ZEV COHEN & ASSOCIATES INC

300 Interchange Blvd., Suite C
Ormond Beach, FL 32174
386-677-2482 • Fax: 386-677-2505
www.ZevCohen.com

Environmental Assessment

For

Project Orchid

ZC 23151

August 21, 2023

Prepared For:
Mr. Gregory Kern
Program Manager
Michael Baker International
12740 Gran Bay Parkway West, Suite 2110
Jacksonville, Florida 32258

Prepared By:
Mallory Tatum
Zev Cohen & Associates, Inc.
300 Interchange Blvd., Suite C
Ormond Beach, FL 32174
(386) 677-2482

Table of Contents

Page

Appendices

Appendix A – Exhibits

- Location Map
- Aerial Map
- USGS Quadrangle Map
- Soils Map
- Habitat Map
- Wetland and Surface Waters Map
- Regulatory Conservation Easement Map
- Lidar Map

Appendix B – Additional Information

- IPAC Resource List
- FWC Comments
- Audubon Florida EagleWatch Nest App August 2023 Screenshot

1.0 PROJECT INFORMATION

The Flagler County Project Orchid project site, herein referred to as the subject property, is a ~34.5 acre site located in Palm Coast, Florida (**Location Map**). The project site is south of Royal Palms Parkway, west of Town Center Boulevard, north of Lake Avenue and east of Florida Power and Light facility and The Gables at Town Center community (**Aerial Map**). The subject property is located in the Palm Coast Town Center and in Section 05, Township 12 South, Range 31 East, in Flagler County (**USGS Quadrangle Map**).

The applicant for the project is:

Mr. Gregory Kern
Program Manager
Michael Baker International
12740 Gran Bay Parkway West, Suite 2110
Jacksonville, Florida 32258

The environmental scientist for this project is:

Mallory Tatum
Zev Cohen and Associates, Inc.
300 Interchange Boulevard, Suite C
Ormond Beach, Florida 32174
(386) 677-2482

The field work and associated report were completed under the guidance of Bill Lites, a Qualified Environmental Professional registered by the City of Palm Coast. His City of Palm Coast certification numbers are below:

Bill Lites
Zev Cohen and Associates, Inc.
300 Interchange Boulevard, Suite C
Ormond Beach, Florida 32174
(386) 677-2482

Wetland Resources: 22771 Exp. Date 06/20/2025
Listed Species Resources: 22772 Exp. Date 06/20/2025
Certified Gopher Tortoise Agent: 22773 Exp. Date 05/16/2026

The subject property is proposed to be developed for industrial uses as a data center with the intent of increasing the economic capacity for this area.

Zev Cohen & Associates, Inc. (ZCA) Environmental Department staff has conducted an Environmental Assessment (EA) of the subject property. ZCA has characterized habitat and soil types, verified the presence of wetlands, and documented the potential

occurrence of protected species. This EA report includes survey methodology, results, and supplementary materials.

2.0 SOILS

A review of the soil types present was conducted to characterize the existing conditions on the subject property. The soil review used soils surveys conducted by the United States Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS). Data are presented in accordance to Official Soil Series Descriptions (**Soil Map**).

11 – Myakka Fine Sand: This very deep, nearly level and poorly drained soil occurs in broad flatwoods. The water table is at a depth of 6 to 18 inches of the surface for 1 to 4 months and recedes to a depth of 40 inches for approximately 6 months during most years. Available water capacity, natural fertility and organic matter are all low, with permeability ranging from moderately slow to moderately rapid with depth.

12 – Placid; Basinger; St. Johns Soils; Depressional : These very deep, nearly level, very poorly drained soils are in depressions on the flatwoods. In most years, undrained areas are ponded for more than 6 months, the water table reaches up to 2' above the surface. Available water capacity and permeability range from moderately slow to rapid with depth and soil type.

19 – Valkaria Fine Sand**:** This very deep, nearly level, poorly drained soil is on low broad flats and in sloughs connecting depressions. The water table is at a depth of 0 to 6 inches for 2 to 6 months. It remains at surface for a few days to several weeks, and is at a depth of 10 to 40 inches during dry periods. Permeability is rapid. The available water capacity is low.

21 – Smyrna Fine Sand**:** This very deep, nearly level, poorly drained soil occurs in the flatwoods. The water table is at a depth of 6 to 18 inches for 1 to 4 months during wet seasons in most years. It is at a depth of 10 to 40 inches for more than 6 months. Permeability is moderate or moderately rapid. Available water capacity is low.

30 – Pits: This map unit consists of excavated areas from which soil and geologic material was removed for use mainly in road construction and as fill material, commonly referred to as borrow pits. In most years, the water table is at a depth of more than 80". Permeability is very rapid. Available water capacity is low.

3.0 LAND USE AND VEGETATIVE COMMUNITY

The subject property consists of vacant land, forested wetlands, and a previously permitted stormwater pond (**Habitat Map**). Land use of the subject property was classified according to the Florida Department of Transportation (FDOT) (1999) *Florida Land Use, Cover and Forms Classification System* (FLUCFCS). The land use and vegetative communities observed on the subject property are described in detail below.

Shrub and Brushland (320) – The majority of the project site is closely related to the shrub and brushland FLUCFCS cover type with an open canopy and subcanopy. The ground cover is maintained and mowed frequently with scattered saw palmetto (*Serenoa repens*), wax myrtle (*morella cerifera*), cogon grass (*Imperata cylindrica*), bahia grass (*Paspalum notatum*), tickseed (*Coreopsis leavenworthii*), bushy blue stem (*Andropogon glomeratus*), Spanish gold ratttlebox (*Sesbania punicea*), partridge pea (*Chamaecrista fasciculata*), beggar ticks (*Bidens alba*), wild blackberry (*Rubus* spp.), and catbrier (*Smilax* spp.).

Pine – Mesic Oak (414) – The forested upland areas located on the southern portion of the property have a canopy of slash pine (*Pinus elliottii*), sweet gum (*Liquidambar styraciflua*), laurel oak (*Quercus laurifolia*), and dahoon holly (*Ilex cassine*). The subcanopy is composed of fetterbush (Lyonia lucida) and gallberry (Ilex glabra), with a groundcover of saw palmetto.

Surface Water (500) – This is a previously permitted and constructed stormwater pond associated with the Palm Coast Town Center.

Wetland Forested Mixed (630) – The onsite wetlands are located south of the stormwater pond. They have a canopy cover of slash pine, water oak (*Quercus nigra*), bald cypress (*Taxodium distichum*), sweetgum, and dahoon holly. The subcanopy is composed of fetterbush, gallberry, wax myrtle, Virginia chain fern (*Woodwardia virginica*), and cinnamon fern (*Osmundastrum cinnamomeum*).

4.0 WETLANDS AND SURFACE WATERS

ZCA conducted a site visit on August 1, 2023 to verify the habitat types, including verifying wetlands presence. Criteria used to determine the presence of wetlands and surface waters and delineate their boundaries were in accordance with Chapter 62-340 F.A.C. and the 1987 *Corps of Engineers Wetlands Delineation Manual*.

According to the criteria above, **5.17 acres** of wetlands and **5.13 acres** of surface waters occur within the subject property (**Wetlands and Surface Waters Map**).

The onsite wetlands were previously delineated, surveyed, and placed under Regulatory Conservation Easement (RCE) dedicated to the St. Johns River Water Management District (SJRWMD) and the US Army Corps of Engineers (USACE) during the conceptual approval for the Palm Coast Town Center (**ERP Permit No. 88948 – 3, IP Permit No. SAJ-2001-533-MLH**). The RCE will not be impacted and will remain in its current state with the development of Project Orchid (**RCE Map**).

The site was cleared, graded, and filled, and the stormwater pond constructed with the Phase 1 Construction permit for the Town Center at Palm Coast (**ERP No. 88948-2**) which authorized the construction of a commercial parcel, primary roads, the wetland mitigation plan, and supporting infrastructure for the stormwater management system.

No further wetland impacts are planned for Project Orchid.

Permitting

The SJRWMD Conceptual Permit (**ERP Permit No. 88948 – 3)** authorized the conceptual surface water management system for the municipal development, valid until 10/12/2024. The conceptual approval was for residential, commercial, recreational, governmental development, roadways, stormwater sewer systems, and wet detention systems known as the Town Center at Palm Coast. As part of the conceptual permit, the loss of isolated and contiguous wetlands were authorized, totaling 27.59 acres and 13.28 acres of surface waters and ditches on the parcels 368 and 363/Tidwell. A total of twenty-three wetland systems (1, 2, 10, 11, 13, 14, 16, 17, 19, 20, 22, 24, 30, 31, 37-44 and 52) will be entirely impacted in order to construct the proposed project. Ten other wetlands (Wetlands 4S, 7, 12, 15, 16, 21, 25, 28, 48, and 49) will be partially impacted. 11.31 acres of ditches will be filled and 1.97 acre of surface water (borrow pit) will be filled. The mitigation plan for the conceptual permit has been implemented and included he preservation of 225.37 acres of wetlands of which 45.21 were preserved and 180.16 acres were hydrologically enhanced, 276.91 acres of uplands were preserved, 28.39 acres of existing surface waters (borrow lakes) were preserved, and 75.39 acres of deepwater aquatic habitat were created with 6.75 acres of littoral zones. A total of 225.37 acres of wetland, 276.91 acres of the upland preservation, and 28.39 acres of surface waters were placed under conservation easement as part of the conceptual permit.

Following the conceptual permit issuance, the first phase of construction was permitted and completed (**SJRWMD ERP Permit No. 88948 – 2**) that authorized the construction

of a surface water management system consisting of parcels of land, borrow pits, roadways, stormwater sewer systems, and wet detention systems on 222-acres of land. The construction and operation of Phase 1 results in a total of 17.97 acres of wetland impacts. This mitigation plan supplied 43.18 of wetland preservation areas and 70 acres of upland preservation to offset the impacts.

A SJRWMD Individual ERP modification will be applied for Project Orchid to construct the industrial development. All of the wetland impacts and mitigation associated within the project boundary were previously completed under the Phase 1 SJRWMD ERP (**Permit No. 88948 – 2**). No wetland impacts will occur with this development. The RCE will be maintained and preserved in its current state.

The construction of Project Orchid will also align with the IP issued from USACE. No further permitting under the State Section 404 program is expected to occur with the Florida Department of Environmental Protection (FDEP) nor USACE.

No further wetland mitigation is proposed as part of this development.

5.0 PROTECTED SPECIES

Prior to visiting the site, a background literature search was conducted to compile a list of state and federally protected animal and plant species that could occur on-site. The three primary sources of literature reviewed include the Florida Fish and Wildlife Conservation Commission's (FWC) *Florida's Endangered Species, Threatened Species, And Species of Special Concern*, the United States Fish and Wildlife Service's (USFWS) Threatened and Endangered Species System (TESS) database, and the Florida Department of Agriculture and Consumer Services (FDACS), Division of Plant Industry's (DPI) *Notes on Florida's Endangered and Threatened Plants*. Additional information was gathered from the Florida Natural Areas Inventory (FNAI) *Field Guides to the Rare Animals/Plants of Florida*, and the Florida Committee on Rare and Endangered Plants and Animals (FCREPA) *Rare and Endangered Biota of Florida* Series: Volumes 1-5, ZCA's *Protected Species Database,* including the *Florida Scrub-Jay Database* (a Zev Cohen proprietary database comprised of data acquired from several agencies, direct observations, and scientific journals), and the FWC's Eagle Nest Locator web site. Additionally, the Florida Natural Areas Inventory Biodiversity Matrix (**FNAI Biodiversity Matrix**) and US Fish and Wildlife Service's Information for Planning and Consultation (**IPAC Resource List**) were reviewed and included as attachments.

5.1 Protected Wildlife Species Database Review

The protected animal species with at least some likelihood of occurrence are listed in Table 1 below. The estimated likelihood of occurrence of each species is noted in the table.

Figure 5.1.1. Federally and Florida state protected wildlife species with the potential to occur on the subject property, in Flagler County, Florida.

Species Name	Common Name	Agency Listing	Likelihood of Occurrence	Habitat
		FWC/USFWS		
Amphelocoma coerulescens	Florida scrub-jay	FT	Low	Scrub, Xeric
Antigone canadensis pratensis	Florida sandhill crane	ST	Low	Open wetlands, prairies
Ardea herodias occidentalis	Great Blue Heron	BCC	Moderate	Shallow water bodies in FL
Arenaria interpres morinella	Ruddy Turnstone	BCC	Low	Beaches, mudflats, jetties, rocky shores
Calidris canutus rufa	Red knot	FT	Low	Migratory use of coastal waterways
Chaetura pelagica	Chimney Swift	BCC	Low	Hollow trees, open sky
Charadrius wilsonia	Wilson's Plover	BCC	Low	Salt flats and sandy beaches
Dendroica discolor	Prairie Warbler	BCC	Low	Brushy slashings, bushy pastures, low pines
Drymarchon corais couperi	Eastern indigo snake	FT	Low	Wide variety of habitats
Egretta caerulea	Little blue heron	ST	Moderate	Shallow water bodies in FL
Egretta tricolor	Tricolored heron	ST	Moderate	Coastal ponds, marshes, swamps
Egretta rufescens	Reddish egret	ST	Moderate	Coastal tidal flats, salt marshes, shores
Elanoides forcatus	Swallow-tailed Kite	BCC	Low	Wooded river swamps
Falco sparverius paulus	Southeastern American kestrel	ST	Low	Open habitats with scattered trees
Fregata magnicens	Magnificent Frigatebird	BCC	Low	Coasts and islands in tropical waters
Gelochelidon nilotica	Gull-billed Tern	BCC	Low	Salt marshes, fields, coastal bays
Gopherus polyphemus	Gopher tortoise	ST	Moderate	Sandhills, scrub, flatwoods
Haliaeetus leucocephalus	Bald eagle	BE	Low	Common adjacent to water
Haematopus palliatus	American Oystercatcher	BCC	Low	Coastal marshes, swamps
Laterallus jamaicensis	Eastern Black Rail	FPT	Low	Salt, brackish, and fresh wetlands
Limnodromus griseus	Short-billed Dowitcher	BCC	Low	Mudflats, tidal marshes, pond edges
Melanerpes erythrocephalus	Red-headed woodpecker	BCC	Low	Groves, farm country, shade trees
Mycteria americana	Wood stork	FT	Moderate	Shallow open waters
Passerina ciris	Painted Bunting	BCC	Low	Woodland edges, roadsides, brush
Picoides borealis	Red-cockaded woodpecker	FE	Low	Mature pine forests with regular burn
Pituophis melanoleucus	Florida pine snake	ST	Low	Upland areas adjacent to wetlands
Platalea ajaja	Roseate spoonbill	ST	Low	Coastal ponds, marshes, swamps
Rynchops niger	Black Skimmer	BCC	Low	Coastal marshes, swamps
Tringa avipes	Lesser Yellowlegs	BCC	Low	Variety of fresh and saltwater habitats
Tringa semipalmata	Willet	BCC	Low	Marshes, wet meadows, mudflats

Ursus americanus floridanus	Florida black bear	BCR	Low	Wide variety of habitats in FL

FE= Federally Endangered; FT= Federally Threatened; FPT= Federally Proposed Threatened; BE= Bald and Golden Eagle Protection Act; ST= State Threatened; SSC= Species of Special Concern; BCR= Bear Conservation Rule.

Based on the results from the database search described above and the habitat present onsite, 6 animal species were considered to have a low or moderate likelihood of occurrence on the subject property. Selected protected species that have a likelihood of occurrence are discussed below.

Great Blue Heron (*Ardea herodias occidentalis*) – The Great Blue heron is a Bird of Conservation Concern in particular Bird Conservation Regions in the US. The species is found in a wide variety of habitats, including marshes, swamps, shores, tidal flats and forages in any kind of calm fresh waters or slow-moving rivers. The onsite stormwater pond may provide some foraging habitat for the species, however as the development will not impact the surface water, no impacts to the species are expected.

Wading birds, including the Little blue heron (*Egretta caerulea*), tricolored heron (*Egretta tricolor*), reddish egret (*Egretta rufescens*) – The little blue heron, tricolored heron, and the reddish egret are state-designated threatened species, that inhabit fresh, salt, and brackish water environments in Florida including swamps, estuaries, ponds, lakes, and rivers. The onsite stormwater pond may provide some foraging habitat for the species, however as the development will not impact the surface water, no impacts to the species are expected.

Gopher Tortoise (*Gopherus polyphemus*) - The gopher tortoise is a state-designated Threatened Species due to habitat loss associated with development. Gopher tortoises require uplands that have a high enough elevation to allow for the construction of underground burrows that would not be below the groundwater table. These conditions are present on portions of the subject property. A 15% gopher tortoise survey was conducted on the property in August 2023 and no burrows were observed (**15% Gopher Tortoise Survey Map**). Their populations onsite are expected to be low due to past clearing and logging operations.

A 100% gopher tortoise survey is also required within 90 days prior to construction, and permitting will be required by an FWC Authorized Agent. Additional permitting through FWC may be required if burrows are observed on the project site. All tortoises excavated from the property will be relocated to an approved gopher tortoise recipient site.

Wood Stork (*Mycteria americana*) - The wood stork is a federally threatened species and protected by the US Migratory Bird Treaty Act. Their populations have declined due to agricultural expansions resulting in altered hydro-cycles limiting their nesting and

foraging habitat. Utilizing the *Corps of Engineers, Jacksonville District US Fish and Wildlife Service, Jacksonville Ecological Services Field Office and State of Florida Effect Determination Key for the Wood Strok in Central and North Peninsular Florida Wood Stork Key* (September 2008), the project is more than 2,500 feet from a colony site (A), the project does not affect suitable foraging habitat (B), therefore the project will have *no effect* on the wood stork.

Bald eagle (*Haliaeetus leucocephalus*) - According to the Florida Fish and Wildlife Conservation Commission, Eagle Nest Locator database, the closest eagle's nests are located approximately 3.25 miles to the north and south from the property. Please note that the location provided by this website is provided only to allow the user to view the general location of a nest and to confirm that an appropriate area of interest was targeted by the user's search. As the closest known bald eagle nest is more than 1000' away, this will not affect the development of the site.

5.2 Wildlife Survey

A site inspection was conducted on August 1, 2023 to determine if the site contains potentially suitable protected species habitat and identify wildlife utilization on-site. During the inspection, the site was reviewed for potential gopher tortoise burrows and other protected species. A 15% gopher tortoise survey was conducted and no burrows were observed (**15% Gopher Tortoise Survey Map**); however, a full 100% survey will be conducted at least 90 days prior to construction. Any gopher tortoise burrows found will be permitted and excavated and the tortoises will be relocated to an approved recipient site.

During the site inspection, the following species were observed:

White tail deer (*Odocoileus virginianus*)
Wild hog (*Sus scrofa*)
Nine-banded armadillo (*Dasypus novemcinctus*)
Opossum (*Didelphis virginiana*)
Raccoon (*Procyon lotor*)
Southern black racer (*Coluber constrictor priapus*)
Florida banded water snake (*Nerodia fasciata fasciata*)
Northern cardinal (*Cardinalis cardinalis*)
Mourning dove (*Zenaida macroura*)

6.0 SUMMARY

Zev Cohen and Associates, Inc. has conducted a site review on the proposed Project Orchid site for the purposes of determining the presence or potential presence of state and federally protected wildlife, as well as wetlands. A total of **5.17 acres** of wetlands and **5.13 acres** of surface waters were observed. The onsite wetlands were previously placed under RCE and will not be impacted by the development. The onsite surface water was previously permitted and will not be impacted. An ERP will be obtained from SJRWMD in order to develop the site.

A wildlife survey was conducted to evaluate the potential presence of state and federally protected wildlife species. No federally or state listed were observed on the site and none are expected to be impacted by the development of Project Orchid. A 100% gopher tortoise survey will need to be conducted 90 days prior to construction and a gopher tortoise relocation permit may be required if any burrows are observed.

Technical Literature References

Chafin, L.G. 2000. *Field Guide to the Rare Animals of Florida*. Florida Natural Areas Inventory, Tallahassee, Florida.

Coile, Nancy C. 1998. *Notes of Florida's Endangered and Threatened Plants*. (Rule 5B-40 Florida's Regulated Plant Index), Botany Contribution 38, 2nd Ed. Florida Department of Agriculture and Consumer Services, Division of Plant Industry, Gaineville, Florida. 119 pp.

Cox, Jeffrey. A. 1987 *Status and Distribution of the Florida Scrub-Jay*. Florida Ornithological Society. Special Publication No. 3, Gainesville, Florida 110 pp.

Cox, James, D. Inkley, R. Kautz. 1987. *Ecology and Habitat Protection Needs of Gopher Tortoise (*Gopherus polyphemus*) Populations Found on Lands Slated for Large-Scale Development in Florida*. Florida Game and Freshwater Fish Commission, Nongame Wildlife Program. Technical Report No. 4. Tallahassee, Florida. 69 pp.

Deyrup, Mark, Franz, Richard 1994. *Rare and Endangered Biota of Florida, Volume IV Invertebrates.* Special Committee on Invertebrates, Florida Committee on Rare and Endangered Plants and Animals.

Division of Endangered Species. *Threatened and Endangered Species System*. Web Page Address: http://ecos.fws.gov/tess_public/TESSWebpage. United States Fish and Wildlife Service, Denver, Colorado.

Environmental Laboratory, Wetlands Research Program. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1. Department of the Army, Vicksburg, Mississippi.

Florida Fish and Wildlife Conservation Commission. 2004. *Florida's Endangered Species, Threatened Species, and Species of Special Concern*. Web Page Address: http://www.wildflorida.org/imperiled/pdf/Endangered-Threatened-Special-Concern-2004.pdf. Florida Fish and Wildlife Conservation Commission.

Gilbert, Carter R., 1992. *Rare and Endangered Biota of Florida, Volume II Fishes.* Special Committee on Fishes, Florida Committee on Rare and Endangered Plants and Animals.

Gilbert, K.M., J.D. Tobe, R.W. Cantrell, M.E. Sweeley, J.R. Cooper. 1995. The *Florida Wetlands Delineation Manual*. Florida Department of Environmental Protection, South Florida Water Management District, St. Johns River Water Management District, Suwannee River Water Management District, Southwest Florida Water Management District, and Northwest Florida Water Management District. 198 pp.

Hipes, D. D.R. Jackson, K. NeSmith, D. Printiss, K. Brandt. 2001. *Field Guide to the Rare Animals of Florida*. Florida Natural Areas Inventory, Tallahassee, Florida.

Humphrey, Stephen R., 1992. *Rare and Endangered Biota of Florida, Volume I. Mammals*. Special Committee on Mammals, Florida Committee on Rare and Endangered Plants and Animals.

Moler, Paul E., 1992. *Rare and Endangered Biota of Florida, Volume III Amphibians and Reptiles.* Special Committee on Amphibians and Reptiles Florida Committee on Rare and Endangered Plants and Animals.

Natural Resource Conservation Service (Soil Conservation Service at time of publication). Circa 1977. *Soil Survey of Volusia County, Florida*. United States Department of Agriculture.

Rogers, James A. Jr., Kale, Herbert W. III, Smith, Henry T. 1996. *Rare and Endangered Biota of Florida Volume V. Birds*. Special Committee on Birds Florida Committee on Rare and Endangered Plants and Animals.

Surveying and Mapping Office, Thematic Mapping Section. Department of Transportation. 1999. *Florida Land Use, Cover and Forms Classification System* 3rd ed. State of Florida, Department of Administration. 81 pp.

Wunderlin, Richard P. 1998. *Guide to the Vascular Plants of Florida.* University Press of Florida. 804 pp.

Wunderlin, R. P., and B. F. Hansen. 2004. *Atlas of Florida Vascular Plants* (http://www.plantatlas.usf.edu/).[S. M. Landry and K. N. Campbell (application development), Florida Center for Community Design and Research.] Institute for Systematic Botany, University of South Florida, Tampa.

Zev Cohen and Associates, Inc. 2004. *Geographically Referenced Listed Species Database,* including the *Florida Scrub-Jay Database*. Proprietary Geographic Information System Database.

Appendix A

Exhibits

Info:

Date Saved: 8/7/2023 Created by: planigan

Path: Z:\PROJECTS\2023\23151 Project Orchid Palm Coast\Location Map.mxd

10,000 5,000 0 10,000 Feet

Location Map
Project Orchid
Palm Coast, FL

ZEVCOHEN & ASSOCIATES INC
300 Interchange Blvd
Ormond Beach, FL 32174
ph 386-677-2482

Info:

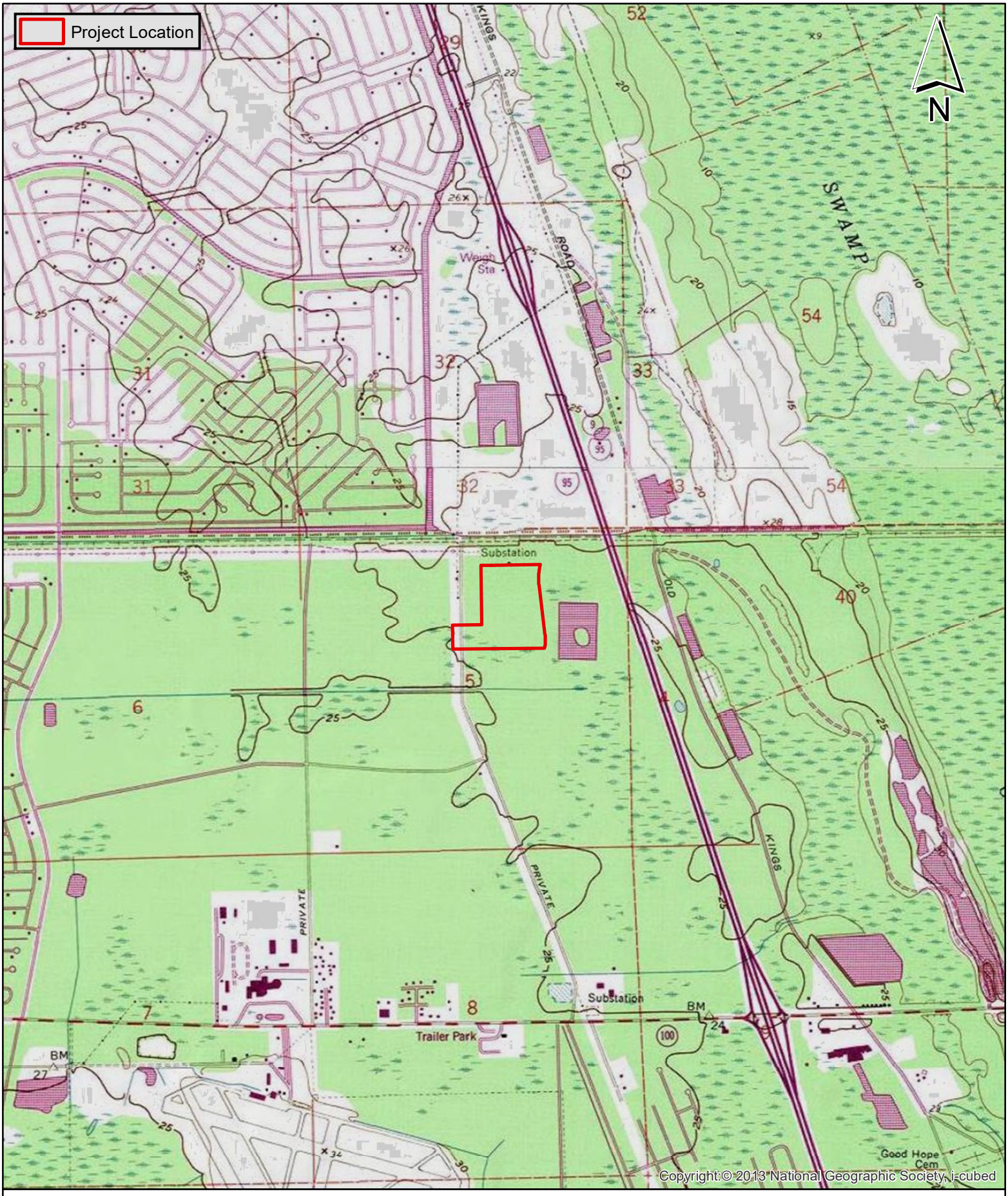
Date Saved: 8/1/2023 Created by: mtatum

Path: Z:\PROJECTS\2023\23151 Project Orchid Palm Coast\Aerial Map.mxd

350 175 0 350 Feet

Aerial Map
Project Orchid
Palm Coast, FL

ZEVCOHEN & ASSOCIATES INC
300 Interchange Blvd
Ormond Beach, FL 32174
ph 386-677-2482



Info:

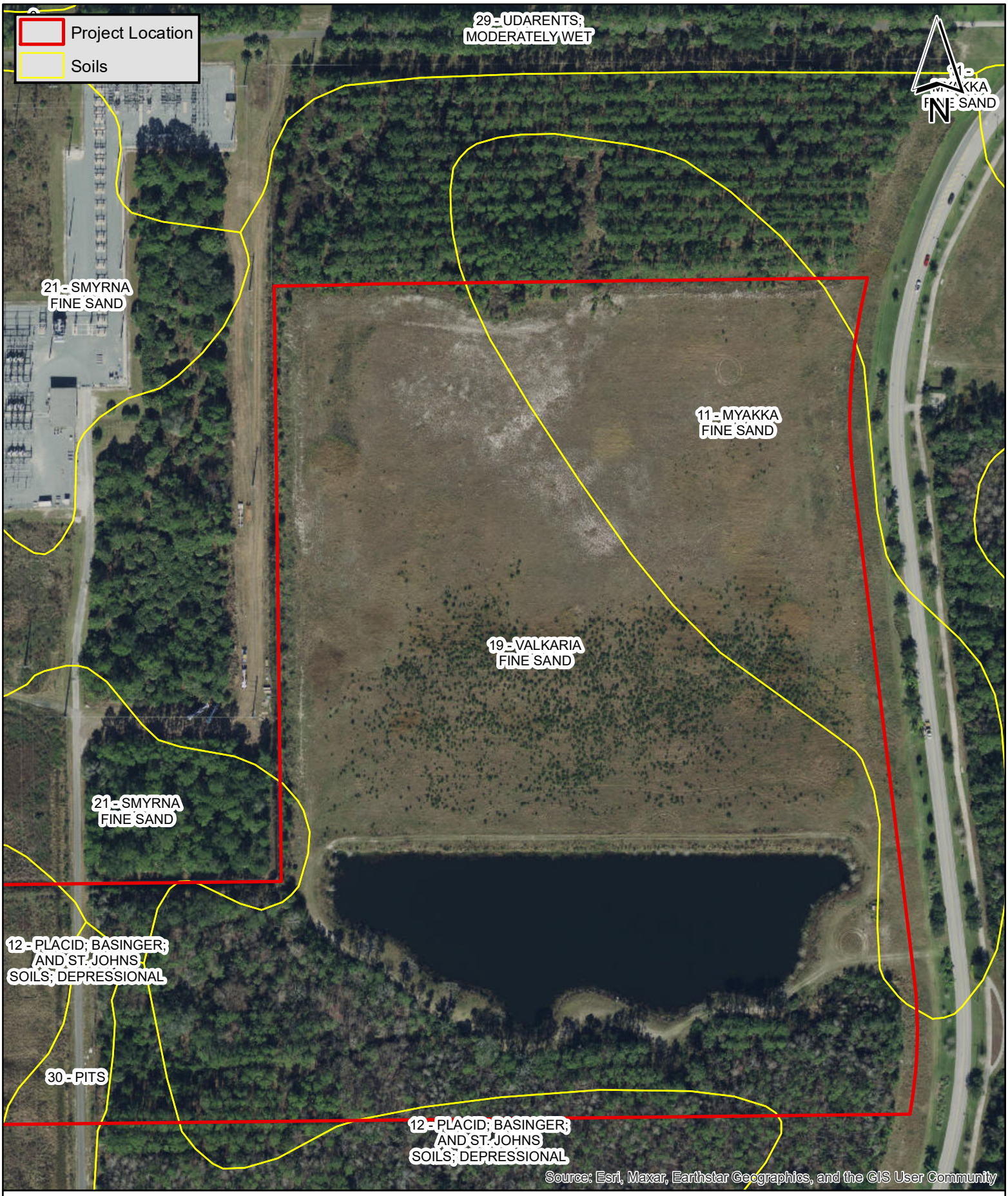
Date Saved: 8/7/2023 Created by: planigan

Path: Z:\PROJECTS\2023\23151 Project Orchid Palm Coast\QUAD Map.mxd

2,000 1,000 0 2,000 Feet

USGS Topographic Map
Project Orchid
Palm Coast, FL

ZEVCOHEN & ASSOCIATES INC
300 Interchange Blvd
Ormond Beach, FL 32174
ph 386-677-2482



Info:

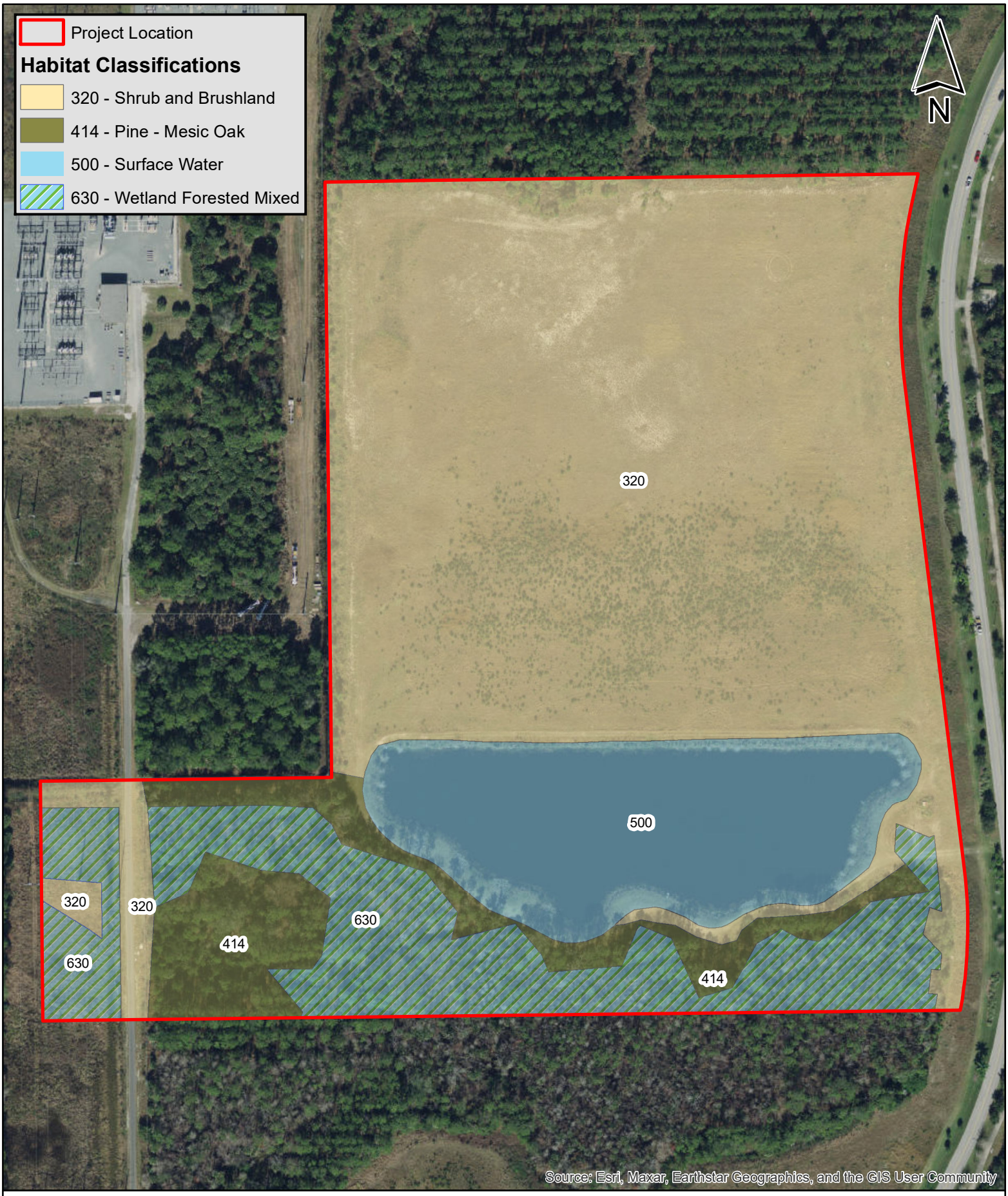
Date Saved: 8/18/2023 Created by: jdurant

Path: Z:\PROJECTS\2023\23151 Project Orchid Palm Coast\Soils Map.mxd

Feet 200 100 0 200 Feet

Soils Map
Project Orchid
Palm Coast, FL

ZEVCOHEN & ASSOCIATES INC
300 Interchange Blvd
Ormond Beach, FL 32174
ph 386-677-2482



Info:

Date Saved: 8/18/2023 Created by: jdurant

Path: Z:\PROJECTS\2023\23151 Project Orchid Palm Coast\Habitat Map.mxd

200 100 0 200 Feet

Habitat Map
Project Orchid
Palm Coast, FL

ZEVCOHEN & ASSOCIATES INC
300 Interchange Blvd
Ormond Beach, FL 32174
ph 386-677-2482

Info:

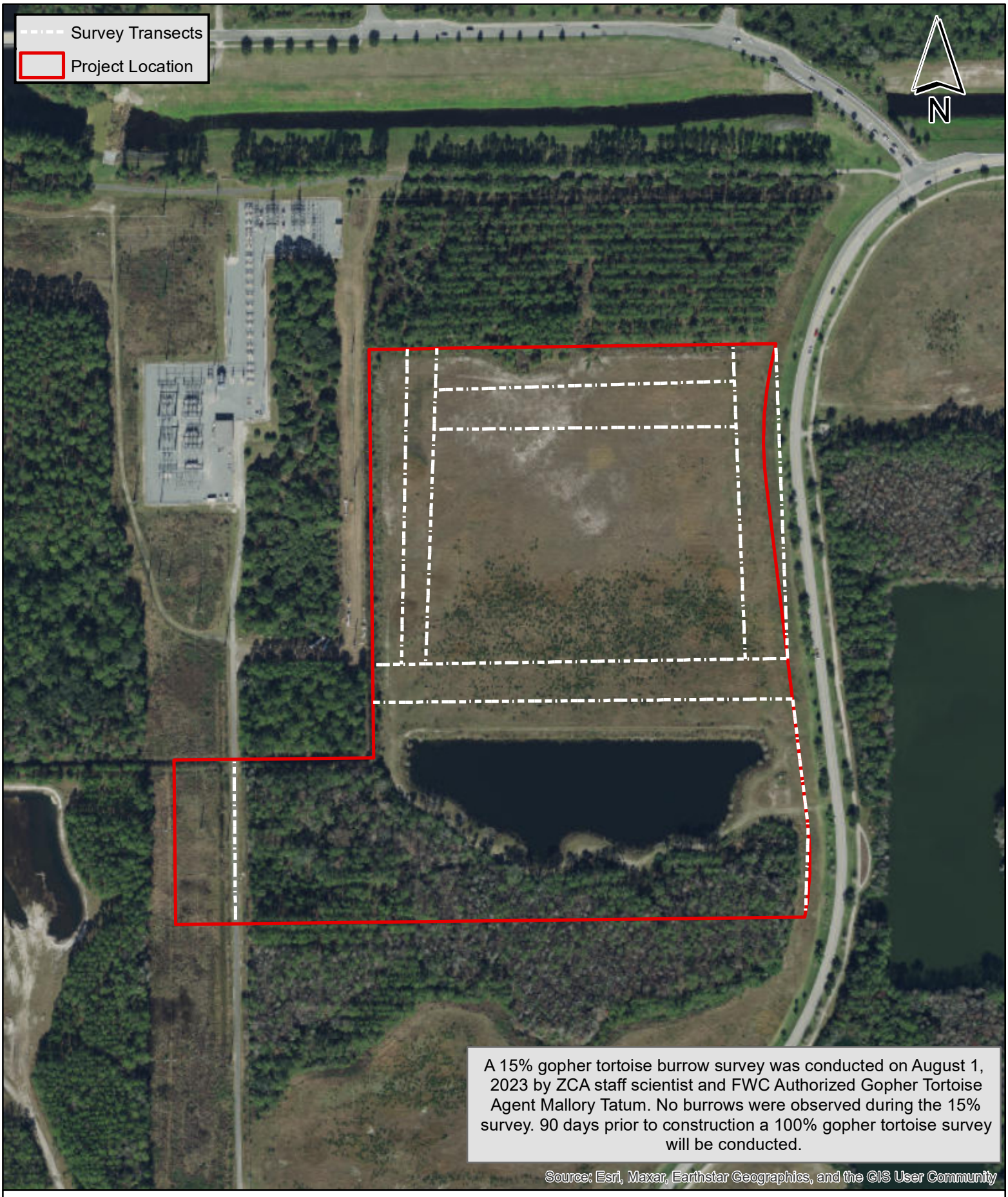
Date Saved: 8/18/2023 Created by: jdurant

Path: Z:\PROJECTS\2023\23151 Project Orchid Palm Coast\RCE Map.mxd

200 100 0 200 Feet

Regulatory Conservation Easement Map
Project Orchid
Palm Coast, FL

ZEVCOHEN & ASSOCIATES INC
300 Interchange Blvd
Ormond Beach, FL 32174
ph 386-677-2482



A 15% gopher tortoise burrow survey was conducted on August 1, 2023 by ZCA staff scientist and FWC Authorized Gopher Tortoise Agent Mallory Tatum. No burrows were observed during the 15% survey. 90 days prior to construction a 100% gopher tortoise survey will be conducted.

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Info:

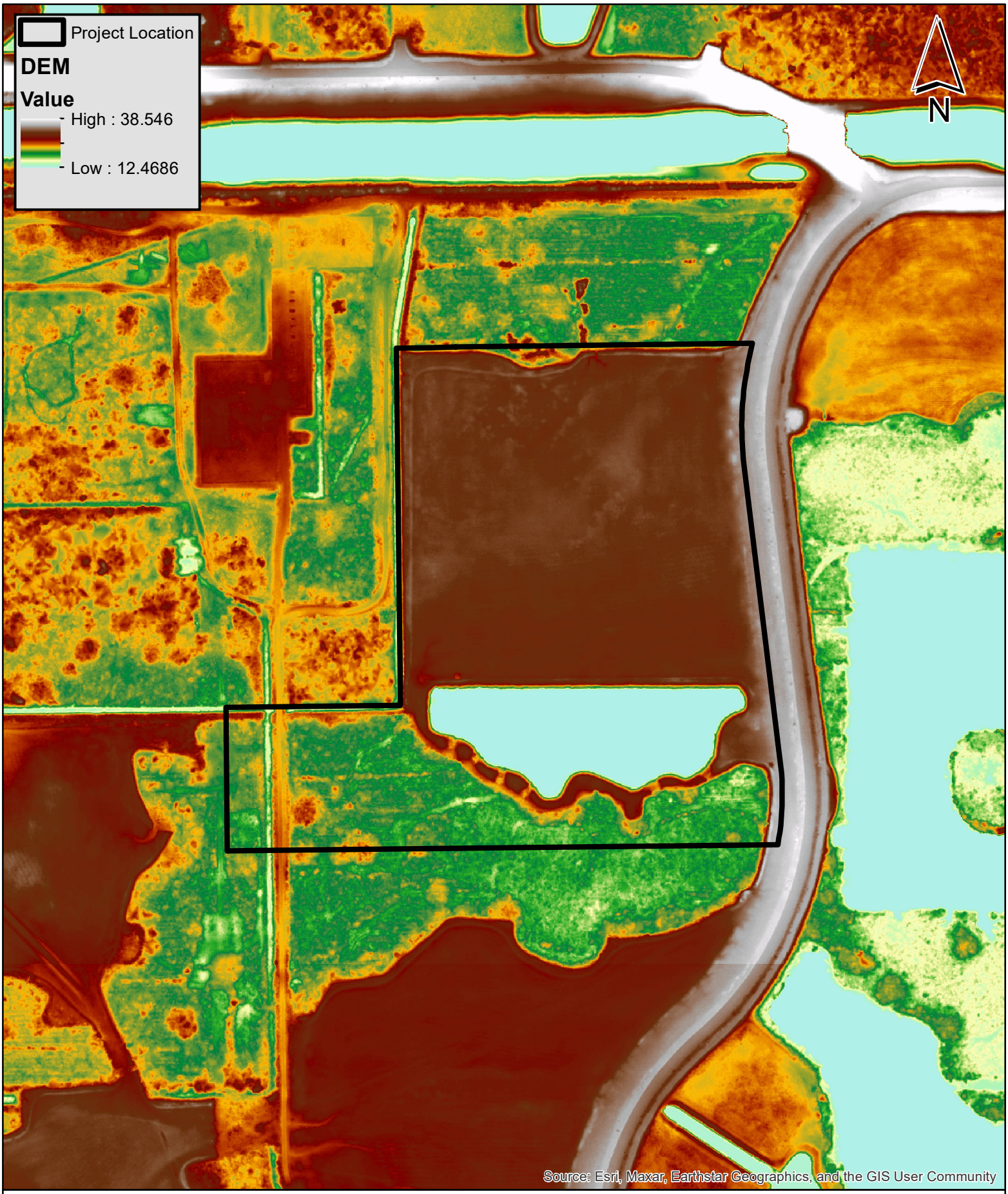
Date Saved: 8/14/2023 Created by: mtatum

Path: Z:\PROJECTS\2023\23151 Project Orchid Palm Coast\15 Percent GT Map.mxd

300 150 0 300 Feet

15% Gopher Tortoise Survey Map
Project Orchid
Palm Coast, FL

ZEVCOHEN & ASSOCIATES INC
300 Interchange Blvd
Ormond Beach, FL 32174
ph 386-677-2482



Info:

Date Saved: 8/7/2023 Created by: planigan

Path: Z:\PROJECTS\2023\23151 Project Orchid Palm Coast\LiDAR Map.mxd

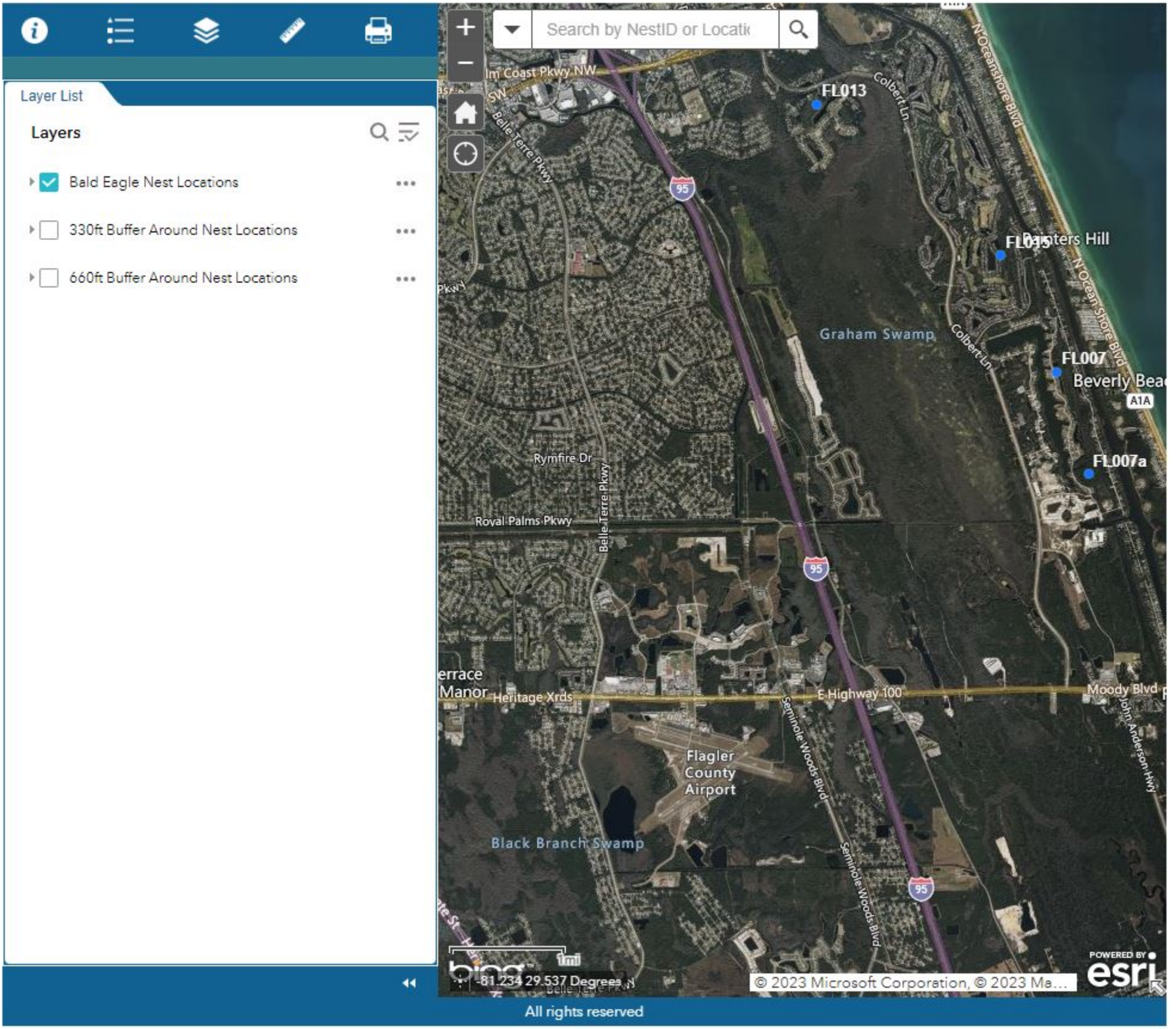
350 175 0 350 Feet

DEM Map
Project Orchid
Palm Coast, FL

ZEVCOHEN & ASSOCIATES INC
300 Interchange Blvd
Ormond Beach, FL 32174
ph 386-677-2482

Appendix B

Additional Information



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

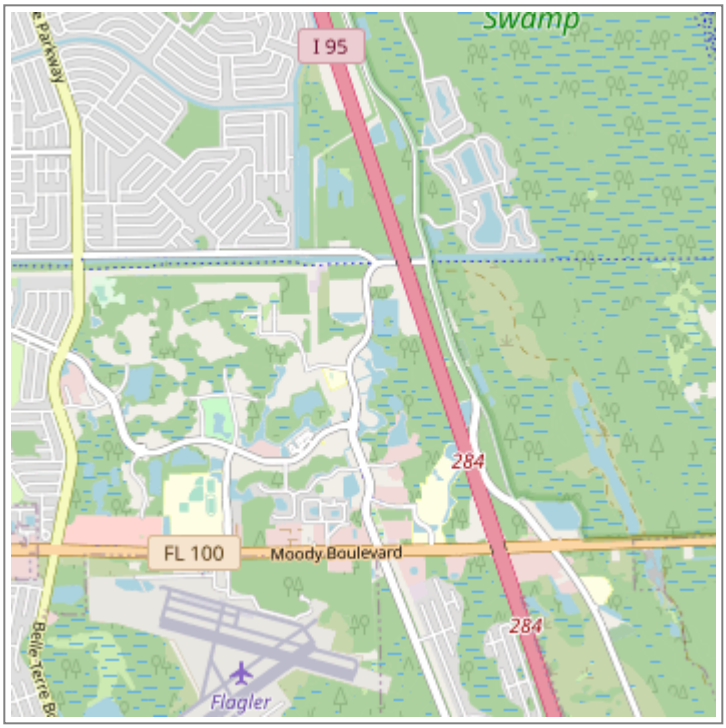
UNOFFICIAL REPORT

Created 8/10/2023

(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: 50529



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: 50529

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

3 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Mesic flatwoods	G4	S4	N	N
Scrub	G2	S2	N	N
Ursus americanus floridanus Florida Black Bear	G5T4	S4	N	N

Matrix Unit ID: 50529

21 **Potential** Elements for Matrix Unit 50529

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Aphelocoma coerulescens Florida Scrub-Jay	G2?	S1S2	T	FT
Asplenium x heteroresiliens Morzenti's spleenwort	G2	S1	N	N
Calopogon multiflorus many-flowered grass-pink	G2G3	S2S3	N	T
Centrosema arenicola sand butterfly pea	G2Q	S2	N	E
Chamaesyce cumulicola sand-dune spurge	G2	S2	N	E
Conradina grandiflora large-flowered rosemary	G3	S3	N	T
Corynorhinus rafinesquii Rafinesque's Big-eared Bat	G3G4	S1	N	N
Drymarchon couperi Eastern Indigo Snake	G3	S2?	T	FT
Floodplain swamp	G4	S4	N	N
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
Gymnopogon chapmanianus Chapman's skeletongrass	G3	S3	N	N
Helianthus carnosus lake-side sunflower	G1G2	S1S2	N	E
Heterodon simus Southern Hognose Snake	G2	S2S3	N	N
Lechea cernua nodding pinweed	G3	S3	N	T
Lechea divaricata pine pinweed	G2	S2	N	E
Litsea aestivalis pondspice	G3?	S2	N	E
Matelea floridana Florida spiny-pod	G2	S2	N	E
Nemastylis floridana celestial lily	G2	S2	N	E
Neofiber alleni Round-tailed Muskrat	G2	S2	N	N
Nolina atopocarpa Florida beargrass	G3	S3	N	T
Pteroglossaspis ecristata giant orchid	G2G3	S2	N	T

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

Flagler County, Florida

Local office

Florida Ecological Services Field Office

(772) 562-3909
(772) 562-4288
fw4flesregs@fws.gov

1339 20th Street
Vero Beach, FL 32960-3559

https://www.fws.gov/office/florida-ecological-services

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[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

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. IPaC only shows species that are regulated by USFWS (see FAQ).

2. 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.

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

Birds

NAME	STATUS
Eastern Black Rail Laterallus jamaicensis ssp. jamaicensis Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10477	Threatened
Florida Scrub-jay Aphelocoma coerulescens Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6174	Threatened

Reptiles

NAME	STATUS
Eastern Indigo Snake Drymarchon couperi Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/646	Threatened
Green Sea Turtle Chelonia mydas There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6199	Threatened
Hawksbill Sea Turtle Eretmochelys imbricata Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3656	Endangered
Leatherback Sea Turtle Dermochelys coriacea Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1493	Endangered

Loggerhead Sea Turtle Caretta caretta There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1110	Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

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.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

Additional information can be found using the following links:

- Eagle Managment https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds

- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

There are bald and/or golden eagles in your project area.

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
Bald Eagle Haliaeetus leucocephalus 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.	Breeds Sep 1 to Jul 31

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.

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

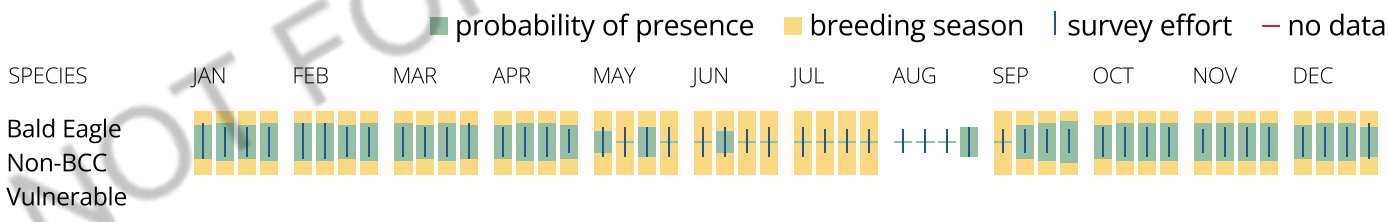
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. 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. 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.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence 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). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles 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 Rapid Avian Information Locator (RAIL) Tool.

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. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

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.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

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 Falco sparverius paulus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9587	Breeds Apr 1 to Aug 31
American Oystercatcher Haematopus palliatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8935	Breeds Apr 15 to Aug 31
Bald Eagle Haliaeetus leucocephalus 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.	Breeds Sep 1 to Jul 31
Black Skimmer Rynchops niger This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5234	Breeds May 20 to Sep 15
Chimney Swift Chaetura pelagica This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Great Blue Heron Ardea herodias occidentalis This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Jan 1 to Dec 31

Gull-billed Tern *Gelochelidon nilotica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9501	Breeds May 1 to Jul 31
Lesser Yellowlegs *Tringa flavipes* 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
Magnificent Frigatebird *Fregata magnificens* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Oct 1 to Apr 30
Painted Bunting *Passerina ciris* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 25 to Aug 15
Prairie Warbler *Dendroica discolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* 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 *Egretta rufescens* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/7617	Breeds Mar 1 to Sep 15
Ruddy Turnstone *Arenaria interpres morinella* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Short-billed Dowitcher *Limnodromus griseus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere

Swallow-tailed Kite Elanoides forficatus — Breeds Mar 10 to Jun 30

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8938

Willet Tringa semipalmata — Breeds Apr 20 to Aug 5

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wilson's Plover Charadrius wilsonia — Breeds Apr 1 to Aug 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

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.

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

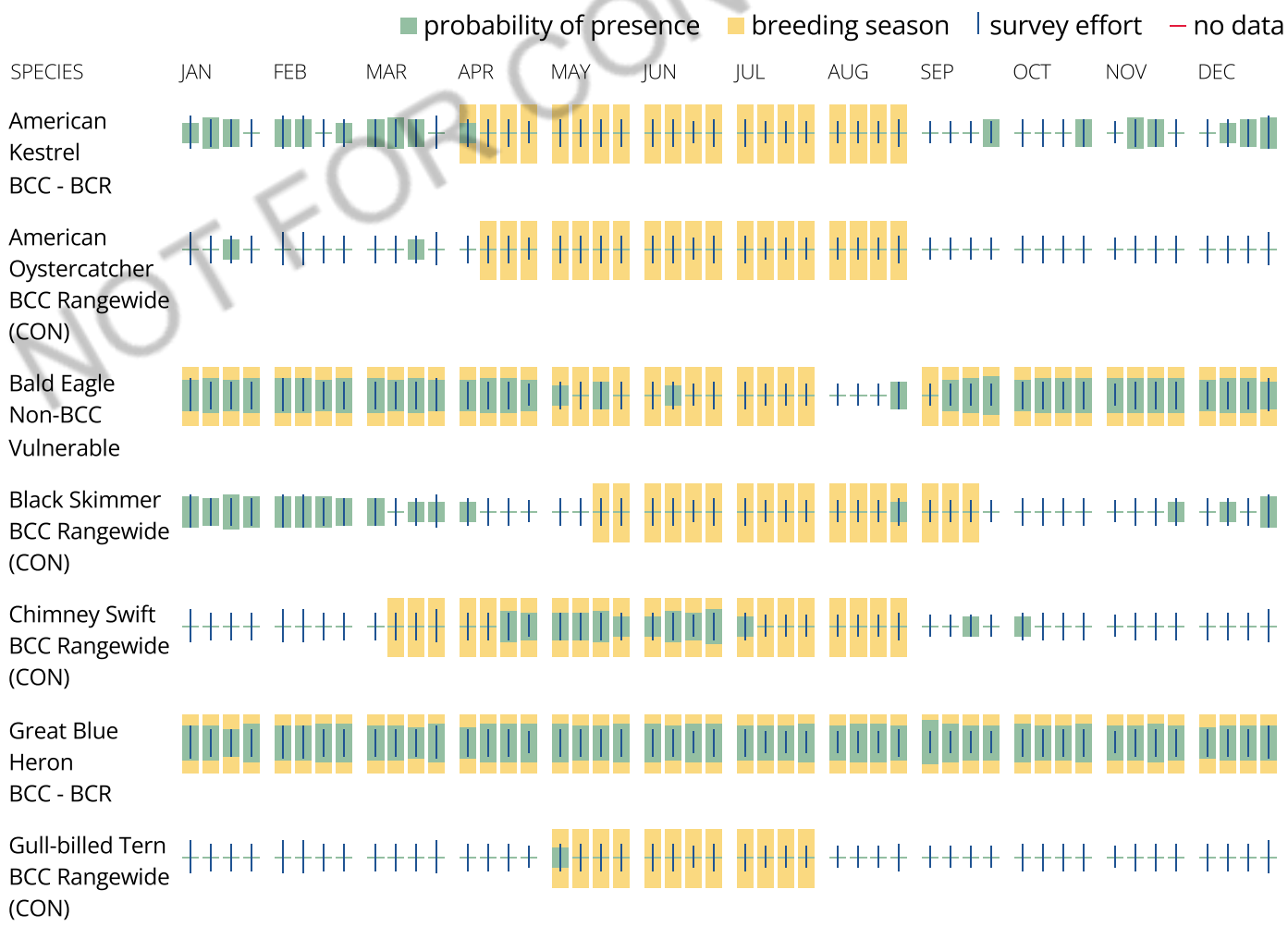
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

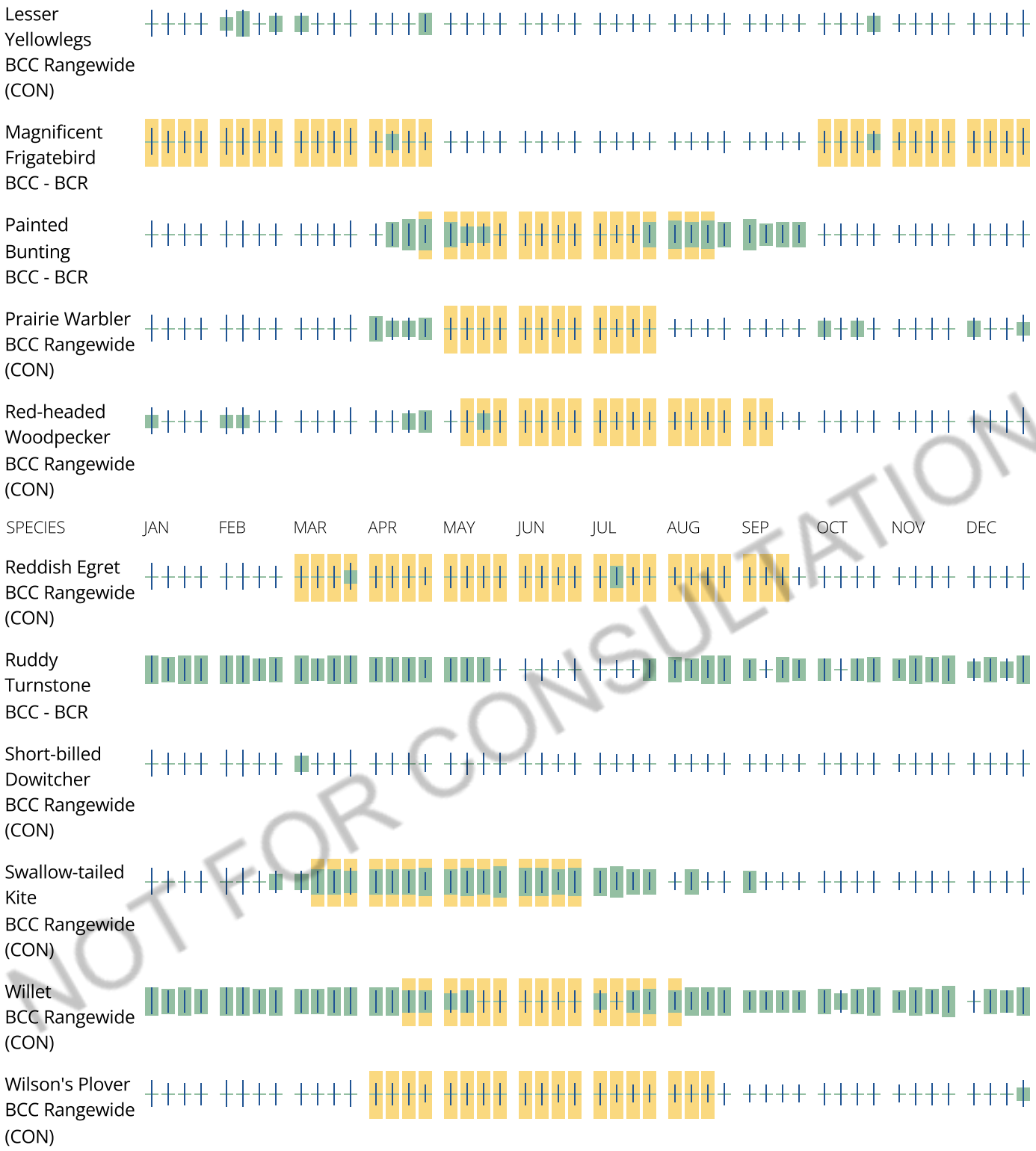
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

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. 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.





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 list of migratory birds that potentially occur 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 Rapid Avian Information Locator (RAIL) 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 or migrating in my 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 query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. 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.

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 (NWI)

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.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER POND

PUBHx

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

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 tuberficid 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.