



# Threatened and Endangered Species Assessment Report

Lake Orlando Project  
*in* Sections 4, 5, 8, & 9, Township 22 South, Range 29 East  
City of Orlando, Orange County, Florida

GAI Project Number: A190961.00

April 2020

Prepared by: GAI Consultants, Inc. |  
Orlando Office  
618 East South Street, Suite 700  
Orlando, Florida 32801

Prepared for: Lake Orlando Land Owner, LLC |  
2525 Ponce De Leon Boulevard, Floor 4  
Coral Gables, Florida 33134

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# Table of Contents

1.0	Introduction.....	1
2.0	Methodology.....	1
3.0	Existing Site Conditions.....	1
3.1	Location.....	1
3.2	Topography and Drainage.....	1
3.3	Soils.....	2
3.4	Land Use and Vegetation.....	3
4.0	Threatened and Endangered Species.....	3
5.0	Summary.....	5

Table 1 Classification of On-Site Soils

Figure 1 Vicinity Map

Figure 2 USGS Topographic Map

Figure 3 Soils Map

Figure 4 Existing Land Cover Map

Appendix A Information Sources

Appendix B Wildlife Agency Correspondence

## 1.0 Introduction

Pursuant to the request of Lake Orlando Land Owner, LLC, GAI Consultants, Inc. (GAI) conducted an assessment of the Lake Orlando Project study area in the City of Orlando, Florida for the presence of threatened and endangered species. The study area was investigated during a field inspection as well as through a review of published data containing information about the study area's topography, soils, vegetation, and wildlife. The purpose of our research was to document the study area's potential to support listed plants and animals, and the potential constraints on planned future improvements to the study area as a result of their presence. No subsurface soil, water quality, archaeological, or hazardous materials investigations were conducted by GAI. This report documents the findings of this investigation and the potential ecological permitting requirements and management obligations relative to listed species documented to occur within or adjacent to the study area. These findings reflect conditions at the time of the investigation and do not preclude the possibility that on-site conditions may change. The opinions expressed are those of the writer and should not be viewed as binding on any governmental agency.

## 2.0 Methodology

The study area was investigated through review of published information (Appendix A). Further, GAI staff conducted a review of the state's database of species occurrence records and the bald eagle nest location database (Appendix B). Finally, a field inspection was conducted on 6 November 2019 by ecologists familiar with the natural communities of Florida to determine the vegetative communities present within the study area, and to determine the presence of, or potential for use by, listed plant or animal species. The field investigation also allowed the ecologists to confirm or amend the information collected from database searches and the review of published information. Vegetative community types and general observations were recorded via field data sheets and photographs taken of the study area. A list of plant species encountered was recorded for the study area. This list reflects representative species observed within the study area and is not necessarily a complete floristic inventory. The study area was reviewed for the presence of listed animals through actual observation, signs of scat, prints, or other indications of their presence or utilization of the site.

Statements regarding listed species are based on limited field observations and existing data records, and do not exclude the possibility that listed species may occasionally forage on-site or may move into the study area at a later date, or that protected plants may be discovered on-site when blooming structures are apparent.

## 3.0 Existing Site Conditions

### 3.1 Location

The Lake Orlando Project study area encompasses much of the defunct Lake Orlando Country Club along the south and east shoreline of Lake Orlando, located in the northwest portion of the City of Orlando, Florida (Figure 1). The study area is situated amongst a variety of land uses including residential, commercial, and institutional. The study area is bounded by Silver Rose Avenue and South Lake Orlando Parkway on the west, by South Lake Orlando Parkway and the Rosemont Green subdivision on the south, by residential development along South Lake Orlando Parkway, the Ashley Court Condominiums, and the Parkway Center commerce park on the east, and by Clubhouse Road, North Lake Orlando Parkway, and Rosamond Drive on the north.

### 3.2 Topography and Drainage

The study area is gently sloping, generally from south to north. The U.S. Geological Survey (USGS) topographic map (Orlando West, FL Quadrangle) depicts the high elevation of the study area as approximately 95 feet National Geodetic Vertical Datum (NGVD) near the southern end of the study area, and a low elevation of approximately 90 feet NGVD near the northern end of the study area

(Figure 2). The study area drains to a series of natural and manmade flowways and depressions eventually reaching Lake Orlando. The study area lies in the Wekiva River Nested Drainage Basin as defined by the St. Johns River Water Management District.

### 3.3 Soils

Soil mapping often provides an indication of the historic and/or current conditions of a site, the potential for presence of sensitive plant communities (e.g., wetlands, scrub, etc.), and/or the potential for presence of listed plants and animal species that are typically limited to specific plant communities. The U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS), in the *Soils Survey of Orange County, Florida* (1989), identified ten soil types occurring within the study area. The soil types are listed below in Table 1 and are depicted on Figure 3.

Soils within and adjacent to the study area are primarily mapped as two groups of soils – those associated with wetlands and those associated with flatwoods. The wetland soils are predominantly in the west and south and are dominated by Samsula, Hontoon, and Basinger soils. The flatwoods soils (Ona, St. Johns, Smyrna, and Zolfo fine sands) are found predominantly in the north and eastern portions of the study area. It is likely that the native soils were significantly altered when the site was cleared and graded for the golf course construction. One sign of this is the mapping of the Arents soil unit in the parking lot and clubhouse area in the middle of the study area. The Arents map unit designation is assigned to areas that have been filled and graded. The current status of these soils may also be different from the NRCS description due to the effects of development and off-site drainage activities.

**Table 1. Classification of On-Site Soils**

Soil Map Unit <sup>1</sup>	Drainage Class	Significant Hydric Inclusions <sup>2</sup>
Arents, nearly level (1)	Well drained	No
Basinger fine sand, depressional (3)	Very poorly drained	Yes
Ona fine sand (26)	Poorly drained	Yes
Ona-Urban land complex (27)	Poorly drained	
St. Johns fine sand (37)	Poorly drained	Yes
Samsula muck (40)	Very poorly drained	Yes
Samsula-Hontoon-Basinger association (41)	Very poorly drained	Yes
Smyrna fine sand (44)	Poorly drained	Yes
Smyrna Urban land complex (45)	Poorly drained	Yes
Zolfo fine sand (54)	Somewhat poorly drained	No

<sup>1</sup> Soil Survey of Orange County, NRCS (1980)

<sup>2</sup> Hydric Soils of Florida Handbook, Florida Association of Environmental Soil Scientists

### 3.4 Land Use and Vegetation

The land use and vegetative communities occurring in the study area were determined based on published GIS data and interpretation of aerial photography, which were then updated based on observations during the site inspection (Figure 4). The land uses and vegetative communities occurring within the study area were then classified using the Florida Land Use, Cover and Forms Classification System (FLUCCS), 1999. The study area is comprised primarily of the former golf course and is bordered by a mixture of developed (residential, commercial, and institutional) and undeveloped lands. The vegetation associated with the golf course consists of turfgrasses and turfweeds, as well as landscape plantings of shrubs and trees. The undeveloped lands vary from forested uplands to herbaceous marsh, shrub swamp, forested wetlands, and open water.

The undeveloped uplands within and adjacent to the study area can be classified as Hardwood-Conifer Mixed (FLUCCS 434). The dominant tree species include slash pine (*Pinus elliotii*), cabbage palm (*Sabal palmetto*), sycamore (*Platanus occidentalis*), and camphor (*Cinnamomum camphora*). The shrub layer is predominantly Brazilian pepper (*Schinus terebinthifolius*) and lantana (*Lantana camara*). Herbaceous and ground cover consists of turfgrasses (primarily bahiagrass [*Paspalum notatum*]) and turfweeds including sandspur (*Cenchrus* sp.), Brazilian pusley (*Richardia brasiliensis*), Spanish needles (*Bidens alba*), ticktrefoil (*Desmodium* spp.), bitter gourd (*Momordica charantia*), and dayflower (*Commelina diffusa*).

Much of the shorelines of the lakes and ponds (FLUCCS 520 and 530) within and adjacent to the study area are dominated by a mixture of remnant native trees (including pond cypress [*Taxodium ascendens*] and sweetbay [*Magnolia virginiana*]) and nuisance and invasive shrubs such as Peruvian primrose willow (*Ludwigia peruviana*), elderberry (*Sambucus canadensis*), and Carolina willow (*Salix caroliniana*).

The shrub swamp (FLUCCS 618) is located primarily in the northeastern extent of the study area near Rosamond Drive and is dominated by a mixture of Carolina willow, elderberry, and Peruvian primrose willow, with cattail (*Typha* sp.) and wild taro (*Colocasia esculenta*).

The Wetland Forested Mixed (FLUCCS 630) community occurs throughout the study area as remnants of the natural community that likely existed prior to the construction of the golf course. Dominant species include pond cypress, cabbage palm, swamp gum (*Nyssa biflora*), red maple (*Acer rubrum*), and sweetgum (*Liquidambar styraciflua*). These wetlands have also been affected by invasive species, including chinaberry (*Melia azedarach*), Brazilian pepper, and Chinese tallow (*Sapium sebiferum*).

Herbaceous Marshes (FLUCCS 641) are also interspersed across the study area. Dominant species include cattail, maidencane (*Panicum hemitomon*), torpedograss (*P. repens*), wild taro, pickerelweed (*Pontederia cordata*), duck potato (*Sagittaria latifolia*), and fragrant waterlily (*Nymphaea odorata*).

### 4.0 Threatened and Endangered Species

The U.S. Fish and Wildlife Service (USFWS) and the Florida Fish and Wildlife Conservation Commission (FWC) list wildlife species that are considered “endangered” or “threatened.” The FWC uses an additional category - “species of special concern” (SSC) - for several animals that may ultimately be listed as endangered or threatened. This classification provides the SSC-listed animal with a level of protection that varies from species to species. The USFWS and the Florida Department of Agriculture and Consumer Services (FDACS) also compile lists of protected plant species. The USFWS classifies protected plants as either endangered or threatened, while the FDACS’s plant list is categorized into endangered, threatened, and “commercially exploited” species.

Prior to the field inspection, various web sites were accessed in order to collect information concerning the possible presence of state and/or federally listed threatened or endangered species within the study area. These sites included:

- ▶ The USFWS's website for federally listed species found within Orange County;
- ▶ The FWC's website to identify state listed species known to occur within Orange County;
- ▶ The FWC's website for Bald Eagle (*Haliaeetus leucocephalus*) nest locations; and,
- ▶ The Florida Natural Areas Inventory (FNAI) database and Biodiversity Matrix for known occurrences of listed species or critical habitat.

In addition, GIS data layers obtained from the FWC and the FNAI that provide species occurrence records were used in our determination of whether protected species may occur within the vicinity of the study area. Our field inspection consisted of a series of meandering pedestrian transects throughout the study area to evaluate existing land use and ascertain the likelihood that it may support protected species through the observation of individuals, tracks, burrows, scat, or other indications of listed plants and/or animals.

Based on in-house data searches, numerous protected animal and plants are known to occur in Orange County. From review of the habitat requirements of these plants and animals as well as the subsequent field inspection, it was determined that there is concern for the potential presence of the Bald Eagle (*Haliaeetus leucocephalus*), listed wading birds (Little Blue Heron [*Egretta caerulea*], Tricolored Heron [*Egretta tricolor*], and Wood Stork [*Mycteria americana*]), gopher tortoise (*Gopherus polyphemus*), Eastern indigo snake (*Drymarchon corais couperi*), and a few listed plants with broad habitat requirements that may include the habitat types that occur on-site. These findings do not preclude the possibility that these or other protected animals may move into the area at a later date or occasionally forage on-site, or that protected plants may be discovered on-site when blooming structures are apparent. Habitat requirements and the probability of occurrence for these species are provided below.

Bald Eagle - GAI conducted a Bald Eagle nest search following the procedures of the FWC's *Eagle Nest Locator Database* (2018). The Bald Eagle has been removed from the FWC's list of threatened and endangered species and is no longer listed under the federal Endangered Species Act. However, it should be noted that protection of the Bald Eagle will continue under the federal Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act, and by the revised management plans issued by the FWC and the USFWS. The FWC database search revealed that the study area does not occur within or near the designated protection zone of a previously documented eagle nest. The closest documented active eagle nest (designated VO131) is located approximately 2.8 miles to the southeast of the study area. Unless a new nest is identified within 660 feet of the study area, no coordination with the FWC is necessary.

Wading Birds - The Little Blue Heron and Tricolored Heron utilize a variety of upland and wetland habitats including marshes, ponds, sloughs, rivers, mangrove swamps, islands, as well as various other salt and freshwater wetland habitats. While it is likely that individuals of these species occasionally forage within the wetlands and ponds associated with the study area, the study area itself does not represent a critical foraging area or nest habitat for either of the listed bird species. Due to the preponderance of foraging habitat within the general vicinity of the Project, and the lack of permanent impacts to wading bird nesting habitat that would be anticipated to result from the construction of the proposed Project, no significant adverse impacts to these species are anticipated to occur.

Wood Stork - The wood stork is listed as an endangered species by both the Service and the FWC. The surface water management areas, flowways, ditches, and ponds within and adjacent to the Project offer areas of open shallow water with emergent vegetation and could serve as foraging habitat. The open water portions of the depression marsh wetlands may also provide suitable foraging habitat. The project site falls within the 15-mile foraging habitat range of two documented wood stork colonies.

The wood stork colonies, designated “Lawne Lake” and “Eagle Nest Park,” lie approximately 2.2 miles south-southwest and 5.4 miles south-southwest of the Lake Orlando Project site, respectively. However, because the quantity of potential foraging habitat within the Project site is not likely to be diminished, the project is not likely to adversely affect wood stork foraging habitat.

Gopher Tortoise - The gopher tortoise is listed as threatened by the FWC. The gopher tortoise requires well-drained and loose sandy soils for burrowing, and low-growing herbs and grasses for food. These habitat conditions are best provided in the sandhill (longleaf pine-xeric oak) community, although tortoises are known to use many other habitats, including sand pine scrub, xeric oak hammocks, dry prairies, pine flatwoods, and ruderal sites, including pastures. No gopher tortoises or gopher tortoise burrows were observed during the site inspection, and none are anticipated to occur based on the soil types and vegetative communities present within the study area. Construction activities within a 25-foot radius of a “potentially occupied” gopher tortoise burrow will require coordination with the FWC and will likely require a permit to be issued by the FWC prior to the commencement of construction activities. A quantitative survey for gopher tortoise prior to site development in this area is recommended to ensure compliance with state law.

Eastern Indigo Snake - Gopher tortoise burrows harbor and protect a number of commensal species, including the Eastern indigo snake, which is listed by both the USFWS and the FWC as threatened. The Eastern indigo snake prefers drier habitats, but may be found in a variety of habitats from xeric sandhills to cabbage palm hammocks to hydric hardwood hammocks. Indigo snakes often forage adjacent to wetlands, particularly seasonal wetlands. This species was not observed during the field investigation. The FWC recognizes the limitations of current survey methodologies to locate this species and generally manages for this species under the regulatory umbrella of the gopher tortoise. If Eastern indigo snakes are observed within or adjacent to the study area, a management plan can be prepared consisting of educational pamphlets for the construction crew instructing them not to kill the snakes and to allow them to pass through the work area unharmed. These same pamphlets can be posted or distributed as education materials for the personnel and visitors to the site during operational activities.

Listed Plants - The majority of the listed plants documented to occur in Orange County are either associated with wetlands or scrub habitat. No scrub habitat types occur in the study area. No plants listed by the FDACS were observed within the study area. It should be noted that the incidental destruction of State-listed rare or commercially exploited plants, as may be caused by vegetation clearing associated with construction or agriculture, are neither regulated nor prohibited by the FDACS. No plants listed by the USFWS were observed within or adjacent to the study area. Thus, no further coordination with the FDACS or the USFWS is currently recommended as it relates to listed plants. These conclusions are based on field observations and existing data records.

## 5.0 Summary

This listed species assessment was conducted to document the potential usage of the study area by, or potential presence within the study area of, protected species and the potential constraints and management obligations posed by their presence. We recommend a formal survey for gopher tortoise prior to site development or associated work. Construction activities within a 25-foot radius of any “potentially occupied” gopher tortoise burrow will require coordination with the FWC and will likely require a permit to be issued by the FWC prior to the commencement of construction activities. The study area also has a potential for the presence of Eastern indigo snake. This species is typically addressed under the umbrella of gopher tortoise management plans; although a site-specific educational program and work plan for Eastern indigo snake may be required during site construction and operational activities.

No plants listed by the USFWS or the FDACS were observed within the study area. The state of Florida does not prohibit the loss of these species associated with clearing activities associated with agriculture or site development. No coordination with the USFWS or the FDACS is currently necessary regarding listed plant species. This assessment should be updated if greater than one year passes prior to project site development activities.

## FIGURES

**Legend**

**Project Site Location**



Lake Orlando  
Project  
Location



Scale: 1 : 150,000



**Lake Orlando**

**Project Vicinity**

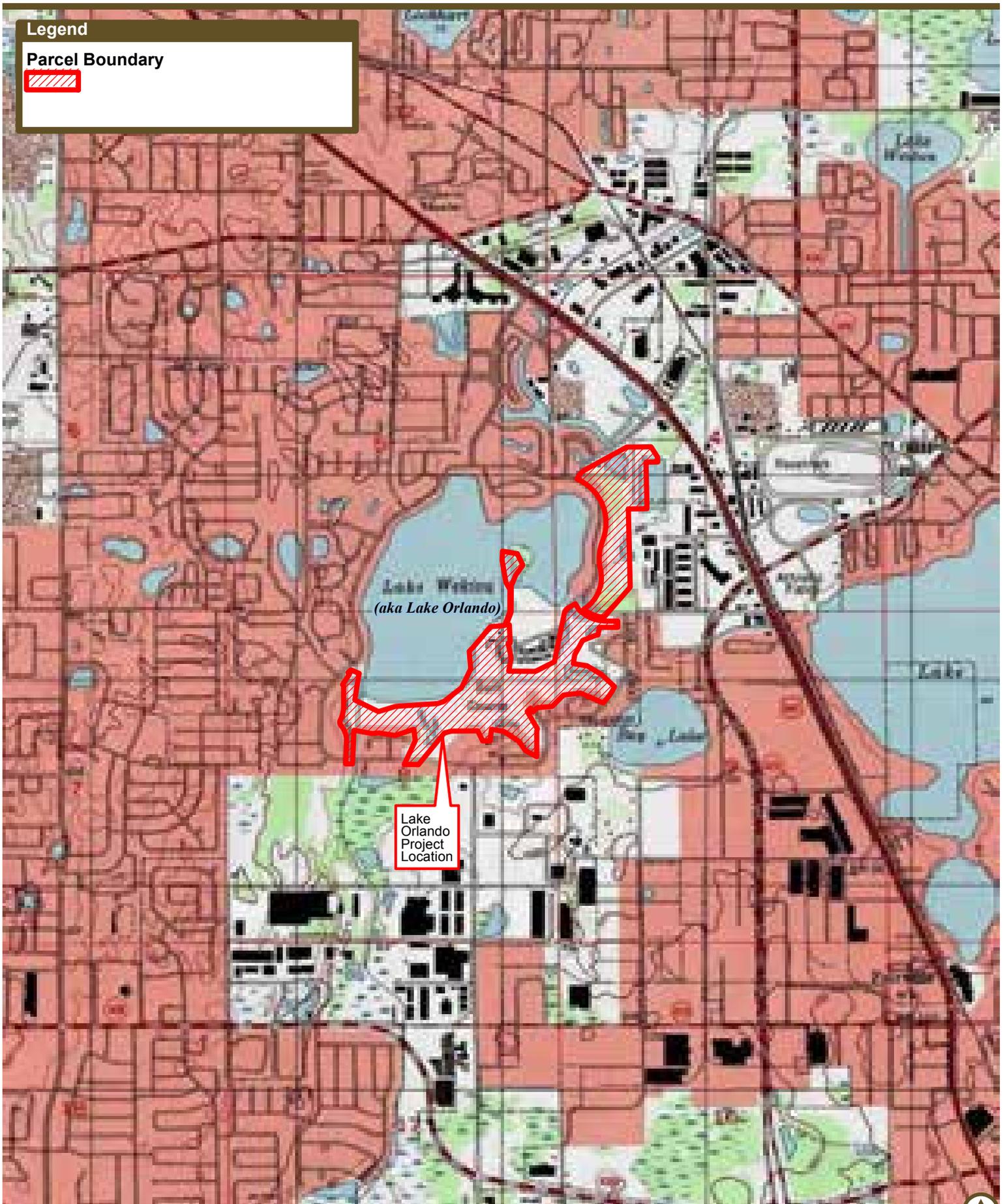
in Sections 4, 5, 8, & 9 Township 22 South, Range 29 East  
City of Orlando, Orange County, Florida

Drawn by: JGS  
Date: 2020.04.15  
A190961.00-F1.MXD

1

Legend

Parcel Boundary



0 1,000 2,000 3,000 4,000 5,000 Feet

Scale: 1 : 24,000



Lake Orlando

in Sections 4, 5, 8, & 9 Township 22 South, Range 29 East  
City of Orlando, Orange County, Florida

USGS 7.5" series  
Topographic Map

Drawn by: JGS  
Date: 2020.04.15  
A190961.00-F2.MXD

Legend

Parcel Boundary

Parcel Boundary

Soils



Notes:

Soil delineation and classification from USDA NRCS Soil Survey of Orange County, FL.

Soil Classification

- 1 Arents, nearly level
- 3 Basinger fine sand, depressional
- 26 Ona fine sand
- 27 Ona-Urban land complex
- 37 St. Johns fine sand
- 40 Samsula muck
- 41 Samsula-Hontoon-Basinger association
- 44 Smyrna fine sand
- 45 Smyrna Urban land complex
- 54 Zolfo fine sand
- 99 Open Water



Lake Orlando Project Location



Lake Orlando

NRCS Soils Map

in Sections 4, 5, 8, & 9 Township 22 South, Range 29 East  
City of Orlando, Orange County, Florida

Drawn by: JGS  
Date: 2020.04.15  
A190961.00-F3.MXD

Legend

Project Boundary



Existing Land Cover



Notes:

Existing land cover classification and delineation by GAI Consultants, Inc.

Land Cover Classification

- 182 Golf Course (Abandoned)
- 310 Upland Herbaceous
- 434 Hardwood - Conifer Mixed
- 511 Canals & Ditches
- 520 Lakes
- 530 Reservoirs
- 618 Shrub Swamp Wetland
- 630 Wetland Forested Mixed
- 641 Freshwater Marsh
- 644 Emergent Aquatic Vegetation



Scale: 1 : 8,000



# Lake Orlando

in Sections 4, 5, 8, & 9 Township 22 South, Range 29 East  
City of Orlando, Orange County, Florida

## Existing Land Cover Map

Drawn by: JGS  
Date: 2020.04.15  
A190961.00-F4.MXD

## **APPENDIX A**

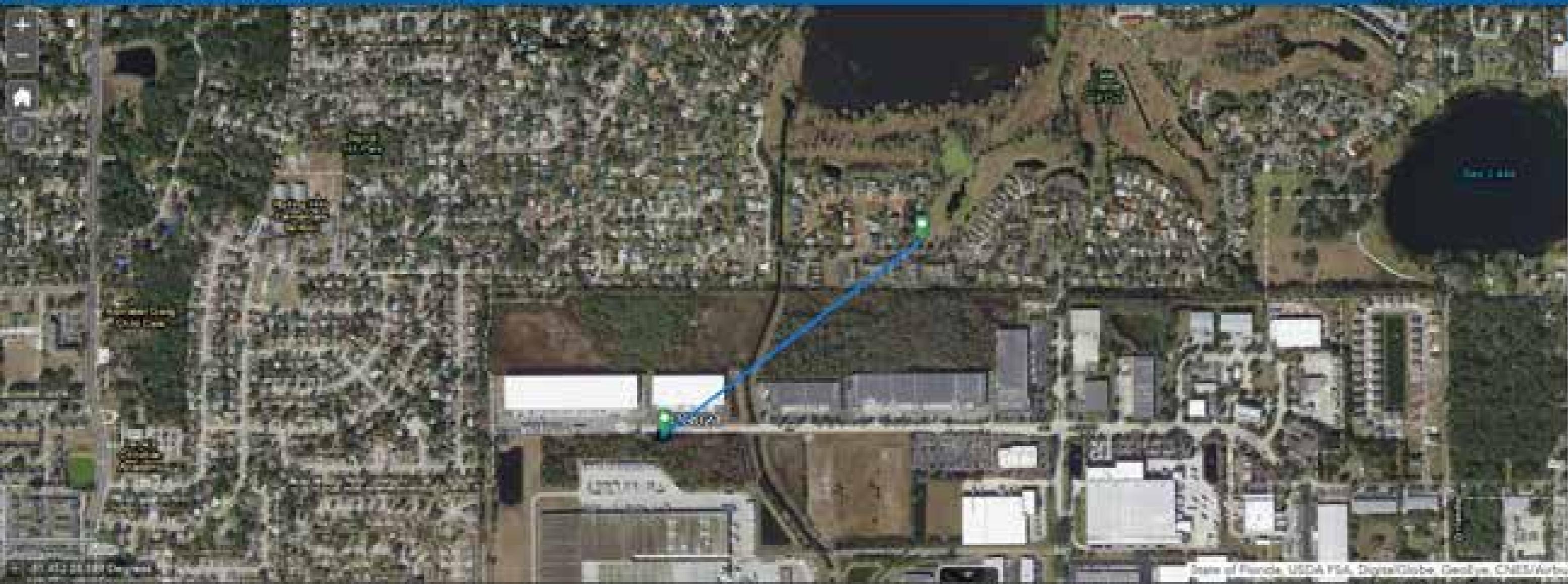
### **Information Sources**

Information sources utilized for the Lake Orlando Project study area included:

- ▶ Aerial photography provided in GIS format by ESRI and Microsoft Bing Maps.
- ▶ Florida Association of Professional Soil Classifiers. Hydric Soils of Florida Handbook, 1 ed. 1990.
- ▶ Florida Department of Agriculture and Consumer Services, Division of Plant Industry. 2010. "Notes of Florida's Endangered and Threatened Plants."
- ▶ Florida Department of Transportation, January 1999, Florida Land Use, Cover and Forms Classification System.
- ▶ Florida Fish and Wildlife Conservation Commission. Florida's Endangered and Threatened Species. Updated December 2018.
- ▶ Florida Fish and Wildlife Conservation Commission, Wildlife Technology Services, January 2018. Eagle Nest Locator.
- ▶ Florida Fish and Wildlife Conservation Commission, Gopher Tortoise Permitting Guidelines, January 2017.
- ▶ Florida Natural Areas Inventory, Species and Communities database.
- ▶ Soil Survey of Orange County. 1989. Natural Resources Conservation Service.
- ▶ United States Fish and Wildlife Service, Orange County Federally-Listed Species. February 2018.
- ▶ United States Geological Survey Topographic Survey Map: Orlando West, Florida; provided in GIS format by the Florida Department of Environmental Protection.

## **APPENDIX B**

### **Wildlife Agency Correspondence**



Measurement

Miles =

Measurement Result

0.42 Miles

Clear

EagleNests2017

Options | Filter by map extent | Zoom in | Clear selection | Refresh

NestID	County	LatDec	LonDec	LastKnownActive	LastSurvey	Active12	Active14	Active15	Active16	Active17
08021	Orange	28.56033	-81.43903	2017	2017	+	Y	+	+	Y

# 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

Orange County, Florida



## Local office

North Florida Ecological Services Field Office

☎ (904) 731-3336

📠 (904) 731-3045

7915 Baymeadows Way, Suite 200  
Jacksonville, FL 32256-7517

# Endangered species

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

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

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

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

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

Listed species<sup>1</sup> 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<sup>2</sup>).

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.
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* Proposed Threatened  
No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/10477>

Everglade Snail Kite *Rostrhamus sociabilis plumbeus* Endangered  
There is **final** critical habitat for this species. Your location is outside the critical habitat.  
<https://ecos.fws.gov/ecp/species/7713>

Florida Scrub-jay *Aphelocoma coerulescens* Threatened  
No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/6174>

Wood Stork *Mycteria americana* Threatened  
No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/8477>

## Reptiles

NAME STATUS

Bluetail Mole Skink *Eumeces egregius lividus* Threatened  
No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/2203>

Eastern Indigo Snake *Drymarchon corais couperi* Threatened  
No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/646>

Gopher Tortoise *Gopherus polyphemus* Candidate  
No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/6994>

Sand Skink *Neoseps reynoldsi* Threatened  
No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/4094>

## Flowering Plants

NAME STATUS

Beautiful Pawpaw *Deeringothamnus pulchellus* Endangered  
No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/4069>

Britton's Beargrass *Nolina brittoniana* Endangered  
No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/4460>

Florida Bonamia <i>Bonamia grandiflora</i>	Threatened
No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/2230">https://ecos.fws.gov/ecp/species/2230</a>	
Papery Whitlow-wort <i>Paronychia chartacea</i>	Threatened
No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/1465">https://ecos.fws.gov/ecp/species/1465</a>	
Pigeon Wings <i>Clitoria fragrans</i>	Threatened
No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/991">https://ecos.fws.gov/ecp/species/991</a>	
Sandlace <i>Polygonella myriophylla</i>	Endangered
No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/5745">https://ecos.fws.gov/ecp/species/5745</a>	
Scrub Buckwheat <i>Eriogonum longifolium</i> var. <i>gnaphalifolium</i>	Threatened
No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/5940">https://ecos.fws.gov/ecp/species/5940</a>	
Scrub Lupine <i>Lupinus aridorum</i>	Endangered
No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/736">https://ecos.fws.gov/ecp/species/736</a>	
Scrub Plum <i>Prunus geniculata</i>	Endangered
No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/2238">https://ecos.fws.gov/ecp/species/2238</a>	
Wide-leaf Warea <i>Warea amplexifolia</i>	Endangered
No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/412">https://ecos.fws.gov/ecp/species/412</a>	

## Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

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

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or 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 (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

<p><b>American Kestrel</b> <i>Falco sparverius paulus</i>  This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	<p>Breeds Apr 1 to Aug 31</p>
<p><b>Bachman's Sparrow</b> <i>Aimophila aestivalis</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/6177">https://ecos.fws.gov/ecp/species/6177</a></p>	<p>Breeds May 1 to Sep 30</p>
<p><b>Bald Eagle</b> <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.  <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a></p>	<p>Breeds Sep 1 to Jul 31</p>
<p><b>Black Skimmer</b> <i>Rynchops niger</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/5234">https://ecos.fws.gov/ecp/species/5234</a></p>	<p>Breeds May 20 to Sep 15</p>
<p><b>Common Ground-dove</b> <i>Columbina passerina exigua</i>  This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	<p>Breeds Feb 1 to Dec 31</p>
<p><b>King Rail</b> <i>Rallus elegans</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/8936">https://ecos.fws.gov/ecp/species/8936</a></p>	<p>Breeds May 1 to Sep 5</p>
<p><b>Least Tern</b> <i>Sterna antillarum</i>  This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	<p>Breeds Apr 20 to Sep 10</p>
<p><b>Limpkin</b> <i>Aramus guarauna</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	<p>Breeds Jan 15 to Aug 31</p>
<p><b>Prairie Warbler</b> <i>Dendroica discolor</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	<p>Breeds May 1 to Jul 31</p>
<p><b>Prothonotary Warbler</b> <i>Protonotaria citrea</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	<p>Breeds Apr 1 to Jul 31</p>

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

Short-tailed Hawk *Buteo brachyurus*  
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/8742>

Breeds Mar 1 to Jun 30

Swallow-tailed Kite *Elanoides forficatus*  
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

Yellow Warbler *Dendroica petechia gundlachi*  
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Breeds May 20 to Aug 10

## 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.

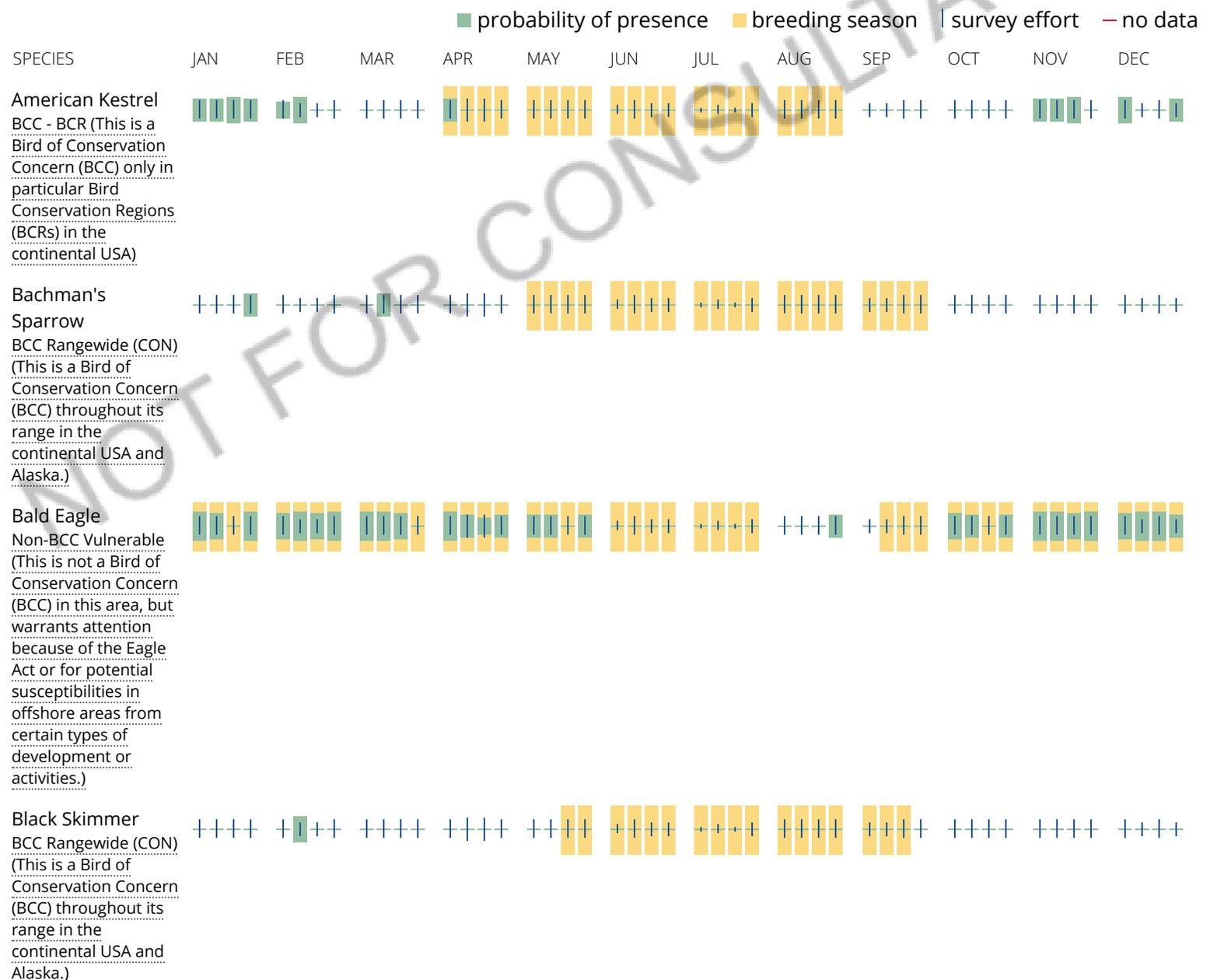
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

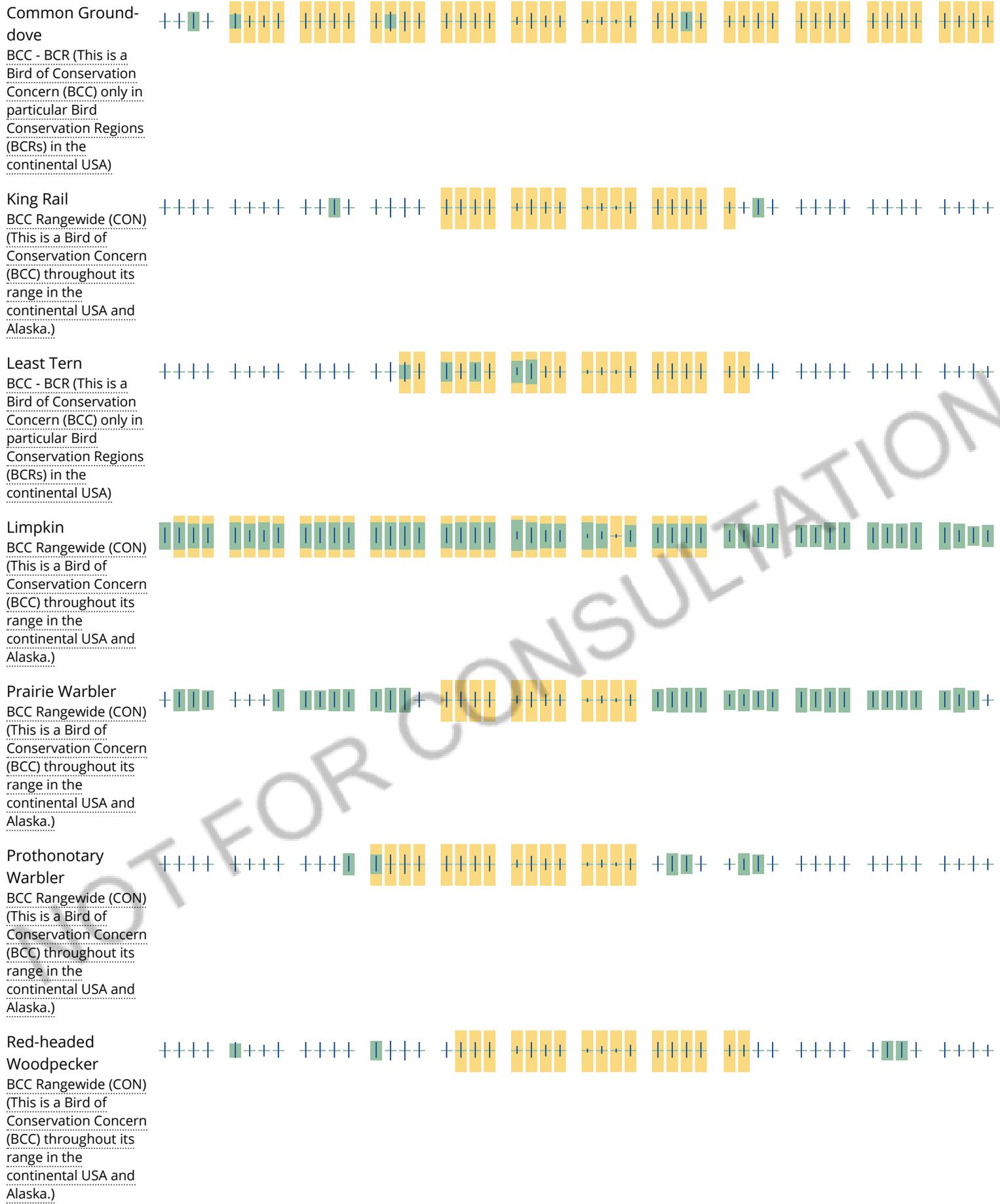
### No Data (-)

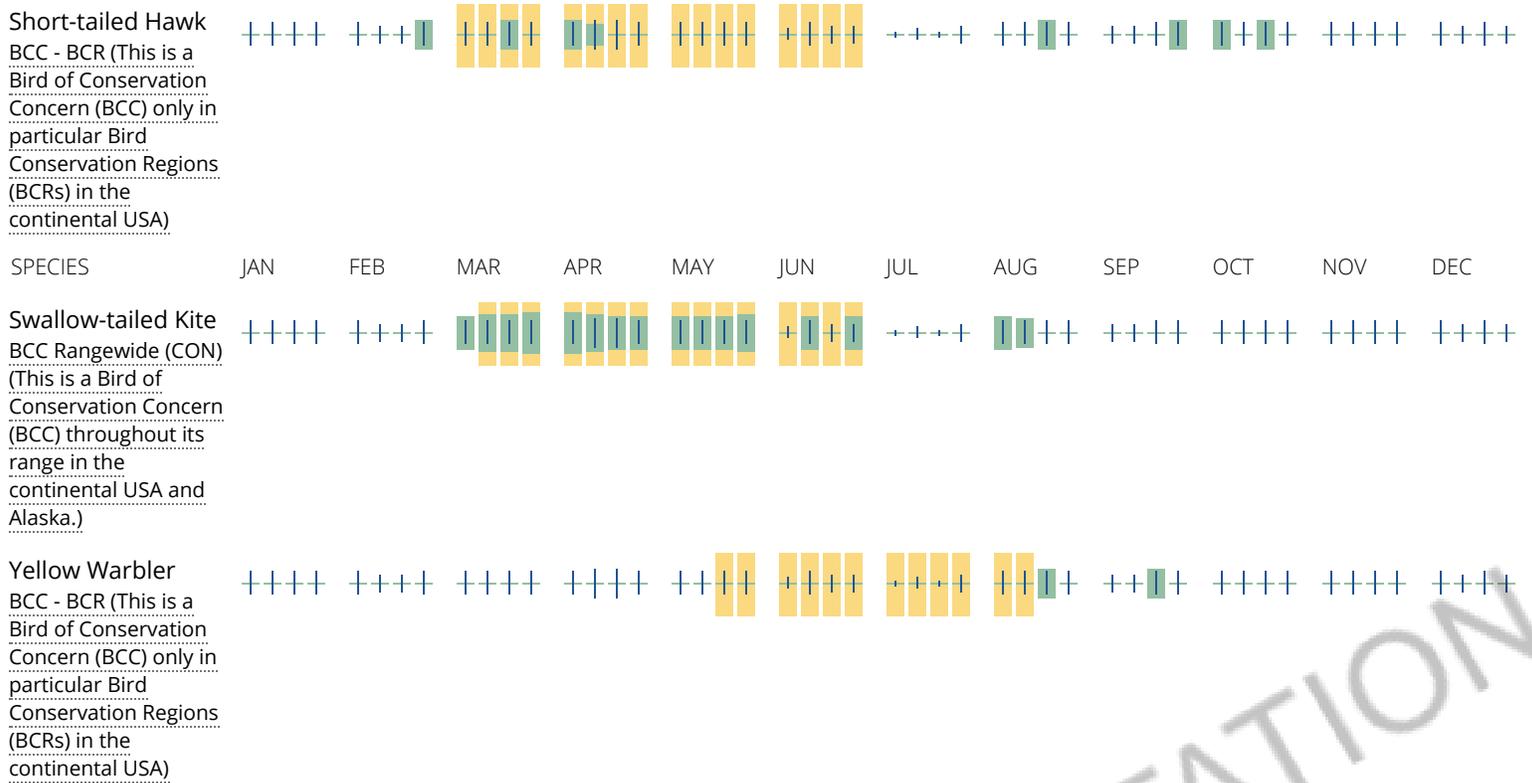
A week is marked as having no data if there were no survey events for that week.

### 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](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

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

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) 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 to 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.

## Facilities

### National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

### Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

### Wetlands in the National Wetlands Inventory

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

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

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

[Palustrine](#)

LAKE

[Lacustrine](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

### Data limitations

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

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

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

### Data exclusions

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

### Data precautions

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