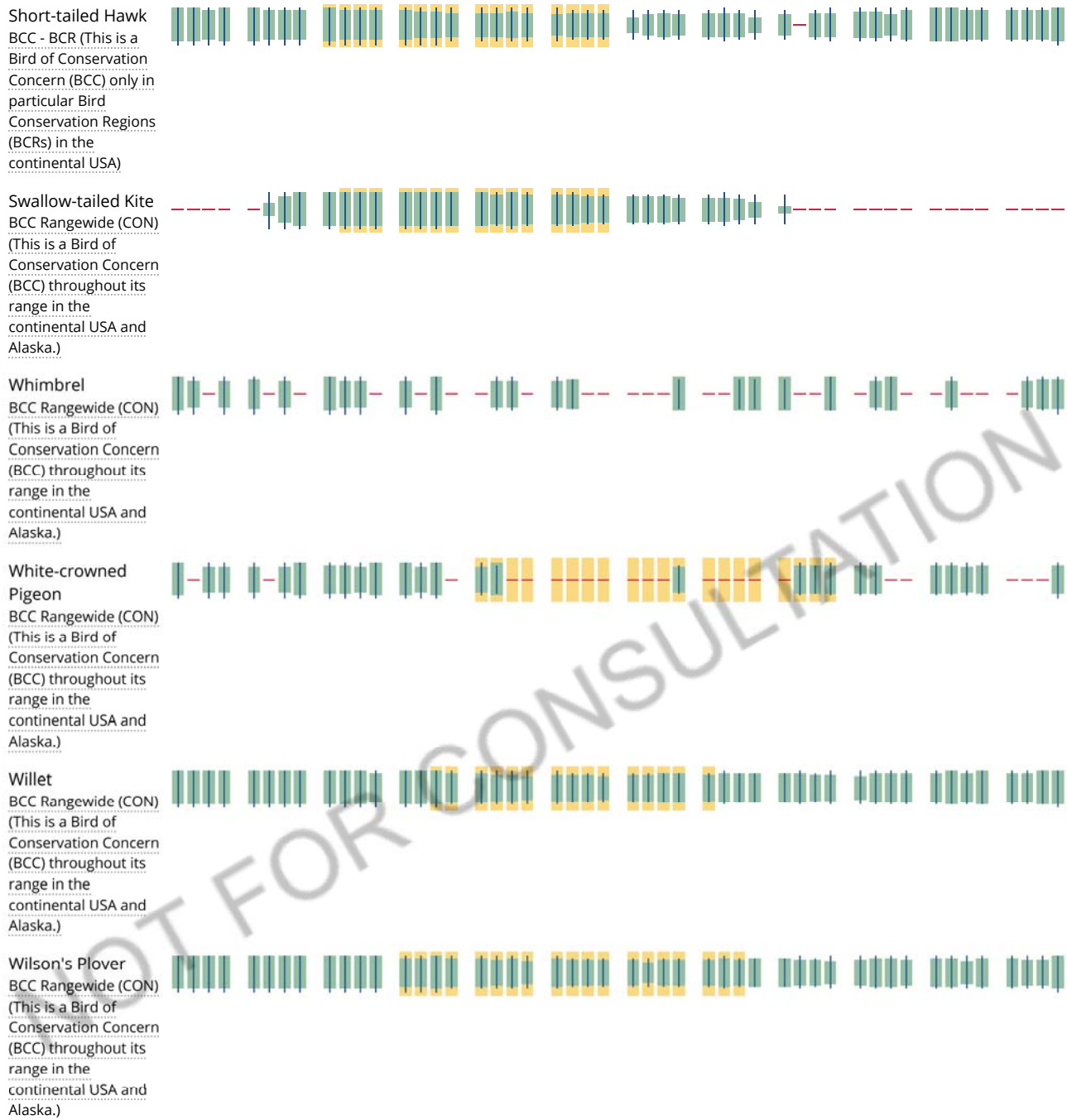
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.











Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Such measures are particularly important when birds are most likely to occur in the project area. To see when birds are most likely to occur in your project area, view the Probability of Presence Summary. Special attention should be made to look for nests and avoid nest destruction during the breeding season. The best information about when birds are breeding can be found in [Birds of North America \(BNA\) Online](#) under the "Breeding Phenology" section of each species profile. Note that accessing this information may require a [subscription](#). [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) that might be affected by activities in your project location. These birds are of priority concern because it has been determined that without additional conservation actions, they are likely to become candidates for listing under the [Endangered Species Act \(ESA\)](#).

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#). The AKN list represents all birds reported to be occurring at some level throughout the year in the counties in which your project lies. That list is then narrowed to only the Birds of Conservation Concern for your project area.

Again, the Migratory Bird Resource list only includes species of particular priority concern, and is not representative of all birds that may occur in your project area. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

**What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available.

**How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird entry on your migratory bird species list indicates a breeding season, it is probable the bird breeds in your project's counties at some point within the time-frame specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

**What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

[Avoidance and minimization measures](#) should be implemented to reduce impacts to birds on your list, and all other birds that may occur in your project area. Nationwide Standard Conservation Measures can be applied for any project, regardless of project type or location.

If measures exist that are specific to your activity or to any of the species on your list that are confirmed to exist at your project area, these should also be considered for implementation in addition to the Nationwide Standard Conservation Measures. Implementation of avoidance and minimization measures is particularly important for BCC birds of rangewide concern.

If your project has the potential to disturb or kill eagles, you will need to [obtain a permit](#) to avoid violating the BGEPA should such impacts occur.



**Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

NOT FOR CONSULTATION

## Marine mammals

Marine mammals are protected under the [Marine Mammal Protection Act](#). Some are also protected under the Endangered Species Act

<sup>1</sup> and the Convention on International Trade in Endangered Species of Wild Fauna and Flora<sup>2</sup>.

The responsibilities for the protection, conservation, and management of marine mammals under these acts are shared by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (NMFS). Marine mammals that fall under the responsibility of NMFS are **not** shown on this list.

1. The [Endangered Species Act](#) (ESA) of 1973.
2. The [Convention on International Trade in Endangered Species of Wild Fauna and Flora](#) (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.

The following marine mammals are potentially affected by activities in this location:

NAME

West Indian Manatee *Trichechus manatus*  
<https://ecos.fws.gov/ecp/species/4469>

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

## Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

## Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

This location overlaps the following wetlands:

FRESHWATER FORESTED/SHRUB WETLAND

[PFO4Ad](#)

A full description for each wetland code can be found at the National Wetlands Inventory website: <https://ecos.fws.gov/ipac/wetlands/decoder>

#### Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

#### Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

#### Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

## **APPENDIX C**

### **EASTERN INDIGO SNAKE PROTECTION MEASURES**

**STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE**  
**U.S. Fish and Wildlife Service**  
**August 12, 2013**

The eastern indigo snake protection/education plan (Plan) below has been developed by the U.S. Fish and Wildlife Service (USFWS) in Florida for use by applicants and their construction personnel. At least **30 days prior** to any clearing/land alteration activities, the applicant shall notify the appropriate USFWS Field Office via e-mail that the Plan will be implemented as described below (North Florida Field Office: [jaxregs@fws.gov](mailto:jaxregs@fws.gov); South Florida Field Office: [verobeach@fws.gov](mailto:verobeach@fws.gov); Panama City Field Office: [panamacity@fws.gov](mailto:panamacity@fws.gov)). As long as the signatory of the e-mail certifies compliance with the below Plan (including use of the attached poster and brochure), no further written confirmation or “approval” from the USFWS is needed and the applicant may move forward with the project.

If the applicant decides to use an eastern indigo snake protection/education plan other than the approved Plan below, written confirmation or “approval” from the USFWS that the plan is adequate must be obtained. At least 30 days prior to any clearing/land alteration activities, the applicant shall submit their unique plan for review and approval. The USFWS will respond via e-mail, typically within 30 days of receiving the plan, either concurring that the plan is adequate or requesting additional information. A concurrence e-mail from the appropriate USFWS Field Office will fulfill approval requirements.

The Plan materials should consist of: 1) a combination of posters and pamphlets (see **Poster Information** section below); and 2) verbal educational instructions to construction personnel by supervisory or management personnel before any clearing/land alteration activities are initiated (see **Pre-Construction Activities** and **During Construction Activities** sections below).

### **POSTER INFORMATION**

Posters with the following information shall be placed at strategic locations on the construction site and along any proposed access roads (a final poster for Plan compliance, to be printed on 11” x 17” or larger paper and laminated, is attached):

**DESCRIPTION:** The eastern indigo snake is one of the largest non-venomous snakes in North America, with individuals often reaching up to 8 feet in length. They derive their name from the glossy, blue-black color of their scales above and uniformly slate blue below. Frequently, they have orange to coral reddish coloration in the throat area, yet some specimens have been reported to only have cream coloration on the throat. These snakes are not typically aggressive and will attempt to crawl away when disturbed. Though indigo snakes rarely bite, they should NOT be handled.

**SIMILAR SNAKES:** The black racer is the only other solid black snake resembling the eastern indigo snake. However, black racers have a white or cream chin, thinner bodies, and WILL BITE if handled.

**LIFE HISTORY:** The eastern indigo snake occurs in a wide variety of terrestrial habitat types throughout Florida. Although they have a preference for uplands, they also utilize some wetlands

and agricultural areas. Eastern indigo snakes will often seek shelter inside gopher tortoise burrows and other below- and above-ground refugia, such as other animal burrows, stumps, roots, and debris piles. Females may lay from 4 - 12 white eggs as early as April through June, with young hatching in late July through October.

**PROTECTION UNDER FEDERAL AND STATE LAW:** The eastern indigo snake is classified as a Threatened species by both the USFWS and the Florida Fish and Wildlife Conservation Commission. “Taking” of eastern indigo snakes is prohibited by the Endangered Species Act without a permit. “Take” is defined by the USFWS as an attempt to kill, harm, harass, pursue, hunt, shoot, wound, trap, capture, collect, or engage in any such conduct. Penalties include a maximum fine of \$25,000 for civil violations and up to \$50,000 and/or imprisonment for criminal offenses, if convicted.

Only individuals currently authorized through an issued Incidental Take Statement in association with a USFWS Biological Opinion, or by a Section 10(a)(1)(A) permit issued by the USFWS, to handle an eastern indigo snake are allowed to do so.

**IF YOU SEE A LIVE EASTERN INDIGO SNAKE ON THE SITE:**

- Cease clearing activities and allow the live eastern indigo snake sufficient time to move away from the site without interference;
- Personnel must NOT attempt to touch or handle snake due to protected status.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Immediately notify supervisor or the applicant’s designated agent, **and** the appropriate USFWS office, with the location information and condition of the snake.
- If the snake is located in a vicinity where continuation of the clearing or construction activities will cause harm to the snake, the activities must halt until such time that a representative of the USFWS returns the call (within one day) with further guidance as to when activities may resume.

**IF YOU SEE A DEAD EASTERN INDIGO SNAKE ON THE SITE:**

- Cease clearing activities and immediately notify supervisor or the applicant’s designated agent, **and** the appropriate USFWS office, with the location information and condition of the snake.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Thoroughly soak the dead snake in water and then freeze the specimen. The appropriate wildlife agency will retrieve the dead snake.

**Telephone numbers of USFWS Florida Field Offices to be contacted if a live or dead eastern indigo snake is encountered:**

**North Florida Field Office – (904) 731-3336**

**Panama City Field Office – (850) 769-0552**

**South Florida Field Office – (772) 562-3909**



## **PRE-CONSTRUCTION ACTIVITIES**

1. The applicant or designated agent will post educational posters in the construction office and throughout the construction site, including any access roads. The posters must be clearly visible to all construction staff. A sample poster is attached.
2. Prior to the onset of construction activities, the applicant/designated agent will conduct a meeting with all construction staff (annually for multi-year projects) to discuss identification of the snake, its protected status, what to do if a snake is observed within the project area, and applicable penalties that may be imposed if state and/or federal regulations are violated. An educational brochure including color photographs of the snake will be given to each staff member in attendance and additional copies will be provided to the construction superintendent to make available in the onsite construction office (a final brochure for Plan compliance, to be printed double-sided on 8.5" x 11" paper and then properly folded, is attached). Photos of eastern indigo snakes may be accessed on USFWS and/or FWC websites.
3. Construction staff will be informed that in the event that an eastern indigo snake (live or dead) is observed on the project site during construction activities, all such activities are to cease until the established procedures are implemented according to the Plan, which includes notification of the appropriate USFWS Field Office. The contact information for the USFWS is provided on the referenced posters and brochures.

## **DURING CONSTRUCTION ACTIVITIES**

1. During initial site clearing activities, an onsite observer may be utilized to determine whether habitat conditions suggest a reasonable probability of an eastern indigo snake sighting (example: discovery of snake sheds, tracks, lots of refugia and cavities present in the area of clearing activities, and presence of gopher tortoises and burrows).
2. If an eastern indigo snake is discovered during gopher tortoise relocation activities (i.e. burrow excavation), the USFWS shall be contacted within one business day to obtain further guidance which may result in further project consultation.
3. Periodically during construction activities, the applicant's designated agent should visit the project area to observe the condition of the posters and Plan materials, and replace them as needed. Construction personnel should be reminded of the instructions (above) as to what is expected if any eastern indigo snakes are seen.

## **POST CONSTRUCTION ACTIVITIES**

Whether or not eastern indigo snakes are observed during construction activities, a monitoring report should be submitted to the appropriate USFWS Field Office within 60 days of project completion. The report can be sent electronically to the appropriate USFWS e-mail address listed on page one of this Plan.



# **ATTENTION:**

## **THREATENED EASTERN INDIGO SNAKES MAY BE PRESENT ON THIS SITE!!!**

### **IF YOU SEE A LIVE EASTERN INDIGO SNAKE ON THE SITE:**

- Cease clearing activities and allow the eastern indigo snake sufficient time to move away from the site without interference.
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- Take photographs of the snake, if possible, for identification and documentation purposes.
- Immediately notify supervisor or the applicant's designated agent, **and** the appropriate U.S. Fish and Wildlife Service (USFWS) office, with the location information and condition of the snake.
- If the snake is located in a vicinity where continuation of the clearing or construction activities will cause harm to the snake, the activities must halt until such time that a representative of the USFWS returns the call (within one day) with further guidance as to when activities may resume.

### **IF YOU SEE A DEAD EASTERN INDIGO SNAKE ON THE SITE:**

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**North Florida Field Office – (904) 731-3336**

**Panama City Field Office – (850) 769-0552**

**South Florida Field Office – (772) 562-3909**

**Killing, harming, or harassing indigo snakes is strictly prohibited and punishable under State and Federal Law.**

DESCRIPTION:	The eastern indigo snake is one of the largest non-venomous snakes in North America, with individuals often reaching up to 8 feet in length. They derive their name from the glossy, blue-black color of their scales above and uniformly slate blue below. Frequently, they have orange to coral reddish coloration in the throat area, yet some specimens have been reported to only have cream coloration on the throat. These snakes are not typically aggressive and will attempt to crawl away when disturbed. Though indigo snakes rarely bite, they should NOT be handled.
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PROTECTION:	The eastern indigo snake is classified as a Threatened species by both the USFWS and the Florida Fish and Wildlife Conservation Commission. "Taking" of eastern indigo snakes is prohibited by the Endangered Species Act without a permit. "Take" is defined by the USFWS as an attempt to kill, harm, harass, pursue, hunt, shoot, wound, trap, capture, collect, or engage in any such conduct. Penalties include a maximum fine of \$25,000 for civil violations and up to \$50,000 and/or imprisonment for criminal offenses, if convicted.

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# UNIVERSAL ENGINEERING SCIENCES

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- Ocala
- Orlando (Headquarters)
- Palm Coast
- Panama City
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- Rockledge
- Sarasota
- St. Petersburg
- Tampa
- Tifton
- West Palm Beach

December 18, 2017

Naples Select Senior Development, LLC  
c/o Evergreen Senior Housing  
2040 W. 17<sup>th</sup> Street, 3<sup>rd</sup> Floor  
Denver, CO 80211

Attention: Mr. Bill Henry, President

**RE: Wetland & Mitigation Assessment Report  
Proposed Memory Care Cottages of Naples Property  
5867 Whitaker Road  
Naples, Collier County, FL  
UES Project No. 0140.1700455.0000  
UES Report No. 1515822**

Dear Mr. Henry:

The purpose of this report is to provide you with the results of the wetland assessment and mitigation assessment performed at the above-referenced site for your use. The subject property includes two parcels totaling 8.74± acres in size and is located at the southwest corner of . The purpose of this assessment was to determine if wetlands and/or surface waters exist on the subject property that may be considered jurisdictional by the South Florida Water Management District (SFWMD) pursuant to Chapter 62-340 of the Florida Administrative Code (F.A.C.), and the United States Army Corps of Engineers (ACOE) pursuant to the 1987 Wetland Delineation Manual and Section 404 of the Clean Water Act. This assessment was performed with database and aerial map review, followed by field reconnaissance. Wetlands were also flagged/delineated to be picked up by the client's surveyor. Surveying of wetland flags was not completed by the time of issuance of this report.

## Results:

***The results of our wetland assessment concluded that there is one area of wetlands totaling approximately 5.58 acres on the subject property.*** No other wetlands or surface waters were observed on the property. There are approximately 3.16 acres of uplands on the property.

#### Wetland Delineation/Methodology:

The boundary of the wetland area was marked by GPS and flagged by Universal Engineering Sciences on December 12, 2017. The GPS points locating the approximate boundary of wetlands on the property are used in the attached Figure 1 (Wetland Assessment Map).

The indicators used to delineate the wetland boundary included presence of hydrophytic vegetation, evidence of hydrology, and hydric soil indicators. The wetland area on the site is considered a cypress, pine, and cabbage palm wetland. The dominant canopy trees are actually melaleuca, which is considered a nuisance exotic species. Sub-dominant canopy species include slash pine, pond pine, cabbage palm, and ear-leaf acacia. Earleaf acacia is also an invasive exotic species. A few bald cypress trees were observed in the wetland. However, the cypress trees observed were mostly dead stumps or severely stressed which can be an indication of change in hydrology. Shrubs are very minimal, but include saplings of tree species, Brazilian pepper around the perimeter, and a few carrotwood shrubs intermixed. Both Brazilian pepper and carrotwood are also invasive exotic species. Groundcover within the wetland areas is minimal as well but includes southern bog button and swamp fern. Uplands around the wetland are pine flatwoods where slash pine dominates the canopy, saw palmetto dominates the shrub layer, and bracken fern is the dominant groundcover.

The on-site wetland appears to have been significantly impacted by a drainage swale/ditch along the north property boundary, a large canal bordering the east end of the property, and the presence of greater than 50% exotic and nuisance species, including melaleuca, ear-leaf acacia, and Brazilian pepper.

#### Jurisdiction:

The on-site wetland appears to be isolated (i.e. not connected to other surface waters and wetlands) due to berms along the north, east, and south property boundaries. The wetland does not appear to have a direct connection to the off-site surface waters located just off-site along the north and east property boundaries. Therefore, the on-site wetland and swale may only be jurisdictional to the South Florida Water Management District (SJRWMD) and Collier County.

Collier County defers to the SJRWMD, FDEP, and ACOE for wetland permit and mitigation review. However, there are policies in the Conservation and Coastal Management Element (CCME) of Collier County's Growth Management Plan that are required to be implemented by new developments so the project will be consistent with the CCME. The most significant items appear to be 1) the requirement to eradicate nuisance exotic species within areas of the property to be preserved and maintain these species to avoid re-infestation (Preserve Management

Plan will need to be implemented) and 2) a permanent Conservation Easement will need to be provided over the remaining upland and wetland areas to be preserved.


The wetland delineation line will need to be verified by the SJRWMD staff prior to or during the environmental resource permitting process. Because the isolated wetland area is currently estimated at greater than 0.5 acre in size, compensatory mitigation for proposed impacts will be required by the SJRWMD if impacts are approved.

The ACOE will need to review the site to determine if they will claim jurisdiction based on whether they believe there is a hydrologic connection from the on-site wetlands to the neighboring ditch and/or canal through the berms. If ACOE does claim jurisdiction permitting and mitigation through ACOE will also be necessary.

Mitigation:

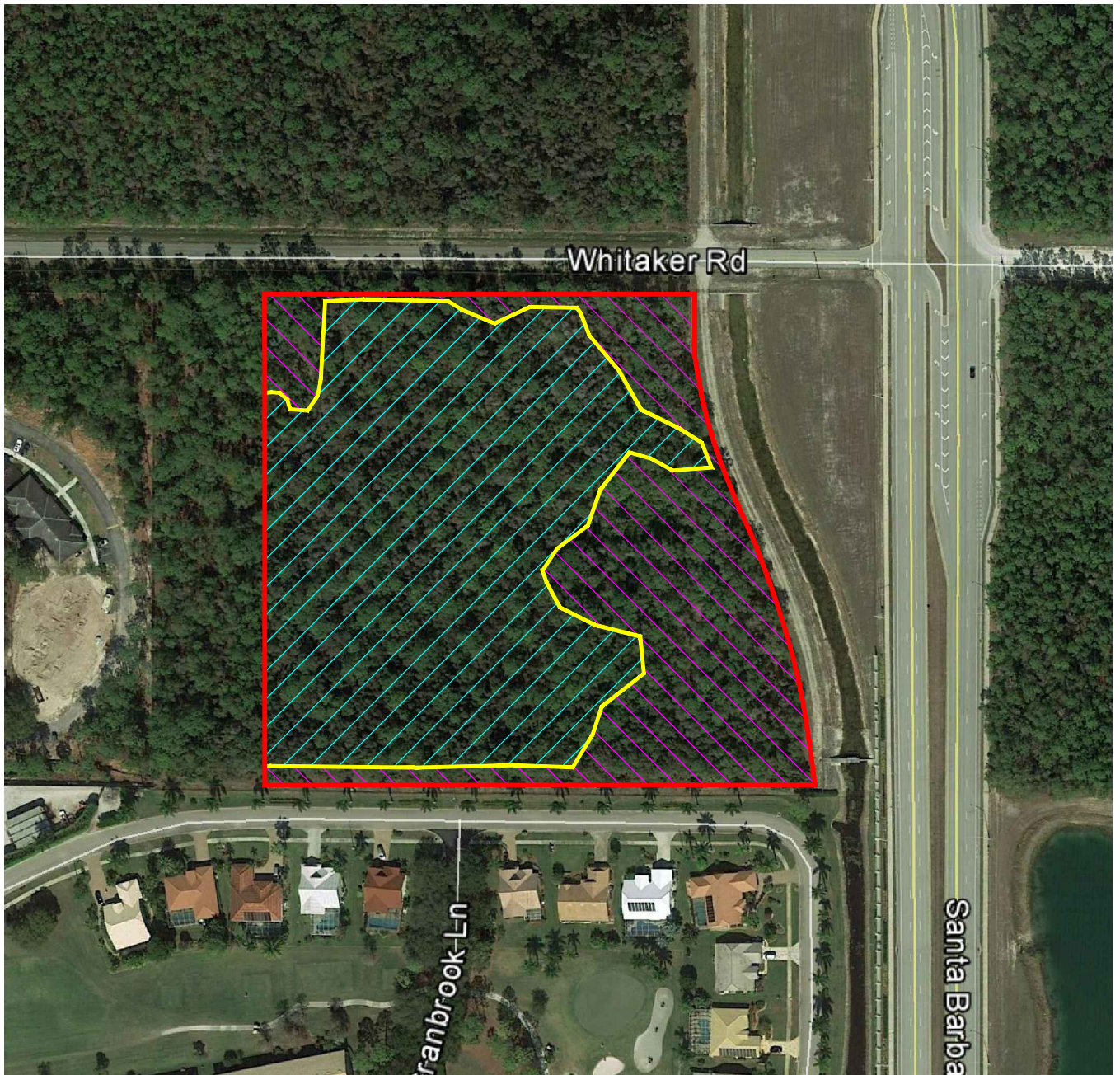
Based on communications with the SFWMD staff, there is only one mitigation bank located within the same drainage basin as the project location. That bank is Panther Island Mitigation Bank. The current cost for these mitigation credits is \$90,000 per UMAM credit (UMAM is Uniform Mitigation Assessment Method). Based on the below-average quality of the on-site wetland area, we estimate that a total of 0.4 to 0.6 credits per acre may be required to mitigate future impacts to the wetland on the subject property. This would result in the estimated cost for mitigation being in the range of \$36,000 - \$54,000 per acre of proposed wetland impact. There are other mitigation banks with service areas covering the project area, but in order to use "out-of-basin" bank credits an additional cumulative impact analysis must be performed before the SFWMD will accept mitigation from those banks. UES suggests staying "in-basin" by using the Panther Island MB.

Please see the attached Wetland Assessment Map, soils survey map, and National Wetlands Inventory map for reference. Thank you very much for allowing us to assist in this project. Please contact me with any questions.

Respectfully submitted,  
**Universal Engineering Sciences, Inc.**  
  
David S. Whitney  
Senior Environmental Scientist

Enclosures: Wetland Assessment/ Aerial Map  
National Wetlands Inventory Map  
NRCS Soil Survey Data/Map





# LEGEND



- WETLANDS (5.58 acres)



- UPLANDS (3.16 acres)

0 200

SCALE (FT.)



AERIAL PHOTO SOURCE: GOOGLE EARTH



UNIVERSAL  
ENGINEERING SCIENCES

## WETLAND ASSESSMENT PROPOSED MEMORY CARE COTTAGES OF NAPLES 5867 WHITAKER ROAD NAPLES, COLLIER COUNTY, FLORIDA

### WETLAND ASSESSMENT MAP

DRAWN BY: N.F.	DATE: 12 - 8 - 17	CHECKED BY: D.W.	DATE:
SCALE: AS SHOWN	PROJECT NO: 0140.1700455.0000	REPORT NO:	FIGURE NO: FIGURE 1

17-0583-01





This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

December 15, 2017

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine



# Soil Map—Collier County Area, Florida



Map Scale: 1:1,620 if printed on A landscape (11" x 8.5") sheet.  
 Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Collier County Area, Florida  
Survey Area Data: Version 10, Oct 2, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 1, 2014—Feb 12, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Malabar fine sand, 0 to 2 percent slopes	4.6	56.1%
11	Hollandale fine sand, 0 to 2 percent slopes	0.4	4.5%
14	Pineda fine sand, limestone substratum, 0 to 2 percent slopes	3.2	39.3%
16	Oldsmar fine sand, 0 to 2 percent slopes	0.0	0.2%
Totals for Area of Interest		8.3	100.0%