



Natural Resource Assessment

Space Coast Service Center Brevard County, Florida

Prepared for:

Florida Power & Light Company
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Juno Beach, FL 33408

144196067
March 2021
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TABLE OF CONTENTS

1.0 INTRODUCTION.....	1
2.0 METHODOLOGY.....	4
3.0 EXISTING CONDITIONS.....	5
3.1 SOILS.....	5
3.2 LAND COVER AND NATURAL COMMUNITIES.....	7
3.3 WETLANDS, TIDAL WATERS AND OTHER SURFACE WATERS.....	9
3.4 WILDLIFE UTILIZATION.....	9
3.5 ENDANGERED, THREATENED, AND SPECIES OF SPECIAL CONCERN.....	9
3.6 HISTORIC AND ARCHAEOLOGICAL RESOURCES.....	14
3.7 FLOODPLAIN INFORMATION.....	14
4.0 REGULATORY REQUIREMENTS.....	16
4.1 LOCAL ENVIRONMENTAL ORDINANCES.....	16
4.2 STATE REGULATORY REQUIREMENTS.....	16
4.3 FEDERAL REGULATORY REQUIREMENTS.....	17
5.0 SUMMARY AND RECOMMENDATIONS.....	18

FIGURES

FIGURE 1: LOCATION MAP.....	2
FIGURE 2: USGS QUADRANGLE MAP.....	3
FIGURE 3: USDA/NRCS SOILS.....	6
FIGURE 4: FLUCFCS MAP.....	8
FIGURE 5: SPECIES OBSERVATION MAP.....	12
FIGURE 6: FEMA FLOOD ZONE MAP.....	15

TABLES

TABLE 1: NRCS SOILS IDENTIFIED WITHIN THE STUDY AREA	5
TABLE 2: POTENTIAL LISTED SPECIES OCCURRENCE	13

APPENDICES

APPENDIX A – SITE PHOTO LOG
APPENDIX B – FNAI BIODIVERSITY MATRIX REPORT/USFWS IPAC
APPENDIX C – SPECIES SPECIFIC SURVEY PROTOCOLS
APPENDIX D – SHPO FLORIDA MASTER SITE FILE REPORT

**Natural Resource Assessment
Technical Memorandum**

**Space Coast Service Center
Brevard County, Florida**

1.0 INTRODUCTION

The following technical memorandum summarizes a review of readily available documentation and the results of field reconnaissance conducted at the study area. The purpose of this Natural Resource Assessment was to characterize the existing conditions of the property relative to threatened and endangered species and their habitat, ecological communities, land cover and vegetation, wetlands, soils, hydrology, archaeological and historical resources, and floodplains.

The scope of this assessment included field reconnaissance to determine habitat present and to determine environmental constraints for this study area.

The project site is approximately 14.5 acres and is located at the northwest corner of Grissom Parkway and Port Saint John Parkway (28° 27' 15.10" N, 80° 48' 24.31" W) in Section 27, Township 23 South Range 35 East in unincorporated Brevard County, Florida. A location map is attached as **Figure 1**. A portion of the U.S. Geological Service (USGS) 7.5-Minute Providence, Florida quadrangle map depicting the location of the project site is attached as **Figure 2**. Based on review of the USGS quadrangle map, elevations on the project site range from approximately 25 to 30 feet.



Legend



Project Area

Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA

0 100 200 Feet



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Project Location Map

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Brevard County, FL**

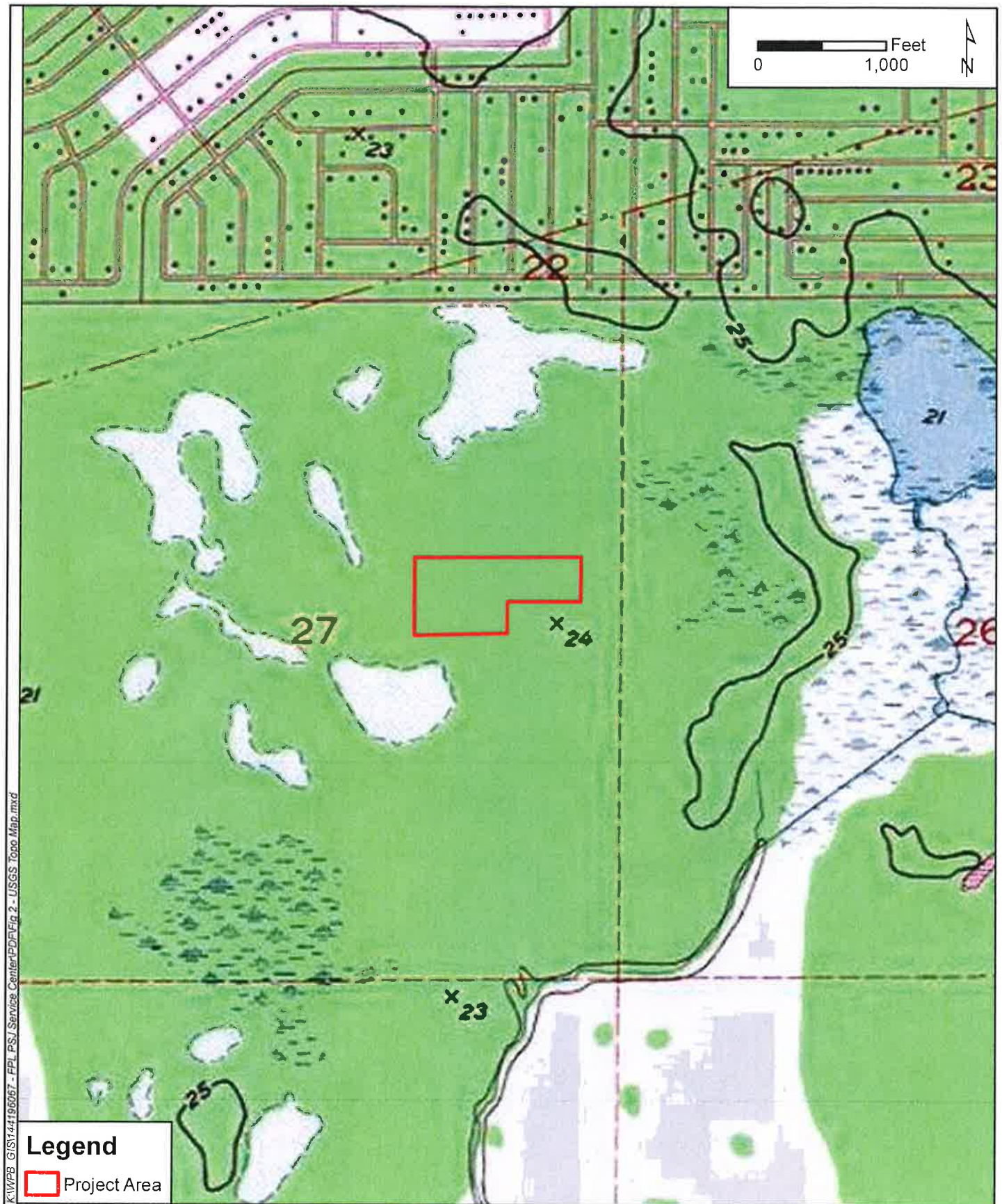
1 inch = 200 feet

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FIGURE 1

50



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USGS 7.5 Minute Quadrangle Map

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1 inch = 1,000 feet

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FIGURE 2

(5)

2.0 METHODOLOGY

The methodology for this assessment included a review of the following resources:

- Florida Natural Areas Inventory (FNAI) Biodiversity Matrix (<http://www.fnai.org/biointro.cfm>)
- Various Geographic Information System (GIS) data layers from the U.S. Fish and Wildlife Service (USFWS), U.S. Geological Survey (USGS), Florida Fish and Wildlife Conservation Commission (FWC) (<https://myfwc.com/wildlifehabitats/wildlife/bba/>)
- USFWS IPaC data [<https://ecos.fws.gov/ipac/>]
- U.S. Department of Agriculture (USDA) / Natural Resources Conservation Service (NRCS) Soil Survey of Brevard County, Florida (<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>)
- State Historic Preservation Officer (SHPO), Florida Master Site File (<http://www.flheritage.com/>)
- USFWS National Wetlands Inventory (NWI) Maps (Web-based maps available from <http://www.fws.gov/wetlands/Data/mapper.html>)
- Federal Emergency Management Agency (FEMA) Digital Flood Insurance Rate Maps (FIRM; Web-based maps available from <http://msc.fema.gov/>)
- United States Geological Survey (USGS) Quadrangle Maps, Land Boundary Information System (LABINS; <http://www.labins.org>)
- St. Johns River Water Management District Interactive GIS Map
- Florida Department of Environmental Protection (FDEP) MapDirect GIS
- Brevard County Code of Ordinances
- Chapter 62-340, Florida Administrative Code (FAC)

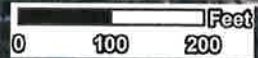
On March 10, 2021 a field review of the project limits was conducted by environmental scientists to document the existing habitat conditions and determine potential wildlife utilization. The field review also included a 15% gopher tortoise survey.

3.0 EXISTING CONDITIONS

3.1 SOILS

The USDA / NRCS *Soil Survey of Brevard County, Florida*, maps the following soil on the property: (28) Immokalee Sand, (36) Myakka Sand, and (54) St. Johns Sand. A copy of the digital USDA/NRCS soils mapping data is illustrated in **Figure 3** and details regarding each soil are provided in **Table 1**.


Table 1 NRCS Soils Identified Within Study Area						
Soil ID Number ¹	Soil Name	Occurrence ²	Characteristics	Drainage Class	Groundwater Depth	Hydric, Hydric Inclusions, or Non-hydric
28	Immokalee Sand	Flatwoods	Moderate permeability	Poorly Drained	6-18 inches	Non-hydric
36	Myakka Sand	Broad flats	Rapid permeability	Poorly Drained	6-18 inches	Non-hydric
54	St. Johns Sand	Broad flats and sloughs	Very slow permeability	Poorly drained	0-6 inches	Hydric
¹ Reference: https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/florida/FL009/0/Brevard.pdf						
² Reference: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx						






Grissom Pkwy

Port St. John Pkwy

Legend

 Project Area

NRCS Soils

-  28; IMMOKALEE SAND, 0 TO 2 PERCENT SLOPES
-  36; MYAKKA SAND, 0 TO 2 PERCENT SLOPES
-  54; ST. JOHNS SAND, 0 TO 2 PERCENT SLOPES*

*denotes hydric soil rating

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Basemap provided by ArcGIS

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NRCS Soils Map

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FIGURE 3

54

3.2 LAND COVER AND NATURAL COMMUNITIES

Vegetative communities within the study area were identified through pedestrian transects and aerial photograph interpretation. Vegetative communities were classified using the *Florida Land Use, Cover, and Forms Classification System* (FLUCFCS, Florida Department of Transportation, 1999). A FLUCFCS map of the study area is attached as **Figure 4**. A description of the upland land cover included below, characterizes dominant vegetation observed along random pedestrian transects, and does not represent an all-inclusive vegetative inventory. The acreage provided for each land cover is approximate, based on aerial mapping. A photo log of the site can be found in **Appendix A**.

FLUCFCS 411 – PINE FLATWOODS (3.5± ACRES)

This land cover makes up approximately 3.5 acres of the project site. Canopy vegetation includes primarily slash pine (*Pinus elliotii*) with occasional cabbage palm (*Sabal palmetto*). Understory vegetation includes dominant saw palmetto (*Serenoa repens*) with myrtle oak (*Quercus myrtifolia*), Chapman's oak (*Quercus chapmanii*), wax myrtle (*Myrica cerifera*), and gallberry (*Ilex glabra*).

FLUCFCS 419 – OTHER PINES (1± ACRES)

This land cover makes up approximately 1 acre of the project site and is dominated by slash pine with minimal understory.

FLUCFCS 421 – XERIC OAK (10± ACRES)

This land cover is the largest habitat within the project area and makes up approximately 10 acres of the project site. There is minimal canopy vegetation, however when it is present, the canopy is primarily comprised of slash pine with occasional cabbage palm. Dominant understory vegetation includes myrtle oak, Chapman's oak, and scrub oak (*Quercus inopina*) with fewer occurrences of saw palmetto, wax myrtle, gallberry, shining fetterbush (*Lyonia lucida*), rusty lyonia (*Lyonia ferruginea*), gopher apple (*Licania michauxii*), winged sumac (*Rhus copallinum*), wire grass (*Eleusine indica*), and shiny blueberry (*Vaccinium myrsinites*).



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FLUCFCS Map

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FIGURE 4

50

3.3 WETLANDS, TIDAL WATERS AND OTHER SURFACE WATERS

The presence of wetlands was evaluated based on the Florida unified wetland delineation methodologies in accordance with Chapter 62-340, Florida Administrative Code (FAC) and Chapter 62-331 FAC under the State 404 Program. These methods consider prevalence of wetland vegetation, hydric soil indicators, and wetland hydrology. Surface waters include both natural and manmade bodies of water, such as streams, lakes, ponds, canals, and ditches. Based on an informal assessment of the vegetative communities, hydrologic conditions, and soils observed during on-site reconnaissance, no wetlands or surface waters exist within the project area.

3.4 WILDLIFE UTILIZATION

Wildlife, or evidence of wildlife, seen during field reconnaissance included black vulture (*Coragyps atratus*), cattle egret (*Bubulcus ibis*), northern cardinal (*Cardinalis cardinalis*), brown anole (*Anolis sagrei*), and armadillo (*Dasypus novemcinctus*).

3.5 ENDANGERED, THREATENED, AND SPECIES OF SPECIAL CONCERN

A list of protected species potentially occurring within the project vicinity was generated using the databases described in Section 2.0 Methodology. Information regarding previously documented occurrences, on-site observations conducted as part of this assessment, and likelihood of occurrence is summarized below.

FNAI – The FNAI report includes data from FNAI Matrix Unit 58476 (**Appendix B**). Based on the FNAI report, there are no documented listed species within the vicinity of the site. FNAI lists wood storks (*Mycteria Americana*) as likely to occur within the matrix unit. Wood stork habitat does not exist on-site, and this species is discussed further below.

FWC – There are no known bald eagle (*Haliaeetus leucocephalus*) nests or wading bird colonies on or within one mile of the study area. Additionally, no bald eagles or their nests were observed within the study area during field reconnaissance. There are two documented observations of the Florida scrub-jay (*Aphelocoma coerulescens*) within one mile of the study area. No additional coordination regarding the bald eagle or wading birds is anticipated. Further discussion of the scrub-jay can be found below.

USFWS Consultation Areas – The study area is in the following USFWS Consultation Areas:

- Audubon's crested caracara (*Polyborus plancus audubonii*)
- Everglade's snail kite (*Rostrhamus sociabilis plumbeus*)
- Florida scrub-jay (*Aphelocoma coerulescens*)

Habitat for the Audubon's crested caracara and everglade snail kite does not occur on-site, thus, no further coordination regarding these species is anticipated. Suitable habitat for the Florida scrub-jay is present on-site, and the species is discussed further below.

USFWS Wood Stork Colonies – The project site is within the core foraging area (CFA) of two known wood stork colonies: Lake Poinsett and Brevard County Maintenance Shop. The CFA for an active wood stork colony is defined as a circular area within a 15-mile radius from the wood stork colony. No wood storks, or potential wood stork foraging habitat, occurs within the project site, and no further coordination regarding wood stork is anticipated.

USFWS IPaC Data – The IPaC Trust Resources includes historical data in their reporting, which results in some species findings that do not reflect current on-site conditions. The following species are listed in the data and have suitable or marginal habitat within the study area: Florida scrub-jay and gopher tortoise. Species listed in the data that do not have suitable habitat on-site include: Audubon's crested caracara, eastern black rail, Everglade snail kite, wood stork, eastern indigo snake, green sea turtle, hawksbill sea turtle, leatherback sea turtle, and loggerhead sea turtle. This dataset confirmed that the project site is not within any USFWS designated Critical Habitat (**Appendix B**).

Based on field reconnaissance and database reviews, a listing of the state and federally listed species potentially occurring within the immediate vicinity of the study area has been compiled. **Table 2** lists species that may occur and their likelihood of occurrence. Likelihood of occurrence is based on actual observation of the species, signs of the species (burrows, tracks, scat, etc.), observance of suitable habitat, or documented occurrences of the species within various databases. A copy of the map depicting observed species on-site is attached as **Figure 5**.



Table 2						
Potential Listed Species Occurrence						
Common Name		Scientific Name	Federal Status	State Status	Comments	Likelihood of Occurrence
Birds	Florida scrub-jay	<i>Aphelocoma coerulescens</i>	T	FT	Observed On-site: No Observed in Proximity: No Habitat Present: Yes Habitat Type: Nesting/Foraging	High
Reptiles	Gopher Tortoise	<i>Gopherus polyphemus</i>	C	ST	Observed On-site: No Observed in Proximity: Yes Habitat Present: Marginal Habitat Type: Burrowing/foraging	Moderate
Federal Status: E = Endangered; T = Threatened; T(S/A) = Threatened due to Similarity of Appearance; C = Candidate Species; NL = Not Listed. State Status: FE- Federally Endangered; FT – Federally Threatened; FT(S/A) – Federally Threatened due to Similarity of Appearance; ST- State Threatened; SSC = Species of Special Concern. Note: Coordination is not required with FWC for Federally listed species.						

0 100 200 Feet



Grissom Pkwy

Port St. John Pkwy

Legend

- Project Area
- Florida scrub-jay call played
- Observed Gopher Tortoise Burrows

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Basemap provided by ArcGIS

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Wildlife Map

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FIGURE 5

10

Based on the database review and field reconnaissance, the following species have the potential to occur on-site and/or require additional evaluation, survey or permitting.

Florida Scrub-Jay

The Florida scrub-jay is listed as threatened by both the USFWS and FWC. The scrub-jay inhabits fire-dominated, low-growing, oak scrub habitat found on well-drained sandy soils. The project site falls within the USFWS consultation area for the species and there are documented observations of the scrub-jay within one mile of the project site. A scrub-jay survey will be required prior to development utilizing the methods outlined in the Florida Scrub-Jay General Survey Guidelines and Protocols (2007) (**Appendix C**) to determine the presence of scrub-jays.

Gopher Tortoise

Gopher tortoises are considered a keystone species in certain ecosystems because many different animal species utilize their extensive burrows for shelter. The gopher tortoise is listed as Threatened by the FWC and is a candidate for listing by the USFWS and prefers dry upland habitats such as pine flatwoods, xeric oak hammocks, open sandy pastures, and disturbed areas. Per FWC guidelines, Kimley-Horn conducted a 15% gopher tortoise survey (March 10, 2021) and no burrows were observed on-site, however two burrows were observed directly adjacent to the project area. In addition, potential habitat for the gopher tortoise does occur on-site. Thus, a 100% gopher tortoise survey will need to be completed no more than 90 days prior to construction. Impacts to or within 25 feet of gopher tortoise burrows require a relocation permit from FWC. This permit authorizes gopher tortoises to be relocated by an authorized agent to a protected certified recipient area.

Listed Plant Species

The Florida Department of Agriculture and Consumer Service's *Notes on Florida's Threatened and Endangered Plants*, and Richard Wunderlin's *Guide to Vascular Plants of Florida*, were consulted to assess habitat requirements for listed plant species. Although 15 state-listed plants were noted by FNAI as possibly occurring in this area, none were observed during field reconnaissance. No further action is anticipated regarding listed plant species.

3.6 HISTORIC AND ARCHAEOLOGICAL RESOURCES

Kimley-Horn requested an inquiry from the Department of State, State Historic Preservation Officer (SHPO) Division of Historical Resources Florida Master Site File (FMSF) regarding the presence of known historical or archaeological findings on the study area or in the immediate vicinity (**Appendix D**). The FMSF lists no previously recorded cultural resources and no resources that are eligible for the National Register of Historic Places within a 0.25-mile radius of the project area.

3.7 FLOODPLAIN INFORMATION

FEMA indicates that the entirety of the study area is located within Flood Zone X - areas determined to be outside of the special flood hazard area. A FEMA flood zone map is attached as **Figure 6**. No required floodplain compensation is anticipated.



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FEMA Map

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MARCH 2021

FIGURE 6

603

4.0 REGULATORY REQUIREMENTS

4.1 LOCAL ENVIRONMENTAL ORDINANCES

Per the Brevard County Code of Ordinances, a permit shall be required prior to any land clearing activities (Article XIII, Sec. 62-4337). A survey of all protected trees and canopy coverage shall be prepared by a professional land surveyor registered in the State of Florida. Protected trees include hardwood trees having DBH of ten inches or greater or a softwood tree, such as a pine, having a DBH of 14 inches or greater. Protected trees were observed on-site, and a tree survey will be required before site development.

Article X, Division 4 addresses development in or adjacent to wetlands. Any wetlands addressed by an FDEP or SJRWMD permit will be exempt from the county's mitigation standards provided that the FDEP or SJRWMD permit conditions are consistent with Brevard County's requirements. As there are no wetlands on-site, no further coordination regarding wetland impacts are anticipated.

4.2 STATE REGULATORY REQUIREMENTS

Environmental Resource Permit

The ERP evaluates the project impacts to wetlands, surface waters, and stormwater management design including floodplain impacts. An ERP may be required from the SJRWMD if any stormwater improvements are proposed as part of this project. Drainage design and stormwater management is not discussed further in this report as the scope was limited to natural resources. As there are no wetlands on-site, a non-jurisdictional determination is recommended, however an ERP addressing wetland impacts is not required.

It should be noted that the FDEP has assumed administration of the Clean Water Act (CWA) Section 404 program. Effective December 22, 2020, FDEP will process Section 404 permits within State-assumed Waters of the US (WOTUS) rather than the US Army Corps of Engineers (USACE). Based on a preliminary review, there do not appear to be Waters of the US (WOTUS) present on site, and therefore, authorization under Section 404 will not be required.



Listed Species Permitting

Species specific permitting may be required for potential effects to listed species or their habitats including the gopher tortoise. Per FWC regulations, Kimley-Horn conducted a 15% gopher tortoise survey (March 10, 2021) and no burrows were observed on-site, however two potential burrows were observed directly adjacent to the project area. In addition, potential habitat for the gopher tortoise does occur on-site. Thus, a 100% gopher tortoise survey will need to be completed no more than 90 days prior to construction. Impacts to or within 25 feet of gopher tortoise burrows require a relocation permit from FWC. This permit authorizes gopher tortoises to be relocated by an authorized agent to a protected certified recipient area.

4.3 FEDERAL REGULATORY REQUIREMENTS

Section 404 Dredge and Fill Permitting

Please refer to State Regulatory Requirements above. The Corps of Engineers has suspended processing of 404 permits in state-assumed waters, and the state permit provides the necessary authorization under Section 404. Based on a preliminary review, there do not appear to be Waters of the US (WOTUS) present on site, and therefore, authorization under Section 404 will not be required.

Federal Listed Species

Federal and State listed species and protected habitats present on-site may require mitigation for potential impacts. Since the project does not appear to have any federal jurisdictional wetlands, there is not a federal nexus for addressing potential species impacts with the USFWS. If, after project design and additional species-specific surveys, it is determined that impacts to federally protected species will occur, consultation through Section 10 of the Endangered Species Act may be required. This section provides an estimate of anticipated species survey, permitting, and mitigation requirements associated with site development.

Florida Scrub-Jay

The Florida scrub-jay is listed as threatened by both the USFWS and FWC. The scrub jay inhabits fire-dominated, low-growing, oak scrub habitat found on well-drained sandy soils. This site falls within a USFWS consultation area for the species and there are documented

sightings within one mile of the site. Additionally, there is suitable scrub-jay habitat on-site; thus, coordination with the USFWS and a scrub jay survey will be required. Surveys can be conducted from March-October with March, July, and October being the best times to survey. Surveys are conducted with the assistance of a scrub jay vocalization which is broadcast along transects throughout suitable habitat. If scrub jays are present and occupied habitat will be impacted, a permit may be required from the USFWS.

5.0 SUMMARY AND RECOMMENDATIONS

- A tree survey and permit will be required from Brevard County before any land clearing activities.
- No wetlands were observed on-site, however an ERP will be required if any stormwater improvements are proposed as part of this project.
- The site does not appear to contain federal jurisdictional Waters of the US, so authorization under Section 404 will not be required.
- The following state and federally listed species were observed or potentially occur on-site: gopher tortoise and Florida scrub-jay as described in Section 4.2 and 4.3. A 100% survey will be required no more than 90 days prior to construction for the gopher tortoise. If any gopher tortoises or their burrows are found, any impacts to or within 25 feet of gopher tortoise burrows will require a relocation permit from FWC. Coordination with the USFWS and a formal survey will be required for the scrub-jay.
- Based on the FMSF, there were no historic or archaeological resources within the study area. Currently, no further action is required. The SHPO will review and comment on the ERP and determine if additional analysis is warranted.
- The study area is not within a FEMA designated floodplain. No further action is required.

APPENDIX A
SITE PHOTO LOG



Photo 1: View looking south from northeast corner of site.



Photo 2: View looking north from southeast corner of site.

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PHOTOGRAPHIC LOG

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PAGE 1

68



Photo 3: View looking east from southwest corner of site.



Photo 4: View looking west from southeast corner of site.

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PHOTOGRAPHIC LOG

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PAGE 2

18



Photo 5: View looking north at stormwater pond adjacent to site.

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PHOTOGRAPHIC LOG

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Photo 6



Photo 7

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PHOTOGRAPHIC LOG

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PAGE 4

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Photo 8



Photo 9

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PAGE 5

72



Photo 10



Photo 11

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PHOTOGRAPHIC LOG

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PAGE 6

73

APPENDIX B
FNAI BIODIVERSITY MATRIX AND USFWS IPAC DATA



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www.fnai.org

FLORIDA
Natural Areas
INVENTORY

Florida Natural Areas Inventory

Biodiversity Matrix Query Results

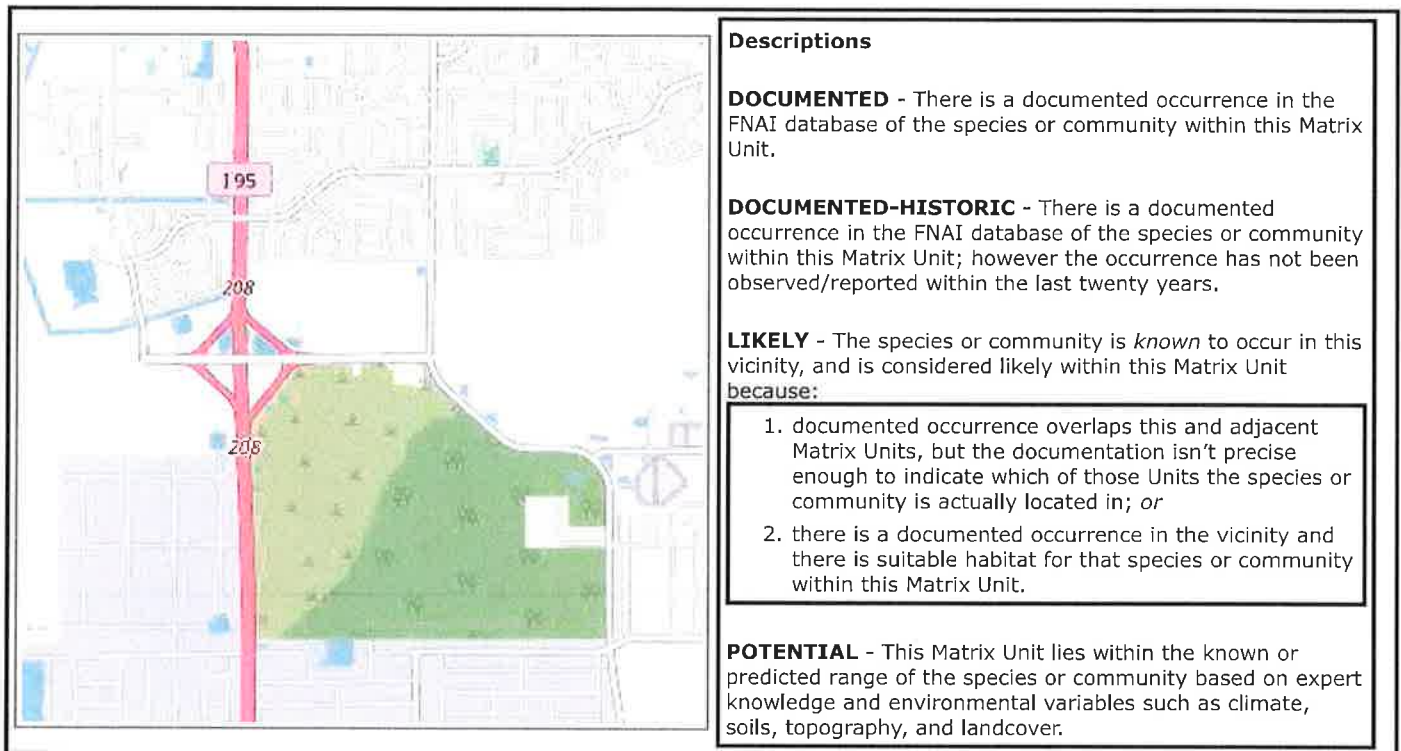
UNOFFICIAL REPORT

Created 3/23/2021

(Contact the FNAI Data Services Coordinator at 850.224.8207 or
kbrinegar@fnai.fsu.edu 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: 58476



Matrix Unit ID: 58476

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
<u><i>Aphelocoma coerulescens</i></u> Florida Scrub-Jay	G2	S2	LT	FT
<i>Mesic flatwoods</i>	G4	S4	N	N
<u><i>Mycteria americana</i></u> Wood Stork	G4	S2	LT	FT
<i>Scrub</i>	G2	S2	N	N

Matrix Unit ID: 58476**26 Potential Elements for Matrix Unit 58476**

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<u><i>Athene cunicularia floridana</i></u> Florida Burrowing Owl	G4T3	S3	N	SSC
<u><i>Calopogon multiflorus</i></u> Many-flowered Grass-pink	G2G3	S2S3	N	T
<u><i>Centrosema arenicola</i></u> Sand Butterfly Pea	G2Q	S2	N	E
<i>Chamaesyce cumulicola</i> Sand-dune Spurge	G2	S2	N	E
<i>Conradina brevifolia</i> Short-leaved Rosemary	G2Q	S2	LE	E
<i>Conradina grandiflora</i> Large-flowered Rosemary	G3	S3	N	T
<u><i>Deeringothamnus pulchellus</i></u> Beautiful Pawpaw	G1	S1	LE	E
<i>Dicerandra thinnicola</i> Titusville Balm	G1Q	S1	N	E
<u><i>Drymarchon couperi</i></u> Eastern Indigo Snake	G3	S3	LT	FT
<u><i>Gopherus polyphemus</i></u> Gopher Tortoise	G3	S3	C	ST
<u><i>Grus canadensis pratensis</i></u> Florida Sandhill Crane	G5T2T3	S2S3	N	ST
<i>Gymnopogon chapmanianus</i> Chapman's Skeletongrass	G3	S3	N	N
<i>Lechea cernua</i> Nodding Pinweed	G3	S3	N	T
<u><i>Lechea divaricata</i></u> Pine Pinweed	G2	S2	N	E
<u><i>Linum carteri</i> var. <i>smallii</i></u> Small's Flax	G2T2	S2	N	E
<u><i>Lithobates capito</i></u> Gopher Frog	G3	S3	N	SSC
<i>Mustela frenata peninsulæ</i> Florida Long-tailed Weasel	G5T3	S3	N	N
<u><i>Nemastylis floridana</i></u> Celestial Lily	G2	S2	N	E
<i>Nolina atopocarpa</i> Florida Beargrass	G3	S3	N	T
<i>Panicum abscissum</i> Cutthroat Grass	G3	S3	N	E
<i>Peucaea aestivalis</i> Bachman's Sparrow	G3	S3	N	N
<u><i>Picoides borealis</i></u> Red-cockaded Woodpecker	G3	S2	LE	FE
<u><i>Peromyscus floridanus</i></u> Florida Mouse	G3	S3	N	SSC
<u><i>Sceloporus woodi</i></u> Florida Scrub Lizard	G2G3	S2S3	N	N
<u><i>Sciurus niger shermani</i></u> Sherman's Fox Squirrel	G5T3	S3	N	SSC
<u><i>Warea carteri</i></u> Carter's Warea	G3	S3	LE	E

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.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
North Florida Ecological Services Field Office
7915 Baymeadows Way, Suite 200
Jacksonville, FL 32256-7517
Phone: (904) 731-3336 Fax: (904) 731-3045



In Reply Refer To:

March 08, 2021

Consultation Code: 04EF1000-2021-SLI-0645

Event Code: 04EF1000-2021-E-01094

Project Name: PSJ Service Center

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2))

75

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>;

<http://www.towerkill.com>; and

www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

<http://>

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- Migratory Birds

79

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

North Florida Ecological Services Field Office

7915 Baymeadows Way, Suite 200

Jacksonville, FL 32256-7517

(904) 731-3336



Project Summary

Consultation Code: 04EF1000-2021-SLI-0645

Event Code: 04EF1000-2021-E-01094

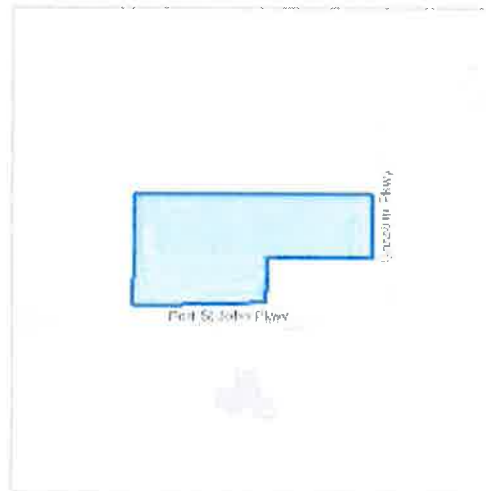
Project Name: PSJ Service Center

Project Type: ** OTHER **

Project Description: NRA

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@28.4549549,-80.80670798285777,14z>



Counties: Brevard County, Florida

Endangered Species Act Species

There is a total of 13 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Audubon's Crested Caracara <i>Polyborus plancus audubonii</i> Population: FL pop. No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8250	Threatened
Eastern Black Rail <i>Laterallus jamaicensis ssp. jamaicensis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477	Threatened
Everglade Snail Kite <i>Rostrhamus sociabilis plumbeus</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7713	Endangered
Florida Scrub-jay <i>Aphelocoma coerulescens</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6174	Threatened
Wood Stork <i>Mycteria americana</i> Population: AL, FL, GA, MS, NC, SC No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8477	Threatened

Reptiles

NAME	STATUS
Eastern Indigo Snake <i>Drymarchon corais couperi</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/646	Threatened
Gopher Tortoise <i>Gopherus polyphemus</i> Population: eastern No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6994	Candidate
Green Sea Turtle <i>Chelonia mydas</i> Population: North Atlantic DPS There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened
Hawksbill Sea Turtle <i>Eretmochelys imbricata</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3656	Endangered
Leatherback Sea Turtle <i>Dermochelys coriacea</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1493	Endangered
Loggerhead Sea Turtle <i>Caretta caretta</i> Population: Northwest Atlantic Ocean DPS There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1110	Threatened

Flowering Plants

NAME	STATUS
Carter's Mustard <i>Warea carteri</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5583	Endangered
Lewton's Polygala <i>Polygala lewtonii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6688	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider 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)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, 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 project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). 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, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Kestrel <i>Falco sparverius paulus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 1 to Aug 31
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

NAME	BREEDING SEASON
Common Ground-dove <i>Columbina passerina exigua</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Feb 1 to Dec 31
Dunlin <i>Calidris alpina arctica</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	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
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
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
Swallow-tailed Kite <i>Elanoides forficatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8938	Breeds Mar 10 to Jun 30

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. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps 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.

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 (|)

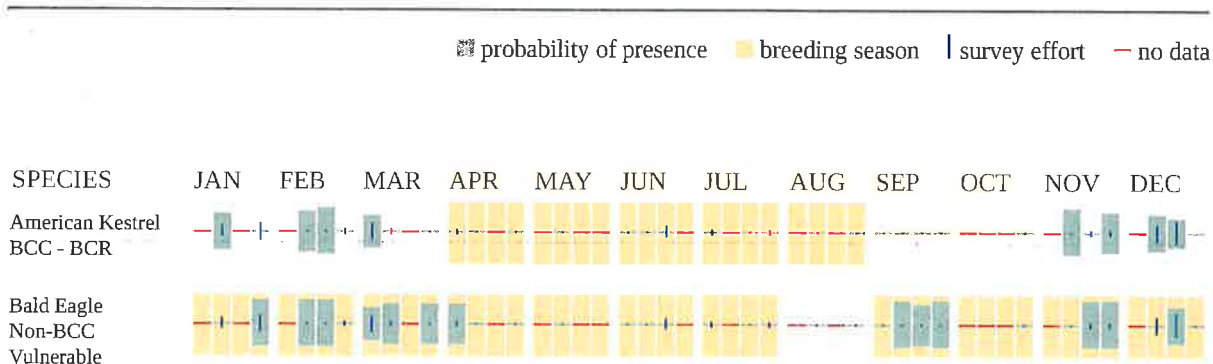
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

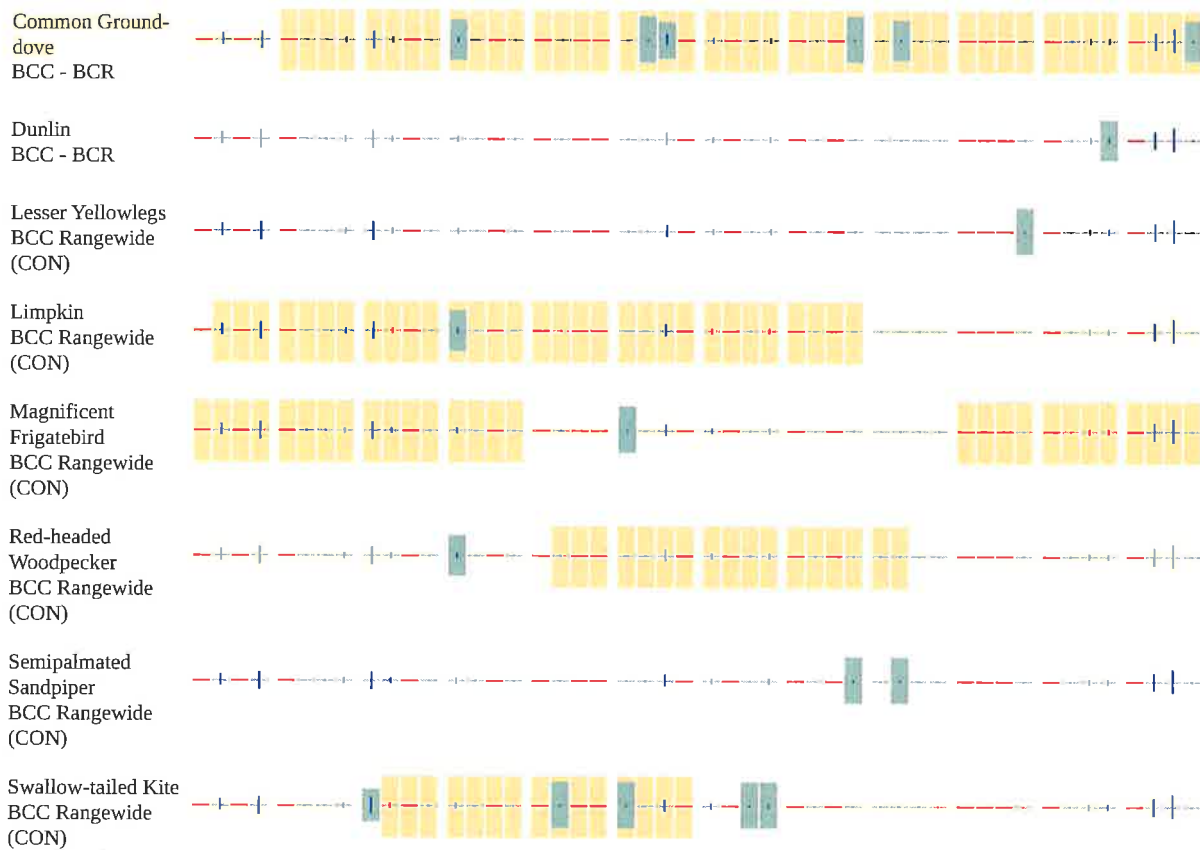
No Data (—)

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. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





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>

Migratory Birds FAQ

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. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) 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 \(BCC\)](#) and other species that may warrant special attention in your project location.

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](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology 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. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

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 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 on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe 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).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

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](#).

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities,

should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

APPENDIX C
SPECIES SPECIFIC SURVEY PROTOCOLS

Scrub-Jay Survey Guidelines

(Updated 08/24/2007)

Adapted from: J.W. Fitzpatrick, G.E. Woolfenden and M.T. Kopeny. 1991. *Ecology and development-related habitat requirements of the Florida scrub-jay (Aphelocoma coerulescens)*. Florida Game and Fresh Water Fish Commission, Nongame Wildlife Program Technical Report No. 8. Tallahassee, FL. 49pp.

The most effective method for surveying a site for Florida scrub-jays is to traverse the area systematically, using a high quality tape recording of Florida scrub-jay territorial scolding in an attempt to attract the jays. The recording should include clear examples of all typical territorial scolds, including the female "hiccup" call. Vocalizations are available by contacting:

Macaulay Library
Cornell Lab of Ornithology
159 Sapsucker Rd.
Ithaca, NY 14850
Email: macaulaylibrary@cornell.edu
<http://birds.cornell.edu>

Map plant communities either on a 7.5 foot U.S. Geological Survey (USGS) topographic map or an aerial photograph at a scale of no more than 400 feet per inch. The vegetation map must show all forms of existing development. On the vegetation map, establish parallel line transects with playback stations along each transect. Space the transects and playback stations so that all different scrub types will be sampled for jays (i.e., so that the taped calls will be effectively broadcast across areas of concern). These scrub types should include not only the more "classic" xeric oak scrub, scrubby pine flatwoods, scrubby coastal strand, and sand pine scrub, but should also include:

- pine-mesic oak
- xeric oak
- sand live oak
- improved, unimproved, and woodland pastures;
- citrus groves;
- rangeland;
- pine flat woods;
- longleaf pine xeric oak;
- sand pine;
- sand pine plantations;
- forest regeneration areas;
- sand other than beaches;
- disturbed rural land in transition without positive indicators of intended activity; and disturbed burned areas.

The presence of scrub oaks, no matter how sparsely distributed, is the key indicator of "scrub" habitat.

Distances between transects, and between stations along transects, depend on many factors, including power of the speaker used for broadcasting the calls, topography of the site, and the density of the surrounding vegetation. Adequate spacing between transects can be estimated roughly as the distance at which a person listening to the tape directly in front of the speaker perceives the "bird" to be no more than about 100 meters away. A distance of 100 to 200 meters between transects and between stations is generally adequate when using a good-quality, hand-held cassette player broadcasting at full volume.

Surveys should be carried out on calm, clear days about one hour after sunrise, and should terminate before midday heat or wind. Surveys should not be conducted in winds stronger than a moderate breeze (5-8 mph), in mist or fog, or in precipitation exceeding a light, intermittent drizzle. Heat and especially wind lowers the tendency for jays to respond to distant territorial scolds, and wind reduces the distance over which recordings can be heard. Jays are also reluctant to fly on windy days regardless of hour or season. Surveys also should NOT be conducted if accipiters or other scrub-jay predators are present in the area; in the event this is the case, the surveyor should either wait until the predator is gone or come back on another day.

Surveys may be conducted anytime between March 1 through October 31. However, ideal survey periods include: 1) spring (especially March), 2) fall (September and October), when territorial displays are most frequent and vigorous, and 3) midsummer (July) when young of the year are independent but still distinguishable by plumage. The poorest times of the year to survey are late winter, when jays are most likely to fly far for food, and late spring when the young are quiet and the adults are occupied with molt and feeding fledglings.

Transects may be driven or walked. If driven, step out or stand atop the vehicle at each playback station. Broadcast the calls at each station for at least 1 minute in all four directions around the playback station, emphasizing any direction in which low-growing oak scrub is the predominant vegetation. On the vegetation map, plot the locations and indicate group size of all Florida scrub-jays where they are first seen or heard. Distinguish adult-plumaged jays from juvenile-plumaged jays whenever possible.

At localities with car trails, large areas of scrub can be surveyed with a vehicle in one day. On foot, the process is more laborious because of the relatively large size of territories (often 10 to 40 acres). Once a group is located, stop broadcasting at that station. Remaining at this station briefly should result in the assembly of the entire group. This allows one to estimate group size and, if done during the midsummer, to distinguish young of the year from adults.

Sometimes two or more groups will be attracted to one station, usually from different directions. Observers should be careful, therefore, to plot each group where it was first spotted or heard, not at the site to which the jays were attracted. In rare circumstances, especially at sites where numerous groups congregate at artificial food or water sources, it may be difficult to differentiate groups. This is especially true where jays have become habituated and tame to human approach. Again, in such cases careful observation is extremely important. Studies of such congregations using color-marked jays have confirmed that almost always they consist of members of different family groups. Often they may have crossed several territory boundaries to reach the neutral feeding or drinking areas. The result gives a false impression of extremely high jay density.

It is essential that the subject area be surveyed as often as necessary (for a minimum of 5 days) to establish an accurate count of jay groups and territorial boundaries. If more than 8 to 10 jays are encountered at a single playback station during a fall or spring survey period, the jays at this site should be monitored carefully over several visits and different times of day. Numbers will shift as groups arrive and depart. Often it is possible to watch where the jays come from or return to as a means of determining how many groups are represented. For determining territorial boundaries, it is essential that the surveyor be familiar with different types of behavior exhibited by scrub-jays. Territorial boundaries may be most accurately predicted through a combination of observing scrub-jays and listening for territorial behavior (in the case where several families of scrub-jays exist in contiguous habitat) or by including habitat suitable for occupation by scrub-jays within a territorial boundary (in the case where a family of scrub-jays is somewhat isolated from other groups). If a question exists as to how many groups of scrub-jays are onsite, or where to draw territorial boundaries, it is strongly recommended that the U.S. Fish and Wildlife Service receive permission from the land owner to conduct an independent survey onsite.

The key end products of this procedure are: (1) a complete count of all jay groups onsite and (2) an approximate territory map or home range center for each group. Provide the U.S. Fish and Wildlife Service with a final report that includes the following, as applicable:

A. An information sheet including:

- Dates and starting and ending times of all surveys conducted.
- Weather conditions during all surveys, including average temperature, wind speed and direction, visibility, and precipitation.
- Total number of jay groups found, number of jays in each group and number of juvenile-plumaged jays in each of these groups.

B. An aerial photograph or vegetation map depicting:

- The entire area of interest.
- Transect lines and playback stations.
- Locations of all jays seen or heard while conducting the survey or at any other time, including flight direction.
- Approximate suspected territory boundaries between jay groups or suspected home range centers for each group.

Mail Scrub-jay survey reports to:

North Florida Counties

Scrub-Jay Survey
U.S. Fish and Wildlife Service
7915 Baymeadows Way, Suite 200
Jacksonville, FL 32256-7517

South Florida Counties

Scrub-Jay Survey
U.S. Fish and Wildlife Service
1339 20th St.
Vero Beach, FL 32960-3559

4