Natural Resources Report

Seffner Property

October 3, 2022 | Project Number: H1227841

Prepared for:

Cornerstone Group Development, LLC
2601 South Bayshore Drive, #725
Miami, Florida 33133

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1.0 Introduction

The site consists of a ±10.96-acre tract of undeveloped land located at 5425 Mobile Villa Drive (identified as Hillsborough County Folio No. 063066-0000) in Seffner, Florida. The site primarily consists of forested uplands, wetlands, and a small stream surrounded by developed areas. It is the understanding of Terracon that the site will be developed with multi-family residential buildings and associated infrastructure.

Any potential wetland areas on the site would likely fall under the jurisdiction of the Southwest Florida Water Management District (SWFWMD) for the State, and potentially the Florida Department of Environmental Protection (FDEP) under the State 404 Program. In addition, the site may be subject to local ordinances and require additional coordination with the Hillsborough County Environmental Protection Commission (EPC). Potential impacts to species which are listed as threatened or endangered would fall under the jurisdiction of the Florida Fish and Wildlife Conservation Commission (FWC) for state listed species, and the United States Fish and Wildlife Service (USFWS) for federally listed species. The following sections provide Terracon's methodologies and findings to conduct a natural resources assessment of the site.

2.0 Methodology

2.1 Wetland Assessment

Terracon initially reviews readily available published resources to preliminarily identify features indicative of jurisdictional resources on the project site or in the immediate vicinity. The Natural Resource Conservation Service (NRCS) Soil Survey for Hillsborough County, the National Wetland Inventory (NWI), the Florida Department of Transportation (FDOT) Florida Land Use, Cover and Forms Classification System (FLUCFCS), and historical aerial imagery are also reviewed.

A site reconnaissance is then conducted on site utilizing the FDEP Wetlands Delineation Manual[1], Rule 62-340 Florida Administrative Code (FAC) and Rule 62-331 FAC, and assessed for the presence of wetlands and surface waters based on the three wetland parameters of hydrophytic vegetation, hydrology, and hydric soil indicators. The presence or absence of wetland indicators is documented and photographed on site.

If present, the wetlands/surface waters will also be assessed to determine if they would constitute Waters of the United States (WOTUS) and be federally regulated by the FDEP under the Assumed Waters Rule that went into effect on December 22, 2020. The Navigable Waters Protection Rule (NWPR) was vacated in federal court on August 31, 2021. Because a new WOTUS rule has not yet been codified, any wetlands/surface waters identified on site will be assessed under the NWPR. However, in order to ensure

[1]Gilbert, K.M., J.D. Tobe, R.W. Cantrell, M.E. Sweely, and J.R. Cooper. 1995. The Florida Wetlands Delineation Manual. FDEP, Tallahassee, FL.

jurisdiction is not challeneged by the agencies in the event that the WOTUS rule changes, Terracon will also evaluate the wetlands/surface waters under the pre-2015 definition, so consideration will be given to the 1986 Rapanos/Carabell decisions. If wetlands are present, the applicant will have the opportunity to present information regarding whether the wetlands are considered WOTUS and FDEP will review.

2.2 Listed Species Assessment

The site is preliminarily investigated for the presence of state and federally protected animal and plant species and their habitat.[2] Literature and agency file searches are conducted to identify the potential occurrence of state and federally protected animal species on the site. A review of Geographical Information System (GIS) databases[3] containing listed species observations and a map review is performed prior to the field assessment. The USFWS Information, Planning, and Conservation (IPAC) and Florida Natural Areas Inventory (FNAI) search engines are also utilized to determine potential occurrences.

USFWS-IPAC identifies potential occurrences and habitat for federally listed threatened and endangered species, proposed listed and candidate species, and designated critical habitat. The FNAI search engine identifies potential occurrences of both federally and state listed species. The results of the USFWS-IPAC and FNAI search results are then compiled to produce Table 1 in Appendix C of this report. The search results are supplemented by data from the FWC. Additional FWC databases researched for this assessment include Map Direct, wading bird colonies, the eagle nest locator, and GIS data layers of species occurrences. Database search results are included in Appendix C.

A general wildlife survey is then performed on site by conducting the following activities:

- Stationary monitoring stations are established to survey for migratory bird species utilizing the site and transects are walked to locate any migratory bird nests on the site.
- A reconnaissance-level listed flora and fauna survey is conducted for the project area.
- An assessment is conducted by a qualified biologist to identify the occurrence and relative abundance of species considered endangered, threatened, or listed as a species of special concern by the USFWS (50 CFR 11-12) or the FWC (Chapter 68A-27, FAC). All sightings, signs, calls, tracks, scat, nests, cavities, burrow, and probable habitat of wildlife observed is documented.
- If encountered, observations of listed species are recorded, their locations marked utilizing a GPS with sub-meter accuracy, and the location is marked on an aerial photograph. A determination is made to determine what additional formal surveys may be required to address species occurrence on the site.

[2]Species-specific survey methods were not used as this is a preliminary site inspection.

[3]The data was obtained from the Florida Fish and Wildlife Conservation Commission and the Florida Natural Areas Inventory.

Table 1 in Appendix C provides a list of state and federally protected animal and plant species with the potential to occur within the vicinity of the site in Hillsborough County, Florida, and makes a recommendation as to whether further investigations are warranted.

2.3 Land Cover

To better categorize on site habitats, on site areas were demarcated and classified using FLUCFCS.[4] Particular attention was allocated to undeveloped and natural areas. The current conditions are discussed in Section 4.0 of this report and reflected on Exhibit 5 (Appendix A).

2.4 Functional Assessment

If wetlands are present onsite, a preliminary assessment is conducted in accordance with Rule 62-345 FAC: Uniform Mitigation Assessment Method (UMAM) to assess current site conditions and associated wetland function. The three areas of focus when determining wetland function consists of a review of location and landscape support, water environment, and community structure/benthic community. These three parameters are assigned a value between 0 and 10 with 0 representing no wetland function (uplands) and 10 representing optimal wetland function. These scores are averaged out a maximum potential score of 30 and represented as a percentage of wetland function. This percentage is referred to as the UMAM "Delta" which represents the functional "value", of the wetlands used to estimate mitigation needs should direct or indirect impacts be proposed. Because the wetlands have not been formally delineated and reviewed by the regulatory agencies, Terracon's preliminary UMAM analysis is limited in nature and is to be used to determine mitigation estimates only. Final UMAM scores are subject to regulatory approval.

3.0 Desktop Assessment

3.1 Topography and Hydrology

A review of the United States Geological Survey (USGS) topographical maps for this parcel (Brandon, FL Quadrangle, 2021), and elevation data from Google Earth indicate the parcel slopes from approximately 31 feet above mean sea level (AMSL) at the northwest portion of the site to 21 feet AMSL at the southeast portion of the site. Hydrology onsite is associated with the topographic slope, as well as the offsite pond and drainage ditch. On site hydrology will likely flow towards the southeastern portion of the site and into the pond, before flowing north and west into Sixmile Creek. The topographic map also depicts green wetland hatchmarks over the southeastern portion of the site. The topographic map is generally consistent with current site conditions. The topographic map is provided in Exhibit 1.

3.2 Soil Survey

According to the Natural Resources Conservation Service (NRCS) Soil Survey for Hillsborough County, mapped soil units on the site include the following:

[4]Florida Department of Transportation, Survey and Mapping Office Geographic Mapping Section. January 1999, Third Ed. Florida Land Use, Cover and Forms Classification System. Tallahassee, FL.

- **5 – Basinger, Holopaw and Samsula soils, depressional:** Very poorly drained with an average depth to water table at or near the ground surface. This is the dominant soil type is located on the southern portion of the site.

- **7 – Candler fine sand, 0 to 5 percent slopes:** Excessively drained with an average depth to water table of more than 80 inches below ground surface (bgs). This soil type is mapped on the northwestern portion of the site.

- **46 – St. Johns fine sand:** Poorly drained with an average depth to water table of 0 to 12 inches bgs. This soil is the dominant soil type on the site and is mapped in the central portion of the site.

During the site reconnaissance, Terracon dug test pits to analyze subsurface soil conditions for hydric soil indicators. According to the *Hydric soils of Florida Handbook*, Basinger, Holopaw and Samsula soils, depressional (5) and St. Johns fine sand (46) are categorized as hydric soils. The Candler fine sand (7) and Basinger, Holopaw, and Samsula soils (5) designated areas were observed to be consistent with the NRCS soil survey, however the St. Johns fine sand (46) designated areas were observed to be inconsistent with the NRCS soil survey designation based on *in situ* soil conditions during the site reconnaissance because the soils in this area were not observed to contain hydric soil indicators.

Additionally, Terracon reviewed the *Gopher Tortoise Burrowing Suitability* layer on the NRCS Web Soil Survey. According to this resource, Basinger, Holopaw and Samsula soils, depressional (5) and St. Johns fine sand (46) are rated as 'unsuitable' for burrowing, while Candler fine sand (7) is rated as 'highly suited' for burrowing. Therefore, onsite soil conditions are conductive for burrowing fauna such as the gopher tortoise *(Gopherus polyphemus)* and the Florida Burrowing Owl *(Athene cunicularia)* in the northwest portion of the site, but are inappropriate in other areas. The NRCS Soil Survey Map for the site is included as Exhibit 3, and the soil resource report is included in Appendix C.

3.3 National Wetlands Inventory

The NWI map of the site was reviewed to identify potential wetlands and surface waters. The map for the site was published by USFWS and depicts probable wetland areas and surface waters based on stereoscopic analysis of high-altitude aerial photographs, topographic maps, and soil survey information. The NWI map depicts a freshwater forested wetland on the southern portion of the site, which appears to be associated with the pond depicted south of the site. In addition, there is a freshwater riverine system located just outside of the eastern property boundary, which connects the wetlands depicted onsite to the Tampa Bypass Canal; although the riverine habitat connected to the wetland further north at the time of the site reconaissance. This is generally consistent with the findings of the site reconnaissance. The NWI map for the site is included as Exhibit 4.

3.4 Flood Zones

Terracon reviewed the Federal Emergency Management Agency (FEMA) ArcGIS online open data portal to determine if the subject project area falls does falls within a flood zone area. The southeastern portion of the site falls under Zone A, 1% annual chance of flooding (no determined base flood elevation). No other portion of the project area falls within flood hazard zones. The FEMA 100-Year Flood Zone Map is included as part of Appendix A.

3.5 Previously Issued Wetland Permits

Terracon reviewed the following sources to determine if wetland or surface water permits had previously been issued for the site, or if the site is associated with a currently valid permit.

- **Environmental Resource Permit Database:** The SWFWMD and FDEP Environmental Resource Permit (ERP) databases were reviewed to identify potential wetland areas and permits previously issued for the site. According to the records search, there are no previously issued ERPs associated with the site.

- **State 404 Program Permit Database:** The FDEP State 404 Program permit database was reviewed to identify potential wetland areas and permits previously issued for the site. According to the records search, there are no previously issued State 404 Program permits issued for the site.

- **USACE Permit Database:** The US Army Corps of Engineers (USACE) permit database was reviewed to identify potential wetland areas and permits issued for the site. According to the records search, there are no previously issued wetland permits associated with the site.

- **Hillsborough County EPC:** The Hillsborough County EPC wetlands permit database was reviewed to identify potential wetland areas and permits issued for the site. According to the records search, there are no wetland permits associated with the site. However, a 2019 wetland delineation was conducted and provided to Terracon by the client, which was reviewed and approved by EPC on 11/19/2019. This wetland boundary is valid until 11/19/2024. It should be noted that EPC approved wetland boundaries are not valid for ERP and State 404 Program permitting. Therefore, the wetland boundaries as approved by EPC would still need to be verified and approved by SWFWMD and FDEP prior to any propsosed wetland permitting efforts with these agencies.

3.6 Recorded Conservation Easements

Terracon reviewed site information made available through the Hillsborough County Property Appraiser website, and available data layers made available through FDEP's Map Direct database to determine if the site was associated with recorded conservation easements. According to these resources, there are no conservation easements recorded for the site. However, Terracon recommends that title records for the site be researched prior to acquisition or development of the site.

4.0 Site Reconnaissance

The site was reviewed by Cristina Lingvay on September 22, 2022. The site was investigated for the presence of wetlands and surface waters using the Routine On-site Determination Method described in the FDEP Wetland Delineation Manual. Additionally, the site was investigated to determine if habitat for listed threatened or endangered species was present based on FLUCFCS designation. The following section outlines Terracon's observations during the site reconnaissance.

4.1 Existing Site Conditions

A wetland was observed in the southeastern portion of the site. Based on the site inspection and review of the above resources, the following land uses were observed on the site:

- **Temperate Hardwoods** (Mapped FLUCFCS Code – 425) ±1.89 acres: This land cover was observed in the eastern portion of the site along the offsite drainage ditch and around the margins of the wetland further south. The topography undulates in this area, creating small areas with temporary ponding following heavy rain. The canopy is dominated by water oak (*Quercus nigra*), with intersparsed laurel oak (*Quercus laurifolia*), and occasionally red maple (*Acer rubrum*), while the subcanopy contains cabbage palm (*Sabal palmetto*). There is little ground cover, but includes muscadine grapevine (Vitis rotundifolia) and young recruits of the higher canopy layers. No hydric soils or other hydrologic indicators were identified in this area; however, because the canopy contains wetland tree species, it is possible this area could be contested as a wetland.

- **Live Oak** (Mapped FLUCFCS Code – 427) – ±6.83 acres: This upland type was observed from the southwestern portion of the site through the north of the site. The canopy is a mix of live oak (*Quercus virginiana*) and laurel oak, with cabbage palm in the subcanopy. The ground cover is dominated by vines such as muscadine grapevine and air potato (*Dioscorea bulbifera*), and also contains sword fern (*Nephrolepis exaltata*) and coral bush (*Ardisia crenata*). In areas with less canopy cover, the ground cover includes dog fennel (*Eupatorium capillifolim*) and switchgrass (*Panicum virgatum*).

- **Stream and Lake Swamps (Bottomland)** (Mapped FLUCFCS Code – 615) – ±2.24 acres: This wetland was observed in the southeastern portion of the site. Near the southeast corner of the property, the bank of the offsite canal flattens and allows water exchange between the canal and the wetland. The wetland canopy is dominantly red maple, with water oak near the wetland's edge. The subcanopy is composed of dahoon holly (*Ilex cassine*), with Carolina willow (*Salix caroliniana*) near the center of the wetland. The ground cover around the edge includes cinnamon fern (*Osmunda cinnamomea*) and some Peruvian primrose (*Ludwigia peruviana*). Areas with standing water contain taro (*Colocasia esculenta*), lizard's tail (*Saururus cernuus*), haspin flatsedge (*Cyperus haspin*), and American cupscale (*Sacciolepis striata*). There is also duckweed (*Lemna spp*.) floating on the water's surface.

5.0 Wetland Jurisdiction and Permitting Needs

5.1 Hillsborough County Environmental Protection Commission

Because the site is located within unincorporated Hillsborough County, on site wetlands fall under the jurisdiction of Hillsborough County EPC. A wetland delineation was conducted in 2019 which was reviewed and approved by EPC, and is set to expire November 19, 2024. Any potential impacts to the wetlands or surface waters onsite will be subject to review based on the criteria in Chapter 4.01.07 of the Hillsborough County Land Development Code (LDC), Chapter 1-11.04 of the Rules of the Environmental Protection Commission, and the Hillsborough EPC Basis of Review. If any wetland impacts are proposed, Terracon recommends that a wetlands impact permit application should be submitted to

EPC, and additional mitigation may be required. If there are no wetland impacts, EPC requires that a wetland buffer should be established at a minimum of 30 – 50 feet, depending on the environmental sensitivity of the area.

5.2 Southwest Florida Water Management District

The site is located within the jurisdictional boundary of SWFWMD. The wetland onsite has been delineated previously and approved by EPC; however, the regulatory records review had no indication that the wetland boundary has been reviewed/approved by any other regulating agency. Terracon recommends that the wetland delineation should be reviewed and approved by SWFWMD via formal wetland determination prior to the submittal of an ERP to ensure the wetland boundary is not contested. An ERP application will have to be submitted to address any potential wetland impacts and for stormwater needs as they relate to the project.

If wetland impacts are proposed, mitigation would need to be provided to offset those impacts. Mitigation can be provided by purchasing credits from a wetland mitigation bank within the same cumulative impact basin as the site (Tampa Bay Drainage Basin). This requirement can also be satisfied by onsite wetland creation, enhancement, and preservation, or a combination of methods. The mitigation mechanism will have to be approved by SWFWMD.

5.3 Florida Department of Environmental Protection

Currently, wetlands and surface waters are assessed to determine if they would constitute WOTUS and be federally regulated by the FDEP under the Assumed Waters Rule that went into effect on December 22, 2020. Although the Navigable Waters Protection Rule (NWPR) was vacated in federal court on August 31, 2021, the FDEP is using the NWPR to make jurisdictional determinations until the state rule can be updated to be consistent with the federal rule. Therefore, jurisdiction was assessed using the NWPR.

Based on the findings of the site reconnaissance, the wetlands and surface waters onsite would likely be considered (a)(4) 'Adjacent wetlands' because they are adjacent and hydrologically connected to a drainage canal that is subsequently connected to an (a)(2) 'Tributary'. Because of the connection to jurisdictional waters, the wetland onsite is anticipated to be jurisdictional to the FDEP, and a State 404 Program permit would be required to address any proposed wetland impacts. If wetland impacts are proposed, mitigation will have to be provided to offset wetland impacts. Terracon recommends a formal wetland determination with FDEP prior to the submission of a permit application to ensure the wetland boundary is not contested. Additionally, as part of the State 404 Program permit application process, the applicant will need to provide an alternate site analysis which demonstrates that other parcels were considered for purchase to accommodate the project, and that development on the subject site represents the least environmentally damaging practicable alternative (LEDPA) of all the parcels considered.

6.0 Functional Assessment

In accordance with Rule 62-345 FAC: UMAM, Terracon conducted a preliminary analysis to determine the functional value of wetlands on site that were proposed to be impacted. The following table is a summary of the preliminary UMAM scores for the site.

		Location & Landscape		Water Environment		Community Structure		
Assessment Area by FLUCFCS	Type	w/o	w	w/o	w	w/o	w	Delta
615	Direct	4	0	6	0	5	0	-0.5

Based on the UMAM analysis of the wetlands on site, the functional value of the wetland is estimated to be 50% of the optimal condition, or moderately low quality. Therefore, each acre of impact to the wetland would require 0.5 credits to offset. If utilizing a mitigation bank is the preferred method of mitigation, then mitigation credits would need to be purchased from a mitigation bank located within the same cumulative impact basin (Tampa Bay Drainage Basin) to offset wetland impacts and yield "no net loss" of wetlands. Additionally, EPC requires that mitigation should be provided within Hillsborough County. Based on the location of the site, there is currently one wetland mitigation bank with the appropriate type of credits (freshwater forested) that satisfies these requirements – Big Bullfrog Creek Mitigation Bank. Credit pricing is estimated to be approximately $275,000 per state/federal dual credit. Therefore, based on the relative quality of the wetland, it is estimated that impacts would cost between $137,500 per acre to mitigate. Note that credit pricing is subject to change and this pricing should only be used for preliminary planning purposes. If utilizing a mitigation bank is not the preferred method of offsetting wetland impacts, other methods include onsite wetland creation/enhancement, and preservation.

7.0 Listed Species Assessment

7.1 Listed Wildlife

During the site reconnaissance, Terracon surveyed along pedestrian transects through the site. Based on our observations, potential habitat for the following fauna was identified on site:

- **Gopher Tortoise** *(Gopherus polyphemus)*: The gopher tortoise is listed as a state-threatened species. Typical habitat for this species includes dry upland habitats which include disturbed sites and improved pastures. Suitable habitat for this species was found in the northwestern portion of the site; however, the site was investigated for tortoise burrows but none were identified on the site. Therefore, no impacts to gopher tortoises are anticipated with site development, and no additional coordination with FWC should be required for this species.

- **Wood Stork** (*Mycteria americana*): This state/federally listed species typically nests in forested wetlands and forages in shallow ponds and freshwater marshes. The site is located within the core foraging area (CFA) of a wood stork colony, but is not within a mile of a documented wood stork colony and no wood storks were identified onsite. There are forested freshwater wetlands that could support potential nesting habitat for this species, but no appropriate foraging habitat was identified onsite. Based on the results of the site reconnaissance, no adverse impacts are anticipated for wood storks due to site development. Therefore, no additional coordination with USFWS should be required for this species.

No other listed threatened or endangered fauna species or suitable habitat for listed fauna species was identified on site during the site reconnaissance.

7.2 Migratory Birds

7.2.1 Bald Eagles

Bald Eagles are protected under the Bald and Golden Eagle Protection Act (BGEP) and the Migratory Bird Treaty Act (MBTA). No bald eagle *(Haliaeetus leucocephalus)* or golden eagle *(Aquila chrysaetos)* individuals, nests, or eggs was noted on the site during the site reconnaissance. In addition, Terracon accessed the bald eagle nest locator dataset provide through FDEP's Map Direct database, as well as the eagle nest location map made available through the National Audubon Society's Eagle Watch Program website. According to these sources, there are no documented bald eagle nests or eagle nest protection zones within one mile of the project site. No impacts to migratory birds are anticipated during site development.

7.2.2 Other Migratory Birds

During the site reconnaissance, a hawk (*Buteo spp*.) call was identified, multiple red cardinals (*Cardinalis cardinalis*), and other small songbirds were identified on site. Additionally, several small bird nests were identified in various trees within the project area, and multiple snags were found which contained nesting cavities. In accordance with the Migratory Bird Treaty Act (MBTA), no permit is required to remove an inactive nest of a migratory bird species provided additional protections do not apply (BGEPA, ESA). Therefore, Terracon recommends conducting tree clearing activities outside of the nesting season for migratory birds (March – July) or conducting a migratory bird evaluation of the site just prior to land clearing.

7.3 Listed Plant Species

No listed threatened or endangered plant species was identified on site during the site reconnaissance. It should be noted that the site reconnaissance may have been conducted outside of the survey season for certain species; however, there are currently no state or federal regulatory protections regarding the removal or destruction of listed plant species unless they are located on federal lands. As such, additional consultation with the agencies regarding listed plant species should not be required.

8.0 Conclusions and Recommendations

The site was investigated to identify the potential presence of wetlands and listed species on the site. Based on the results of our assessment, Terracon makes the following conclusions and recommendations:

- The site is located within jurisdiction of Hillsborough County EPC. A wetland delineation was previously conducted and approved by EPC, and is set to expire in 2024. If any wetland impacts are proposed, Terracon recommends that a wetlands impact permit application should be submitted to EPC. If there are no wetland impacts, EPC requires that a wetland buffer should

be established at a minimum of 30 – 50 feet, depending on the environmental sensitivity of the area.

- The site is located within the jurisdictional boundary of SWFWMD. Although the wetland has been delineated previously and approved by EPC, Terracon recommends that a formal wetland determination should be conducted with SWFWMD prior to the submittal of an ERP to ensure the wetland boundary is not contested. An ERP application will have to be submitted to address any potential wetland impacts and for stormwater needs as they relate to the project. If wetland impacts are proposed, mitigation would need to be provided to SWFWMD offset the impacts.

- The Section 404 permitting program has been "assumed" by FDEP. The wetland onsite is anticipated to be jurisdictional to the FDEP, and a State 404 Program permit would be required to address any proposed wetland impacts. Should there be wetland impacts, additional mitigation will have to be provided to offset the impacts. Terracon recommends that a formal wetland determination should be conducted with FDEP prior to the submittal of a 404 Permit application to ensure the wetland boundary is not contested.

- The functional value of the wetland is estimated to be moderately low quality. There is currently one mitigation bank within the same cumulative impact basin as the site (Tampa Bay Drainage Basin), the Big Bullfrog Creek Mitigation Bank. Credit pricing is estimated to be approximately $275,000 per state/federal dual credit. Therefore, based on the relative quality of the wetland, it is estimated that impacts would cost between $137,500 per acre to offset. These prices are subject to change and should only be used for preliminary site planning.

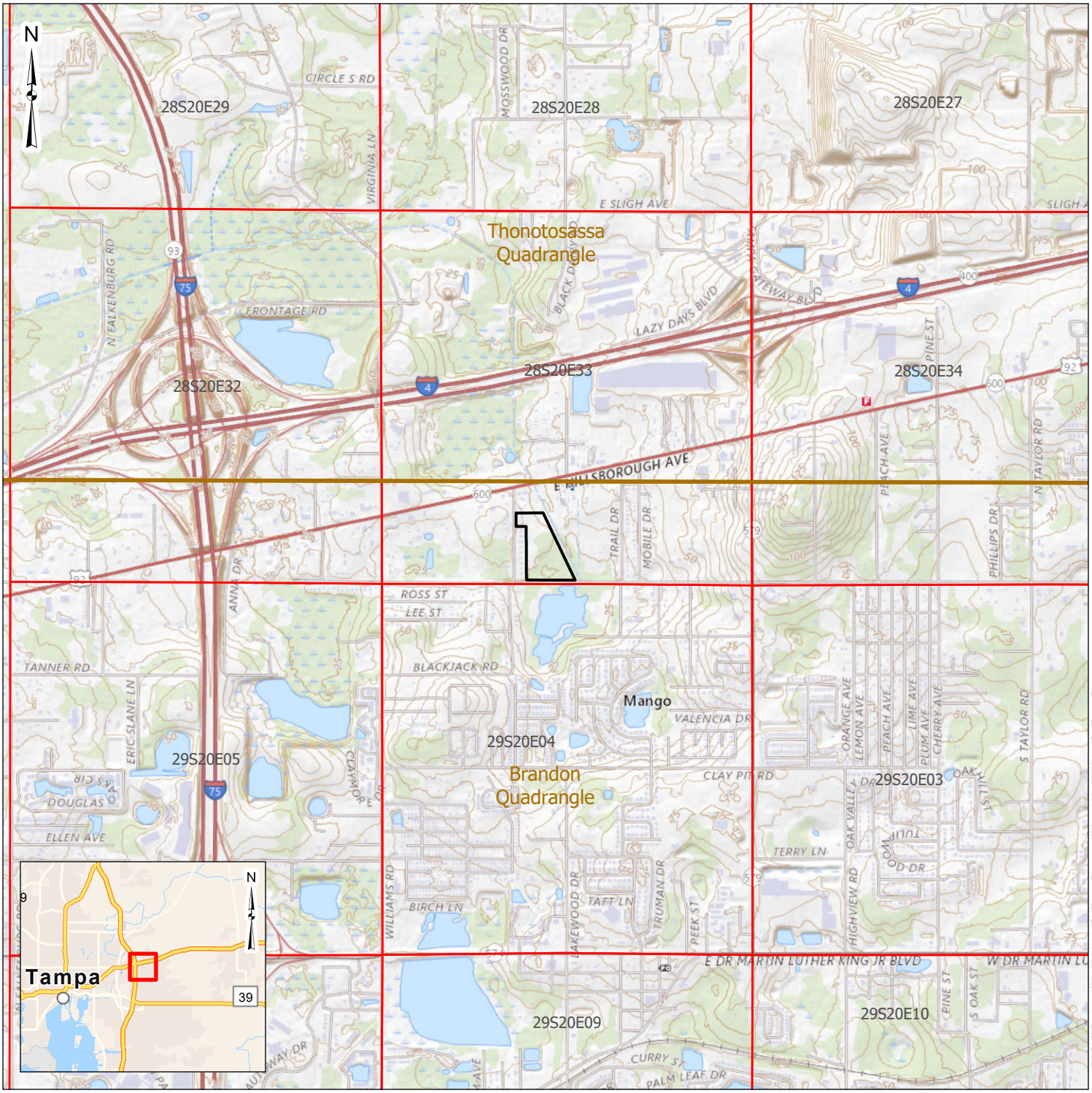
- No impacts to listed threatened or endangered species are anticipated with site development.

- During the site reconnaissance, multiple migratory birds and nests were identified in various trees within the project area, as well as multiple snags containing nesting cavities. In accordance with the MBTA, no permit is required to remove an inactive nest of a migratory bird species provided additional protections do not apply. Therefore, Terracon recommends conducting tree clearing activities outside of the nesting season for migratory birds (March – July) or conducting a migratory bird evaluation of the site just prior to land clearing.

9.0 Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. Terracon makes no warranties, express or implied, regarding the findings, conclusions or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies or other third-party resources supplying information used in the preparation of the report. These services were performed in accordance with the scope of work agreed to by the client. Findings, conclusions, and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of wetlands may have been latent, inaccessible, unobservable, or not present during our services.

Appendix A
Exhibits



Project Boundary
USGS 24K Grid Quadrangle
Public Land Survey System (TRS)

Feet
0 1,000 2,000 4,000

DATA SOURCES:
USGS Topographic Survey; Brandon Quadrangle; ESRI - USGS Topographic Basemap & World Navigation Map

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Project No.:	H1227841
Date:	Sep 2022
Drawn By:	GRS
Reviewed By:	CL

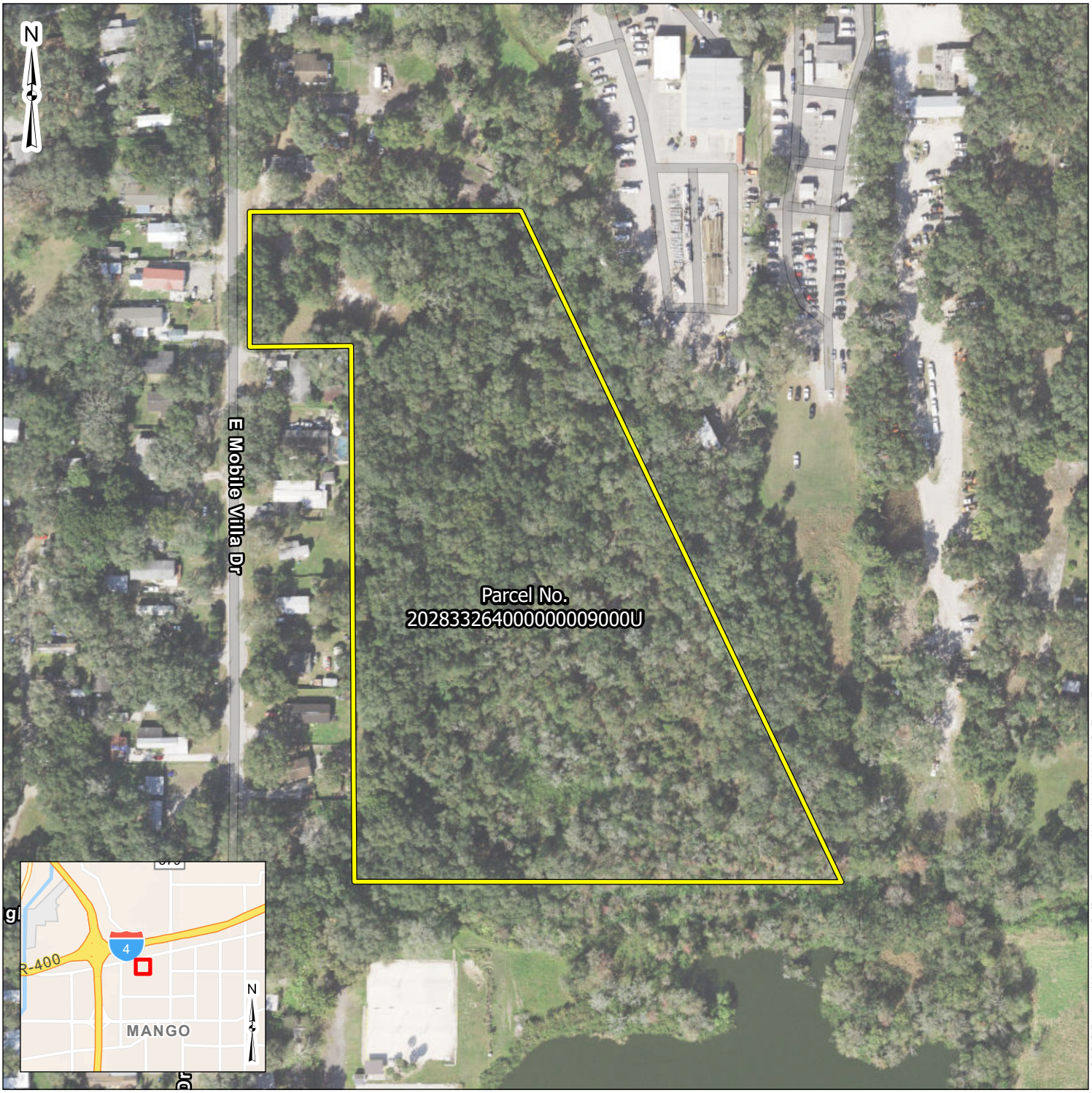
terracon
1675 Lee Rd
Winter Park, FL
PH. 407-740-6110 terracon.com

Project Location

Environmental Planning
Seffner Property
Hillsborough County, Florida

Exhibit

1



Project Boundary

Feet

0 100 200 400

DATA SOURCES:
Project Boundary created from Hillsborough County Parcel No. 2028332640000000009000U (Parcels 2022); ESRI - World Imagery Hybrid Basemap & World Navigation Map

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Project No.:	H1227841
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Drawn By:	GRS
Reviewed By:	CL

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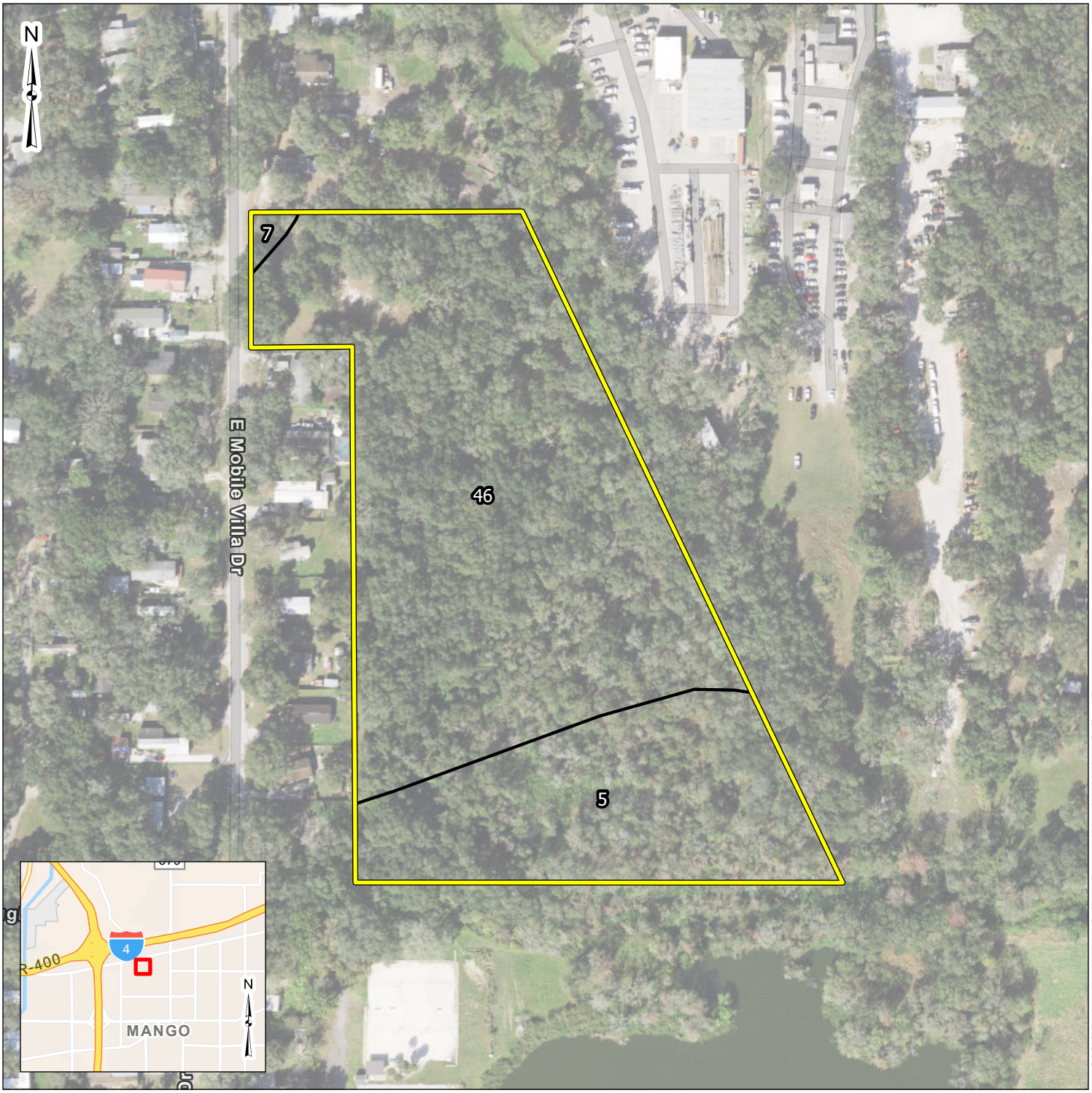
Aerial Photograph

Environmental Planning
Seffner Property
Hillsborough County, Florida

Exhibit

2



Project Boundary

Soils

- 5, Basinger, Holopaw, And Samsula Soils, Depressional
- 7, Candler Fine Sand, 0 To 5 Percent Slopes
- 46, St. Johns Fine Sand

Feet

0 100 200 400

DATA SOURCES:
USDA - NRCS Soils Survey of Hillsborough County, FL; ESRI - World Imagery Hybrid Basemap & World Navigation Map

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Project No.:	H1227841
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Reviewed By:	CL

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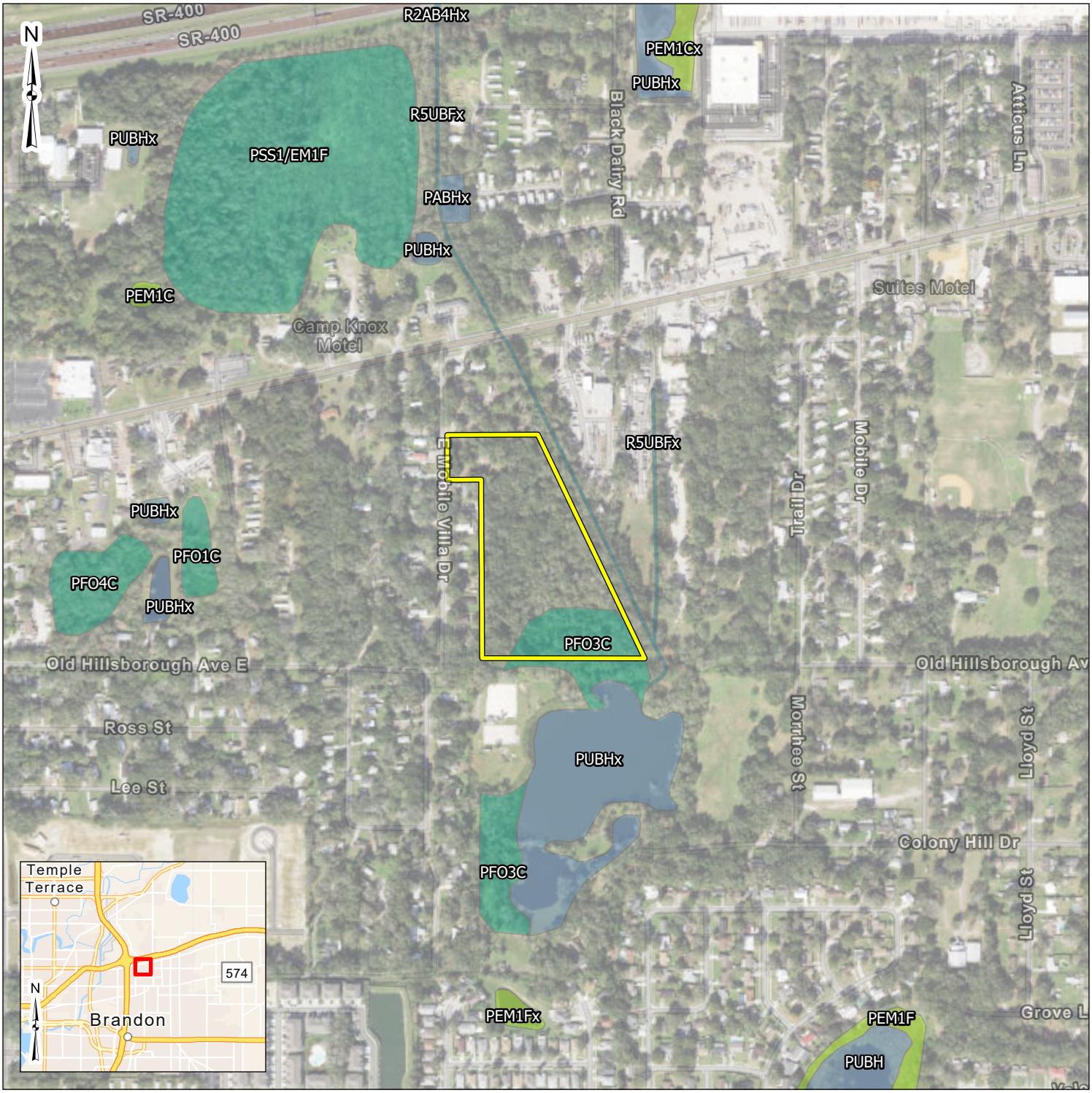
NRCS Soils

Environmental Planning
Seffner Property
Hillsborough County, Florida

Exhibit

3



Project Boundary

National Wetlands Inventory

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

Feet

0 305 610 1,220

DATA SOURCES:
USFWC - National Wetlands Inventory (NWI); ESRI - World Imagery Basemap & World Navigation Map

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National Wetlands Inventory

Environmental Planning
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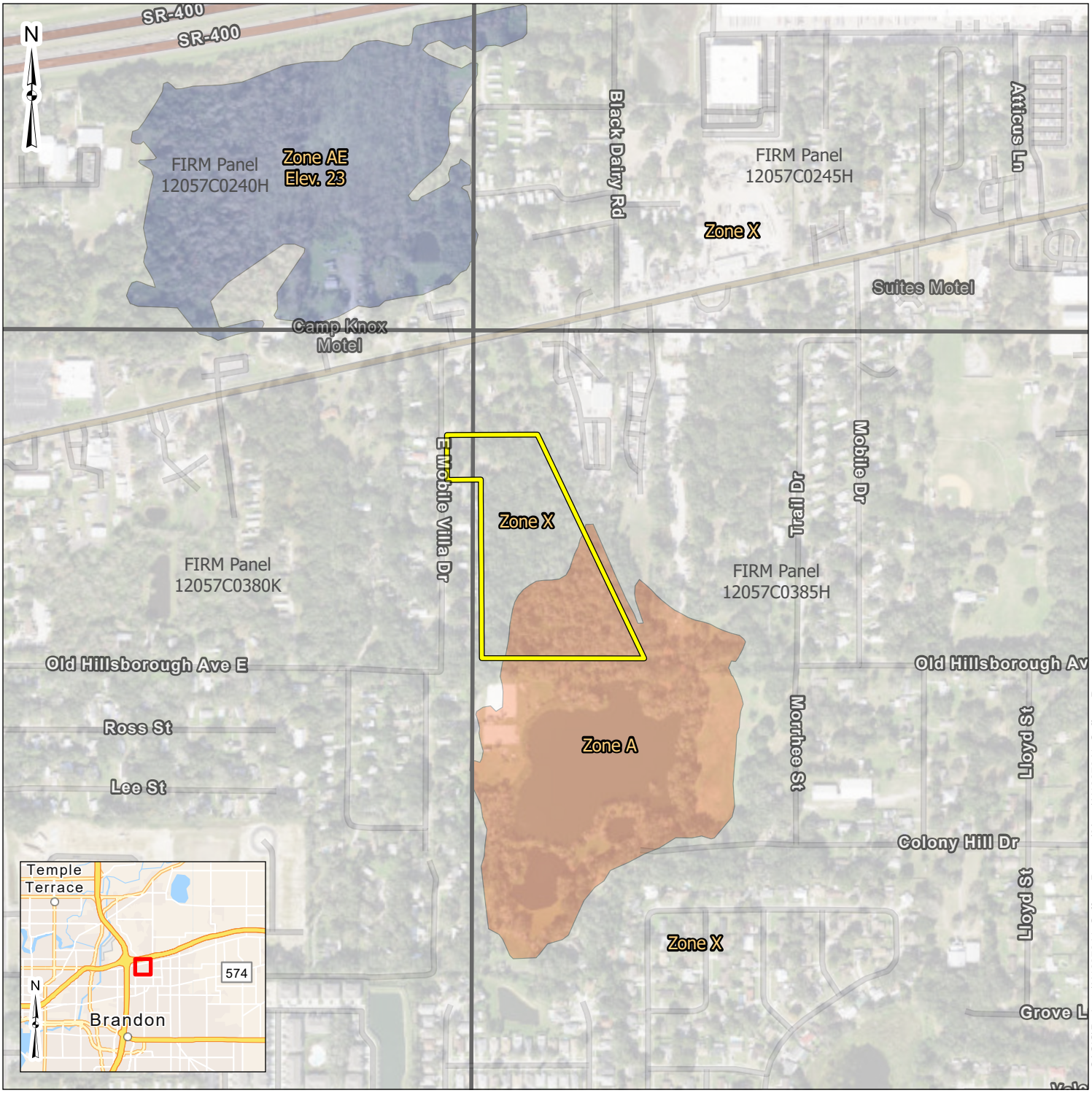
Hillsborough County, Florida

Exhibit

4



Project Boundary
FIRM Panels

FEMA Zones
- Zone A - No Base Flood Elev. Determined
- Zone AE - Base Flood Elev. Determined
- Zone X - Outside 0.2% Annual Chance Floodplain

Feet
0 300 600 1,200

DATA SOURCES:
FEMA - Flood Hazard Zones for Hillsborough County, FIRM Panel - 12057C0385H & 12057C0380K;, Effective Date 3/15/2022; ESRI - World Imagery Basemap & World Navigation Map

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Project No.:	H1227841
Date:	Sep 2022
Drawn By:	GRS
Reviewed By:	CL

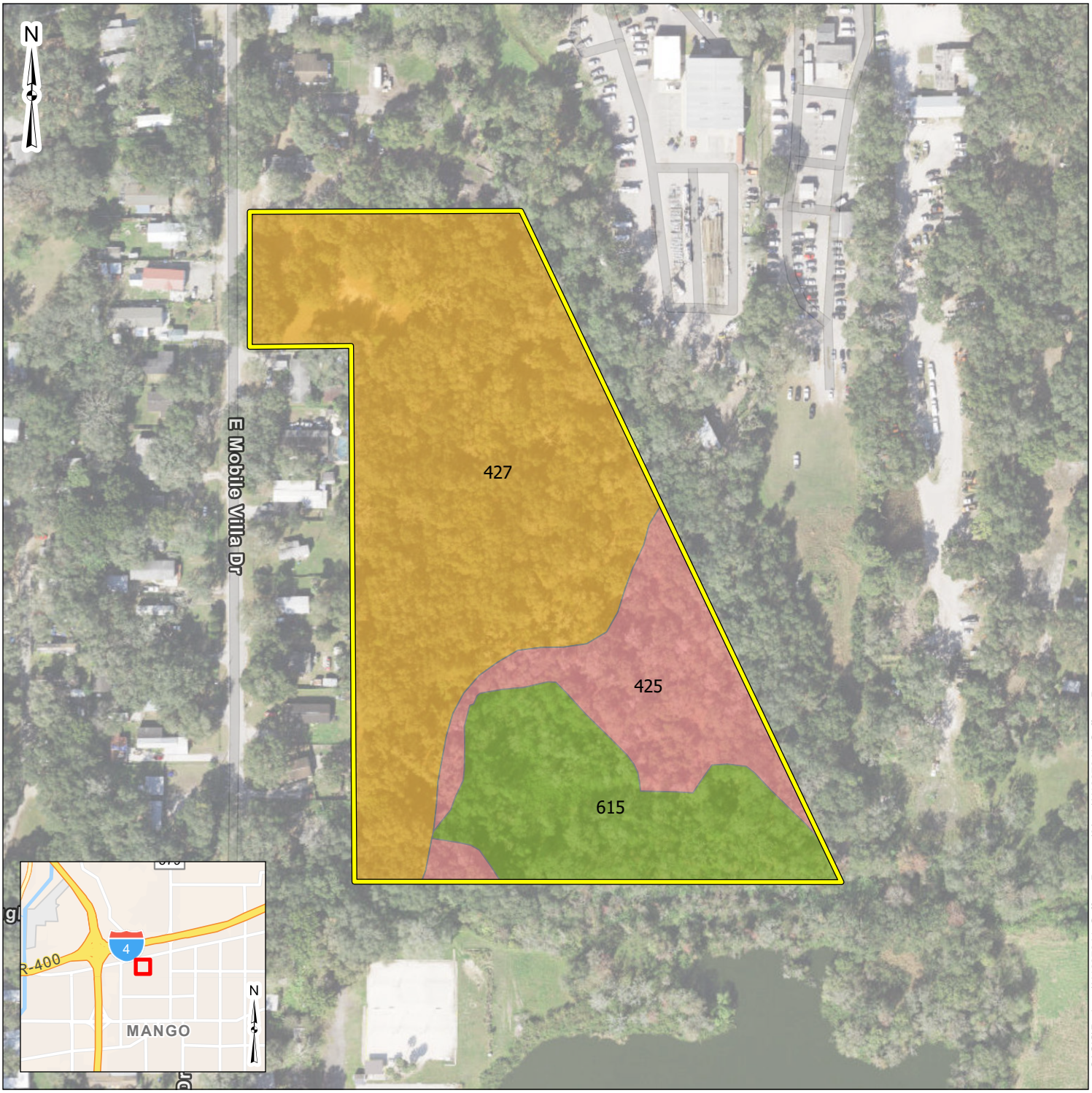
terracon
1675 Lee Rd
Winter Park, FL
PH. 407-740-6110 terracon.com

FEMA

Environmental Planning
Seffner Property
Hillsborough County, Florida

Exhibit

5



Project Boundary (10.96 ac.±)

FLUCFCS

425, Temperate Hardwoods (1.89 ac.±)

427, Live Oak (6.83 ac.±)

615, Stream and Lake Swamps - Bottomland (2.24 ac.±)

Feet

0 100 200 400

DATA SOURCES:
Florida Land Use, Cover and Forms Classification System (FLUCFCS); ESRI - World Imagery Basemap & World Navigation Map

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Existing Site Conditions

Environmental Planning
Seffner Property
Hillsborough County, Florida

Exhibit

6

Appendix B
Photos

Photo #1 View of the oak uplands onsite
Mapped FLUCFCS Code 427

Photo #2 Wetlands onsite
Mapped FLUCFCS Code 615

Photo #3 Water oak floodplain area
Mapped FLUCFCS Code 425

Photo #4 Connection of the onsite wetlands to the offsite drainage canal

Photo #5 Localized areas of ponding on the site

Photo #6 Upland soils on the site (typical)

Appendix C
Species Lists

Table 1 Listed Threatened and Endangered Species				
Species	**Federal Status**	**State Status**	**Habitat**	**Habitat Present**
Amphibians				
Gopher Frog[1] *(Lithobates capito)*		SSC	Longleaf pine, xeric oak, and sandhills mostly, but also occurs in upland pine forest, scrub, xeric hammock, mesic and scrubby flatwoods, dry prairie, mixed hardwood-pine communities, and a variety of disturbed habitats. This species inhabits gopher tortoise burrows.	No suitable habitat observed on site
Reptiles				
American Crocodile (*Crocodylus acutus*)	T		Coastal estuarine marshes, tidal swamps, and creeks along edges of mainland and islands. Usually associated with mangroves. Nests on beaches, stream banks, and levees.	No suitable habitat observed on site
Eastern Indigo Snake *(Drymarchon couperi)*	T	FT	Broad range of habitats, from scrub and sandhill to wet prairies and mangrove swamps. In northern part of range, often winters in gopher tortoise burrows in sandy uplands but forages in more hydric habitats. Requires very large tracts to survive.	No suitable habitat observed on site
Gopher Tortoise *(Gopherus polyphemus)*	C	ST	Typically found in dry upland habitats, including sandhills, scrub, xeric oak hammock, and dry pine flatwoods; also commonly uses disturbed habitats such as pastures, old fields, and road shoulders.	Suitable habitat observed on site; however, no burrows or tortoises observed
Hawksbill Sea Turtle (*Eretmochelys imbricata*)	E		Nests on sandy beaches in the summer months and can be found in saline to brackish water in oceans, estuaries, bays, and inlets.	No suitable habitat observed on site
Leatherback Sea Turtle (*Dermochelys coriacea*)	E		Nests on sandy beaches in the spring and summer months and can be found in saline to brackish water in oceans, estuaries, bays, and inlets.	No suitable habitat observed on site
Loggerhead Sea Turtle (*Caretta caretta*)	T		Nests on sandy beaches in the spring and summer months and can be found in saline to brackish water in oceans, estuaries, bays, and inlets.	No suitable habitat observed on site

Table 1
Listed Threatened and Endangered Species

Species	Federal Status	State Status	Habitat	Habitat Present
Short-tailed Snake (*Lampropeltis extenuate*)		T	Found burrowed in sandy soils, particularly longleaf pine and xeric (habitat that needs little water) oak sandhills, but they may also be found in scrub and xeric hammock habitats	No suitable habitat observed on site
Birds				
Eastern Black Rail (*Laterallus jamaicensis*)	T		Tidally or non-tidally influenced, and range in salinity from salt to brackish to fresh. Can be found in higher elevation wetland zones with some shrubby vegetation. Impounded and unimpounded intermediate marshes	No suitable habitat observed on site
Everglade Snail Kite *(Rostrhamus sociabilis plumbeus)*	E	N	Snail Kite habitat consists of freshwater marshes and the shallow vegetated edges of lakes where apple snails can be found. They require foraging areas that are relatively clear and open so that they can visually search for apple snails.	No suitable habitat observed on site
Florida Burrowing Owl *(Athene cunicularia floridana)*		T	High, sparsely vegetated, sandy ground. Natural habitats include dry prairie and sandhill. Makes extensive use of ruderal areas such as pastures, airports, ball fields, parks, school grounds, university campuses, road right-of-ways, and vacant spaces in residential areas.	No suitable habitat observed on site
Florida Sandhill Crane *(Grus canadensis pratensis)*		T	Prairies, freshwater marshes, and pasture lands. Avoids forests and deep marshes but uses transition zones and edges between these and prairies or pasture lands. Will frequent agricultural areas like feed lots and crop fields, and also golf courses and other open lawns, especially in winter and early spring. Nest is a mound of herbaceous plant material in shallow water or on the ground in marshy areas. Favors wetlands dominated by pickerelweed and maidencane. Non-migratory. Very sedentary, although may forage widely. Large influx of northern migratory subspecies in winter (October - March).	No suitable habitat observed on site
Wood Stork *(Mycteria americana)*	T	T	Nests colonially in a variety of inundated forested wetlands, including cypress strands and domes, mixed hardwood swamps, sloughs, and mangroves. Forages in shallow water in freshwater marshes, swamps, lagoons, ponds, tidal creeks, flooded pastures and ditches, where they are attracted to falling water levels that concentrate food sources (mainly fish).	Suitable nesting habitat; no suitable foraging habitat observed, no storks observed on site

Table 1
Listed Threatened and Endangered Species

Species	Federal Status	State Status	Habitat	Habitat Present
Mammals				
Florida Mouse[2] (*Podomys floridanus*)		SSC	Xeric Uplands (ecological communities with well drained sandy soils) such as sandhill and scrub	No suitable habitat observed on site
Southeastern Fox Squirrel (*Sciurus niger niger*)		SSC	Sandhills (high pine), pine flatwoods, and pastures and other open, ruderal habitats with scattered pines and oaks. Depends on a variety of oak trees for seasonal food and nest material. Longleaf pine cones and seeds are important foods.	This species was delisted
Plants				
Celestial Lily *(Nemastylis floridana)*		E	Wet flatwoods, prairies, marshes, cabbage palm hammocks edges.	No suitable habitat observed on site
Cutthroat Grass (Panicum abscissum)		E	Typically, found near ponds in Florida scrub, or scrubby habitat, and in marshy flatwoods; dependent on wildfire for natural maintenance	No suitable habitat observed on site
Florida Beargrass *(Nolina atopacarpa)*		T	Scrub, sandhill, scrubby flatwoods, and xeric hammock	No suitable habitat observed on site
Florida Bonamia *(Bonamia grandiflora)*	T	E	Openings or disturbed areas in white sand scrub on central Florida ridges, with scrub oaks, sand pine, and lichens.	No suitable habitat observed on site
Florida Goldenaster *(Chrysopsis floridana)*	E	E	Sunny bare patches of sand in sand pine scrub, low sand ridges of excessively well drained fine sands, railroad and highway rights-of-way – endemic to west central Florida	No suitable habitat observed on site
Florida Spiny-Pod *(Matelea floridana)*		E	Bluffs, pine-oak-hickory woods	No suitable habitat observed on site

Table 1 Listed Threatened and Endangered Species				
Species	**Federal Status**	**State Status**	**Habitat**	**Habitat Present**
Giant Orchid *(Pteroglossaspis ecristata)*		T	Sandhill, scrub, pine flatwoods, pine rocklands.	No suitable habitat observed on site
Many-flowered Grass Pink *(Calopogon multiflorus)*		T	Fire maintained damp pinelands and meadows	No suitable habitat observed on site
Nodding Pinweed *(Lechea cernua)*		T	Sand pine scrub	No suitable habitat observed on site
Pygmy Fringe Tree *(Chionanthus pygmaeus)*	E	E	Scrub, sandhill, and xeric hammock, primarily on the Lake Wales Ridge. May form thickets with evergreen scrub oaks and shrubs.	No suitable habitat observed on site
Sand Butterfly Pea *(Centrosema arenicola)*		E	Sandhill, scrubby flatwoods, dry upland woods.	No suitable habitat observed on site
Tampa Mock Vervain *(Glandularia tampensis)*		E	Live oak-cabbage palm hammocks and pine-palmetto flatwoods	No suitable habitat observed on site

TABLE 1 KEY

[1] No longer listed in Florida as of January 11,2017, but is part of the *Imperiled Species Management Plan*

[2] No longer listed in Florida as of January 11,2017. Commensal species with gopher tortoise.

FEDERAL LEGAL STATUS: Definitions derived from U.S. Endangered Species Act of 1973, Sec. 3. Note that the federal status given by FNAI refers only to Florida populations and that federal status may differ elsewhere.

C = Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened.
E = Endangered: species in danger of extinction throughout all or a significant portion of its range.
T = Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.

SAT = Treated as threatened due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.

STATE LEGAL STATUS: Provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant state agency. Definitions derived from "Florida's Endangered Species and Species of Special Concern, Official Lists" published by Florida Fish and Wildlife Conservation Commission, 1 August 1997, and subsequent updates.

C = Candidate for listing at the Federal level by the USFWS
FE = Listed as Endangered Species at the Federal level by the USFWS
FT = Listed as Threatened Species at the Federal level by the USFWS
FT(S/A) = Federal Threatened due to similarity of appearance
ST = State population listed as Threatened by the FWC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future.
SSC = Listed as Species of Special Concern by the FWC. Defined as a population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species. (SSC* for *Pandion haliaetus* (Osprey) indicates that this status applies in Monroe county only.)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Florida Ecological Services Field Office
FL
Email Address: fw4flesregs@fws.gov

In Reply Refer To:
Project Code: 2022-0087527
Project Name: Seffner Property

September 21, 2022

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

To Whom It May Concern:

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

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

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

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

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

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

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

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

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

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

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

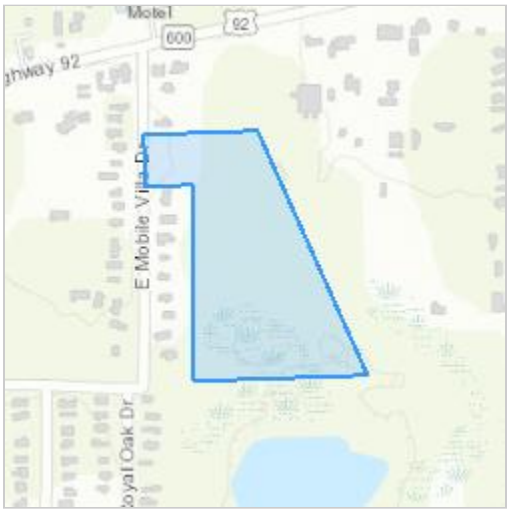
This species list is provided by:

Florida Ecological Services Field Office
, FL

Project Summary

Project Code: 2022-0087527
Project Name: Seffner Property
Project Type: Commercial Development
Project Description: proposed multi family development
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@27.997461299999998,-82.31152457248913,14z



Counties: Hillsborough County, Florida

Endangered Species Act Species

There is a total of 12 threatened, endangered, or candidate species on this species list.

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

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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

Birds

NAME	STATUS
Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis*	Threatened
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477	
Wood Stork *Mycteria americana*	Threatened
Population: AL, FL, GA, MS, NC, SC No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8477 General project design guidelines: https://ipac.ecosphere.fws.gov/project/4PPOPXUFKFGPHEJNPQA6VPFPTM/documents/generated/6954.pdf	

Reptiles

NAME	STATUS
American Crocodile *Crocodylus acutus* Population: U.S.A. (FL) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6604	Threatened
Eastern Indigo Snake *Drymarchon couperi* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/646	Threatened
Gopher Tortoise *Gopherus polyphemus* Population: eastern No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6994	Candidate
Hawksbill Sea Turtle *Eretmochelys imbricata* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3656	Endangered
Leatherback Sea Turtle *Dermochelys coriacea* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1493	Endangered
Loggerhead Sea Turtle *Caretta caretta* Population: Northwest Atlantic Ocean DPS There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1110	Threatened

Insects

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

Flowering Plants

NAME	STATUS
Florida Bonamia *Bonamia grandiflora*	Threatened
Population:	
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/2230	
Florida Golden Aster *Chrysopsis floridana*	Endangered
Population:	
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/5352	
Pygmy Fringe-tree *Chionanthus pygmaeus*	Endangered
Population:	
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/1084	

Critical habitats

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

USFWS National Wildlife Refuge Lands And Fish Hatcheries

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 OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

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.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

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

NAME	BREEDING SEASON
American Kestrel *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
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. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

NAME	BREEDING SEASON
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
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
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
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* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8938	Breeds Mar 10 to Jun 30

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

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

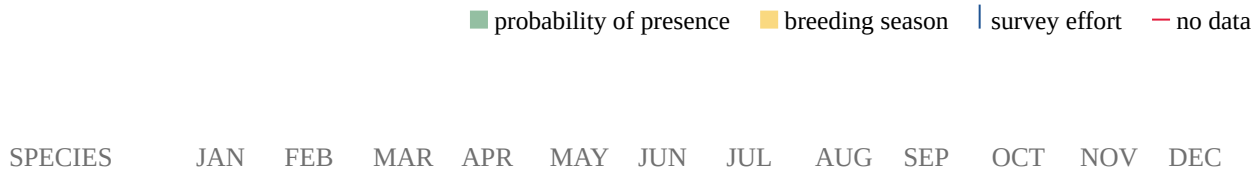
1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability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

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

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

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern 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

Migratory Birds FAQ

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

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the 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.

Wetlands

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.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

IPaC User Contact Information

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Florida Natural Areas Inventory

Biodiversity Matrix Query Results

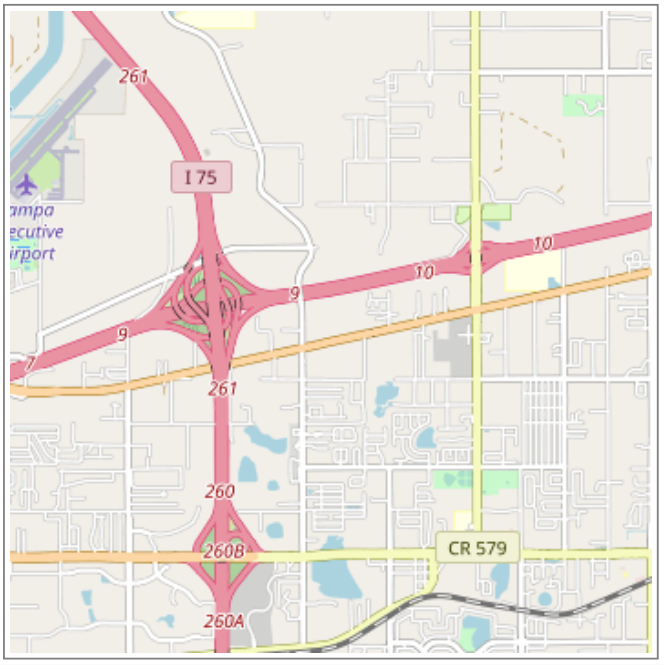
UNOFFICIAL REPORT

Created 9/21/2022

(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: 27988



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: 27988

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

2 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Mesic flatwoods	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	T	FT

Matrix Unit ID: 27988

24 **Potential** Elements for Matrix Unit 27988

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Antigone canadensis pratensis Florida Sandhill Crane	G5T2	S2	N	ST
Athene cunicularia floridana Florida Burrowing Owl	G4T3	S3	N	ST
Calopogon multiflorus many-flowered grass-pink	G2G3	S2S3	N	T
Centrosema arenicola	G2Q	S2	N	E

sand butterfly pea				
Coleataenia abscissa cutthroatgrass	G3	S3	N	E
Corynorhinus rafinesquii Rafinesque's Big-eared Bat	G3G4	S1	N	N
Drymarchon couperi Eastern Indigo Snake	G3	S2?	T	FT
Glandularia tampensis Tampa vervain	G2	S2	N	E
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
Gymnopogon chapmanianus Chapman's skeletongrass	G3	S3	N	N
Hydroptila wakulla Wakulla Springs Vari-colored Microcaddisfly	G2	S2	N	N
Lampropeltis extenuata Short-tailed Snake	G3	S3	N	ST
Lechea cernua nodding pinweed	G3	S3	N	T
Lithobates capito Gopher Frog	G2G3	S3	N	N
Matelea floridana Florida spiny-pod	G2	S2	N	E
Mustela frenata peninsulae Florida Long-tailed Weasel	G5T3?	S3?	N	N
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
Peucaea aestivalis Bachman's Sparrow	G3	S3	N	N
Podomys floridanus Florida Mouse	G3	S3	N	N
Pteroglossaspis ecristata giant orchid	G2G3	S2	N	T
Rostrhamus sociabilis Snail Kite	G4G5	S2	E	FE
Sciurus niger niger Southeastern Fox Squirrel	G5T5	S3	N	N

Printer Friendly View | Download as PDF

Florida Department of Environmental Protection

Map Direct AIR (Area of Interest Report)
Standard Map

Point of Interest: 27°59'54.5414" x -82°18'45.2909" 27.99848372694395 x -82.31258079811727 Search Radius: 1 mile Report Created on Wed Sep 21 2022 at 11:48:59 *Map Direct v7.220904*	Township/Range/Section: 28S20E33 Mango, Hillsborough County 33584 FDEP Regulatory District: SOUTHWEST DISTRICT Water Management District: SWFWMD FL House District 58 :: FL Senate District 19 US Congressional District 15 HUC Basin Area: Tampa Bay Waterbody ID: 1536C State Land DM ID:

Search Result Summary

Features Found	*Data Layer*	*Metadata*	*Spreadsheet*
1	Florida Wood Stork Foraging Areas	Layer Information	Download as Spreadsheet
0	Florida Woodstork Nesting Colonies	Layer Information	--
0	Fish and Wildlife Conservation Commission (FWC) Eagle Nests - 660 Foot Buffer	Layer Information	--
0	Wood Stork Active Nesting Colonies - 2500 Foot Buffer	Layer Information	--

Search Result Details

FLORIDA WOOD STORK FORAGING AREAS: 1 FOUND. **BACK TO SEARCH RESULTS SUMMARY**

#1 Of 1 From Florida Wood Stork Foraging Areas

OBJECTID 1	1
OBJECTID	1
SHAPE LENG	34.986696
SHAPE.AREA	74429233929.5591
SHAPE.LEN	3670591.666836

No Results Found:
Fish and Wildlife Conservation Commission (FWC) Eagle Nests - 660 Foot Buffer
Florida Woodstork Nesting Colonies
Wood Stork Active Nesting Colonies - 2500 Foot Buffer

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Hillsborough County, Florida

September 21, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Wildlife Management

Wildlife Management interpretations are tools for evaluating the suitability of the soil for various components of wildlife habitat, and as habitat of different types or species of wildlife. Example interpretations include crawfish aquaculture, burrowing animals and reptiles, grasses and legumes for food and cover, and freshwater wetland plants.

WLF - Gopher Tortoise Burrowing Suitability

This soil interpretation is intended to provide ratings based on the dominant soil characteristics that influence the suitability of the soil for excavation, maintenance, and preservation of burrows by gopher tortoises (Gopherus polyphemus). The information allows the user to identify areas of potentially suitable habitat area prior to the application of conservation practices. The ratings are for the soils in their natural condition and do not consider present land use, existing vegetation, water sources, and the presence or absence of wildlife in the area. The presence or absence of a species is determined at the local level and by many factors including soil characteristics.

The gopher tortoise (Gopherus polyphemus) is a burrowing reptile that inhabits open pine forests throughout the southeastern United States. Historically, typical gopher tortoise habitat consisted of open, frequently burned longleaf pine or longleaf pine/scrub oak uplands and flatwoods on moderately well drained to xeric soils. The burrows of a gopher tortoise are the habitat and center of normal feeding, breeding, and sheltering activity. Gopher tortoises excavate and use more than one burrow for shelter beneath the ground surface. Burrows, which may extend for more than 30 feet, provide shelter from canid predators, winter cold and summer heat.

The soil criteria that are taken into account in this soil interpretation are those that have been determined to have the most effect on burrow excavation, maintenance, and preservation. These include the soil texture, percent coarse fragments, depth to a restrictive layer or layer with greater than or equal to 35% clay, ponding or flooding frequency, slope, and depth to seasonal high water table.

Each soil criteria is assigned a numerical rating between 0 and 1. In this rating, 1 represents more suitable soil characteristics, and 0 represents less suitable soil characteristics. Each criterion is calculated separately and the lowest rating is reported as the overall soil suitability rating, representing the most limiting factor in the soil's suitability for gopher tortoise burrows.

Rating classes have been defined as follows:

Highly suited (numerical rating 0.95-1): These soils have no restrictions for use and are favorable for burrowing by gopher tortoise. Colonization and population densities may be above average if other habitat factors are not limiting.

Moderately suited (numerical rating 0.5-0.95): These soils are suitable and somewhat favorable for burrowing by gopher tortoise. Some restrictive features may limit the use of the site to a minor extent. Colonization and population densities may be average to above for the area if the other habitat requirements are met.

Less suited (numerical rating 0.05-0.5): These soils have characteristics that may limit establishment, maintenance, or use of the site by gopher tortoise. Colonization and population densities may be below average or restricted in the area due to the limiting factors even though all of the other species habitat requirements are met.

Unsuitable (numerical rating 0-0.05): These soils have characteristics that may limit establishment, maintenance, or use of the site by gopher tortoise. Areas of included soils with better drainage may provide suitable soil properties in some locations.

Not Rated: Miscellaneous areas are given a not rated status.

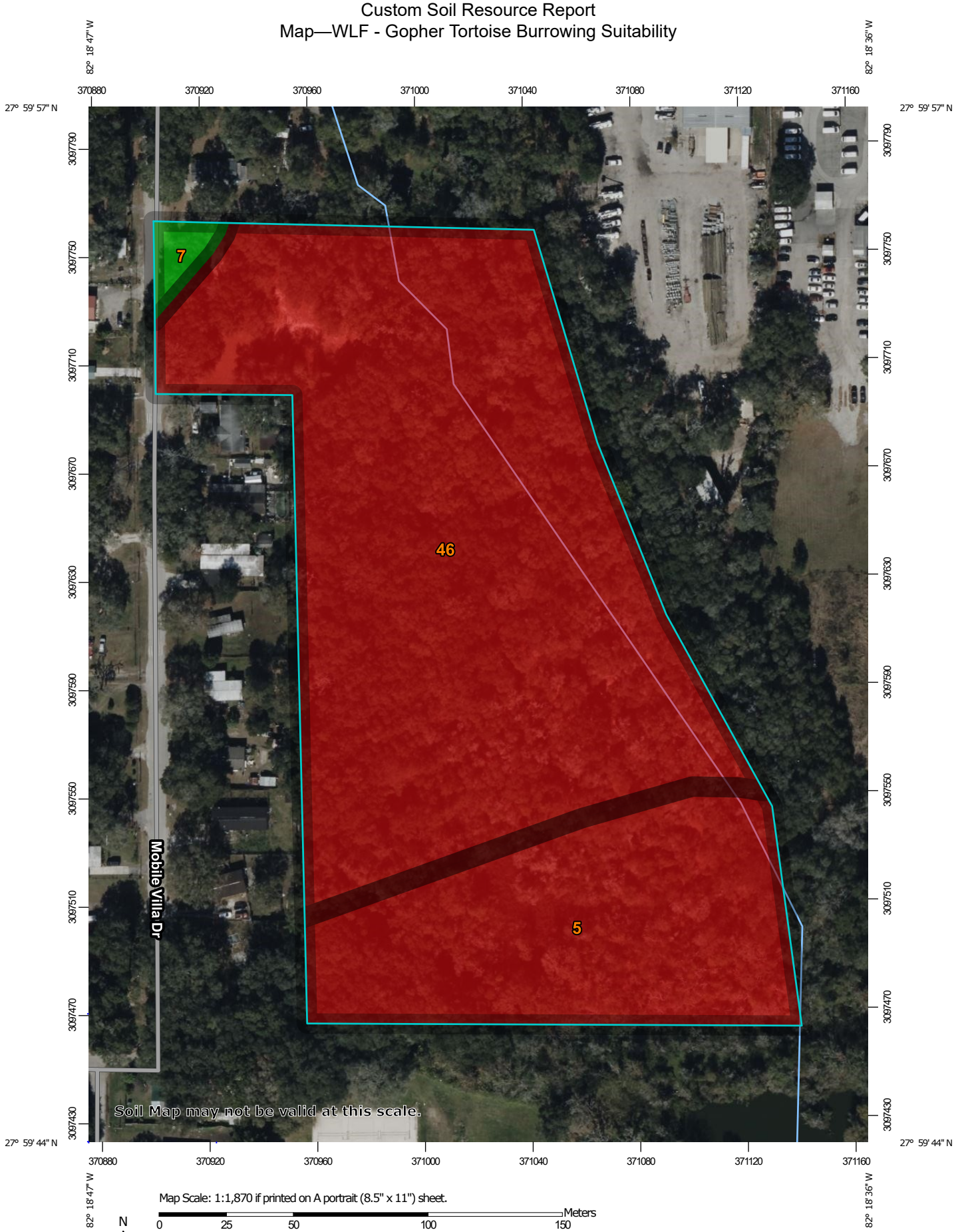
The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen, which is displayed on the report. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the Selected Soil Interpretations report with this interpretation included from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Citations:

U.S. Fish and Wildlife Service and Natural Resources Conservation Service. 2012. Gopher Tortoise (Gopherus polyphemus) Soil Classifications for the Federally Listed Range using the National Soil Information System Database, Version 1.

Custom Soil Resource Report
Map—WLF - Gopher Tortoise Burrowing Suitability



Map Scale: 1:1,870 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Unsuitable
- Less suited
- Moderately suited
- Highly suited
- Not rated or not available

Soil Rating Lines
- Unsuitable
- Less suited
- Moderately suited
- Highly suited
- Not rated or not available

Soil Rating Points
- Unsuitable
- Less suited
- Moderately suited
- Highly suited
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

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

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

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

Soil Survey Area: Hillsborough County, Florida
Survey Area Data: Version 21, Aug 27, 2021

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

Date(s) aerial images were photographed: Jan 6, 2022—Jan 30, 2022

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

Tables—WLF - Gopher Tortoise Burrowing Suitability

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
5	Basinger, Holopaw, and Samsula soils, depressional	Unsuitable	Basinger (35%)	Ponding (0.00)	3.1	27.6%
				Water table (0.00)		
			Holopaw (31%)	Ponding (0.00)		
				Water table (0.00)		
			Samsula (18%)	Ponding (0.00)		
				Water table (0.00)		
				Texture (0.50)		
			Eaton, depressional (6%)	Ponding (0.00)		
				Water table (0.00)		
				Soil depth (0.03)		
				Texture (0.75)		
			Felda (5%)	Water table (0.00)		
				Texture (0.78)		
7	Candler fine sand, 0 to 5 percent slopes	Highly suited	Candler (85%)		0.1	1.3%
			Astatula (4%)			
			Apopka (3%)			
			Adamsville (3%)			
			Tavares (2%)			
			Arredondo (2%)			
			Millhopper (1%)			
46	St. Johns fine sand	Unsuitable	St. Johns (87%)	Water table (0.00)	7.9	71.1%
			Basinger (7%)	Ponding (0.00)		
				Water table (0.00)		
			Floridana (6%)	Water table (0.00)		
				Texture (0.86)		
Totals for Area of Interest					**11.1**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Unsuitable	11.0	98.7%
Highly suited	0.1	1.3%

Rating	Acres in AOI	Percent of AOI
Totals for Area of Interest	**11.1**	**100.0%**

Rating Options—WLF - Gopher Tortoise Burrowing Suitability

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix D
Resumes

Cristina Lingvay

FIELD SCIENTIST / ENVIRONMENTAL PLANNING

PROFESSIONAL EXPERIENCE

Ms. Lingvay is a Field Scientist in Terracon's Winter Park Office. Ms. Lingvay's role at Terracon primarily consists of acting as Project Manager and facilitating field support for a variety of environmental planning services in the commercial and government sector. Ms. Lingvay has 3 years of experience as an environmental professional, with expertise in environmental surveying, monitoring, and remediation in terrestrial, freshwater, and marine ecosystems. Her services include wetland delineation, wetland permitting assistance, wetland mitigation plans and monitoring, wetland functional assessment, listed species surveys and permitting, and agency consultation.

PROJECT EXPERIENCE

Verizon Wireless – Golden Gate Boat Flora Survey
Project manager and field scientist on this listed plant species survey in Collier County. The scope of services included the survey and relocation of protected threatened/endangered plants per Collier County Land Development Code.

ATC Watertown – Natural Resources Services
Project manager and field scientist providing natural resources services for a proposed multi-family housing project in Miami-Dade County. The scope of services included a wetland delineation and functional assessment, general listed species survey, agency coordination for listed species, and 404 Program and SFWMD wetland permitting.

Lake Placid Solar – Natural Resources Services
Field scientist on this solar farm project in Highlands County. The scope of services included formal surveys for the Audubon's crested caracara, a general wildlife survey, and a wetland delineation.

Hildreth Solar Power Plant – Gopher Tortoise Surveys & Relocations
Field scientist on this solar farm project in Suwannee County. The scope of services included formal surveys for the Gopher Tortoise, and directon of backhoe operations to locate and remove Gopher Tortoises under the supervision of an FWC Authorized Gopher Tortoise Agent.

Pine Hills Affordable Housing – Natural Resources Services
Project manager and field scientist providing natural resources services for a proposed multi-family housing project in Orlando. The scope of services included a general listed species survey, a formal Gopher Tortoise survey, USFWS consultation for listed species, a wetland assessment and delineation, and a Phase I Environmental Site Assessment.

Lake Worth Lagoon – Shorline Characterization Mapping*
Independent researcher on this project at UCF. An interactive shapefile of the shoreline in Lake Worth Lagoon was created in ArcMap to be used as a tool for Palm Beach County Environmental Resource Managers to prioritize the direction of shoreline restoration and resiliencey efforts. Field data provided by PBC Environmental Resource Managers was analyzed to highlight the shorelines and bulkheads most suitable for remediation. This product was presented at UCF's Student Scholar Symposium in Spring 2021.

EDUCATION

Bachelor of Science, Biology – Marine and Aquatic
University of Central Florida, 2021

YEARS WITH TERRACON: <1

CERTIFICATIONS

Florida Boater's Lisence

AFFILIATIONS

Coastal Estuarine and Ecology Lab (UCF)

Florida Association of Environmental Professionals

* *Work performed prior to joining Terracon.*

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Cristina Lingvay (continued)

Brevard and Volusia Counties – Shoreline Stabilization and Oyster Reef Restoration*
Field research assistant for ecosystem restoration in Mosquito Lagoon, Indian River Lagoon, and Tomoka State Park. The scope of services included fabricating experimental restoration materials, deploying restoration materials, and monitoring restored shorelines and oyster reefs. Other responsibilities included directing community volunteers on restoration projects, growing cordgrass, red, white, and black mangroves as bioremediators. Seagrass surveys were also done on an annual basis; the data collected from these surveys were contributed to the Long Term Ecological Research Network.

Electric Knifefish Lab – Animal Behavior Research*
Laboratory technician researching Amazonian electric knifefish behavior at UCF. The scope of services included specimen dissection, data collection/recording, and data analysis.

Brian P. Brandon, PWS

Group Manager/Environmental Planning

PROFESSIONAL EXPERIENCE

Mr. Brandon is a Group Manager in Terracon's Winter Park Florida office. Mr. Brandon's role at Terracon is to manage project assignments and budgets, prepare proposals and bids for environmental planning related services, and develop clientele in the central and south Florida markets. Mr. Brandon also oversees a group of environmental scientists and participates directly in various environmental projects.

Mr. Brandon's expertise includes wetland delineation, wetland permitting and compliance, wetland functional assessment and mitigation plans, wetland monitoring, habitat assessments, habitat conservation plans, floral/vegetation surveys, threatened and endangered species surveys, migratory bird evaluations, wildlife monitoring, creation and maintenance of avian protection programs, tribal and agency consultation pursuant to the National Environmental Policy Act (NEPA). His experience also includes coordination with the United States Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FWC), Federal Communications Commission (FCC), various state and tribal historic preservation offices (HPOs), the Florida Department of Environmental Protection (FDEP), United States Army Corps of Engineers (USACE), and all Florida Water Management Districts for various permitting projects.

RELEVANT PROJECT EXPERIENCE

Durando Yeehaw Ranch – Yeehaw Junction, Florida
Senior Staff Scientist and Project Manager for land analysis that includes demography of saw palmetto stands, agricultural soil analysis, and land use analysis to determine the correlation between palmetto densities and productivity and available soil nutrients on site. The 12,000-acre project site was proposed to be utilized for saw palmetto propagation and harvesting.

Placid Solar Projects – Highlands County
Senior Staff Scientist and Project Manager for a proposed 2,000 acre solar farm. Scope of services includes wetland delineation and permitting assistance, gopher tortoise and burrowing owl surveys, formal surveys for crested caracara, Florida scrub-jay, Florida bonneted bat, sand skinks and blue-tailed mole skinks, Southeastern American kestrel, and agency consultation.

Endangered Plant Surveys – Lake County Florida
Conducted surveys for the federally endangered Lewton's polygala and clasping warea on an outparcel owned by Seminole State Forest. Surveys were conducted in pre-established plots. The target species were identified and the growth status was recorded. All

EDUCATION

Bachelor of Science, Biology
University of Central Florida, 2012

Graduate Certificate, Wetlands and Water Resource Management, University of Florida 2020

YEARS WITH TERRACON: 3
YEARS WITH OTHER FIRMS: 6

CERTIFICATIONS

Professional Wetland Scientist (PWS) No. 3405

FWC Authorized Gopher Tortoise Agent No. GTA-14-00004D

FWC Burrowing Owl Authorized Agent No. RAG-21-00005

Certified Florida Master Naturalist

PROFESSIONAL TRAINING

38-Hour USACE Wetland Delineation Training

AFFILIATIONS

Florida Native Plant Society – Tarflower Chapter

National Association of Environmental Professionals

Ecological Society of America

National Audubon Society

Florida Association of Environmental Soil Scientists

Society of Wetland Scientists

* *Work performed prior to joining Terracon.*

collected data was used to monitor yearly population growth, correlate impacts of prescribed fire, and determine if detrimental effects from invasive herbs affected rare plant species population. Work was conducted as a volunteer for the Florida Forest Service.

Endangered Plant Surveys – Polk County, Florida
Conducted demography survey on the state endangered blushing scrub balm at a confidential site in Polk County, Florida. Surveys consisted of measuring and recording plant height and width, and counting stems, flowers, and seeds. The data was used to determine germination rates in response to the prescribed fire regiment of the area.

Grand Medina Resort (Everest Place) – Osceola County, Florida
Senior Staff Scientist and Project Manager for a proposed mixed use commercial development. Scope of services includes wetland delineation, wetland functional assessment, state and federal permitting assistance, wetland monitoring, listed species surveys, and consultation with SFWMD, FDEP, and USACE.

Grand Medina Resort (Everest Place) – Osceola County, Florida
Project Manager and Senior Ecologist for conducting annual wetland monitoring for Consumptive Use Permit with the City of Apopka. The scope of work included bringing the CUP permit into compliance by conducting wetland monitoring for a two-year period; collecting GPS data of water elevations at four lakes, analyzing vegetative cover, and making a correlation between annual rainfall data, piezometer data, and visual observations to determine if groundwater drawdown is occurring as the result of the City's water usage.

ADDITIONAL EXPERIENCE

Biological Assessments - Alabama, Florida, Georgia, North Carolina, South Carolina*
Project Manager and Lead Biologist. Analyzed habitat structure and performed surveys to determine anticipated impacts to threatened and endangered species and species of special concern pursuant to Section 7 of the Endangered Species Act. Species-specific surveys include gopher tortoise, migratory bird evaluations, bats, red cockaded woodpeckers, Florida scrub-jays, and various vegetation surveys. Consulted with lead agency for determinations of "no adverse effect" findings and coordinated permitting when necessary.

Wetland Delineations –Florida, Georgia, Maryland*
Project Manager and Lead Wetland Scientist. Determined the landward extent of wetlands and other surface waters in accordance with Florida Administrative Code 62-340 and the Army Corps of Engineers wetland delineation methodology. Delineated wetland boundaries and coordinated Environmental Resource Permits (ERP's), Nationwide Permits, and Individual Permits with the FDEP, USACE, and all Water Management Districts.

Migratory Bird Evaluations and Avian Protection Programs – Nationwide*
Director of Migratory Bird Services. Managed and directed a team of scientists to conduct evaluations/formal surveys of Osprey, Bald Eagle, Red-tailed Hawk, Great Horned Owl, Crested Caracara, Crows, Ravens, Eastern Kingbirds, and other migratory birds for compliance with the Migratory Bird Treaty Act (MBTA), Bald and Golden Eagle Protection Act, and Endangered Species Act. Determined nest status and facilitated permit actions. Created and maintained Avian Protection Programs for various national clientele.