NATURAL RESOURCES EVALUATION REPORT

Florida Department of Transportation

District 1

State Road 72 (Clark Road)

From East of I-75 to Lorraine Road

Sarasota County, Florida

Financial Management Number: 444634-1-22-01

ETDM Number: 14441

May 20, 2025

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022, and executed by the Federal Highway Administration and FDOT.

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EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) District One is conducting a Project Development and Environment (PD&E) Study along State Road (SR) 72 (Clark Road) in Sarasota County. The purpose of the PD&E Study is to evaluate roadway capacity and safety improvements. The Preferred Alternative includes four lanes and shared use paths on both sides. The study limits extend approximately 3.4 miles from east of I-75 to Lorraine Road (Rd). This study evaluated the benefits, costs, and impacts of widening this portion of SR 72 from a two-lane undivided roadway to a four-lane divided roadway.

In accordance with Presidential Executive Order (EO) 11990, Federal Highway Administration (FHWA) Technical Advisory T6640.8A, Section 7(c) of the Endangered Species Act (ESA) of 1973 (ESA, P.L. 93-205), and the FDOT *Project Development and Environment (PD&E) Manual*, a Wetlands Evaluation and Protected Species and Habitat Assessment were conducted for the proposed improvements to SR 72. The project was screened through the Efficient Transportation Decision Making (ETDM) Environmental Screening Tool (EST) and the programming screen was published February 3, 2022 (ETDM #14441).

This report reviews the potential impacts to wetland systems and federal and state-protected species, summarizes the results of these assessments, and identifies measures to avoid, minimize, and mitigate for any potential impacts. A summary of the analysis of potential project impacts for the proposed roadway improvements is presented below.

Protected Species and Habitat

The project study area was evaluated for potential occurrences of federal and state-listed plant and animal species in accordance with Section 7 of the Endangered Species Act of 1973, as amended, and Chapters 5B-40 and 68A-27 of the Florida Administrative Code (F.A.C.). The evaluation included referencing the Florida Natural Areas Inventory (FNAI), a literature review, database searches, and field assessments of the project study area to identify the potential occurrence of protected species and/or presence of federal designated critical habitat. Field evaluations of the study area and adjacent habitats and general wildlife surveys were conducted by project biologists on September 19, 2022 and from January to April of 2023.

Nine (9) federally listed species and 15 state listed species have been reviewed for the potential to occur within the project study area. The project is not within any US Fish and Wildlife Service (USFWS) designated critical habitat. An effect determination was made for each of these federal and state-listed species based on an analysis of the potential impacts of the proposed project on each species. Based on evaluation of collected data and field reviews, the federal and state-listed species listed in **Table ES-1** and **Table ES-2** below have been reviewed for the potential to occur within or adjacent to the study area.

Table ES-1 Federal Protected Species Effect Determinations

Project Impact Determination	Federal Listed Species	Status*
"No effect"	Aboriginal prickly-apple (*Harrisia aboriginum*)	FE
	Audubon's crested caracara (*Caracara plancus audubonii*)	FT
	Florida bonneted bat (*Eumops floridanus*)	FE
	Florida grasshopper sparrow (*Ammodramus savannarum floridanus*)	FE
	Florida scrub-jay (*Aphelocoma coerulescens*)	FT
	Pygmy fringe tree (*Chionanthus pygmaeus*)	FE
"May affect, but is not likely to adversely affect"	Tricolored bat (*Perimyotis subflavus*)	PE
	Eastern indigo snake (*Drymarchon couperi*)	FT
	Wood stork (*Mycteria americana*)	FT

*FE: Federally Endangered; FT: Federally Threatened; PE: Proposed Endangered

Table ES-2 State Protected Species Effect Determinations

Project Impact Determination	State Listed Species	Status*
"No effect anticipated"	Florida beargrass (*Nolina atopocarpa*)	ST
	Large-plumed beaksedge (*Rhynchospora megaplumosa*)	SE
	Many-flowered grass-pink (*Calopogon multiflorus*)	ST
	Nodding pinweed (*Lechea cernua*)	ST
"No adverse effect anticipated"	Celestial lily (*Nemastylis floridana*)	SE
	Florida sandhill crane (*Antigone canadensis pratensis*)	ST
	Florida spiny-pod (*Matelea floridana*)	SE
	Florida burrowing owl (*Athene cunicularia floridana*)	ST
	Gopher tortoise (*Gopherus polyphemus*)	ST
	Little blue heron (*Egretta caerulea*)	ST
	Lowland loosestrife (*Lythrum flagellare*)	SE
	Roseate spoonbill (*Platalea ajaja*)	ST
	Sand butterfly pea (*Centrosema arenicola*)	SE
	Southeastern American kestrel (*Falco sparverius paulus*)	ST
	Tricolored heron (*Egretta tricolor*)	ST

*SE: State endangered; ST: State threatened

Wetlands

For the purposes of this document, wetlands are defined as per Chapter 62.340 F.A.C. and Section 373.019 (27), Florida Statutes (F.S.). Surface waters are defined as open water bodies or streams/waterways. The jurisdictional limits of wetlands and surface waters were estimated in accordance with the State unified wetland delineation methodologies as adopted by the Florida Department of Environmental Protection and the water management districts per Chapter 62-340, F.A.C. and as described in *The Florida Wetlands Delineation Manual* and the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual and regional supplement. The extent and types of wetlands in the project study area were documented in accordance with EO 11990,

Protection of Wetlands, and the Wetlands and Other Surface Waters chapter of the PD&E Manual.

Unavoidable wetland impacts will occur as a result of the Preferred Alternative. The wetlands to be impacted by the proposed project include previously disturbed wetlands adjacent to existing roadways. Wetland, surface water, and other surface water habitat types that may be directly or secondarily impacted are included in **Tables ES-3 and ES-4**. Direct impacts resulting from the Preferred Alternative include 3.00 acres of wetlands,3.76 acres of surface waters, and 4.27 acres of other surface waters. Secondary impacts resulting from the Preferred Alternative include 0.96 acres of wetlands and 0.18 acres of surface waters. A description of land use, dominant vegetation, soil types, and other information regarding these communities is provided in subsequent sections of this report. The Uniform Mitigation Assessment Methodology (UMAM) analysis was performed on representative wetland direct impact areas. Construction of the Preferred Alternative results in an estimated loss of 3.643 functional units. Of the total 3.643 functional unit loss, 3.567 result from direct impacts and 0.076 result from secondary impacts.

Wetland impacts which will result from the construction of this project will be mitigated pursuant to Section 373.4137, F.S., to satisfy all mitigation requirements of Part IV of Chapter 373, F.S., and 33 U.S.C. §1344. Compensatory mitigation for direct and secondary wetland impacts will be completed through the use of a private mitigation bank and/or any other mitigation options that satisfy state and federal requirements.

Final determination of jurisdictional boundaries, in addition to mitigation requirements, will be coordinated between FDOT and permitting agencies during the final design phase of the project. The results of the PD&E Study indicate there are no practicable alternatives to the proposed impacts due to the need for a roadway widening to reduce traffic congestion and address safety considerations. In accordance with Presidential EO 11990, the FDOT District One has undertaken all actions to minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities. The FDOT District One has determined that there is no practicable alternative to construction impacts occurring in wetlands. The proposed project will have no significant short-term or long-term adverse impacts to wetlands because any unavoidable impacts to wetlands will be mitigated to achieve no net loss of wetland function. Furthermore, all wetland impacts have been avoided and minimized to the greatest extent possible and have been limited to those areas which are required to meet minimum safety requirements.

Essential Fish Habitat

The proposed project is not located within or near any coastal resources and will not involve Essential Fish Habitat as none exists within the project study area.

Table ES-3 Proposed Wetland, Surface Water, and Other Surface Water Direct Impacts

Name	FLUCFCS Classification	FLUCFCS Description	USFWS Classification	Impact Acreage
Wetlands				
WL-1, WL-2, and WL-5	630	Wetland Forested Mixed	PFO1/3	0.46
WL-3 and WL-4	641	Freshwater Marshes	PEM1F	0.79
WL-6	641	Freshwater Marshes	PEM1F	1.75
Total Direct Wetland Impacts				**3.00**
Surface Waters				
SW-1, SW-3 to 11, SW-13 to 15, and SW-17 to 24	510	Streams and Waterways	R4SBC	2.41
SW-25	510	Streams and Waterways	R4SBC	0.03
SW-2, SW-12, and SW-16	530	Reservoirs	PUBHx	1.32
Total Direct Surface Water Impacts				**3.76**
Other Surface Waters				
OSW-1 to 25 and OSW-29 to 41	510	Streams and Waterways	R4SBC	4.26
OSW-26 and OSW-27	530	Reservoirs	PUBHx	0.01
Total Direct Other Surface Water Impacts				**4.27**
Total Direct Impacts				**11.03**

WL: Wetland; SW: Surface Water; OSW: Other Surface Water
PFO1/3: Palustrine, Forested, Broad-leaved Deciduous, Broad-leaved Evergreen
PEM1F: Palustrine, Emergent, Persistent, Semi-permanently Flooded
R4SBC: Riverine, Intermittent, Streambed, Seasonally Flooded
PUBHx: Palustrine, Unconsolidated Bottom, Permanently Flooded, excavated

Table ES-4 Proposed Wetland, Surface Water, and Other Surface Water Secondary Impacts

Name	FLUCFCS Classification	FLUCFCS Description	USFWS Classification	Impact Acreage
Wetlands				
WL-1, WL-2, WL-5, WL-7, and WL-8	630	Wetland Forested Mixed	PFO1/3	0.51
WL-3 and WL-4	641	Freshwater Marshes	PEM1F	0.45
Total Secondary Wetland Impacts				**0.96**
Surface Waters				
SW-1, SW-7, SW-13, SW-23, and SW-26	510	Streams and Waterways	R4SBC	0.09
SW-25	510	Streams and Waterways	R4SBC	0.02
SW-16	530	Reservoirs	PUBHx	0.07
Total Secondary Surface Water Impacts				**0.18**
Total Secondary Impacts				**1.14**

WL: Wetland; SW: Surface Water; OSW: Other Surface Water
PFO1/3: Palustrine, Forested, Broad-leaved Deciduous, Broad-leaved Evergreen
PEM1F: Palustrine, Emergent, Persistent, Semi-permanently Flooded
R4SBC: Riverine, Intermittent, Streambed, Seasonally Flooded
PUBHx: Palustrine, Unconsolidated Bottom, Permanently Flooded, excavated

1.0 INTRODUCTION

The Florida Department of Transportation (FDOT) District One is conducting a Project Development and Environment (PD&E) Study along State Road (SR) 72 (Clark Road) in Sarasota County as depicted in **Figure 1-1 Project Location Map**. The purpose of this PD&E Study is to evaluate roadway capacity and safety improvements. The study limits extend approximately 3.4 miles from east of I-75 to Lorraine Road (Rd). This study evaluated the benefits, costs, and impacts of widening this portion of SR 72 from a two-lane undivided roadway to a four-lane divided roadway.

In accordance with Presidential EO 11990, Federal Highway Administration (FHWA) Technical Advisory T6640.8A, Section 7(c) of the Endangered Species Act (ESA) of 1973 (ESA, P.L. 93-205), and the FDOT *Project Development and Environment (PD&E) Manual*, a Wetlands Evaluation and Protected Species and Habitat Assessment were conducted for the proposed SR 72 improvements. The project was screened through the Efficient Transportation Decision Making (ETDM) Environmental Screening Tool (EST) and the programming screen was published February 3, 2022 (ETDM #14441).

This Natural Resources Evaluation (NRE) reviews the potential impacts to wetland systems and federal and state-protected species, summarizes the results of these assessments, and identifies measures to avoid, minimize and mitigate for any potential impacts.

Figure 1-1 Project Location Map

2.0 PROJECT DESCRIPTION

This roadway project proposes the potential widening of 3.4 miles of two-lane undivided SR 72 up to four lanes from east of I-75 to Lorraine Rd within unincorporated Sarasota County. SR 72 plays an important role in the transportation network as it facilitates east-west movement within Sarasota County for both local and regional traffic [including truck traffic]. Within the region, SR 72 provides connections to US 41, I-75, beaches at Siesta Key on the west and SR 70 on the east within DeSoto County [just west of the City of Arcadia]. In keeping with the objectives of the Sarasota/Manatee Metropolitan Planning Organization (MPO), the proposed project may include shared-use paths on both sides of the roadway to enhance bicycle and pedestrian mobility.

The project segment of SR 72 is classified as 'Urban Minor Arterial'. East of the I-75 interchange, SR 72 narrows to four lanes before becoming a two-lane undivided roadway with 12-foot travel lanes in each direction and intermittent right-turn and center left-turn lanes. The project corridor currently contains paved shoulders west of Proctor Rd/Dove Ave, marked bicycle lanes east of Proctor Rd/Dove Ave, and intermittent sidewalks [primarily on the north side of the road where the master planned residential developments are located; however, there are some sidewalks on the south side of the road near Twin Lakes Park and east of Sandhill Lake Drive (Dr)/Preservation Dr]. An open drainage system is provided via the grass swales located along each side of the roadway. The posted speed limits along the project corridor are 45 miles per hour (mph) from I-75 to Proctor Rd and 55 mph from Proctor Rd to Lorraine Rd, with the exception of a curved portion of the road just east of Proctor Rd where there is an advisory 25 mph. As part of the nearby I-75 Diverging Diamond Interchange (DDI) project, the speed limit on the west end of the project corridor [near Twin Lakes Park] is being lowered to 35 mph. The existing context classification for the project corridor is C3C-Suburban Commercial. However, the approved future context classification for the project corridor is C3R-Suburban Residential.

The existing roadway right-of-way is generally 100 feet in width; intermittent wider and narrower sections exist along the length of the corridor. Additional right-of-way is anticipated to accommodate the proposed improvements; right-of-way requirements will be determined during the PD&E Study.

2.1 Purpose and Need

The purpose of this project is to improve the operational capacity of SR 72 from east of I-75 to Lorraine Rd within Sarasota County in order to accommodate future travel demand projected as a result of area-wide population and employment growth. Other goals of the project include enhancing safety conditions and accommodating multimodal activity. The need for the project is based on the following criteria:

2.1.1 Transportation Demand

There are several large residential developments along the project section of SR 72, either already built or under construction, including Sandhill Lake, Heron Lake, East Lake, Skye Ranch, and The Forest at Hi Hat Ranch. The Skye Ranch development is expected to accommodate 4,000+ multi- and single-family homes by 2040 and will be one of the largest developments in Sarasota County. In conjunction with the Skye Ranch residential development, dozens of new

parks, a new elementary school, and a new shopping center are proposed to occupy the former LT Ranch [located east of I-75, west of Cow Pen Slough, and south of SR 72]. Based on the FDOT District One Regional Planning Model, the population within the traffic analysis zones (TAZs) encompassing the project segment is expected to grow by 78.8% from 13,278 in 2015 to 23,745 in 2045 (2.6% annual growth rate); employment is expected to increase by 84.1% from 1,981 in 2015 to 3,647 in 2045 (2.8% annual growth rate).

While SR 72 currently operates above its designated Level of Service (LOS) standard of 'D', conditions are anticipated to deteriorate if no future improvements occur as the roadway lacks the operational capacity to accommodate the projected travel demand. In turn, this will contribute to higher levels of congestion and delays. With the proposed improvement, the corridor is expected to continue to operate at an acceptable LOS.

2.1.2 Safety

The five-year average crash rate [i.e., crashes per million vehicle miles traveled] for this project corridor was obtained from the FDOT Safety Office. During the five-year period from 2015 to 2019, 107 crashes occurred along the corridor with three fatalities and 99 injuries. This data indicates that the five-year average crash rate for the SR 72 project corridor is 1.85. This is comparable to the statewide average crash rate for similar facilities [Urban 2-3 Lanes, 2-Way Undivided] which is 1.92.

According to the data, angle and rear-end crashes were the most common crash types recorded along the project segment. It should be noted that as the volume of traffic increases along the corridor, the opportunity for vehicle movement conflict is expected to increase.

Serving as part of the emergency evacuation route network designated by the Florida Division of Emergency Management and Sarasota County, SR 72 plays a critical role during emergency evacuation periods as it facilitates traffic from the vulnerable coastal areas located in the western portion of the county inland to the east. It additionally runs parallel to US 41 and I-75 as well as directly connects to US 41 and I-75 on the west and SR 70 on the east within the City of Arcadia - all of which are designated state and county evacuation routes.

The proposed project is anticipated to improve safety conditions along the roadway by:

- Reducing congestion through additional capacity,
- Enhancing a viable east-west route that can aid in emergency access and response times, and
- Maintaining the evacuation capabilities and further enhancing emergency evacuation efficiency of SR 72.

2.1.3 Modal Interrelationships

SR 72 currently contains paved shoulders west of Proctor Rd/Dove Ave, marked bicycle lanes east of Proctor Rd/Dove Ave, and intermittent sidewalks [primarily on the north side of the road where the master planned residential developments are located; however, there are some sidewalks on the south side of the road near Twin Lakes Park and east of Sandhill Lake Dr/Preservation Dr]. The proposed project includes shared-use paths on both sides of the

roadway to enhance bicycle and pedestrian mobility. Accommodating bicycle and pedestrian activity within the corridor is particularly important given that this activity is expected to increase with the growing number of residential developments within the area. In addition, SR 72 has been identified as a "Multi Modal Emphasis Corridor (MMEC)" by the Sarasota/Manatee MPO indicating a continued desire to accommodate for multiple modes.

The MMEC concept was developed during the Sarasota/Manatee MPO's 2035 Long Range Transportation Plan (LRTP) as a means of redeveloping and revitalizing the US 41 corridor. In the Sarasota/Manatee MPO's Transform 2045 [the 2045 LRTP], the MMEC program has been expanded to include SR 72 along with several additional roadway corridors. MMEC roadways aim to establish a linkage between land use and transportation strategies through urban design that improve traffic movement as well as walking, biking, and transit accessibility conditions.

2.2 Proposed Improvements

Alternatives were evaluated with consideration of input from local agencies and public comments received at the public meetings.

The existing two-lane undivided SR 72 (**Figure 2-1**) will be reconstructed in the Preferred Alternative to include four 11-foot travel lanes, a 22-foot raised median, curb and gutter, and 12-foot shared use paths on both sides (**Figure 2-2**). Proposed drainage improvements include curb inlets, underground stormwater pipes, off-site ponds, and cross drain extensions to maintain existing drainage patterns. The Intersection Control Evaluation (ICE) process was used to evaluate roundabouts at the four main intersections within the project limits; Ibis Street, Proctor Road, Hawkins Road, and Lorraine Road. Single lane roundabouts are currently located at Proctor Road and Lorraine Road; however, all four intersections are proposed for multilane roundabouts.

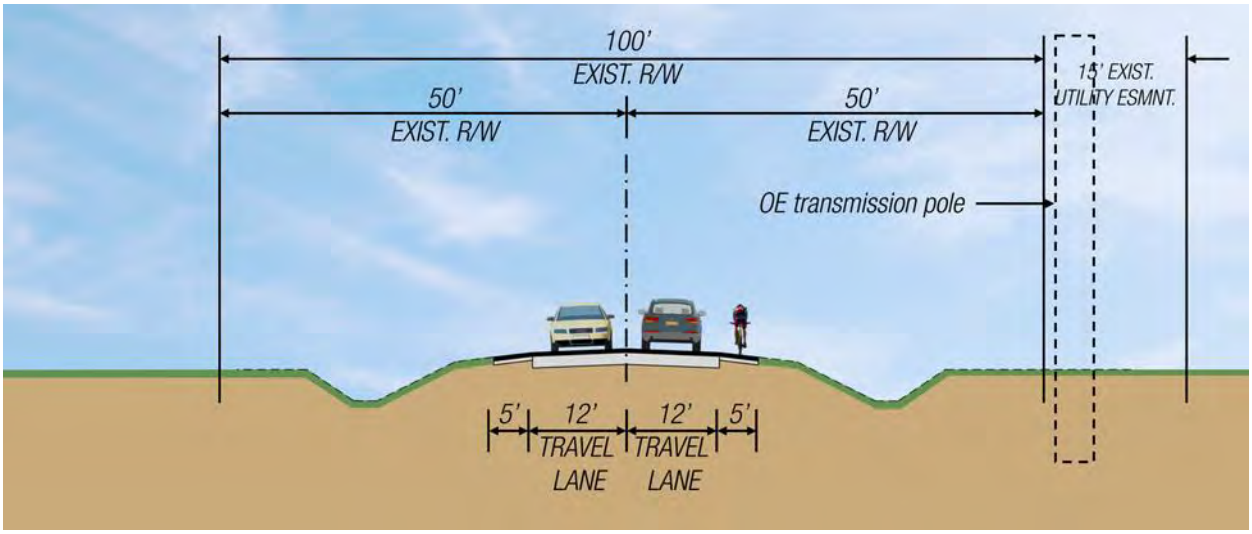

Figure 2-1 Existing Typical Section

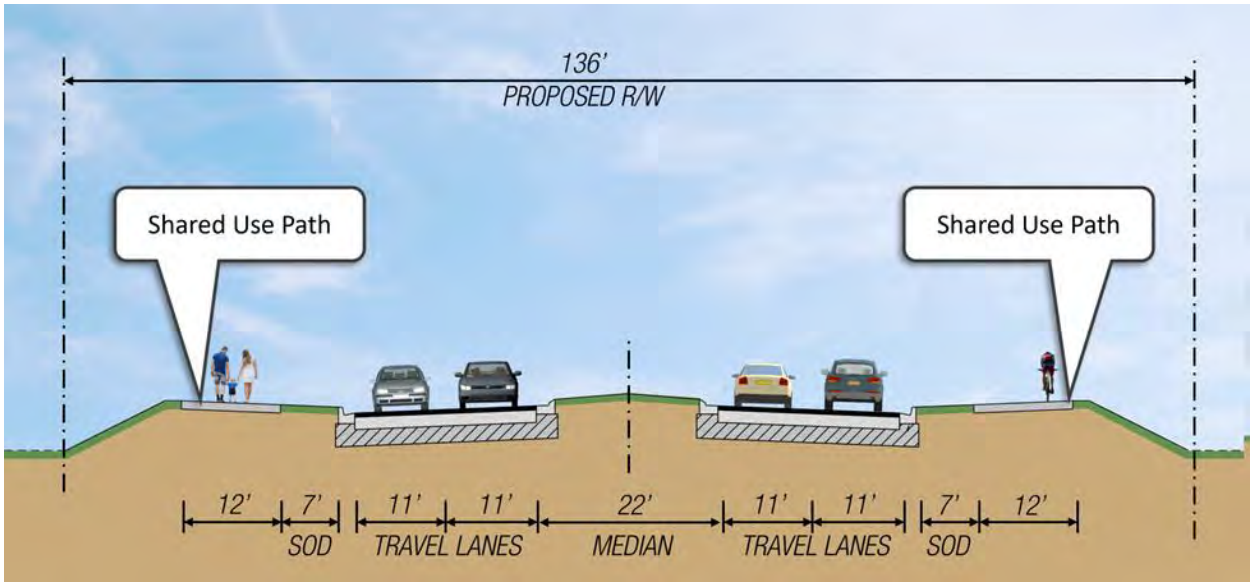

Figure 2-2 Preferred Alternative Typical Section

3.0 EXISTING CONDITIONS

The project study area is approximately 2,000 feet in width and extends along SR 72 from east of I-75 to Lorraine Rd as shown in **Figure 3-1**. This section presents a description of existing conditions within the project study area, including soils and land use/vegetative cover types within both wetlands and uplands. **Section 4.0** presents a description of the potential impacts to federal and state- listed species and proposed conservation measures to off-set these impacts. **Section 5.0** presents a description of wetland and surface water impacts that would result from construction of the proposed project and a discussion of the mitigation options to offset these impacts.

3.1 Methodology

To assess the approximate locations and boundaries of existing wetland and upland communities within the project study area, the following site-specific data were collected and reviewed:

- Aerial photographs (scale, 1 inch = 400 feet), Environmental Systems Resources Institute (ESRI) 2023;
- FDOT, *Florida Land Use, Cover and Forms Classification System (FLUCFCS) Handbook*, 3rd Edition (FDOT, 1999);
- FDOT, Efficient Transportation Decision Making Environmental Screening Tool, https://etdmpub.fla-etat.org/est/; 2024;
- Florida Association of Environmental Soil Scientists, *Hydric Soils of Florida Handbook*, 4th Edition (Hurt, 2007);
- SWFWMD, *Southwest Florida Water Management District Geospatial Open Data Portal*. (https://data-swfwmd.opendata.arcgis.com/), 2023;
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), *Web Soil Survey,* (https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx), September 2023;
- University of Florida (UF), UF Digital Collections, *Aerial Photography: Florida*, (https://original-ufdc.uflib.ufl.edu/aerials), September 2023;
- US Fish and Wildlife Service (USFWS), National Wetlands Inventory (NWI), *Wetlands Online Mapper* (https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper), August 2023;
- USFWS, *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, et al., 1979).

For the purposes of this document, wetlands are defined as per Chapter 62.340 Florida Administrative Code (F.A.C.) and Section 373.019 (27), Florida Statutes (F.S.). Surface waters are defined as open water bodies or streams/waterways, including roadside ditches.

During field reviews of the project study area, environmental scientists delineated the approximate boundaries of existing wetland and surface water communities on 1" = 200' true-color aerial photographs. Approximate wetland boundaries were identified in accordance with the *State of Florida Wetlands Delineation Manual* (Chapter 62-340, F.A.C.) and the criteria found within the U.S. Army Corps of Engineers (USACE) 1987 *Corps of Engineers Wetland Delineation Manual* (Y-87-1) and 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coast Plain Region (Version 2.0)* (ERDC/EL TR-10-20). Each wetland and surface water habitat within the project study area was classified using FLUCFCS (FDOT, 1999) and the USFWS Classification of Wetlands and Deepwater Habitats of the United States (Cowardin *et al*., 1979). Formal wetland boundary delineations and surveys were not conducted as a part of this study but will be completed as part of the state and federal permit process.

Environmental scientists familiar with Florida's natural communities conducted field reviews of the study area on September 19, 2022 and from January to April of 2023. Field reviews consisted of pedestrian transects throughout natural habitat types found within the project study area. The purpose of the reviews was to verify and/or refine preliminary habitat boundaries and classification codes established through in-office literature reviews and aerial photo interpretation. During field investigations, wetland and surface water habitats within the project study area was visually inspected. Attention was given to identifying plant species composition for each community. Exotic plant infestations and other disturbances such as soil subsidence, clearing, canals, power lines, etc., were noted. Attention was also given to identifying wildlife and signs of wildlife usage in habitats within the project study area.

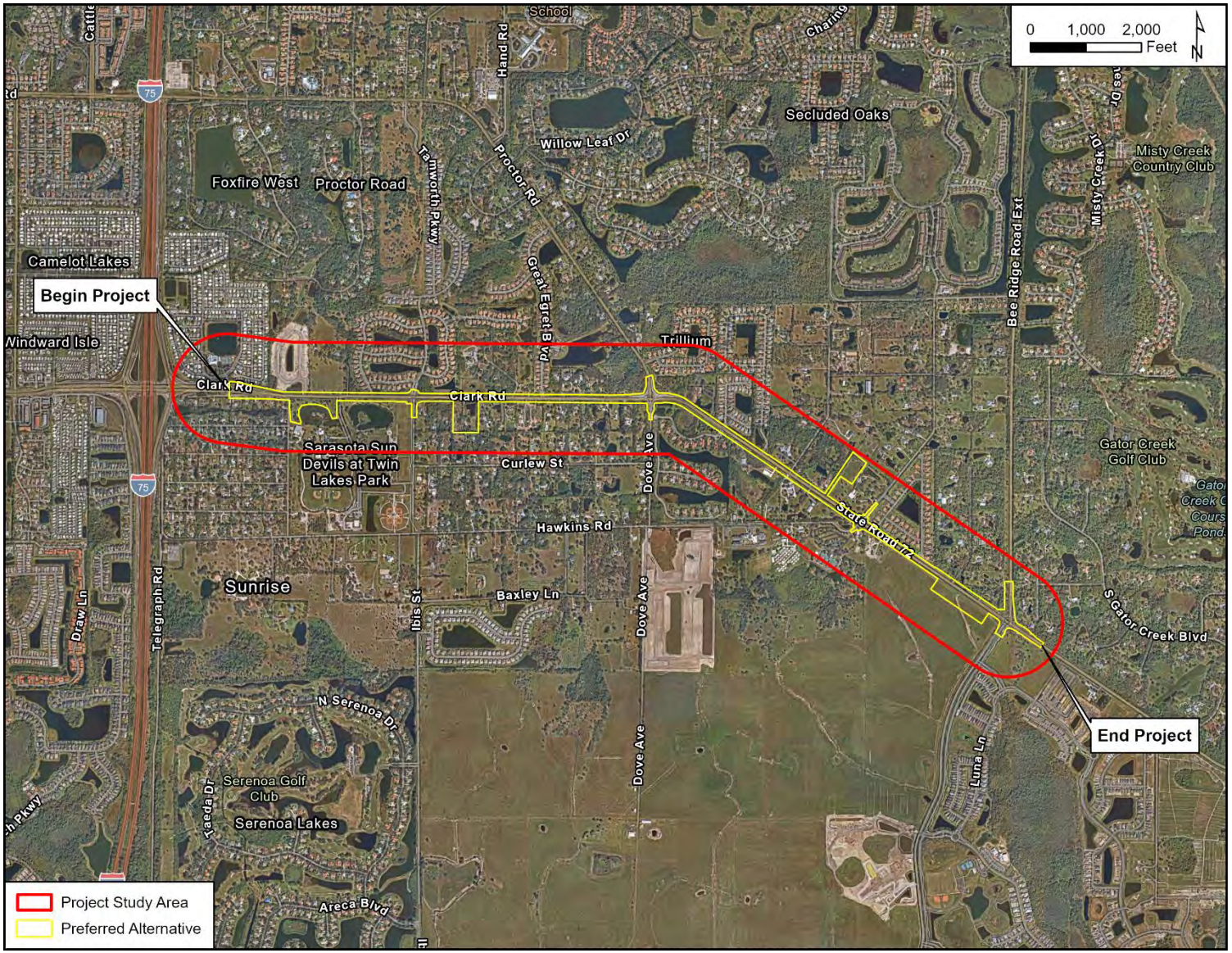

Figure 3-1 Project Study Area Map

3.2 Results

Based on site-specific data searches and field evaluations, a total of 10 soil types, 11 upland habitat types, and six (6) wetland and surface water habitat types were identified within the project study area. The following subsections describe the soils, upland and wetland community types, and individual wetlands and surface waters that occur within the project study area.

3.2.1 Soils

Based on the *Custom Soil Resource Report for Sarasota County, Florida* obtained from NRCS Web Soil Survey, the project study area is comprised of ten (10) soil types. **Appendix A** provides an aerial map depicting the boundaries of each soil type within the project study area in addition to individual soil descriptions and their general characteristics. According to the *Hydric Soils of Florida Handbook*, six (6) of the soil types reported within the project study area are classified as hydric and four (4) are non-hydric. Of these non-hydric soils, one (1) is reported as having hydric soil inclusions. Mapped hydric soils comprise 194.0 acres (25.4 percent) and non-hydric soils cover 568.3 acres (74.6 percent) of the project study area. **Table 3-1** lists the soil types reported within the project study area, their corresponding NRCS reference numbers reported in the *Custom Soil Resource Report for Sarasota County, Florida*, their hydric classification, and the approximate acreage and percentage of each soil type within the project study area.

Table 3-1 Soil Types and Coverage within the SR 72 Project Study Area

Map Unit Symbol	Soil Type	Hydric Y/N	Acres in Study Area	Percent of Study Area
10	EauGallie, Myakka fine sands and 0 to 2 percent slopes	N*	52.9	6.9%
22	Holopaw fine sand, frequently ponded, 0 to 1 percent slopes	Y	21.3	2.8%
30	Ona fine sand, 0 to 2 percent slopes	N	12.9	1.7%
31	Pineda-Pineda, wet, fine sand, 0 to 2 percent slopes	Y	3.4	0.4%
51	Bradenton fine sand-Urban land complex, 0 to 2 percent slopes	Y	6.8	0.9%
55	EauGallie-Myakka fine sands-Urban land complex, 0 to 2 percent slopes	N	344.9	45.2%
62	Gator-Gator, drained mucks, ponded-Urban land complex, 0 to 1 percent slopes	Y	4.4	0.6%
63	Holopaw fine sand, ponded-Urban land complex, 0 to 1 percent slopes	Y	138.2	18.1%
67	Ona fine sand-Urban land complex, 0 to 2 percent slopes	N	141.9	18.6%
69	Pineda fine sand-Urban land complex, 0 to 2 percent slopes	Y	19.8	2.6%
Total Hydric Soils			**194.0**	**25.4%**
Total Non-Hydric Soils			**568.3**	**74.6%**
Total Water			**15.8**	**2.1%**
Totals for Project Study Area			**762.3**	**100.0%**

*May have hydric soil inclusions

3.2.2 Existing Land Use

A total of 11 upland and six (6) wetland and surface water habitat types were found within the project study area. Descriptions and aerial maps depicting existing land uses and habitats within the project study area are provided in **Appendix B**. **Table 3-2** provides land use and habitat types and their FLUCFCS classifications, in addition to their total acreage and percent coverage within the project study area.

Existing land use within the project study area was determined through the interpretation of 1" = 100' scale aerial photography, review of land cover Geographic Information Systems (GIS) data obtained from the Southwest Florida Water Management District (SWFWMD), and field reconnaissance of the project study area conducted on September 19, 2022 and from January to April of 2023.

Upland communities comprise 661.5 acres (86.8 percent) of the project study area and generally includes residential units, roads and highways, pastureland, commercial land use, hardwood and coniferous forest, institutional land use, recreation area, disturbed land, and open land. Wetland and surface water communities comprise 100.8 acres (13.2 percent) of the project study area and are mostly comprised of reservoirs.

Table 3-2 Existing Land Uses within the SR 72 Project Study Area

FLUCFCS Code	FLUCFCS Description	USFWS Classification	Acreage Within Study Area	Percent of Study Area
110	Residential Low Density < 2 Dwelling Units Per Acre	N/A	178.2	23.4%
120	Residential Med Density 2 To 5 Dwelling Units Per Acre	N/A	47.9	6.3%
130	Residential High Density	N/A	104.5	13.7%
140	Commercial And Services	N/A	36.0	4.7%
170	Institutional	N/A	34.2	4.5%
180	Recreational	N/A	33.7	4.4%
190	Open Land	N/A	7.0	0.9%
210	Cropland And Pastureland	N/A	71.2	9.3%
434	Upland Hardwood - Coniferous Mix	N/A	35.4	4.6%
740	Disturbed Lands	N/A	19.5	2.6%
810	Transportation	N/A	93.9	12.3%
		Total Uplands	**661.5**	**86.8%**
510	Streams and Waterways	R4SBC	0.9	0.1%
530	Reservoirs	PUBHx	64.3	8.4%
615	Stream And Lake Swamps (Bottomland)	PFO1Fd	8.2	1.1%
630	Wetland Forested Mixed	PFO1/3	7.1	0.9%
641	Freshwater Marshes	PEM1F	15.4	2.0%
643	Wet Prairies	PEM1Fd	4.9	0.6%
	Total Wetlands and Surface Waters		**100.8**	**13.2%**
	Total		**762.3**	**100.0%**

R4SBC: Riverine, Intermittent, Streambed, Seasonally Flooded
PUBHx: Palustrine, Unconsolidated Bottom, Permanently Flooded, excavated
PFO1Fd: Palustrine, Forested, Broad-Leaved Deciduous, Partly Drained/Ditched
PFO1/3: Palustrine, Forested, Broad-leaved Deciduous, Broad-leaved Evergreen
PEM1F: Palustrine, Emergent, Persistent, Semi-permanently Flooded
PEM1Fd: Palustrine, Emergent, Persistent, Semi-permanently Flooded, Partly Drained/Ditched

3.2.3 Wetlands and Surface Waters

Based on collected field data and desktop reviews, a total of six (6) wetland and surface water habitat types were identified within the project study area. These included four (4) wetland types and two (2) surface water types. The wetland types were classified as stream and lake swamps (bottomland), wetland forested mixed, freshwater marshes, and wet prairies. The surface water included streams and waterways and reservoirs.

Appendix C provides individual descriptions of the identified wetlands and surface water, including acreage within the project study area, and aerial maps of the location of these systems within the project study area. There are no wetlands or surface waters designated as Outstanding Florida Waters, Aquatic Preserves or Wild and Scenic Rivers within the project study area.

4.0 PROTECTED SPECIES

This project was evaluated for impacts to protected species and habitat resources in accordance with 50 CFR Part 402 of the Endangered Species Act (ESA) of 1973, as amended, the Florida Endangered and Threatened Species Act, Section 379.2291, F.S., and the Protected Species and Habitat chapter of the PD&E Manual. Listed species are afforded special protective status by federal and state agencies. This special protection is federally administered by the United States Department of the Interior, USFWS, and National Oceanic and Atmospheric Administration – National Marine Fisheries Service (NOAA-NMFS) pursuant to the Endangered Species Act of 1973 (as amended). The USFWS administers the federal list of animal species (50 CFR 17) and plant species (50 CFR 23). Federal protection of marine species is the responsibility of the NOAA-NMFS.

Administered by the Florida Fish and Wildlife Conservation Commission (FWC), the State of Florida affords special protection to animal species designated as State-designated Threatened pursuant to Chapter 68A-27, F.A.C. The State of Florida also protects and regulates plant species designated as endangered, threatened or commercially exploited as identified on the Regulated Plant Index (5B-40.0055, F.A.C.), which is administered by the Florida Department of Agriculture and Consumer Services (FDACS), Division of Plant Industry, pursuant to Chapter 5B-40, F.A.C. Protected species evaluations were completed in accordance with FHWA's 2002 Memorandum, titled "Management of the Endangered Species Act Environmental Analysis and Consultation Process". Species that are federally listed species are also considered state listed species.

An ETDM Programming Screen Summary Report was published on February 3, 2022 containing comments from the Environmental Technical Advisory Team (ETAT) on the project's effects on various natural, physical and social resources. The USFWS, FDACS, FWC, and SWFWMD were commenting agencies for Protected Species and Habitat. Non-listed rare plants were not identified by stakeholders in the ETDM Programming Screen Summary Report process. The following comments were provided for consideration:

- Surveys for rare and listed plants should be conducted, protected, or translocated to suitable alternative site if present;
- Any lost suitable wood stork foraging habitat should be mitigated in the same core foraging area; and
- FDOT should prepare a Biological Assessment for the project during the PD&E process.
- The project is located within the USFWS Consultation Areas (CAs) of three (3) federally protected species, including the Florida grasshopper sparrow (*Ammodramus savannarum floridanus*), Florida scrub-jay (*Aphelocoma coerulescens*), Florida bonneted bat (*Eumops floridanus*) and within the core foraging area of five (5) wood stork (*Mycteria americana*) colonies.

The following sections describe the methodology used to assess the potential for occurrence of protected species and to identify the effects that implementation of the proposed project alternatives may have on protected species.

4.1 Methodology

Available site-specific data was collected and evaluated to determine federal and state-listed protected plant and animal species that have potential to occur within the project study area and to identify the approximate locations of existing upland and wetland communities.

Literature reviewed, and databases searched as part of this evaluation included:

- Audubon, *About the EagleWatch Program*, (https://cbop.audubon.org/conservation/about-eaglewatch-program), September 2023;
- Florida Natural Areas Inventory (FNAI), *Biodiversity Matrix*, (https://www.fnai.org/BiodiversityMatrix/index.html), September 2023;
- FWC, *Florida's Endangered Species and Threatened Species*, December 2022;
- FWC, *Terrestrial Resources Geographic Information System* (http://ocean.floridamarine.org/TRGIS/Description_Layers_Terrestrial.htm), September 2023;
- University of Florida (UF) Geoplan Center, Florida Geographic Data Library (FGDL), *FGDL Explorer* (http://fgdl.org), September 2023;
- USFWS, *Endangered and Threatened Wildlife and Plants*, 50 CFR 17.11 and 17.12, July 2022;
- USFWS, Information for Planning and Consultation (IPaC) data, (https://ipac.ecosphere.fws.gov/), September 2023;
- USFWS, *USFWS Threatened & Endangered Species Active Critical Habitat Report,* (http://crithab.fws.gov/), September 2023;

Environmental scientists familiar with Florida natural communities conducted field reviews of the project study area and adjacent habitats and general species surveys on September 19, 2022 and from January to April of 2023. Field reviews consisted of reviewing natural habitat types located within the project study area. The purpose of the reviews was to verify and/or refine preliminary habitat boundaries and classification codes established through in-office literature reviews and aerial photo interpretation. During field investigations, upland and wetland communities within the project study area were visually inspected. Attention was given to identifying dominant plant species composition for each community. Additional attention was given to identifying wildlife and signs of wildlife usage in each wetland and upland community within the project study area. The FNAI Biodiversity Matrix and USFWS IPaC data were reviewed for potential occurrences of listed species within one (1) mile of the project study area (**Appendix E**).

Based on the evaluation of collected data, field reviews, and database searches, the federal and state-listed protected species discussed in **Section 4.2** were considered as having the potential to occur within or adjacent to the project study area. For a species to be considered potentially present the project study area must be within the species' distribution range. An effect determination was then made for each federal and state-listed species based on an analysis of the potential impacts of the Preferred Alternative to each species.

4.2 Results

Based on the information collected and field reviews, a list of protected species with the potential to occur within the project study area was generated. This list includes a total of 25 federal or state-listed species and two (2) species with other protection requirements that have the potential for occurrence within the project study area. These protected species include ten (10) flora, two (2) reptilian, three (3) mammalian, one (1) insect and 11 avian species. **Table 4-1** presents a list of protected species with the potential to occur within the project study area, their federal or state protection status, suitable habitat, and a ranking of potential occurrence. Locations of all listed species documented within one (1) mile of the project study area as well as the locations of all protected species observed during field reviews are also provided in this table.

The potential for occurrence for each species was designated as No, Low, Moderate, or High based on the type of habitat present within the project study area, its relative condition, and if the species has been previously documented or was observed within the project study area. A *No* rating indicates that no suitable habitat for that species was found within the project study area. A *Low* rating indicates that minimal suitable habitat for that species was found within the project study area, but the species has not been documented within the project study area. A *Moderate* rating indicates that suitable habitat exists, and the species has been documented within one (1) mile of the project study area. A *High* rating indicates that suitable habitat exists, and the species was observed during field reviews.

While the proposed project has taken all practicable measures to avoid and minimize impacts to potentially occurring protected species and their habitats, unavoidable impacts may occur because of roadway and pond site construction. A determination of the anticipated project effect on protected species was made based on their probability of occurrence within the project study area, the proposed changes to their habitat quality, quantity and availability as a result of project construction, and how each species is expected to respond to anticipated habitat changes. Listed below are the effect determinations for each species.

Table 4-1 Protected Species Potential for Occurrence

Species	Designated Status			Habitat Preference	Potential for Occurrence
	Federal	State	FDACS		
Flora					
Aboriginal prickly-apple *Harrisia aboriginum*	FE	FE	E	Open coastal hammocks and shell middens at low elevations	No
Celestial lily *Nemastylis floridana*	NL	SE	E	Wet flatwoods, prairies, marshes, and cabbage palm hammocks edges	Low
Florida beargrass *Nolina atopocarpa*	NL	ST	T	Wet pine flatwoods; deeply rooted in black, sandy-peaty high hydroperiod soil	No
Florida spiny-pod *Matelea floridana*	NL	SE	E	Occurs on a variety of wooded habitats from fairly moist woods to upland hardwood forests	Low
Large-plumed beaksedge *Rhynchospora megaplumosa*	NL	SE	E	Sands and sandy peats of pine flatwoods scrub and flatwoods-sandscrub transition	No
Lowland loosestrife *Lythrum flagellare*	NL	SE	E	Freshwater marshes, coastal beaches, mangrove swamps, cypress swamps, hardwood swamps, wet prairies and bay swamps	Low
Many-flowered grass-pink *Calopogon multiflorus*	NL	ST	T	Well-drained soils of open, damp to somewhat drier pine savannas-flatwoods and meadows	No
Nodding pinweed *Lechea cernua*	NL	ST	T	Deep sands, usually ancient dunes, on which the most common forest is a mixture of evergreen scrub oaks	No
Pygmy fringe tree *Chionanthus pygmaeus*	FE	FE	E	Scrub, sandhills, hammocks, flatwoods, and transition zones between these habitats	No
Sand butterfly pea *Centrosema arenicola*	NL	SE	E	Sandhill, scrubby flatwoods, dry upland woods	Low
Avian					
Audubon's crested caracara *Polyborus plancus audubonii*	FT	FT	—	Wet prairies with cabbage palms, wooded areas with saw palmetto, cypress, scrub oaks, and pastures	Low

*Bald eagle *Haliaeetus leucocephalus*	NL	NL	—	Open country such as dry prairie and pasture lands with scattered cabbage palm, cabbage palm/live oak hammocks, and shallow ponds and sloughs; cabbage palms or live oaks with low-growing surrounding vegetation are required for nesting	High
Florida burrowing owl *Athene cunicularia floridana*	NL	ST	—	Wide-open, sparsely vegetated areas like prairies, deserts, grasslands and agricultural fields	Low
Florida grasshopper sparrow *Ammodramus savannarum floridanus*	FE	FE	—	Large treeless grasslands dominated by bunch grasses, low shrubs, and saw palmetto with enough interspersed bare ground to forage effectively	No
Florida sandhill crane *Antigone canadensis pratensis*	NL	ST	—	Freshwater marshes, prairies, and pastures	High
Florida scrub-jay *Aphelocoma coerulescens*	FT	FT	—	Sand pine and xeric oak scrub, and scrubby flatwoods	No
Little blue heron *Egretta caerulea*	NL	ST	—	Fresh, salt, and brackish water environments including swamps, estuaries, ponds, lakes, and rivers	High
Roseate spoonbill *Platalea ajaja*	NL	ST	—	Forages in shallow water with muddy bottom, in both salt and fresh water, including tidal ponds, coastal lagoons, extensive inland marshes; nests in colonies, in Florida mainly in red mangroves	High
Southeastern American kestrel *Falco sparverius paulus*	NL	ST	—	Open woodlands, sandhill, and fire-maintained savannah pine habitats; will also use alternative habitats which include pastures and open fields located in residential areas	Low
Tricolored heron *Egretta tricolor*	NL	ST	—	Fresh, salt, and brackish water environments including swamps, estuaries, ponds, lakes, and rivers	High

Wood stork *Mycteria americana*	FT	FT	—	Nest in mixed hardwood swamps, sloughs, mangroves, and cypress domes/strands in Florida; forage in a variety of wetlands including both freshwater and estuarine marshes, although limited to depths less than 10-12 inches	High
Reptilian					
Eastern indigo snake *Drymarchon couperi*	FT	FT	—	Pine flatwoods, hardwood forests, moist hammocks, and areas that surround cypress swamps	Low
Gopher tortoise *Gopherus polyphemus*	NL	ST	—	Open areas of pine scrub habitat, sandhills, and scrub and disturbed areas such as abandoned fields, roadsides, and fire lanes	Low
Mammalian					
**Florida black bear *Ursus americanus floridanus*	NL	NL	—	Can be found almost anywhere in Florida, they prefer a mixture of flatwoods, swamps, scrub oak ridges, bayheads and hammock habitats	Low
Florida bonneted bat *Eumops floridanus*	FE	FE	—	Forage in a variety of habitats including semitropical forests with tropical hardwood, pineland, and mangrove habitats, as well as man-made areas such as golf courses and neighborhoods; roosts in tree cavities and buildings	Low
Tricolored bat *Perimyotis subflavus*	PE	NL	—	Roosts in caves, tree foliage, tree cavities, and occasionally buildings and other man-made structures	Low
Insect					
Monarch butterfly *Danaus plexippus*	PT	NL	—	Habitat depends on the availability of the larval host plant, milkweed (genus Asclepias), which can be found in a variety of habitats	Low

FE: Federally Endangered; FT: Federally Threatened; SE: State Endangered; ST: State Threatened; FT(S/A): Federally Threatened due to Similarity of Appearance; NL: Not Listed; PE: Proposed Endangered; C: Candidate

*Protected by the Bald and Golden Eagle Protection Act (BGEPA), Migratory Bird Treaty Act (MCTA), and the Florida Eagle Rule (F.A.C. 68A-16.002)

**Protected by the Florida Black Bear Conservation Rule (F.A.C. 68A-4.009)

4.2.1 Federal Protected Species

4.2.1.1 Flora

Aboriginal Prickly-Apple (*Harrisia aboriginum*)

The Aboriginal prickly-apple is a cactus with simple or branching cylindrical, spiny stems, often around 10 feet tall, that is listed as ***endangered*** by the **USFWS**, **FWC**, and **FDACS**. This species is a member of the cactus (*Cactaceae*) family and occurs in shell mounds, coastal strands, upland fringes of mangrove swamps, coastal berms, and maritime hammocks. The USFWS IPaC data indicates that project study area is within the habitat range of the Aboriginal prickly-apple. However, no individuals or suitable habitat for this species were observed during field reviews. Additionally, according to FNAI data, the Aboriginal prickly-apple has not been documented within one (1) mile of the project study area. Based on this information, it has been determined that the project will have "**no effect**" on the Aboriginal prickly-apple.

Pygmy Fringe Tree (*Chionanthus pygmaeus*)

The pygmy fringe tree is a shrub/small tree with white and green flowers that is listed as ***endangered*** by the **USFWS**, **FWS**, and **FDACS**. This species is a member of the olive (*Oleaceae*) family and occurs on scrub, sandhill, and xeric hammocks, primarily on the Lake Wales Ridge. The USFWS IPaC data indicates that project study area is within the habitat range of the pygmy fringe tree. However, no individuals or suitable habitat for this species were observed during field reviews. Additionally, according to FNAI data, the pygmy fringe tree has not been documented within one (1) mile of the project study area. Based on this information, it has been determined that the project will have "**no effect**" on the pygmy fringe tree.

4.2.1.2 Fauna

Reptilian

Eastern Indigo Snake (*Drymarchon couperi*)

The eastern indigo snake is a large, glossy black snake that is listed as ***threatened*** by the **USFWS** and **FWC**. This species can be found in a variety of habitat types, including pine flatwoods, scrubby flatwoods, high pine, dry prairie, tropical hardwood hammocks, edges of freshwater marshes, agricultural fields, coastal dunes, as well as human-altered habitats. It may also utilize gopher tortoise burrows for shelter to escape hot or cold ambient temperatures within its range. According to FNAI data, this species has the potential to occur within the project study area. While there is suitable habitat for this species throughout the undeveloped areas of the project study area, the eastern indigo snake was not observed during field reviews and has not been documented within one (1) mile of the project study area. However, it is reasonable to expect that this species could utilize suitable habitat within the project study area. The most recent version of the USFWS Standard Protection Measures for the Eastern Indigo Snake (revised 2023) will be utilized during construction (see **Appendix F**). With the implementation of these measures, it has been determined that the project "**may affect, not likely to adversely affect**" the eastern indigo snake. The path to this determination followed the Eastern Indigo Snake Programmatic Effect

Determination Key (South Florida Ecological Service Office), steps A →B→C→D→E→MANLAA as shown in **Appendix F**.

Mammalian

Florida Bonneted Bat (*Eumops floridanus*)

The Florida bonneted bat is listed as ***endangered*** by the **USFWS** and **FWC** and is the largest bat species endemic to Florida. This species occurs as far south as Miami-Dade County and Monroe County and as far north as Osceola and Polk Counties. This species is known to roost in natural tree cavities and those created by woodpeckers and other species as well as man-made structures. The Florida bonneted bat has been detected foraging in a variety of habitats including semitropical forests with tropical hardwood, pineland, and mangrove habitats, as well as man-made areas such as golf courses and neighborhoods. Potential foraging and roosting habitat for this species exists within the study area, and the study area lies within the CA for the Florida bonneted bat. However, no individuals were recorded during acoustic surveys, and no observations have been documented within the one (1) mile of the study area. A report summarizing the results of the 2023 acoustic survey and the consultation key is included in **Appendix G**. The results from the surveys conducted in 2023 were acceptable by the USFWS and the coordination with USFWS for this species is provided in **Appendix J**. Therefore, using the USFWS bonneted bat consultation key (1a→2a→3b→6b), this project is anticipated to have "**no effect**" on the Florida bonneted bat.

Tricolored Bat (*Perimyotis subflavus*)

The tricolored bat is currently a ***proposed endangered*** species for federal listing with the **USFWS**. Additionally, although not federally protected, this species has state protections per Chapter 68A of the F.A.C. It is Florida's smallest bat and distinguished by its unique tricolored fur and pink forearms that contrast their black wings. This wide-ranging species is found throughout the central and eastern United States, and portions of Canada, Mexico, and Central America. Typically hibernating in caves and mines during the winter, tricolored bats in the southern U.S. have an increased utilization of culverts as hibernacula, with shorter hibernation durations and increased winter activity. The tricolored bat is mostly associated with forested habitats and requires habitat suitable for roosting, foraging, and commuting between winter and summer habitats. Roosting singly or in small groups, the tricolored bat prefers to roost in caves, tree foliage, tree cavities, Spanish moss, and man-made structures such as buildings and culverts. They form summer colonies in forested habitats, utilizing cavities, bark, and foliage. They forage most commonly over water courses and along forest edges.

Suitable roosting and foraging habitat was observed within the project study area. Additionally, the tricolored bat was recorded during acoustic surveys. A report summarizing the results of the 2023 acoustic survey is included in **Appendix G**. The anticipated effect determination is "**may affect, not likely to adversely affect**". As the timeline for construction is better defined, FDOT will adhere to the applicable commitment:

1. Upon listing of the tricolored bat, if the project contains suitable habitat and requires tree trimming and/or clearing, FDOT will not conduct tree trimming/clearing activities during the

tricolored bat pup season (May 1st to July 15th) and when bats may be in torpor (when temperatures are below 45 degrees Fahrenheit).

2. Upon listing of the tricolored bat, if the project contains suitable habitat and FDOT needs to trim or clear trees or perform work on bridges/culverts during the maternity season and/or when the temperature is below 45 degrees Fahrenheit, then FDOT will survey the project area for evidence of the tricolored bat. The Indiana Bat and Northern Long-eared Bat Survey Guidance (USFWS), Appendix J acoustic survey protocol in the year-round range (mist netting is not being conducted in Florida at this time), will be used for areas with tree trimming/clearing. For bridges and culverts, the Indiana Bat and Northern Long-eared Bat Survey Guidance, Appendix K, Assessing Bridges and Culverts for Bats, will be used.

a. If the surveys result in no tricolored bats detected, then FDOT can proceed with the project activities. Negative results from bridge/culvert surveys are valid for 2 years. Negative results for acoustic surveys are valid for 5 years. However, negative results for either survey may be invalidated if additional tricolored bat survey data is submitted to USFWS showing presence of the species within the vicinity of the project area. Additional survey work by FDOT, or application of the avoidance and minimization measures noted in #4, may be required if updated detections are reported, and may result in reinitiation of consultation with FWS.

b. If the surveys result in positive detections of the tricolored bat, FDOT will implement conservation measures such as: not conducting tree trimming/clearing activities during the tricolored bat pup season (May 1st to July 15th) when pups are not volant and not able to escape disturbance; similarly avoid tree trimming/clearing activities when the temperatures are below 45 degrees Fahrenheit when bats may be in torpor and unresponsive to disturbance.

Insect

Monarch Butterfly (*Danaus plexippus*)

The monarch butterfly is currently a ***proposed threatened*** species for federal listing by **USFWS**. Candidate species are those species whose status is currently under review to determine whether it warrants listing under the ESA. Candidate species receive no statutory protection under the ESA. USFWS encourages cooperative conservation efforts for these species because they are species that may warrant future protection under the ESA. Monarchs can be found throughout Florida (and the United States) with a preferred habitat that includes wildflowers and specifically milkweeds. Wildflowers were observed occasionally throughout the project study area, though there are no dedicated “do not mow” or “designated wildflower” areas along the project corridor. If the monarch butterfly is listed by USFWS as Threatened or Endangered and the project may affect the species, FDOT commits to re-initiating consultation with USFWS to determine appropriate avoidance and minimization measures for protection of the newly listed species.

Avian

Audubon’s Crested Caracara (*Polyborus plancus audubonii*)

The Audubon’s crested caracara (crested caracara) is listed as ***threatened*** by the **USFWS** and **FWC** and is a large, boldly patterned raptor with a crest. This species often inhabits open country, such as dry prairie and pasture lands with scattered cabbage palms, cabbage palm/live oak

hammocks, and shallow ponds and sloughs. It also requires cabbage palms or live oaks with low-growing surrounding vegetation for nesting. According to FNAI data, the crested caracara has not been documented within one (1) mile of the study area. However, the project study area lies within the USFWS crested caracara CA, and potential habitat for this species was observed within the project study. For these reasons, a technical guidance meeting with USFWS was held on November 8, 2022 for approval of the survey plan for the crested caracara. Crested caracara surveys were conducted during the 2023 breeding season in accordance with USFWS *Crested Caracara (Polyborus plancus audubonii) Draft Survey Protocol – Additional Guidance (2016-2017 Breeding Season)* issued December 2016. No crested caracaras were observed during these surveys (**Appendix H**). The results from the surveys conducted in 2023 were acceptable by the USFWS and the coordination with USFWS for this species is provided in **Appendix J**. Based on the presence of suitable nesting habitat but no observations, it has been determined that the project will have "**no effect**" on the crested caracara.

Florida Grasshopper Sparrow (*Ammodramus savannarum floridanus*)

The Florida grasshopper sparrow is a small, short-tailed, flat-headed sparrow that is listed as ***endangered*** by the **USFWS** and **FWC**. This species requires large areas of frequently burned dry prairie habitat with patchy open areas sufficient for foraging. It may persist in pasture lands that have not been intensively managed. The project study area lies within the USFWS Florida grasshopper sparrow CA. However, no suitable habitat for this species was observed within the project study area, and no individuals were observed during the field reviews. Additionally, according to FNAI data, the Florida grasshopper sparrow has not been documented within one (1) mile of the project study area. Based on this information, it has been determined that the project will have "**no effect**" on the Florida grasshopper sparrow.

Florida Scrub-Jay (*Aphelocoma coerulescens*)

The Florida scrub-jay is similar to the common blue jay in size and shape, with a pale blue crestless head, nape, wings, and tail. It is listed as ***threatened*** by the **USFWS** and **FWC**. Optimal Florida scrub-jay habitat consists of low growing, scattered scrub species with patches of bare sandy soil such as those found in sand pine scrub and scrubby flatwoods habitats that are occasionally burned. In areas where these types of habitats are unavailable, Florida scrub-jays may be found in less optimal habitats such as pine flatwoods with scattered oaks. The project study area lies within the USFWS Florida scrub-jay CA; however, no individuals or suitable habitat for this species was observed during field reviews. Additionally, according to FNAI data, the Florida scrub-jay has not been documented within one (1) mile of the project study area. Based on this information, it has been determined that the project will have "**no effect**" on the Florida scrub-jay.

Wood Stork (*Mycteria americana*)

The wood stork is a large, white, wading bird that is listed as ***threatened*** by the **USFWS** and **FWC**. The wood stork is opportunistic and utilizes various habitat types including freshwater marshes, swamps, lagoons, ponds, tidal creeks, flooded pastures, and ditches. Water that is relatively calm, uncluttered by dense aquatic vegetation, and with a permanent or seasonal water depth between 2 and 15 inches is considered suitable foraging habitat for this species. According

to FNAI data, the wood stork has not been documented within one (1) mile of the project study area. However, suitable foraging habitat for this species was observed within the project study area, and individuals were observed flying overhead during field reviews (**Figure 4-1 Species Observation Map**).

According to the USFWS wood stork colony website, the project study area is located within the core foraging areas of five (5) active wood stork colonies. These colonies have an 18.6-mile core foraging area buffer and include the Casey Key Sorrento Inlet, Blackburn Bay, North Port Charlotte, North Port Charlotte North, and Dona Bay colonies. All nesting colonies are greater than one (1) mile from the project study area (**Figure 4-2** Wood Stork Core Foraging Area Map). The primary concern for this species is loss of suitable foraging habitat within the Core Foraging Area (CFA) of a wood stork colony. Since anticipated foraging habitat impacts are more than 0.5 acres, a wood stork suitable foraging analysis was completed (**Appendix I**). The Preferred Alternative has 4.54 acres of wetlands that could be utilized by the wood stork for foraging. Wood stork foraging biomass productivity is calculated based on hydroperiods of class of affected wetlands. The Preferred Alternative will impact 0.47 acres of short hydroperiod wetlands and 4.07 acres of long hydroperiod wetlands and result in the net loss of 10.12 kg total (fish and crayfish) biomass.

FDOT will provide mitigation for impacts to wood stork suitable foraging habitat within the Service Area of a Service-approved wetland mitigation bank or wood stork conservation bank. Therefore, it has been determined that the proposed project "**may affect, not likely to adversely affect**" the wood stork. The path to this determination followed the USFWS Effect Determination Key for the Wood Stork in South Florida, steps A→B→C→E→MANLAA as shown in **Appendix I**.

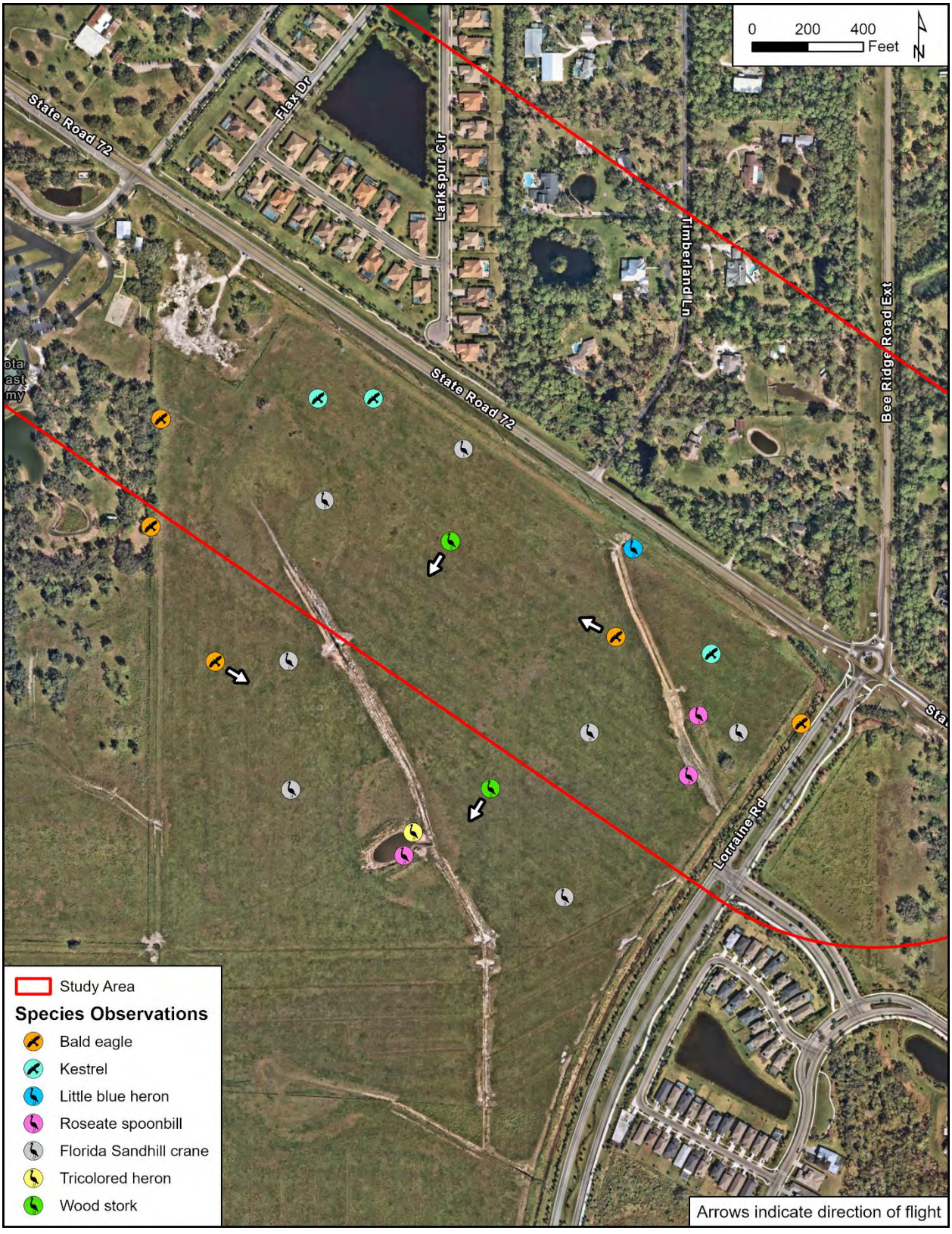

Figure 4-1 Species Observation Map

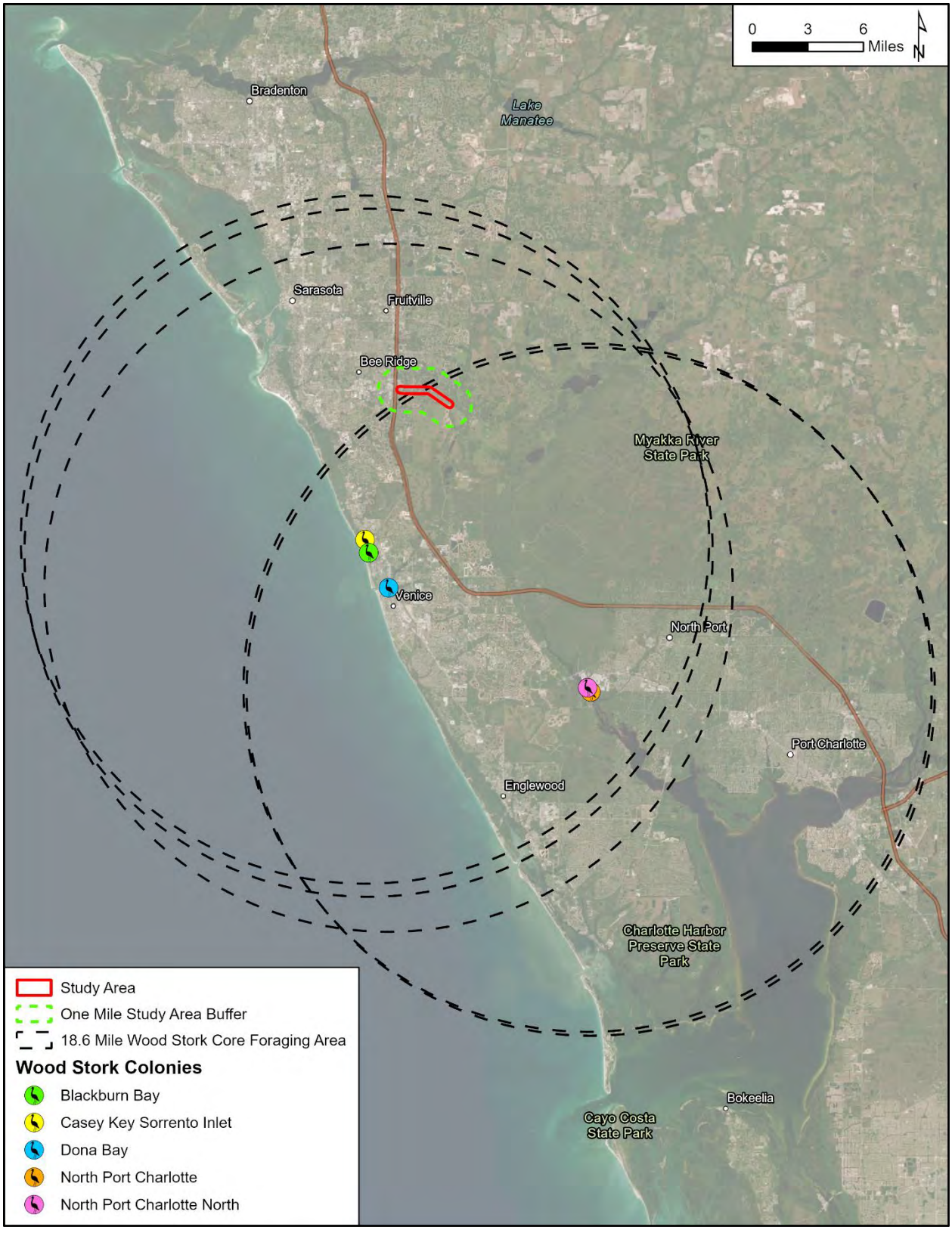

Figure 4-2 Wood Stork Core Foraging Area Map

4.2.2 State Protected Species

4.2.2.1 Flora

Celestial Lily (*Nemastylis floridana*)

The celestial lily is a perennial herb with a single, tall, slender stem and a dark blue flower that is listed as ***endangered*** by the **FDACS**. This species is a member of the iris (*Iridaceae*) family and occurs in wet flatwoods, prairies, marshes, and cabbage palm hammocks edges. Suitable habitat for this species was observed within the project study area. Additionally, according to FNAI data, the celestial lily has the potential to occur within the project study area; however, it has not been documented within one (1) mile of the project study area. During field reviews, this species was not observed within the project study area. Based on this information, it has been determined that the project will have "**no adverse effect anticipated**" on the celestial lily.

Florida Beargrass (*Nolina atopocarpa*)

Florida beargrass is a perennial herb with long, stiff leaves and clusters of small white flowers that is listed as ***threatened*** by the **FDACS**. This species is a member of the agave (*Agavaceae*) family and occurs on pine flatwoods and scrubby flatwoods. Suitable habitat for this species was not observed within the project study area. According to FNAI data, the Florida beargrass has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. Additionally, this species was not observed during field reviews of the project study area. Based on this information, it has been determined that the project will have "**no effect anticipated**" on the Florida beargrass.

Florida Spiny-Pod (*Matelea floridana*)

The Florida spiny-pod is a deciduous herbaceous vining plant that is listed as ***endangered*** by the **FDACS**. This species is a member of the milkweed (*Asclepiadaceae*) family and occurs on a variety of wooded habitats from fairly moist woods to upland hardwood forests. Suitable habitat for this species was observed within the project study area. According to FNAI data, the Florida spiny-pod has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. During field reviews, this species was not observed within the project study area. Based on this information, it has been determined that the project will have "**no adverse effect anticipated**" on the Florida spiny-pod.

Large-Plumed Beaksedge (*Rhynchospora megaplumosa*)

The large-plumed beaksedge is a perennial herb that often forms in clumps with short leaves which form rosettes and a single flowering stem. This species is listed as ***endangered*** by the **FDACS**. This species is a member of the sedges (*Cyperaceae*) family and occurs in sands and sandy peats of pine flatwoods scrub and flatwoods-sandscrub transition. Suitable habitat for this species was not observed within the project study area. According to FNAI data, the large-plumed beaksedge has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. During field reviews, this species was not observed within the project study area. Based on this information, it has been determined that the project will have "**no effect anticipated**" on the large-plumed beaksedge.

Lowland Loosestrife (*Lythrum flagellare*)

The lowland loosestrife is a low-growing, creeping wildflower with six (6) purple to pinkish petals that is listed as ***endangered*** by the **FDACS**. This species is a member of the loosestrife (*Lythraceae*) family. This species occurs within seasonally inundated habitats including wet prairies, floodplain marshes, and roadside ditches in mucky or sandy-peat-muck soils. Suitable habitat for this species was observed within the project study area. According to FNAI data, the lowland loosestrife has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. During field reviews, this species was not observed within the project study area. Based on this information, it has been determined that the project will have "**no adverse effect anticipated**" on the lowland loosestrife.

Many-Flowered Grass-Pink (*Calopogon multiflorus*)

The many-flowered grass-pink is a small plant with grass like leaves and dark pink flowers that is listed as ***threatened*** by the **FDACS**. This species is a member of the orchid (*Orchidaceae*) family and occurs on dry to moist flatwoods with longleaf pine, saw palmetto, and wiregrass. Suitable habitat for this species was not observed within the project study area. According to FNAI data, the many-flowered grass-pink has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. During field reviews, this species was not observed within the project study area. Based on this information, it has been determined that the project will have "**no effect anticipated**" on the many-flowered grass-pink.

Nodding Pinweed (*Lechea cernua*)

The nodding pinweed is a small erect forb that is listed as ***threatened*** by the **FDACS**. This species is a member of the rock-rose (*Cistaceae*) family and is found in deep sands, usually ancient dunes, on which the most common forest is a mixture of evergreen scrub oaks. Suitable habitat for this species was not observed within the project study area. According to FNAI data, the nodding pinweed has not been historically documented within one (1) mile of the project study area. Additionally, this species was not observed during the field reviews of the project study area. Based on this information, it has been determined that the project will have "**no effect anticipated**" on the nodding pinweed.

Sand Butterfly Pea (*Centrosema arenicola*)

The sand butterfly pea is a large perennial vine with purplish-blue flowers that is listed as ***endangered*** by the **FDACS**. This species is a member of the pea (*Fabaceae*) family and typically occurs on sandhill, scrubby flatwoods, and dry upland woods. Limited suitable habitat for this species was observed within the project study area. According to FNAI data, the sand butterfly pea has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. During field reviews, this species was not observed within the project study area. Based on this information, it has been determined that the project will have "**no adverse effect anticipated**" on the sand butterfly pea.

4.2.2.2 Fauna

Reptilian

Gopher Tortoise (*Gopherus polyphemus*)

The gopher tortoise is listed as ***threatened*** by the **FWC**. This species requires well-drained and loose sandy soils for burrowing and low-growing herbs and grasses for food. These conditions are best found in the sandhill (longleaf pine-xeric oak) community, although tortoises are known to use many other habitats including sand pine scrub, xeric oak hammocks, dry prairies, pine flatwoods, and ruderal sites. Suitable habitat for this species was observed within the project study area. According to FNAI data, individuals have not been documented within one (1) mile of the project study area. At the time of the site reviews, no gopher tortoise burrows were observed within or adjacent to the project study area. Surveys for gopher tortoise burrows, as well as commensal species, will be conducted during the design phase and permits to relocate tortoises and commensals as appropriate will be obtained from the FWC. With the implementation of these measures, it has been determined that this project will have "**no adverse effect anticipated**" on the gopher tortoise.

Avian

Florida Burrowing Owl (*Athene cunicularia floridana*)

The Florida burrowing owl is a small, ground-dwelling owl that is listed as ***threatened*** by the **FWC**. This species requires areas of short, herbaceous groundcover such as prairies, sandhills, and farmland. Suitable habitat for this species was observed within the project study area. No individuals were observed during field reviews and according to FNAI data, no individuals have been documented within one (1) mile of the project study area. Based on this information, it has been determined that the project will have "**no adverse effect anticipated**" on the Florida burrowing owl.

Florida Sandhill Crane (*Antigone canadensis pratensis*)

The Florida sandhill crane is a tall, long-necked, long-legged crane that is listed as ***threatened*** by the **FWC**. This species requires wet and dry prairies, marshes, and marshy lake edges. Nests are generally a mound of herbaceous plant material in shallow water or on the ground in marshy areas. According to FNAI data, no individuals have been documented within one (1) mile of the project study area. However, suitable habitat was observed within the project study area, and individuals were observed foraging during field reviews (**Figure 4-1 Species Observation Map**). Surveys for Florida sandhill crane nest sites will be conducted during the design phase. If it is determined nest areas are found and could be impacted by the project, FDOT will coordinate with FWC to determine appropriate avoidance and minimization measures to apply during construction. With the implementation of these measures, it has been determined that the project will have "**no adverse effect anticipated**" on the Florida sandhill crane.

Southeastern American Kestrel (*Falco sparverius paulus*)

The southeastern American kestrel is the smallest falcon in United States. This non-migratory subspecies of kestrel listed as ***threatened*** by the **FWC**. Kestrels are secondary cavity nesters

using abandoned woodpecker cavities and prefer to nest in open pine habitats, woodland edges, prairies, and pastures throughout much of Florida. Nest sites are in tall dead trees or utility poles generally with an unobstructed view of surroundings. Sandhill habitats seem to be preferred, but kestrels have been observed in flatwoods settings. Open patches of grass or bare ground are necessary for kestrels to effectively utilize flatwoods settings, since thick palmettos may prevent detection of prey. According to FNAI data, no individuals have been documented within one (1) mile of the project study area. Within the project study area, suitable habitat for the southeastern American kestrel was observed but is limited, and cavity trees were not observed during field reviews. Foraging kestrels were observed during field reviews; however, these observations occurred during the time of year in which both the migratory and listed non-migratory subspecies may be present (**Figure 4-1 Species Observation Map**). For this reason, the observer was unable to determine which species was present. No individuals or nests were observed during field reviews. Surveys for the Southeastern American Kestrel will be conducted during the nesting season (May through August) in the design phase. If it is determined nest areas are found and could be impacted by the project, FDOT will coordinate with FWC to determine appropriate avoidance and minimization measures to apply during construction. Based on this information, it has been determined that the project will have "**no adverse effect anticipated**" on the southeastern American kestrel.

Wading Birds - Little Blue Heron (*Egretta caerulea*), Tricolored Heron (*Egretta tricolor*), and Roseate Spoonbill (*Platalea ajaja*)

The little blue heron, tricolored heron, and roseate spoonbill are listed as ***threatened*** by the **FWC**. While each species is distinct, wading birds are discussed collectively since they occupy similar habitats and have similar feeding patterns. These wading birds' nest and forage among both fresh and saltwater habitats such as freshwater marshes, coastal beaches, mangrove swamps, cypress swamps, hardwood swamps, wet prairies, and bay swamps. The populations of these species have been primarily impacted by the destruction of wetlands for development and by the drainage of wetlands for flood control and agriculture. Suitable habitat for this species was observed within the project study area. According to FNAI data and the FWC Wading Bird Rookery Database, none of these species or rookeries has been documented within the project study area. However, the little blue heron, roseate spoonbill, and tricolored heron were observed foraging during field reviews (**Figure 4-1 Species Observation Map**).

The primary concern for impacts to these species is the loss of foraging habitat (wetlands). As part of implementing the proposed project, all wetland impacts will be mitigated to prevent a net loss of wetland habitat functions and values. Since the mitigation of impacts will be undertaken, it has been determined that the proposed project will have "**no adverse effect anticipated**" on the little blue heron, tricolored heron, and roseate spoonbill.

4.2.3 Other Species of Concern

Bald Eagle (*Haliaeetus leucocephalus*)

The bald eagle is a large raptor with a distinctive white head and yellow bill. This species was de-listed in 2007 by the USFWS. However, it remains federally protected under the Bald and Golden Eagle Protection Act (BGEPA) in accordance with the 16 United States Code 668 and the Migratory Bird Treaty Act of 1918. In addition, the FWC has implemented a bald eagle management plan. The bald eagle tends to utilize riparian habitat associated with coastal areas, lake shorelines, and riverbanks. Nests are generally located near water bodies that provide a dependable food source. Nests within Florida are monitored by the Florida Audubon – National Audubon Society. This group maintains a website of known bald eagle nest locations, which was last updated in 2023.

According to this database, one (1) active bald eagle nest is located within the project study area. This bald eagle nest, ID SA039, is located approximately 750 feet northwest of the intersection of SR 72 and Underhill Rd and was documented as occupied during the 2022-2023 nesting season (**Figure 4-3 Bald Eagle Location Map**). The project study area is also located within the primary (330 feet) buffer zone of another bald eagle nest, ID SA069. This nest was documented as inactive during the 2022-2023 nesting season. Additionally, bald eagles were repeatedly observed during field reviews foraging within the pasture located southwest of the intersection of SR 72 and Lorraine Rd (**Figure 4-1 Species Observation Map**). Surveys to update locations of active bald eagle nest sites will be conducted during the design phase, and permits will be acquired if there will be unavoidable impacts during construction. Coordination with USFWS and FWC will take place as necessary. With the implementation of these measures, it has been determined the project will have no anticipated impacts on this species.

Florida Black Bear (*Ursus americanus floridanus*)

The Florida black bear was removed from the FWC list of state-threatened species in August 2012; however, the Florida black bear remains protected under other rules and regulations, primarily through the Florida Black Bear Conservation Rule 68A-4.009 (F.A.C.) and the FWC Florida Black Bear Management Plan. Based on these regulations, pursuing, hunting, molesting, capturing, killing, or attempting those actions, whether or not such actions result in possession of the bear is unlawful. In addition, Rule 68A-4.009, F.A.C., generally prohibits anyone from possessing, injuring, shooting, wounding, trapping, collecting, or selling bears or their parts or attempting to engage in such actions without prior authorization from FWC. Black Bear Management Units (BMU) have also been established based on the seven (7) geographically distinct bear subpopulations in Florida. The project study area is located within the South Central BMU. Specifically, according to FWC, black bears occasionally occur in the project study area.

Black bears are adaptable and inhabit a variety of forested habitats including seasonally inundated pine flatwoods, tropical hammocks, hardwood swamps and xeric sand pine-scrub oak communities. Suitable habitat for this species was observed within the project study area. However, based on a review of GIS databases, there are no reported bear telemetry, nuisance reports, or road kills within one (1) mile of the project study area. Additionally, no black bears or evidence of black bears were observed during field reconnaissance.

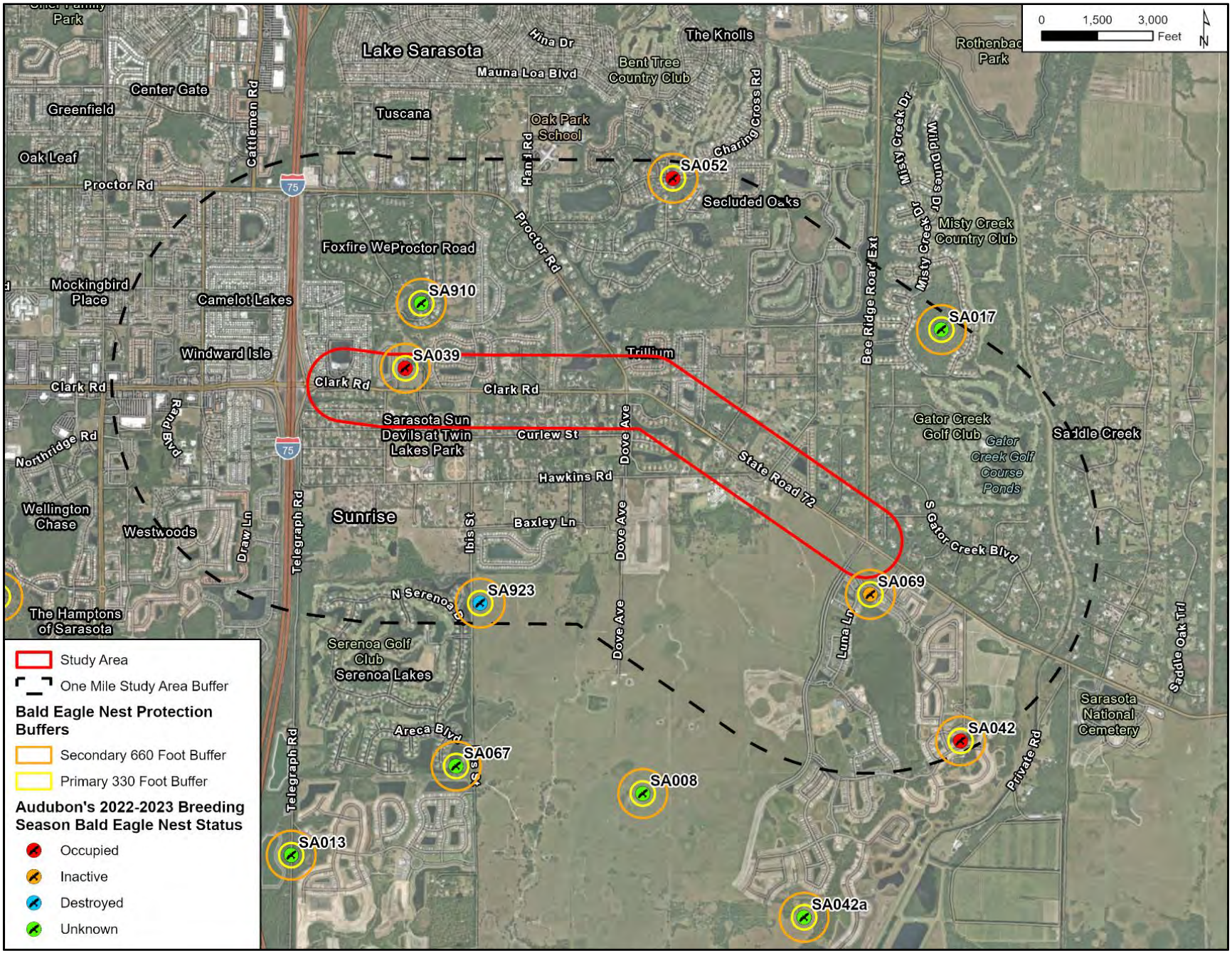

Figure 4-3 Bald Eagle Nest Location Map

Based on this information, it has been determined that the project will have no anticipated impacts on this species.

4.2.4 Critical Habitat

The project study area was evaluated for the occurrence of Critical Habitat as defined by the Endangered Species Act of 1973 as amended and 50 CFR part 424. The USFWS and NMFS have the authority to protect critical habitat from destruction or adverse modification of the biological or physical constituent elements essential to the conservation of listed species. Critical Habitat is defined as the specific areas within the geographical area occupied by a species on which are found those physical or biological features essential to the conservation of the species and which defined may require special management considerations or protection. No designated Critical Habitat for any federal listed species occurs within the project study area. Based on this information, no destruction or adverse modification of critical habitat will occur.

4.2.5 Secondary Impacts

Secondary effects are those that are reasonably certain to occur later in time as a result of the proposed project and may occur outside of the area directly affected by the proposed project. Potential secondary effects include increased noise, traffic, lighting and development, which could impact wildlife or result in a change in wildlife migration patterns by reducing habitat connectivity Secondary impacts of increased nuisance/exotic vegetation are anticipated adjacent to areas of direct disturbance. Species such as Brazilian pepper (*Schinus terebinthifolia*) and cogongrass (*Imperata cylindrica*) are particularly aggressive and successful colonizers. Therefore, the disturbance of construction may allow these species to colonize and outcompete native vegetation within a certain distance from the direct impact. Nuisance/exotic vegetation has negative impacts to native wildlife and their habitats as they take over the natural habitats upon which the species rely. Secondary impacts will be further defined and addressed through agency coordination during the project's design phase.

5.0 WETLANDS EVALUATION

Pursuant to Presidential EO 11990 entitled “Protection of Wetlands,” the United States Department of Transportation (USDOT) has developed the policy Preservation of the Nation’s Wetlands (USDOT Order 5660.1A), dated August 24, 1978, which requires all federally-funded highway projects to protect wetlands to the fullest extent possible. In accordance with this policy, the project study area was evaluated to assess potential wetland impacts that may be associated with the proposed improvements.

5.1 Wetland and Surface Water Impacts

The jurisdictional limits of wetlands and surface waters were estimated in accordance with the State unified wetland delineation methodologies as adopted by the Florida Department of Environmental Protection (FDEP) and the water management districts per Chapter 62-340, F.A.C. and described in *The Florida Wetlands Delineation Manual* and the USACE 1987 Wetland Delineation Manual and regional supplement. The extent and types of wetlands in the project study area were documented in accordance with EO 11990, Protection of Wetlands, and the Wetlands and Other Surface Waters chapter of the PD&E Manual.

An ETDM Programming Screen Summary Report was published on February 3, 2022 containing comments from the ETAT on the project’s effects on various natural, physical and social resources. The U.S. Army Corps of Engineers, National Marine Fisheries Service, U.S. Environmental Protection Agency (EPA), USFWS, and SWFWMD were commenting agencies for Wetlands and Surface Waters. The following comments were provided for consideration:

- If there are wetland impacts and ERP or exemption verification is required;
- Wetlands will need to be delineated with avoidance and minimization of wetland impacts applied;
- Unavoidable wetland impacts need to be assessed for mitigation; and
- Existing culverts will need to be modified.

For the purposes of this document, wetlands are defined as per 62.340 F.A.C. and Section 373.019 (27), F.S. Surface waters are defined as open water bodies. Formal wetland boundary delineation and surveys were not conducted as part of this study and will be completed as part of the state and federal permit process.

Potential direct and secondary impacts to wetlands and surface waters were assessed for the Preferred Alternative (**Tables 5-1 and 5-2)**. Direct impacts associated with the Preferred Alternative include 3.00 acres of wetlands, 3.76 acres of surface waters, and 4.27 acres of other surface waters. Secondary impacts associated with the Preferred Alternative include 0.96 acres of wetlands and 0.18 acres of surface waters. A map showing the locations of the proposed wetland and surface water impacts and description of each type associated with the Preferred Alternative is provided in **Appendix C**.

Table 5-1 Proposed Wetland, Surface Water, and Other Surface Water Direct Impacts

Name	FLUCFCS Classification	FLUCFCS Description	USFWS Classification	Impact Acreage
Wetlands				
WL-1, WL-2, and WL-5	630	Wetland Forested Mixed	PFO1/3	0.46
WL-3 and WL-4	641	Freshwater Marshes	PEM1F	0.79
WL-6	641	Freshwater Marshes	PEM1F	1.75
Total Direct Wetland Impacts				**3.00**
Surface Waters				
SW-1, SW-3 to 11, SW-13 to 15, and SW-17 to 24	510	Streams and Waterways	R4SBC	2.41
SW-25	510	Streams and Waterways	R4SBC	0.03
SW-2, SW-12, and SW-16	530	Reservoirs	PUBHx	1.32
Total Direct Surface Water Impacts				**3.76**
Other Surface Waters				
OSW-1 to 25 and OSW-29 to 41	510	Streams and Waterways	R4SBC	4.26
OSW-26 and OSW-27	530	Reservoirs	PUBHx	0.01
Total Direct Other Surface Water Impacts				**4.27**
Total Direct Impacts				**11.03**

WL: Wetland; SW: Surface Water; OSW: Other Surface Water
PFO1/3: Palustrine, Forested, Broad-leaved Deciduous, Broad-leaved Evergreen
PEM1F: Palustrine, Emergent, Persistent, Semi-permanently Flooded
R4SBC: Riverine, Intermittent, Streambed, Seasonally Flooded
PUBHx: Palustrine, Unconsolidated Bottom, Permanently Flooded, excavated

Table 5-2 Proposed Wetland, Surface Water, and Other Surface Water Secondary Impacts

Name	FLUCFCS Classification	FLUCFCS Description	USFWS Classification	Impact Acreage
Wetlands				
WL-1, WL-2, WL-5, WL-7, and WL-8	630	Wetland Forested Mixed	PFO1/3	0.51
WL-3 and WL-4	641	Freshwater Marshes	PEM1F	0.45
Total Secondary Wetland Impacts				**0.96**
Surface Waters				
SW-1, SW-7, SW-13, SW-23, and SW-26	510	Streams and Waterways	R4SBC	0.09
SW-25	510	Streams and Waterways	R4SBC	0.02
SW-16	530	Reservoirs	PUBHx	0.07
Total Secondary Surface Water Impacts				**0.18**
Total Secondary Impacts				**1.14**

WL: Wetland; SW: Surface Water; OSW: Other Surface Water
PFO1/3: Palustrine, Forested, Broad-leaved Deciduous, Broad-leaved Evergreen
PEM1F: Palustrine, Emergent, Persistent, Semi-permanently Flooded
R4SBC: Riverine, Intermittent, Streambed, Seasonally Flooded
PUBHx: Palustrine, Unconsolidated Bottom, Permanently Flooded, excavated

5.2 Uniform Mitigation Assessment Methodology

The Uniform Mitigation Assessment Methodology (UMAM) per Chapter 62-345, F.A.C., is a state and federally approved method used to assess wetlands in the State of Florida. UMAM was developed by the FDEP and the water management districts to determine the amount of mitigation required to offset adverse impacts to wetlands. The methodology was designed to assess functions provided by wetlands, the amount those functions are reduced by a proposed impact, and the amount of mitigation necessary to offset the proposed functional losses. This method is also used to determine the degree of improvement in ecological value that will be created by proposed mitigation activities.

5.3 Uniform Mitigation Assessment Methodology Results

Representative UMAM scores were developed for each wetland and surface water habitat type (by FLUCFCS category) affected by the proposed project.

To calculate functional loss within the Preferred Alternative, the change in the existing condition (current) scores and the proposed condition (with) scores was divided by the maximum total score for each habitat type. This value was then multiplied by the acreage of proposed impact. The completed UMAM data sheets for each habitat type within the Preferred Alternative are provided in **Appendix D**. Functional loss was calculated by habitat type for the Preferred Alternative. Construction of the Preferred Alternative would result in an estimated loss of 3.643 functional units. Of the total 3.643 functional unit loss, 3.567 result from direct impacts and 0.076 result from secondary impacts.

These UMAM calculations are estimates and are based on current existing conditions. The UMAM scores and values presented in **Table 5-3** are subject to agency review and may change during the state and federal permitting process.

Table 5-3 Estimated UMAM[1] Functional Loss for Wetlands and Surface Waters

Name	FLUCFCS Classification	FLUCFCS Description	USFWS Classification	UMAM Delta	Impact Acreage	Functional Loss
Direct Impacts						
WL-1, WL-2, and WL-5	630	Wetland Forested Mixed	PFO1/3	0.57	0.46	0.261
WL-3 and WL-4	641	Freshwater Marshes	PEM1F	0.57	0.79	0.448
WL-6	641	Freshwater Marshes	PEM1F	0.53	1.75	0.933
SW-1, SW-3 to 11, SW-13 to 15, and SW-17 to 24	510	Streams and Waterways	R4SBC	0.50	2.41	1.205
SW-25	510	Streams and Waterways	R4SBC	0.53	0.03	0.016
SW-2, SW-12, and SW-16	530	Reservoirs	PUBHx	0.53	1.32	0.704
Total Direct Impacts					**6.76**	**3.567**
Secondary Impacts						
WL-1, WL-2, WL-5, WL-7, and WL-8	630	Wetland Forested Mixed	PFO1/3	0.07	0.51	0.034
WL-3 and WL-4	641	Freshwater Marshes	PEM1F	0.07	0.45	0.030
SW-1, SW-7, SW-13, SW-23, and SW-26	510	Streams and Waterways	R4SBC	0.07	0.09	0.006
SW-25	510	Streams and Waterways	R4SBC	0.07	0.02	0.001
SW-16	530	Reservoirs	PUBHx	0.07	0.07	0.005
Total Secondary Impacts					**1.14**	**0.076**
Total Impacts					**7.90**	**3.643**

[1]UMAM scores have not been approved by permitting agencies and are subject to change during the permitting process.
WL: Wetland; SW: Surface Water; OSW: Other Surface Water
PFO1/3: Palustrine, Forested, Broad-leaved Deciduous, Broad-leaved Evergreen
PEM1F: Palustrine, Emergent, Persistent, Semi-permanently Flooded
R4SBC: Riverine, Intermittent, Streambed, Seasonally Flooded
PUBHx: Palustrine, Unconsolidated Bottom, Permanently Flooded, excavated

5.4 Avoidance and Minimization

Wetlands and surface waters were considered in the alternatives analysis selection of the Preferred Alternative. A detailed alternatives analysis is included in the Preliminary Engineering Report under separate cover.

FDOT District One has undertaken all actions to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities. Measures have been taken to minimize harm to wetlands including minimizing water quality impacts from stormwater discharges from roadway surfaces through the use of stormwater management systems. The proposed project will have no significant short-term or long-term adverse impacts to wetlands and there is no practicable alternative to construction in wetlands. Any unavoidable impacts to wetlands will be mitigated to achieve no net loss of wetland function. Impacts to wetlands are unavoidable for the Preferred Alternative due to their location within the study area.

5.5 Secondary and Cumulative Impacts

Secondary effects are those impacts that are reasonably certain to occur later in time as a result of the proposed project. They may occur outside of the area directly affected by the proposed project. Cumulative effects include the effects of future state, local, or private actions that are reasonably certain to occur in the project study area. Secondary and cumulative impacts will be further defined and addressed through agency coordination during the project's design phase. Secondary impacts of edge effects may occur. At locations where natural areas meet development, edge effects such as increased cover of nuisance/exotic vegetation and changes in microclimate generally take place. All wetlands within the Preferred Alternative project footprint already experience edge effects due to the existing roadway that are present within the project study area. The severity of these edge effects will vary based on pre-existing exposure to habitat alteration. It is anticipated that edge effects migrate to the new transitional area between remaining wetlands and new construction and would be greater in previously undisturbed areas. In areas designated for stormwater treatment, secondary impacts of increased nuisance/exotic vegetation are anticipated. Species such as Brazilian pepper and cogongrass are particularly aggressive and successful colonizers within newly disturbed areas. Therefore, the disturbance of construction may allow these species to colonize and outcompete native vegetation. Nuisance/exotic vegetation has negative impacts to wetlands and surface waters as these species may take over native vegetation. Since wetland impacts resulting from the construction of this project will be mitigated, no cumulative impacts are anticipated to occur. Using a matrix for a quantitative analysis of the impacts and costs and a qualitative analysis of the major project issues, the Preferred Alternative was selected. Direct and secondary wetland impacts will be further assessed during the design phase for this project and will also include identification of mitigation needs to offset any unavoidable wetland impacts, at which time mitigation required will be quantified and pursued.

5.6 Mitigation

In 2008, the USACE and the EPA issued regulations governing compensatory mitigation for activities authorized by the Department of the Army. These regulations, as promulgated in 33

Code of Federal Regulations (CFR) Part 332, establish a hierarchy for determining the type and location of compensatory mitigation. To briefly summarize, the rule establishes a preference for the use of mitigation bank credits if a mitigation bank has the appropriate number and resource type of credits available. If the permitted impacts are not in the service area of an approved mitigation bank, or if the appropriate number and resource type of credits are otherwise unavailable, then the rule establishes a preference for in lieu fee program credits. If an approved mitigation bank or in-lieu fee program cannot be used to provide the required compensatory mitigation, the rule establishes a preference for permittee responsible mitigation conducted under a watershed approach. Wetland impacts which will result from the construction of this project will be mitigated pursuant to Section 373.4137, F.S., to satisfy all mitigation requirements of Part IV of Chapter 373, F.S., and 33 U.S.C. §1344. Compensatory mitigation for this project will be completed through the use of mitigation banks and any other mitigation options that satisfy state and federal requirements. The proposed project will have no significant short-term or long-term adverse impacts to wetlands because any unavoidable impacts to wetlands will be mitigated to achieve no net loss of wetland function.

The project study area is currently located within the South Coastal Drainage Basin. However, at this time, there are no mitigation credits available for purchase within this drainage basin. A Cumulative Impacts Analysis (CIA) can be conducted to show no cumulative loss of wetlands will happen and provide the opportunity to purchase mitigation credits outside of the project's drainage basin if credits are not available at an approved mitigation within the project drainage basin. Alternatively, other compensatory mitigation options will be considered during the permitting phase(s) of this project.

All UMAM scores, UMAM calculations, preliminary wetland lines and determinations discussed are subject to revision and approval by regulatory agencies during the permitting process. Additionally, the exact type of mitigation used to offset wetland impacts from the proposed SR 72 improvements will be coordinated with the SWFWMD during the permitting phase(s) of this project.

6.0 ESSENTIAL FISH HABITAT

The Magnuson-Stevens Fishery Conservation and Management Act (16 USC 1801 et seq. Public Law 104-208) reflects the Secretary of Commerce and Fishery Management Council's authority and responsibilities for the protection of essential fishery habitat. The Act specifies that each federal agency shall consult with the Secretary with respect to any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by such agency that may adversely affect any EFH identified under this Act.

The EFH evaluation was conducted in accordance with the Essential Fish Habitat chapter of the FDOT PD&E Manual as well as the Magnusson-Stevens Fishery Conservation and Management Act. Based on the evaluation of the habitat within and adjacent to the project area, neither the aquatic habitat nor emergent wetlands meet the definition of EFH. In addition, NMFS EFH mapper was used to locate areas classified as EFH within the project area, though none were identified. With the habitats of the project area not meeting the criteria for classification as EFH and lack of existing EFH classification, there is no involvement with this resource.

7.0 PERMITTING REQUIREMENTS AND COORDINATION

The SWFWMD and USACE regulate impacts to wetlands within the project study area. Other agencies, including the USFWS, NMFS, EPA, and the FWC, review and comment on wetland permit applications. The FWC also issues permits for gopher tortoise relocation activities and incidental takes for state protected avian species. The USFWS is the lead agency for eagle nest take permitting or coordination. The complexity of the permitting process will depend on the size of the project and/or the extent of wetland impacts. It is anticipated that the following permits will be required for this project:

Permit	Issuing Agency
Environmental Resource Permit (ERP)	SWFWMD
Section 404 Permit	USACE
National Pollutant Discharge Elimination System (NPDES)	FDEP
Gopher Tortoise Relocation Permit (as necessary)	FWC
Incidental Take Permit (as necessary)	FWC

Environmental Resource Permit

The project limits are located within the SWFWMD boundary. SWFWMD requires an ERP when construction of any project results in the creation of a new or modification of an existing surface water management system or results in impacts to waters of the state, including wetlands. The complexity associated with the ERP permitting process will depend on the size of the project and/or the extent of wetland impacts. Under current state rules, the SWFWMD will likely require an individual permit for this project.

Section 404 Dredge and Fill Permit

It is anticipated that a Standard Section 404 Dredge and Fill permit will be required from the USACE. The permit will require compliance with the 404(b)(1) guidelines, including verification that all wetland impacts have first been avoided to the greatest extent possible, that unavoidable impacts have been minimized to the greatest extent possible, and lastly that unavoidable impacts have been mitigated in the form of wetlands creation, restoration, and/or enhancement. Pre-application meetings will be held with the USACE during the design phase of the proposed project.

NPDES

40 CFR Part 122 prohibits point source discharges of stormwater to waters of the U.S. without a NPDES permit. Under the State of Florida's delegated authority to administer the NPDES program, construction sites that will result in greater than one (1) acre of disturbance must file for and obtain either coverage under an appropriate generic permit contained in Chapter 62-621, F.A.C., or an individual permit issued pursuant to Chapter 62-620, F.A.C. A major component of

the NPDES permit is the development of a Stormwater Runoff Control Concept (SRCC). The SRCC identifies potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges from the site and discusses good engineering practices (i.e., best management practices) that will be used to reduce the pollutants. The contractor will be responsible for obtaining the NPDES permit.

Gopher Tortoise Relocation Permit (as necessary)

At the time of the site reviews, no gopher tortoise burrows were observed within or adjacent to the project study area. Surveys for gopher tortoise burrows, as well as commensal species, will be conducted during the design phase and permits to relocate tortoises and commensals as appropriate will be obtained from the FWC.

In accordance with the requirements of Rules 68A-25.002 and 68A-27.004 F.A.C., a permit for gopher tortoise capture/release activities must be secured from FWC before initiating any relocation work. The FWC will require a 100 percent gopher tortoise survey to be conducted within 90 days of the relocation work.

Incidental Take Permit (as necessary)

Based on field reviews, suitable foraging and nesting habitat exists within the project study area for the species listed in **Section 5.2.2**. In accordance with 68A-27.001(4), 68A-27.003(a), 68A-25.002(10), 68A-27.003(2)(a), 68A-27.001(4), 68A-1.004, and 68A-27.005 F.A.C., a permit for removal of state protected species must be secured from the FWC before initiating incidental take.

While avoidance and minimization are the preferred course of actions, a Listed Species Incidental Take Permit is available for situations that require the removal of these species. Further technical assistance will be reinitiated during the design phase of the project if needed.

8.0 CONCLUSIONS

8.1 Protected Species and Habitat

The project study area was evaluated for the presence of federal and/or state protected species and their suitable habitat in accordance with Section 7 of the ESA and the Protected Species and Habitat chapter of the PD&E Manual. **Tables 7-1** and **7-2** summarize the impact determination that has been made for each federal and state listed species based upon their probability ranking and the implementation measures and/or commitments to offset any potential impacts to each species. Other species of concern including the bald eagle and Florida black bear were determined to not be impacted by the project.

Table 8-1 Federal Protected Species Impact Determinations

Project Impact Determination	Federal Listed Species	Status*
"No effect"	Aboriginal prickly-apple (*Harrisia aboriginum*)	FE
	Audubon's crested caracara (*Polyborus plancus audubonii*)	FT
	Florida bonneted bat (*Eumops floridanus*)	FE
	Florida grasshopper sparrow (*Ammodramus savannarum floridanus*)	FE
	Florida scrub-jay (*Aphelocoma coerulescens*)	FT
	Pygmy fringe tree (*Chionanthus pygmaeus*)	FE
"May affect, but is not likely to adversely affect"	Tricolored bat (*Perimyotis subflavus*)	PE
	Eastern indigo snake (*Drymarchon couperi*)	FT
	Wood stork (*Mycteria americana*)	FT

*FE: Federally Endangered; FT: Federally Threatened; PE: Proposed Endangered

Table 8-2 State Protected Species Impact Determinations

Project Impact Determination	State Listed Species	Status*
"No effect anticipated"	Florida beargrass (*Nolina atopocarpa*)	ST
	Large-plumed beaksedge (*Rhynchospora megaplumosa*)	SE
	Many-flowered grass-pink (*Calopogon multiflorus*)	ST
	Nodding pinweed (*Lechea cernua*)	ST
"No adverse effect anticipated"	Celestial lily (*Nemastylis floridana*)	SE
	Florida sandhill crane (*Antigone canadensis pratensis*)	ST
	Florida spiny-pod (*Matelea floridana*)	SE
	Florida burrowing owl (*Athene cunicularia floridana*)	ST
	Gopher tortoise (*Gopherus polyphemus*)	ST
	Little blue heron (*Egretta caerulea*)	ST
	Lowland loosestrife (*Lythrum flagellare*)	SE
	Roseate spoonbill (*Platalea ajaja*)	ST
	Sand butterfly pea (*Centrosema arenicola*)	SE
	Southeastern American kestrel (*Falco sparverius paulus*)	ST
	Tricolored heron (*Egretta tricolor*)	ST

*SE: State endangered; ST: State threatened

8.2 Wetland Evaluation

The proposed project alternatives were evaluated for impacts to wetlands in accordance with EO 11990 and the Wetlands and Other Surface Waters chapter of the PD&E Manual. The proposed project will not have significant short-term and long-term adverse impacts to wetlands. In accordance with EO 11990, FDOT District One has undertaken all actions to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities. Nonetheless, FDOT District One has determined that there is no practicable alternative to construction impacts occurring in wetlands. Any unavoidable impacts to wetlands will be mitigated to achieve no net loss of wetland function.

A UMAM analysis (**Appendix D**) was performed to determine an estimate to the functional loss due to wetland impacts from the Preferred Alternative. Construction of the Preferred Alternative results in an estimated total of 7.90 acres of direct and secondary wetland and surface water impacts with an associated functional loss of 3.643 units (**Table 5-3**).

Wetland impacts which will result from the construction of this project will be mitigated pursuant to Section 373.4137, F.S. to satisfy all mitigation requirements of Part IV Chapter 373, F.S. and 33 U.S.C. 1344. Compensatory mitigation for this project will be completed through the use of mitigation banks and any other mitigation options that satisfy state and federal requirements.

8.3 Implementation Measures

Based on the field and literature reviews outlined in this report, federal or state-listed protected species have the potential to occur within the project study area. To assure that the proposed project will not adversely impacts these species, FDOT District One will adhere to the following:

- Surveys for gopher tortoise burrows, as well as commensal species, will be conducted during the design phase and permits to relocate tortoises and commensals as appropriate will be obtained from the FWC.
- Surveys for Florida sandhill crane nest sites will be conducted during the design phase. If it is determined nest areas are found and could be impacted by the project, FDOT will coordinate with FWC to determine appropriate avoidance and minimization measures to apply during construction.
- Surveys for the southeastern American kestrel will be conducted during the nesting season (May through August) in the design phase. If it is determined nest areas are found and could be impacted by the project, FDOT will coordinate with FWC to determine appropriate avoidance and minimization measures to apply during construction.
- Surveys to update locations of active bald eagle nest sites will be conducted during the design phase, and permits will be acquired if there will be unavoidable impacts during construction. Coordination with USFWS and FWC will take place as necessary.

8.4 Commitments

Based on the field and literature reviews outlined in this report, federal or state-listed species have the potential to occur within the project study area. In order to assure that the proposed project will not adversely impacts these species, FDOT District One will make the following commitments:

- FDOT will provide mitigation for impacts to wood stork suitable foraging habitat within the Service Area of a Service-approved wetland mitigation bank or wood stork conservation bank.
- Upon listing of the tricolored bat, if the project contains suitable habitat and requires tree trimming and/or clearing, FDOT will not conduct tree trimming/clearing activities during the tricolored bat pup season (May 1st to July 15th) and when bats may be in torpor (when temperatures are below 45 degrees Fahrenheit).
- Upon listing of the tricolored bat, if the project contains suitable habitat and FDOT needs to trim or clear trees or perform work on bridges/culverts during the maternity season and/or when the temperature is below 45 degrees Fahrenheit, then FDOT will survey the project area for evidence of the tricolored bat. The Indiana Bat and Northern Long-eared Bat Survey Guidance (USFWS), Appendix J acoustic survey protocol in the year-round range (mist netting is not being conducted in Florida at this time), will be used for areas with tree trimming/clearing. For bridges and culverts, the Indiana Bat and Northern Long-eared Bat Survey Guidance, Appendix K, Assessing Bridges and Culverts for Bats, will be used.

    a. If the surveys result in no tricolored bats detected, then FDOT can proceed with the project activities. Negative results from bridge/culvert surveys are valid for 2 years. Negative results for acoustic surveys are valid for 5 years. However, negative results for either survey may be invalidated if additional tricolored bat survey data is submitted to USFWS showing presence of the species within the vicinity of the project area. Additional survey work by FDOT, or application of the avoidance and minimization measures noted in #4, may be required if updated detections are reported, and may result in reinitiation of consultation with FWS.

    b. If the surveys result in positive detections of the tricolored bat, FDOT will implement conservation measures such as: not conducting tree trimming/clearing activities during the tricolored bat pup season (May 1st to July 15th) when pups are not volant and not able to escape disturbance; similarly avoid tree trimming/clearing activities when the temperatures are below 45 degrees Fahrenheit when bats may be in torpor and unresponsive to disturbance.
- If the monarch butterfly is listed by USFWS as Threatened or Endangered and the project may affect the species, FDOT commits to re-initiating consultation with USFWS to determine appropriate avoidance and minimization measures for protection of the newly listed species.

- The most recent version of the USFWS Standard Protection Measures for the Eastern Indigo Snake will be adhered to during construction of the proposed project.

8.5 Agency Coordination

The ETAT evaluated the project's effects on various natural, physical and social resources. ETAT comments are summarized in **Section 4.0 and 5.1**. A technical guidance meeting with the USFWS was held on November 11, 2022 to determine the implementation of specific actions and measures relative to federal protected species with available suitable habitat within the project study area (**Appendix J**).

9.0 REFERENCES

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APPENDIX A
Soils Descriptions and Map

10 – EauGallie, Myakka fine sands and 0 to 2 percent slopes

EauGallie and Myakka fine sands are poorly drained and sits nearly level on flats of mesic or hydric lowlands. The slopes range from 0 to 2 percent. The water table sits at a depth of 6 to 18 inches. Permeability is very high throughout, and the available water capacity is moderately high. EauGallie and Myakka fine sands are not classified as hydric by the *Hydric Soils of Florida Handbook* , but it may contain hydric inclusions.

22 – Holopaw fine sand, frequently ponded, 0 to 1 percent slopes

Holopaw fine sand is very poorly drained sits nearly level to concave and can be found on stream terraces, flood plains, or in depressions. Its slopes are 0 to 1 percent and the water table is typically at the surface. Permeability ranges from rapidly permeable to moderately slowly permeable depending on the composition of the horizon, and the available water capacity is high. The *Hydric Soils of Florida Handbook* classifies Holopaw fine sand as hydric.

30 – Ona fine sand, 0 to 2 percent slopes

Ona fine sand is poorly drained, nearly level, and found on flats of mesic or hydric lowlands. Its slopes are 0 to 2 percent. The water table sits at a depth of 6 to 18 inches for periods of 4 to 6 months during most years. Permeability is very high, and the available water capacity is moderately high to high. Ona fine sand is not classified as hydric by the *Hydric Soils of Florida Handbook* .

31 – Pineda-Pineda, wet, fine sand, 0 to 2 percent slopes

Pineda-Pineda, wet, fine sand is poorly drained and can be found on broad low flats, hammocks, sloughs, depressions, and poorly defined drainageways and flood plains. They formed in thick beds of sandy and loamy marine sediments. Its slopes are 0 to 1 percent and sits nearly level to concave. The water table sits at a depth of 6 to 18 inches. Permeability is very high, and the available water capacity is high. The *Hydric Soils of Florida Handbook* classifies Pineda-Pineda, wet, fine sand, 0 to 2 percent slopes as hydric.

51 – Bradenton fine sand-Urban land complex, 0 to 2 percent slopes

Bradenton fine sand-Urban land complex is poorly drained and can be found on flats of hydric or mesic lowlands. Its slopes range from 0 to 2 percent and sits nearly level to convex. The water table sits at a depth of 3 to 18 inches. Permeability is very high, and the available water capacity is moderately high to high. The *Hydric Soils of Florida Handbook* classifies Bradenton fine sand-Urban land, 0 to 2 percent slopes, complex as hydric.

55 – EauGallie-Myakka fine sands-Urban land complex, 0 to 2 percent slopes

EauGallie-Myakka fine sands-Urban land complex is poorly drained and found on flats of mesic or hydric lowlands. Its slopes range from 0 to 2 percent and sits nearly level to convex. The water table sits at a depth of 6 to 18 inches. Permeability is very high throughout, and the available water capacity is moderately high. EauGallie-Myakka fine sands-Urban land complex are not classified as hydric by the Hydric Soils of Florida Handbook .

62 – Gator-Gator, drained mucks, ponded-Urban land complex, 0 to 1 percent slopes

Gator-Gator, drained mucks, ponded-Urban land complex is very poorly drained and can be found in depressions and on flood plains. Its slopes are less than 1 percent. They are saturated with water that is always at or above the surface except during extended droughts. Permeability is rapid in the surface layers and moderate in the loamy parts of the in the subsurface layers. The *Hydric Soils of Florida Handbook* classifies Gator-Gator, drained mucks, ponded-Urban land complex as hydric.

63 – Holopaw fine sand, ponded-Urban land complex, 0 to 1 percent slopes

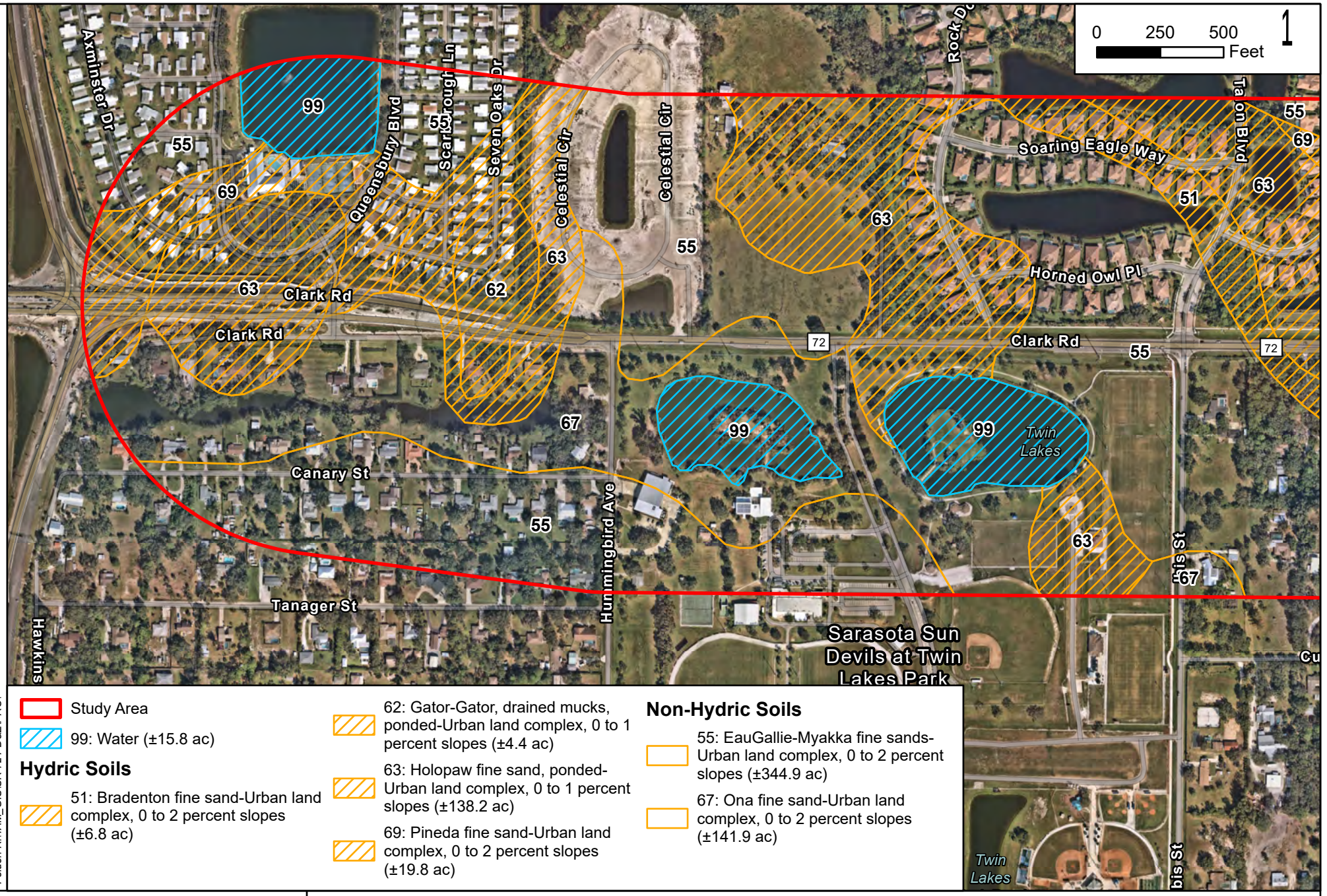
Holopaw fine sand, ponded-Urban land complex is a very poorly drained soil that sits nearly level to concave and can be found on stream terraces, flood plains, or in depressions. Its slopes are 0 to 1 percent and the water table is typically at the surface. Permeability ranges from rapidly permeable to moderately slowly permeable depending on the composition of the horizon, and the available water capacity is high. The *Hydric Soils of Florida Handbook* classifies Holopaw fine sand, ponded-Urban land complex as hydric.

67 – Ona fine sand-Urban land complex, 0 to 2 percent slopes

Ona fine sand-Urban land complex is poorly drained, nearly level, and found on flats of mesic or hydric lowlands. Its slopes are 0 to 2 percent. The water table sits at a depth of 6 to 18 inches for periods of 4 to 6 months during most years. Permeability is very high, and the available water capacity is moderately high to high. Ona fine sand-Urban land complex is not classified as hydric by the *Hydric Soils of Florida Handbook* .

69 – Pineda fine sand-Urban land complex, 0 to 2 percent slopes

Pineda fine sand-Urban land complex is poorly drained and can be found on broad low flats, hammocks, sloughs, depressions, and poorly defined drainageways and flood plains. Its slopes are 0 to 1 percent and sits nearly level to concave. The water table sits at a depth of 6 to 18 inches. Permeability is very high, and the available water capacity is high. The *Hydric Soils of Florida Handbook* classifies Pineda fine sand-Urban land complex as hydric.



Study Area

99: Water (±15.8 ac)

Hydric Soils

51: Bradenton fine sand-Urban land complex, 0 to 2 percent slopes (±6.8 ac)

62: Gator-Gator, drained mucks, ponded-Urban land complex, 0 to 1 percent slopes (±4.4 ac)

63: Holopaw fine sand, ponded-Urban land complex, 0 to 1 percent slopes (±138.2 ac)

69: Pineda fine sand-Urban land complex, 0 to 2 percent slopes (±19.8 ac)

Non-Hydric Soils

55: EauGallie-Myakka fine sands-Urban land complex, 0 to 2 percent slopes (±344.9 ac)

67: Ona fine sand-Urban land complex, 0 to 2 percent slopes (±141.9 ac)

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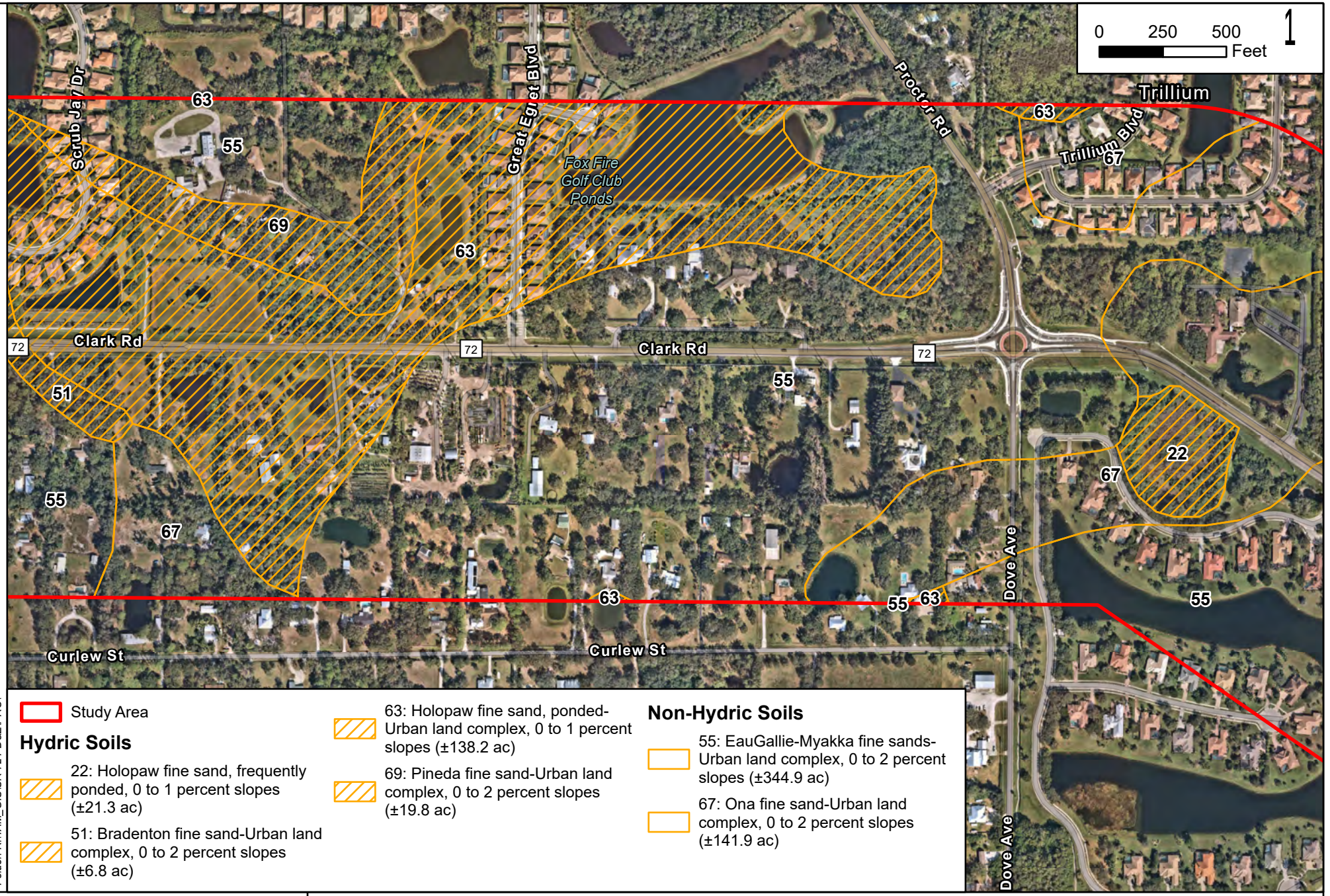
FDOT

NRCS Soils Map

State Road 72 (Clark Road)
From East of I-75 to Lorraine Road
Sarasota County, Florida

1 IN = 500 FT	PROJECT NUMBER: 249161000	NOVEMBER 2023	PAGE 1 OF 4



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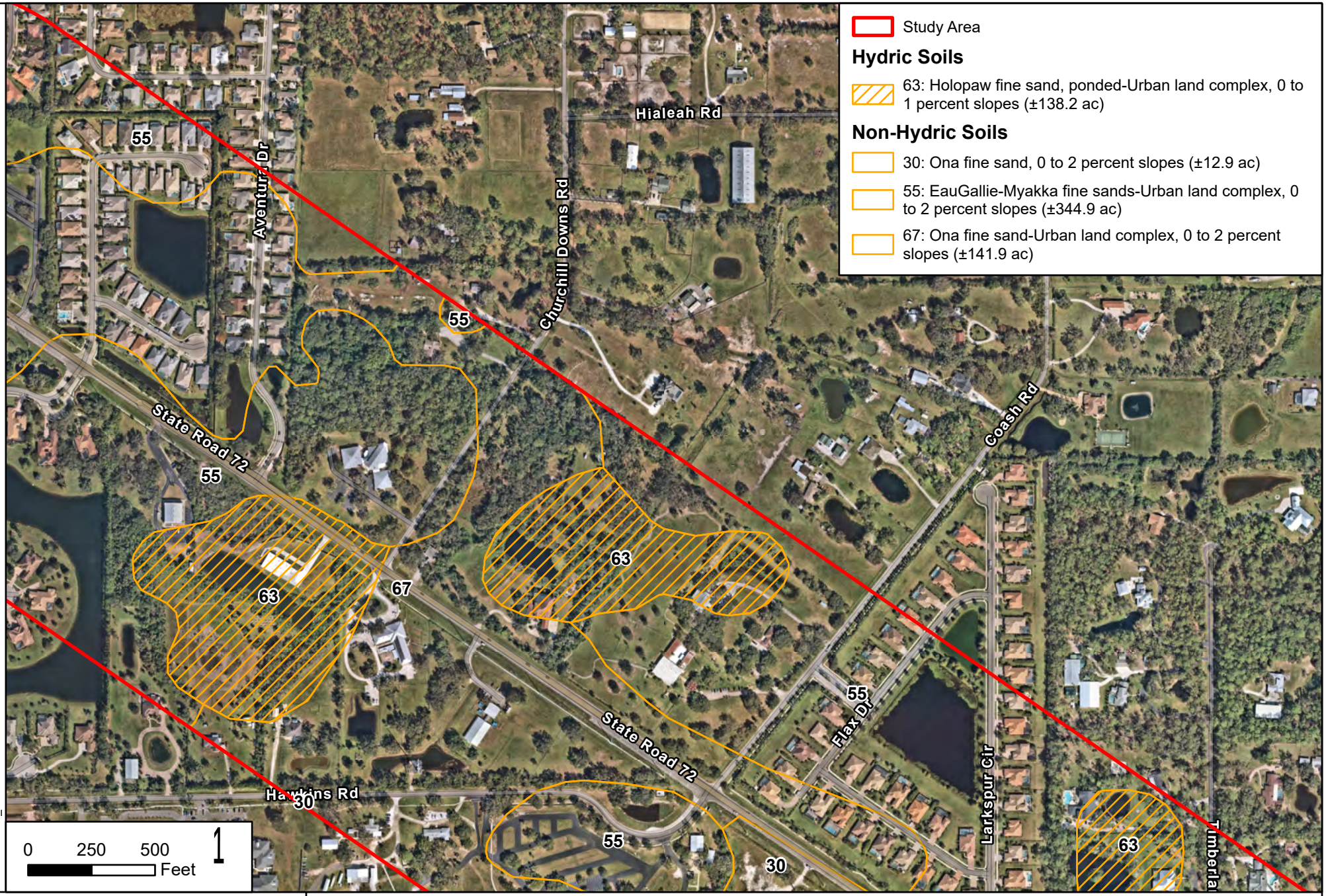
FDOT

NRCS Soils Map

State Road 72 (Clark Road)
From East of I-75 to Lorraine Road
Sarasota County, Florida

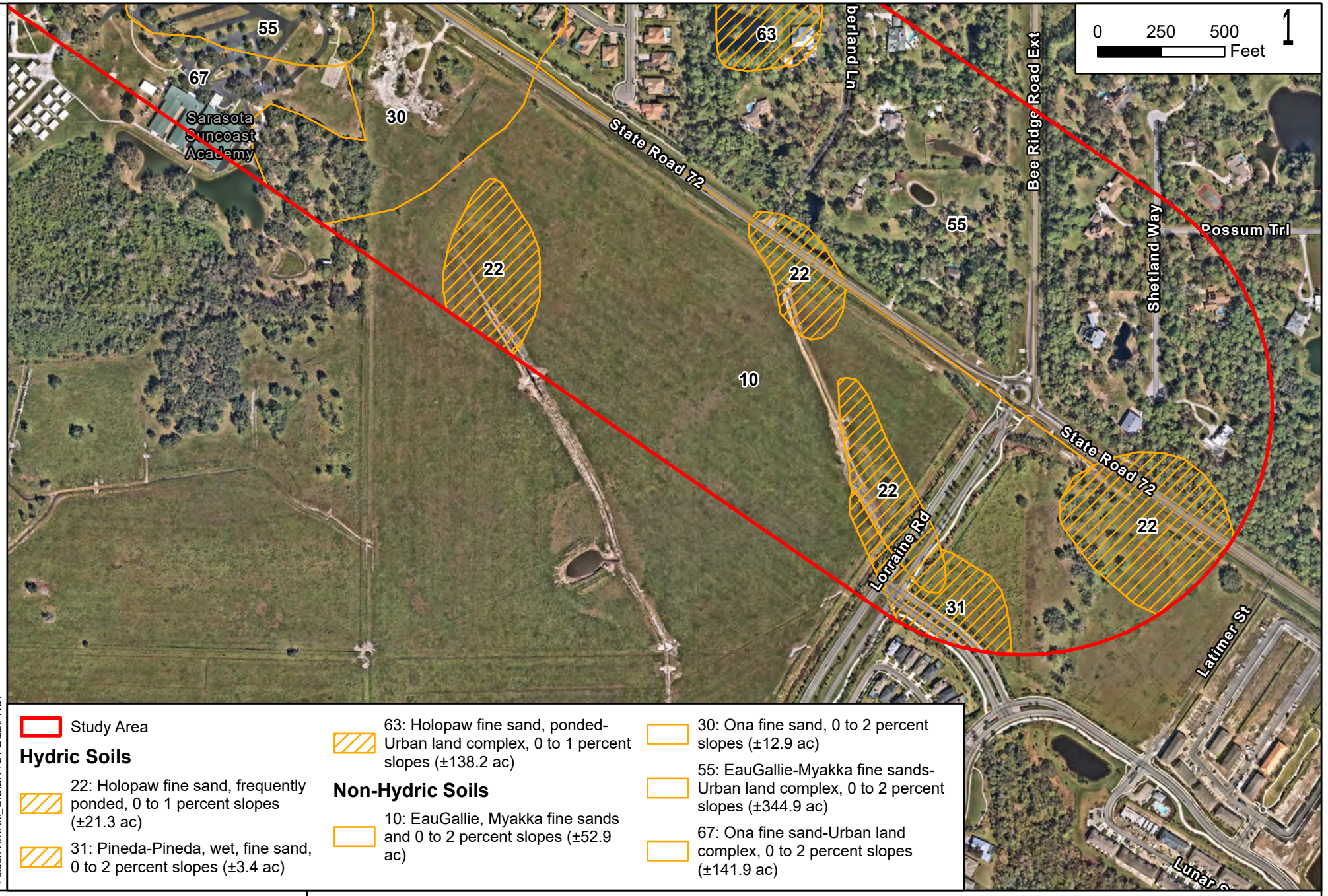
1 IN = 500 FT	PROJECT NUMBER: 249161000	NOVEMBER 2023	PAGE 2 OF 4



NRCS Soils Map

State Road 72 (Clark Road)
From East of I-75 to Lorraine Road
Sarasota County, Florida

1 IN = 500 FT	PROJECT NUMBER: 249161000	NOVEMBER 2023	PAGE 3 OF 4



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FDOT

NRCS Soils Map

State Road 72 (Clark Road)
From East of I-75 to Lorraine Road
Sarasota County, Florida

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APPENDIX B
Upland Land Use and Habitat Descriptions and Map

Upland Land Use and Habitats

FLUCFCS: 110 (Residential Low Density, Less Than Two Dwelling Units Per Acre)
This land use is classified as residential low density as it contains less than two (2) dwelling units per acre. Several areas of this land use are located throughout the whole project study area. Residential low density land use comprises 178.2 acres (23.4 percent) of the project study area.

FLUCFCS: 120 (Residential Medium Density, Two to Five Dwelling Units Per Acre)
This land use is classified as residential medium density as it contains two (2) to five (5) dwelling units per acre. This land use is concentrated at the southwestern extent of the project study area and southeast of the intersection of State Road 72 (SR 72) and Dove Avenue (Ave). Residential medium density land use comprises 47.9 acres (6.3 percent) of the project study area.

FLUCFCS: 130 (Residential High Density)
This land use is classified as residential high density as it contains greater than five (5) dwelling units per acre. This land use is concentrated along the entire north side of SR 72 within the project study area. Residential high density land use comprises 104.5 acres (13.7 percent) of the project study area.

FLUCFCS: 140 (Commercial and Services)
This commercial and services land use consists of land associated with the distribution of products and services, including secondary structures such as sheds, warehouses, office buildings, driveways, parking lot, and landscaped areas. This land use can be found in several areas within the project study area. These areas are located southwest of the intersection of SR 72 and Hummingbird Ave, south of the intersection of SR 72 and Great Egret Boulevard (Blvd), north of the intersection of SR 72 and Coash Road (Rd), and along the southern side of SR 72 from Preservation Drive (Dr) to Hawkins Rd. Commercial and services comprises 36.0 acres (4.7 percent) of the project study area.

FLUCFCS: 170 (Institutional)
This land use consists of four (4) areas within the project study area. An educational facility is located southwest of the intersection of SR 72 and Hawkins Rd; religious land use is located north of the intersection of SR 72 and Churchill Downs Rd and northwest of SR 72 and Sandhill Lake Dr; and governmental land use is located east of the intersection of Canary Street (St) and Hummingbird Ave. Vegetation within these areas is dominated by bahiagrass (*Paspalum notatum*) with scattered or landscaped species such as red cedar (*Juniperus virginiana*), crape myrtle (*Lagerstroemia indica*), live oak (*Quercus virginiana*), and cabbage palm (*Sabal palmetto*). These areas comprise 34.2 acres (4.5 percent) of the project study area.

FLUCFCS: 180 (Recreational)
This land use is located along the southern side of SR 72 from Hummingbird Ave to Ibis St. Vegetation within this area is dominated by mowed bahiagrass with scattered live oak, cabbage palm, and slash pine (*Pinus elliottii*). Recreational land use comprises 33.7 acres (4.4 percent) of the project study area.

FLUCFCS: 190 (Open Land)

This land use comprises undeveloped land which does not exhibit any structures or any indication of intended use. Open land is located along the north side of SR 72 between Talon Blvd and Great Egret Blvd and between Proctor Rd and Great Egret Blvd around a large reservoir located along the northern boundary of the project study area. This land use is dominated by bahiagrass with Brazilian pepper (*Schinus terebinthifolia*), live oak, and cabbage palm primarily concentrated along the edges of these areas. Open land comprises 7.0 acres (0.9 percent) of the project study area.

FLUCFCS: 210 (Cropland and Pastureland)

Cropland and pastureland fall under the agriculture classification and is composed of land which has been cleared, tilled, reseeded with specific grasses, and regularly improved with brush control and fertilizer. This land use is scattered throughout the eastern extent of the project study area and one (1) area located northwest of the intersection of SR 72 and Underhill Rd. Dominant vegetation within these areas is bahiagrass, with dogfennel (*Eupatorium capillifolium*), slash pine, cabbage palm, and laurel oak (*Quercus laurifolia*) scattered throughout. Cropland and pastureland comprise 71.2 acres (9.3 percent) of the project study area.

FLUCFCS: 434 (Upland Hardwood - Coniferous Mixed)

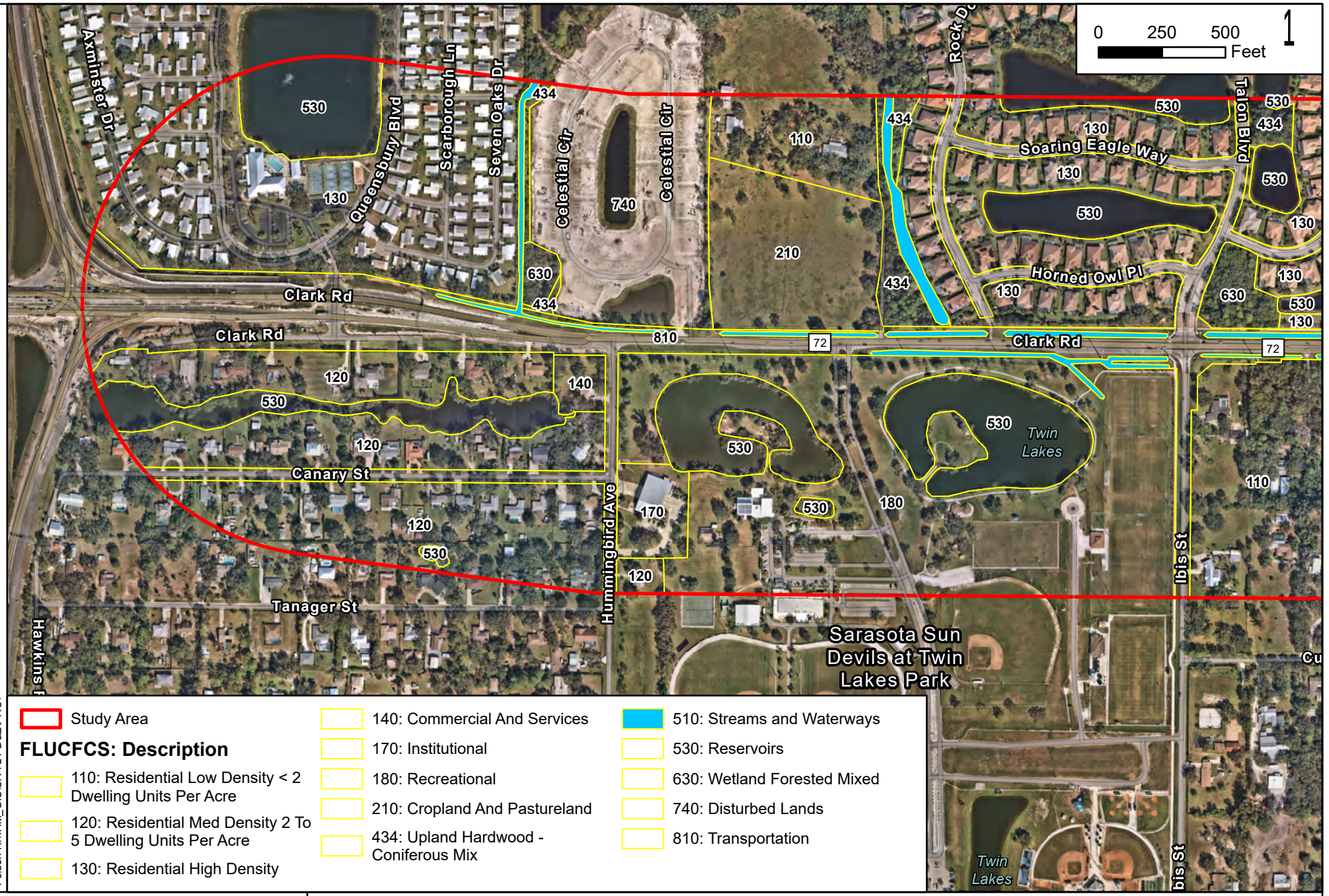
The hardwood-conifer mixed land use includes forested uplands in which neither upland conifers nor hardwoods achieve 66 percent crown canopy dominance. Dominant vegetation within these communities consists of slash pine, live oak, and cabbage palm. Hardwood - conifer mixed communities are scattered throughout the project study along the north side of SR 72. Hardwood-coniferous mixed communities comprise 35.4 acres (4.6 percent) of the project study area.

FLUCFCS: 740 (Disturbed Lands)

This land use includes areas which have been changed due primarily to human activities. In the project study area, this land use consists of a cleared and graded area located north of the intersection of SR 72 and Hummingbird Ave with little to no vegetation. Another area of this land use is an apparent equipment staging area located southeast of the intersection of SR 72 and Hawkins Rd with some slash pine, live oak, dogfennel, caesarweed (*Urena lobata*), and bahiagrass. Disturbed land use comprises 19.5 acres (2.6 percent) of the project study area.

FLUCFCS: 810 (Transportation)

The roads and highways land use are transportation facilities used for the movement of people and goods and encompass all areas used for intersections and ROW, including pavement, medians, and buffers. Located throughout the project study area, this land use type includes the existing SR 72 and associated roadways. Roads and highways comprise 93.9 acres (12.3 percent) of the project study area.



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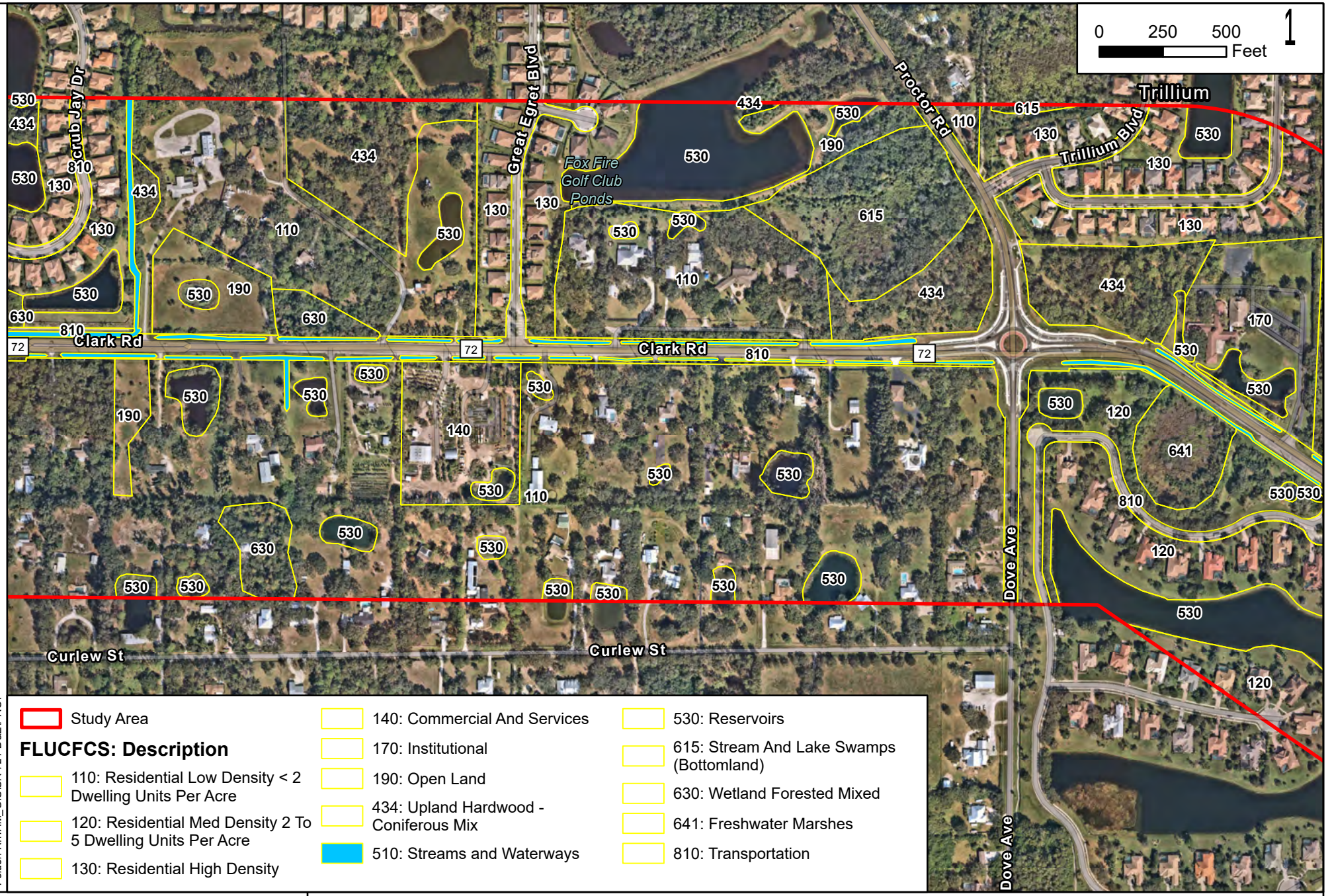
FDOT

Florida Land Use, Cover, and Forms Classification System Map

State Road 72 (Clark Road)
From East of I-75 to Lorraine Road
Sarasota County, Florida

1 IN = 500 FT	PROJECT NUMBER: 249161000	NOVEMBER 2023	PAGE 1 OF 4



Study Area

FLUCFCS: Description

- 110: Residential Low Density < 2 Dwelling Units Per Acre
- 120: Residential Med Density 2 To 5 Dwelling Units Per Acre
- 130: Residential High Density
- 140: Commercial And Services
- 170: Institutional
- 190: Open Land
- 434: Upland Hardwood - Coniferous Mix
- 510: Streams and Waterways
- 530: Reservoirs
- 615: Stream And Lake Swamps (Bottomland)
- 630: Wetland Forested Mixed
- 641: Freshwater Marshes
- 810: Transportation

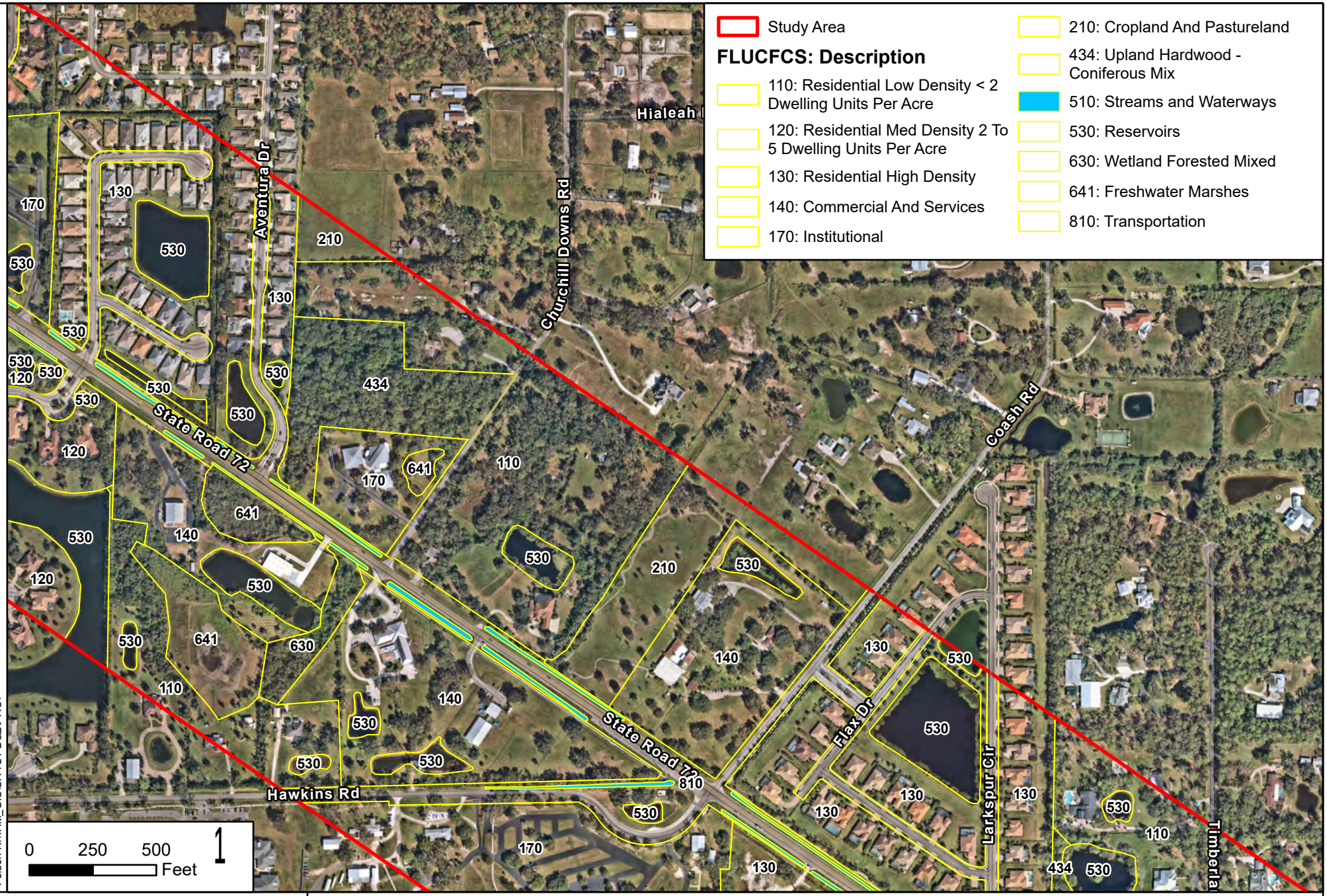
Folder: K:\TAM_GIS\SR 72 PD&E\PRO\

FDOT

Florida Land Use, Cover, and Forms Classification System Map

State Road 72 (Clark Road)
From East of I-75 to Lorraine Road
Sarasota County, Florida

1 IN = 500 FT	PROJECT NUMBER: 249161000	NOVEMBER 2023	PAGE 2 OF 4

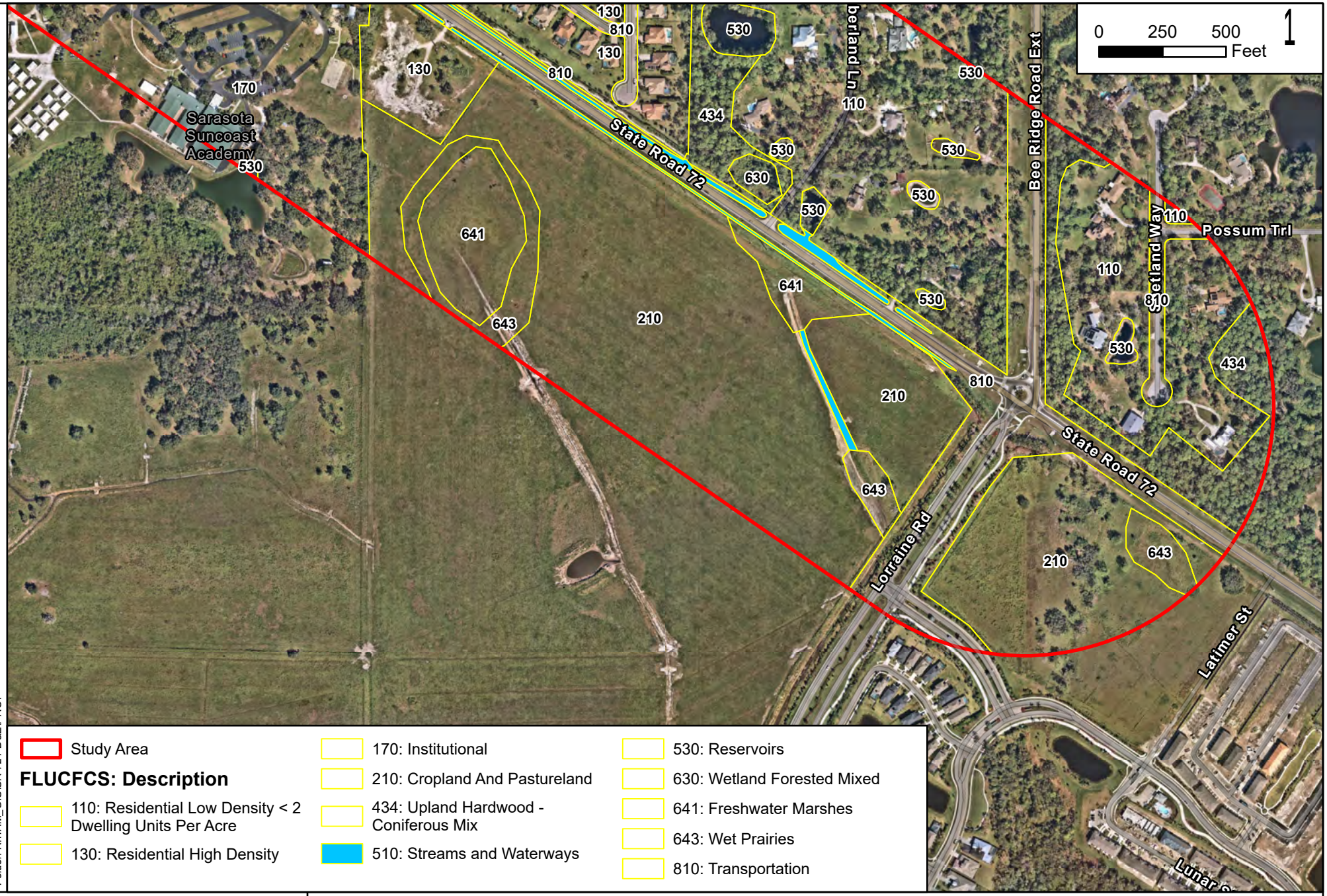


FDOT

Florida Land Use, Cover, and Forms Classification System Map

State Road 72 (Clark Road)
From East of I-75 to Lorraine Road
Sarasota County, Florida

1 IN = 500 FT	PROJECT NUMBER: 249161000	NOVEMBER 2023	PAGE 3 OF 4



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Study Area

FLUCFCS: Description

- 110: Residential Low Density < 2 Dwelling Units Per Acre
- 130: Residential High Density
- 170: Institutional
- 210: Cropland And Pastureland
- 434: Upland Hardwood - Coniferous Mix
- 510: Streams and Waterways
- 530: Reservoirs
- 630: Wetland Forested Mixed
- 641: Freshwater Marshes
- 643: Wet Prairies
- 810: Transportation

FDOT

Florida Land Use, Cover, and Forms Classification System Map

State Road 72 (Clark Road)
From East of I-75 to Lorraine Road
Sarasota County, Florida

1 IN = 500 FT	PROJECT NUMBER: 249161000	NOVEMBER 2023	PAGE 4 OF 4

APPENDIX C
Wetland and Surface Water Descriptions and Map

Wetland and Surface Water Habitats

FLUCFCS: 510 (Streams and Waterways)
USFWS: R4SBC (Riverine, Intermittent, Streambed, Seasonally Flooded)

Streams and waterways include rivers, creeks, canals, and other linear water bodies. This classification includes upland and wetland cut ditches located along SR 72 and associated roadways within the study area and within the pasture located at the eastern extent of the project study area. Vegetation observed within and along the littoral edge of these waterways included cattail (*Typha* sp.), primrose willow (*Ludwidia* spp.), maidencane (*Hymenachne hemitomon*), torpedo grass (*Panicum repens*), bahiagrass (*Paspalum notatum*), softrush, (*Juncus* sp.), spadeleaf (*Centella asiatica*), and frogfruit (*Phyla nodifora*). Within the Preferred Alternative, this classification includes SW-1, SW-3 – 11, SW-13 – 15, SW-17 – 26, OSW-1 – 25, OSW-29 – 41. Streams and waterways comprise 9.0 acres (1.2 percent) of the project study area.

FLUCFCS: 530 (Reservoirs)
USFWS: PUBHx (Palustrine, Unconsolidated Bottom, Permanently Flooded, excavated)

Reservoirs are artificial impoundments of water. Several reservoirs are scattered throughout the project study area. Vegetation observed within the littoral edge of the reservoirs included laurel oak (*Quercus laurifolia*), cabbage palm (*Sabal palmetto*), Brazilian pepper (*Schinus terebinthifolia*), Carolina willow (*Salix caroliniana*), primrose willow, cattail, softrush, and duckweed (*Lemna* sp.). Within the Preferred Alternative, this classification includes SW-2, SW-12, SW-16, OSW-26, and OSW-27. Reservoirs comprise 64.6 acres (8.5 percent) of the project study area.

FLUCFCS: 615 (Streams and Lake Swamps, Bottomland)
USFWS: PFO1Fd (Palustrine, Forested, Broad-Leaved Deciduous, Partly Drained/Ditched)

Streams and lake swamps (bottomland) are characterized as overflow area and are dominated by hardwood species. This habitat type can be found northwest of the intersection of State Road 72 (SR 72) and Proctor Rd and north of Trillium Boulevard (Blvd) within the project study area. Vegetation observed in this habitat included laurel oak, red maple (*Acer rubrum*), and buttonbush (*Cephalanthus occidentalis*). There are no wetland systems of this type within the Preferred Alternative. Streams and lake swamps (bottomland) comprise 8.2 acres (1.1 percent) of the project study area.

FLUCFCS: 630 (Wetland Forested Mixed)
USFWS: PFO1/3 (Palustrine, Forested, Broad-leaved Deciduous, Broad-leaved Evergreen)

This habitat type includes mixed wetland forest communities in which neither hardwood nor conifers dominate the canopy. One (1) of these communities is located approximately 300 feet northwest of the intersection of SR 72 and Hummingbird Ave, two (2) are located north of SR 72 between Talon Blvd and Great Egret Blvd, one (1) community is approximately 0.25 miles southeast of the intersection of SR 72 and Ibis Street (St), one (1) community can be found southwest of the intersection of SR 72 and Churchill Downs Rd, and one (1) community is directly northwest of the intersection of SR 72 and Timberland Lane. Vegetation observed in

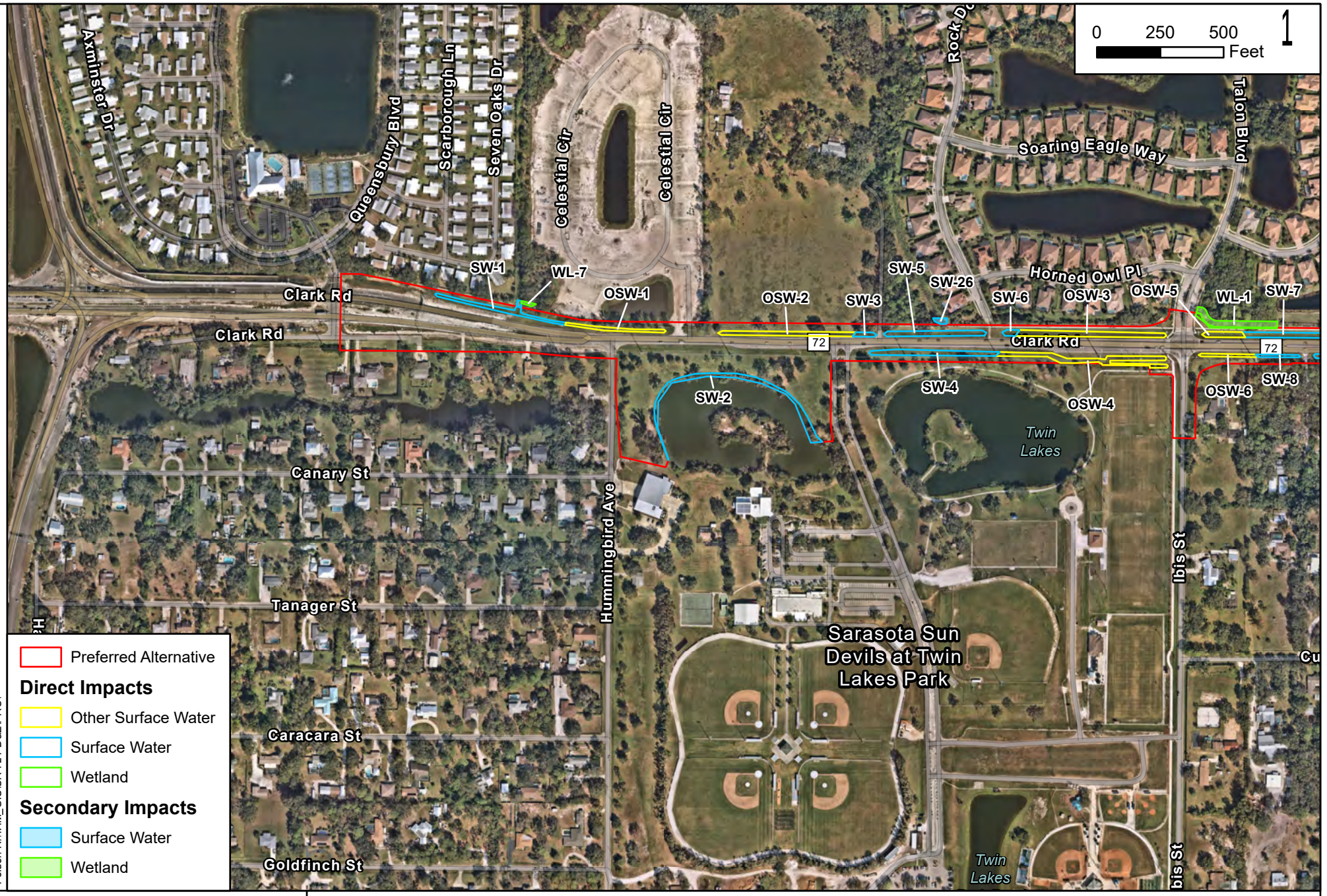
this habitat included Brazilian pepper, laurel oak, cabbage palm, red maple, punktree (*Melaleuca quinquenervia*), and sweetbay (*Magnolia virginiana*). Within the Preferred Alternative, this classification includes WL-1, WL-2, WL-5, WL-7, and WL-8. Wetland forested mixed communities comprise 7.8 acres (1.0 percent) of the project study area.

FLUCFCS: 641 (Freshwater Marshes)
USFWS: PEM1F (Palustrine, Emergent, Persistent, Semi-permanently Flooded)

Freshwater marsh is characterized by its lack of tree cover and falls under the vegetated non-forested wetlands classification. These communities are concentrated within the eastern half of the project study area. Four (4) freshwater marshes can be found along SR 72 between the intersections of Dove Avenue (Ave) and Churchill Downs Rd, and two (2) freshwater marshes can be found within the pasture west of Lorraine Rd. Vegetation observed in this habitat included buttonbush, primrose willow, Carolina willow, torpedo grass, bahiagrass, whitetop sedge (*Rhynchospora colorata*), yellow-eyed grass (*Xyris* sp.), and various sedges (*Carex* sp.). Within the Preferred Alternative, this classification includes WL-3, WL-4, and WL-6. Freshwater marsh communities comprise 15.2 acres (2.0 percent) of the project study area.

FLUCFCS: 643 (Wet Prairies)
USFWS: PEM1Fd (Palustrine, Emergent, Persistent, Semi-permanently Flooded, Partly Drained/Ditched)

This habitat type is composed predominately of grassy vegetation on hydric soils and is distinguished from marshes by having less water and shorter herbage. Three (3) of these communities are located within the pastures found at the eastern extent of the project study area. Vegetation observed within this habitat included bahiagrass, whitetop sedge, and yellow-eyed grass. There are no wetland systems of this type within the Preferred Alternative. Wet prairies comprise 4.9 acres (0.6 percent) of the project study area.



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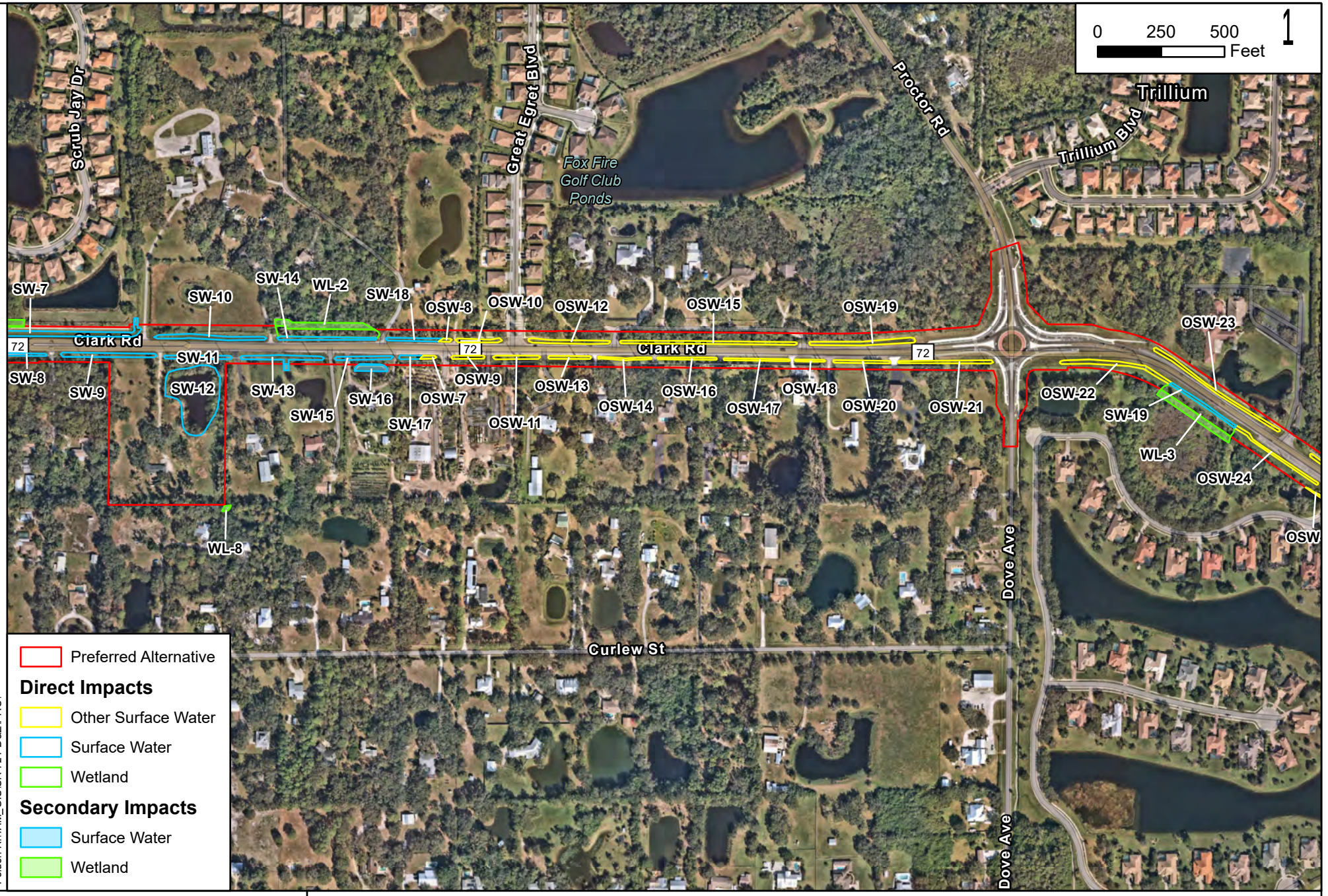
FDOT

Wetlands and Surface Waters Map

State Road 72 (Clark Road)
From East of I-75 to Lorraine Road
Sarasota County, Florida

1 IN = 500 FT	PROJECT NUMBER: 249161000	NOVEMBER 2023	PAGE 1 OF 4



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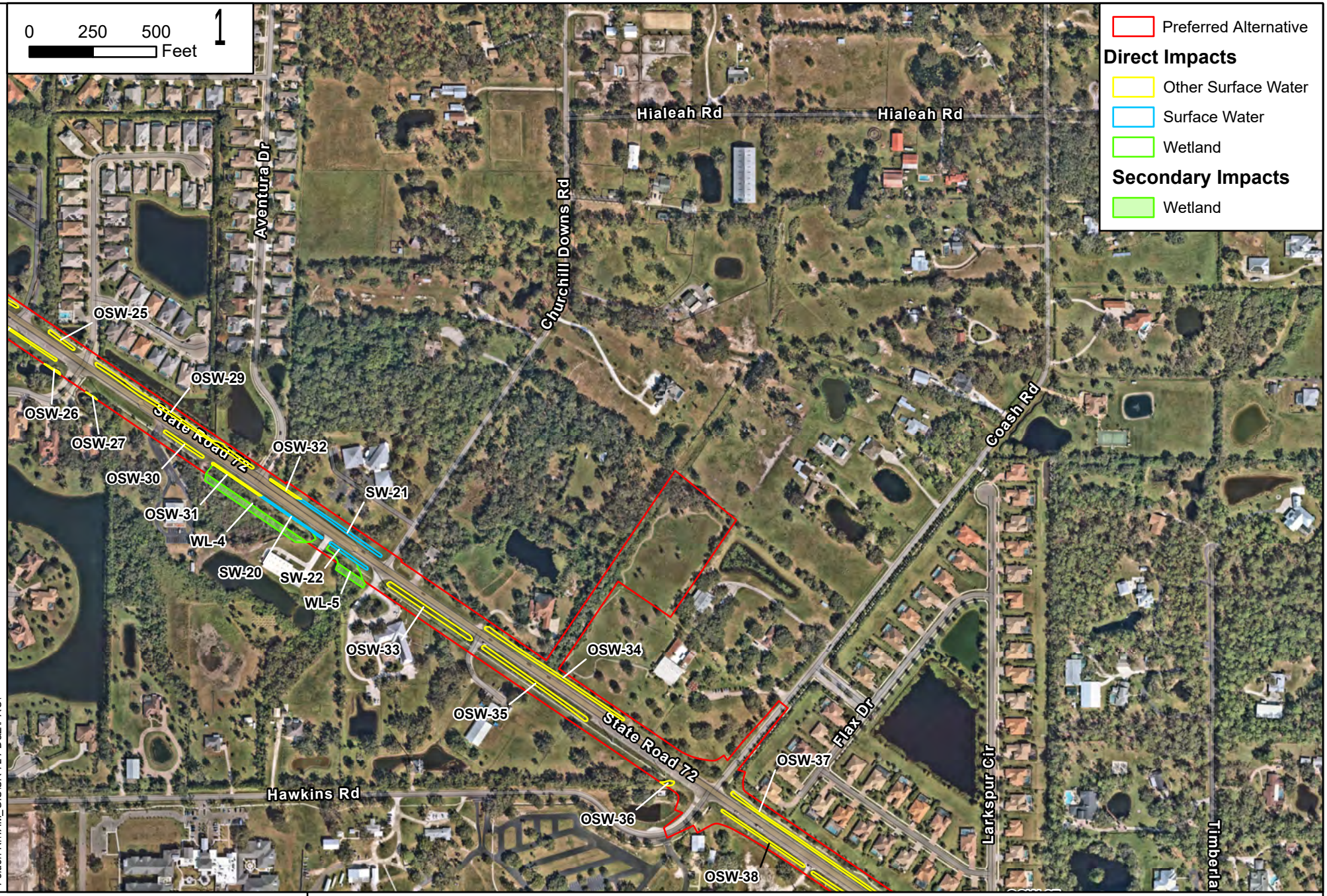
FDOT

Wetlands and Surface Waters Map

State Road 72 (Clark Road)
From East of I-75 to Lorraine Road
Sarasota County, Florida

1 IN = 500 FT	PROJECT NUMBER: 249161000	NOVEMBER 2023	PAGE 2 OF 4



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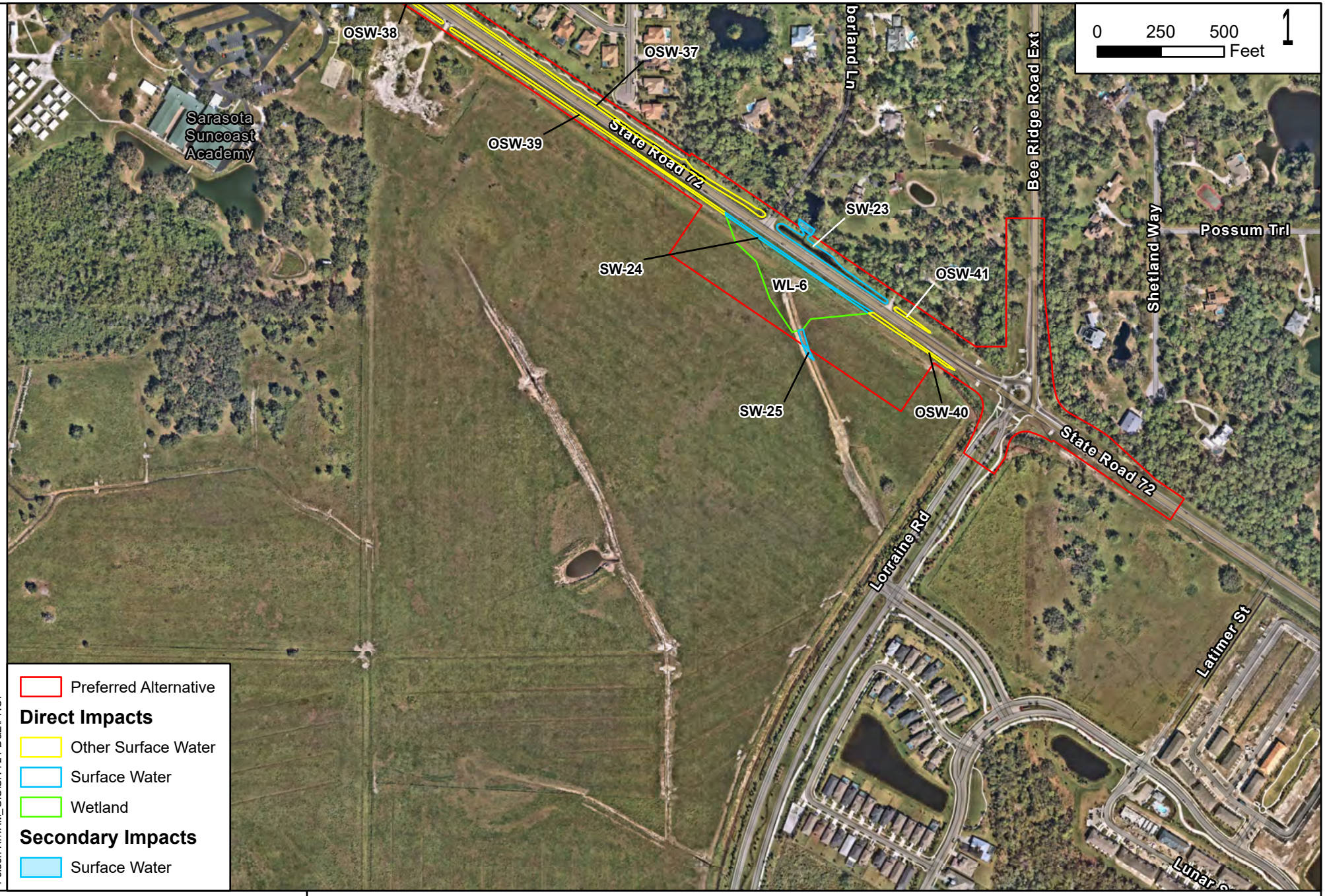
FDOT

Wetlands and Surface Waters Map

State Road 72 (Clark Road)
From East of I-75 to Lorraine Road
Sarasota County, Florida

1 IN = 500 FT	PROJECT NUMBER: 249161000	NOVEMBER 2023	PAGE 3 OF 4



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Wetlands and Surface Waters Map

State Road 72 (Clark Road)
From East of I-75 to Lorraine Road
Sarasota County, Florida

1 IN = 500 FT	PROJECT NUMBER: 249161000	NOVEMBER 2023	PAGE 4 OF 4

APPENDIX D
Uniform Mitigation Assessment Methodology Forms

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	WL-1, 2, 5

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
630 - Wetland Forested Mixed	N/A	Impact	0.46 ac

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
HUC-8: 03100201 Sarasota Bay	Class III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

These wetlands are located along SR 72 and are connected to roadside ditches.

Assessment area description

Assessment areas consist of three roadside portions of larger segmented forested systems.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional
SR 72, offsite forested wetlands	Not unique

Functions	Mitigation for previous permit/other historic use
Potential wildlife foraging habitat and refugia for fishes, herps, small mammals, and wading birds; nutrient uptake and water quality improvement	

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the
Fishes, herps, small mammals, and wading birds	American alligator - T(S/A); Wood stork - FT; State listed wading birds - T

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
Kimley-Horn	10/26/2023

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	WL-1, 2, 5
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	Kimley-Horn	10/26/2023

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	6	0	Systems are located alongside roadway which contributes edge effects, limits wildlife access, and impedes wetland functions.
.500(6)(b)Water Environment (n/a for uplands)	6	0	The hydrology and water quality has been impacted by disturbance and pollution from SR 72.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	5	0	Vegetation consists of Brazilian pepper (*Schinus terebinthifolia*), laurel oak (*Quercus laurifolia*), cabbage palm (*Sabal palmetto*), red maple (*Acer rubrum*), punktree (*Melaleuca quinquenervia*), and sweetbay (*Magnolia virginiana*).

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.57	0

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 0.261

Delta = [with-current]
-0.57

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	WL-3, 4

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641 - Freshwater Marshes	N/A	Impact	0.79 ac

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
HUC-8: 03100201 Sarasota Bay	Class III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

These wetlands are located along SR 72 and are connected to roadside ditches.

Assessment area description

The assessment area consists of roadside portions of two freshwater marshes

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional
SR 72, surrounding development	Not unique

Functions	Mitigation for previous permit/other historic use
Potential wildlife foraging habitat and refugia for fishes, herps, small mammals, and wading birds; nutrient uptake and water quality improvement	

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the
Fishes, herps, small mammals, and wading birds	American alligator - T(S/A); Wood stork - FT; State listed wading birds - T

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
Kimley-Horn	10/26/2023

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	WL-3, 4
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	Kimley-Horn	10/26/2023

Scoring Guidance	**Optimal (10)**	**Moderate(7)**	**Minimal (4)**	**Not Present (0)**
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	6	0	These systems are located alongside roadway which contributes substantial edge effects, limits wildlife access, and impedes wetland functions.
.500(6)(b)Water Environment (n/a for uplands)	6	0	The hydrology and water quality of these systems have been impacted by disturbance and pollution from SR 72.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	5	0	Vegetation observed in this habitat included torpedo grass (*Panicum repens*), Peruvian primrose willow (*Ludwigia peruviana*), buttonbush (*Cephalanthus occidentalis*), Carolina willow (*Salix caroliniana*), and various sedges (*Carex* sp.).

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.57	0

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 0.448

Delta = [with-current]
-0.57

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	WL-6

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641 - Freshwater Marshes	N/A	Impact	1.75 ac

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
HUC-8: 03100201 Sarasota Bay	Class III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This wetland is located along SR 72 and is connected to roadside ditches that connect offsite. Connected to SW-25 southeast.

Assessment area description

The assessment area consists of a roadside freshwater marsh which is connected to a surface water which flows through a pasture.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional
SR 72, pasture south	Not unique

Functions	Mitigation for previous permit/other historic use
Potential wildlife foraging habitat and refugia for fishes, herps, small mammals, and wading birds; nutrient uptake and water quality improvement	

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the
Fishes, herps, small mammals, and wading birds	American alligator - T(S/A); Wood stork - FT; State listed wading birds - T

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
Kimley-Horn	10/26/2023

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	WL-6
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	Kimley-Horn	10/26/2023

Scoring Guidance	**Optimal (10)**	**Moderate(7)**	**Minimal (4)**	**Not Present (0)**
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: 6 — with: 0	WL-6 is located along and south of SR 72 within a pasture and is connected to a surface water which flows through the pasture. Wildlife access is inhibited by roadway and barbed wire fencing in all directions.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: 5 — with: 0	The hydrology and water quality of WL-6 has been impacted by disturbance and pollution from SR 72.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: 5 — with: 0	Vegetation observed within this habitat included bahiagrass (*Paspalum notatum*), whitetop sedge (*Rhynchospora colorata*), and yellow-eyed grass (*Xyris* sp.).

Score = sum of above scores/30 (if uplands, divide by 20)		If preservation as mitigation,	For impact assessment areas
current or w/o pres: 0.53	with: 0	Preservation adjustment factor =	FL = delta x acres = 0.933
		Adjusted mitigation delta =	

Delta = [with-current]	If mitigation	For mitigation assessment areas
-0.53	Time lag (t-factor) =	RFG = delta/(t-factor x risk) =
	Risk factor =	

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	SW-1, 3-11, 13-15, and 17-24

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
510 - Streams and Waterways	N/A	Impact	2.41 ac

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
HUC-8: 03100201 Sarasota Bay	Class III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

These features are roadside ditches that were cut in hydric soils and exhibit signs of hydrology and are found throughout the project limits on the north and south side of SR 72.

Assessment area description

The assessment area consists of a portion of roadside ditches that were cut in hydric soils and convey roadway runoff.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional
SR 72, Twin Lakes Park, adjacent development	Not unique

Functions	Mitigation for previous permit/other historic use
Potential wildlife foraging habitat and refugia for fishes, herps, small mammals, and wading birds; nutrient uptake and water quality improvement	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the
Fishes, herps, small mammals, and wading birds	American alligator - T(S/A); Wood stork - FT; State listed wading birds - T

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
Kimley-Horn	10/26/2023

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	SW-1, 3-11, 13-15, and 17-24
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	Kimley-Horn	10/26/2023

Scoring Guidance
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	**Moderate(7)**	**Minimal (4)**	**Not Present (0)**
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 6	with: 0
Located throughout the project limits adjacent to the roadway that were excavated in hyrdric soils with current signs of hydrology. Habitat connectivity is interrupted by the roadway.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 4	with: 0
The hydrology and water quality of these surface waters have been impacted by disturbance and pollution from SR 72.		
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 5	with: 0
Vegetation within these features include spadeleaf (*Centella asiatica*), creeping primrosewillow (*Ludwidia repens*), torpedo grass (*Panicum repens*), frogfruit (*Phyla nodifora*), maidencane (*Hymenachne hemitomon*) and bahiagrass (*Paspalum notatum*).		

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.50	0

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 1.205

Delta = [with-current]
-0.50

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	SW-25

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
510 - Streams and Waterways	N/A	Impact	0.03 ac

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
HUC-8: 03100201 Sarasota Bay	Class III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This surface water is located south of SR 72 within a pasture west of Lorraine Rd. It is connected to a roadside freshwater marsh system.

Assessment area description

The assessment area consists of a portion of surface water which flows southeast through a pasture.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional
SR 72 and Lorraine Rd	Not unique

Functions	Mitigation for previous permit/other historic use
Potential wildlife foraging habitat and refugia for fishes, herps, small mammals, and wading birds; nutrient uptake and water quality improvement	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the
Fishes, herps, small mammals, and wading birds	American alligator - T(S/A); Wood stork - FT; State listed wading birds - T

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
Kimley-Horn	10/26/2023

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	SW-25
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	Kimley-Horn	10/26/2023

Scoring Guidance	**Optimal (10)**	**Moderate(7)**	**Minimal (4)**	**Not Present (0)**
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 6	with: 0
SW-25 is located within a pasture and is connected to a roadside freshwater marsh. Habitat connectivity is interrupted by the roadway to the north.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 5	with: 0
The hydrology and water quality of SW-25 has been impacted by disturbance and pollution from SR 72.		
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 5	with: 0
Vegetation within SW-25 is typical of a pasture and is dominated by bahiagrass (*Paspalum notatum*) with softrush (*Juncus* sp.).		

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.53	0

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 0.016

Delta = [with-current]
-0.53

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	SW-2, 12, 16

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
530 - Reservoir	N/A	Impact	1.32 ac

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
HUC-8: 03100201 Sarasota Bay	Class III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

These surface waters have been excavated in wetlands and are isolated from other systems. They are located south of SR 72 within residential communities between Hummingbird Avenue and Dove Avenue.

Assessment area description

The assessment area consists of ponds excavated in wetlands.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional
SR 72, Twin Lakes Park, Trent Culleny Plant Nursery	Not unique

Functions	Mitigation for previous permit/other historic use
Potential wildlife foraging habitat and refugia for fishes, herps, small mammals, and wading birds; nutrient uptake and water quality improvement	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the
Fishes, herps, small mammals, and wading birds	American alligator - T(S/A); Wood stork - FT; State listed wading birds - T

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
Kimley-Horn	10/26/2023

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	SW-2, 12, 16
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	Kimley-Horn	10/26/2023

Scoring Guidance	**Optimal (10)**	**Moderate(7)**	**Minimal (4)**	**Not Present (0)**
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: 6 — with: 0	Located within residential communities. Development to the east, west and south with SR 72 to the north. Habitat connectivity is interrupted by the roadway to the north.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: 5 — with: 0	Isolated systems that have water quality impacts from the surrounding development and roadway runoff.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: 5 — with: 0	Primarily open water systems with a fringe of soft rush (*Juncus effusus*), cattail (*Typha* sp.), Peruvian primrose willow (*Ludwigia peruviana*), and duckweed (*Lemna* sp.)

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.53	0

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 0.704

Delta = [with-current]
-0.53

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	WL-1, 2, 5, 7, 8

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
630 - Wetland Forested Mixed	N/A	Impact	0.51 ac

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
HUC-8: 03100201 Sarasota Bay	Class III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

These wetlands are located along SR 72 and are connected to roadside ditches.

Assessment area description

Assessment areas consist of three roadside portions of larger segmented forested systems.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional
SR 72	Not unique

Functions	Mitigation for previous permit/other historic use
Potential wildlife foraging habitat and refugia for fishes, herps, small mammals, and wading birds; nutrient uptake and water quality improvement	

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the
Fishes, herps, small mammals, and wading birds	American alligator - T(S/A); Wood stork - FT; State listed wading birds - T

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
Kimley-Horn	10/26/2023

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	WL-1, 2, 5, 7, 8
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Secondary)	Kimley-Horn	10/26/2023

Scoring Guidance
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 6	with: 6
Systems are still located adjacent to roadway which contributes substantial edge effects, limits wildlife access, and impedes wetland functions.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 6	with: 5
The hydrology may be affected by the roadway being closer; water quality would change neglibily since stormwater management facilities are treating the water for the expanded roadway prior to entering wetland systems		
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 5	with: 4
Some exotics currently exist in the with condition of the direct impact area and may shift to the secondary are due to edge effects, although it's not anticipated to increase the exotices to greater than 0-25% of the existing condition.		

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.57	with: 0.5

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 0.034

Delta = [with-current]
-0.07

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	WL-3, 4

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641 - Freshwater Marshes	N/A	Impact	0.45 ac

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
HUC-8: 03100201 Sarasota Bay	Class III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

These wetlands are located along SR 72 and are connected to roadside ditches.

Assessment area description

The assessment area consists of roadside portions of two freshwater marshes

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional
SR 72	Not unique

Functions	Mitigation for previous permit/other historic use
Potential wildlife foraging habitat and refugia for fishes, herps, small mammals, and wading birds; nutrient uptake and water quality improvement	

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the
Fishes, herps, small mammals, and wading birds	American alligator - T(S/A); Wood stork - FT; State listed wading birds - T

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
Kimley-Horn	10/26/2023

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	WL-3, 4
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Secondary)	Kimley-Horn	10/26/2023

Scoring Guidance	**Optimal (10)**	**Moderate(7)**	**Minimal (4)**	**Not Present (0)**
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	6	6	These systems are located alongside roadway which contributes substantial edge effects, limits wildlife access, and impedes wetland functions.
.500(6)(b)Water Environment (n/a for uplands)	6	5	The hydrology may be affected by the roadway being closer; water quality would change neglibily since stormwater management facilities are treating the water for the expanded roadway prior to entering wetland systems
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	5	4	Some exotics currently exist in the with condition of the direct impact area and may shift to the secondary are due to edge effects, although it's not anticipated to increase the exotices to greater than 0-25% of the existing condition.

Score = sum of above scores/30 (if uplands, divide by 20)		
current or w/o pres	with	
0.57	0.5	

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas	
FL = delta x acres =	0.030

Delta = [with-current]
-0.07

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	SW-1, 7, 13, 23, 26

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
510 - Streams and Waterways	N/A	Impact	0.09 ac

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
HUC-8: 03100201 Sarasota Bay	Class III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

These surface waters include roadside ditches and which extend offsite and are cut in hydric soils.

Assessment area description

The assessment area consists of a portion of surface waters which connect to onsite roadside ditches.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional
SR 72, Twin Lakes Park, adjacent development	Not unique

Functions	Mitigation for previous permit/other historic use
Potential wildlife foraging habitat and refugia for fishes, herps, small mammals, and wading birds; nutrient uptake and water quality improvement	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the
Fishes, herps, small mammals, and wading birds	American alligator - T(S/A); Wood stork - FT; State listed wading birds - T

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
Kimley-Horn	10/26/2023

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	SW-1, 7, 13, 23, 26
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Secondary)	Kimley-Horn	10/26/2023

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	6	6	Located throughout the project limits adjacent to the roadway and convey flows offsite. Excavated in hydric soils with current signs of hydrology. Habitat connectivity is interrupted by the roadway.
.500(6)(b)Water Environment (n/a for uplands)	4	3	The hydrology may be affected by the roadway being closer; water quality would change neglibily since stormwater management facilities are treating the water for the expanded roadway prior to entering these surface water systems. Does not change their function.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	5	4	Some exotics currently exist in the with condition of the direct impact area and may shift to the secondary are due to edge effects, although it's not anticipated to increase the exotices to greater than 0-25% of the existing condition.

Score = sum of above scores/30 (if uplands, divide by 20)		
current or w/o pres	with	
0.50	0.43333	

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas	
FL = delta x acres =	0.006

Delta = [with-current]
-0.07

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	SW-25

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
510 - Streams and Waterways	N/A	Impact	0.02 ac

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
HUC-8: 03100201 Sarasota Bay	Class III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This surface water is located south of SR 72 within a pasture west of Lorraine Rd. It is connected to a roadside freshwater marsh system.

Assessment area description

The assessment area consists of a portion of surface water flows which southeast through a pasture.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional
SR 72 and Lorraine Rd	Not unique

Functions	Mitigation for previous permit/other historic use
Potential wildlife foraging habitat and refugia for fishes, herps, small mammals, and wading birds; nutrient uptake and water quality improvement	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the
Fishes, herps, small mammals, and wading birds	American alligator - T(S/A); Wood stork - FT; State listed wading birds - T

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
Kimley-Horn	10/26/2023

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	SW-25
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Secondary)	Kimley-Horn	10/26/2023

Scoring Guidance
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 6	with: 6
SW-1 is located within a pasture and is connected to a roadside freshwater marsh. Wildlife access is inhibited by barbed wire fencing in all directions.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 5	with: 4
The hydrology and water quality of SW-1 has been impacted by disturbance and pollution from SR 72.		
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 5	with: 4
Some exotics currently exist in the with condition of the direct impact area and may shift to the secondary are due to edge effects, although it's not anticipated to increase the exotices to greater than 0-25% of the existing condition.		

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.53	with: 0.46667

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 0.001

Delta = [with-current]
-0.07

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	SW-16

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
530 - Reservoir	N/A	Impact	0.07 ac

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
HUC-8: 03100201 Sarasota Bay	Class III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

SW-16 been excavated in wetlands and is isolated from other systems. It is located south of SR 72 within residential communities between Hummingbird Avenue and Dove Avenue.

Assessment area description

The assessment area consists of ponds excavated in wetlands.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional
SR 72 and Lorraine Rd	Not unique

Functions	Mitigation for previous permit/other historic use
Potential wildlife foraging habitat and refugia for fishes, herps, small mammals, and wading birds; nutrient uptake and water quality improvement	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the
Fishes, herps, small mammals, and wading birds	American alligator - T(S/A); Wood stork - FT; State listed wading birds - T

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
Kimley-Horn	10/26/2023

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 72	TBD	SW-16
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Secondary)	Kimley-Horn	10/26/2023

Scoring Guidance	**Optimal (10)**	**Moderate(7)**	**Minimal (4)**	**Not Present (0)**
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	6	6	System is still located adjacent to roadway which contributes substantial edge effects, limits wildlife access, and impedes wetland functions.
.500(6)(b)Water Environment (n/a for uplands)	5	4	The hydrology may be affected by the roadway being closer; water quality would change neglibily since stormwater management facilities are treating the water for the expanded roadway prior to entering surface water system. No change in function.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	5	4	Some exotics currently exist in the with condition of the direct impact area and may shift to the secondary are due to edge effects, although it's not anticipated to increase the exotices to greater than 0-25% of the existing condition.

Score = sum of above scores/30 (if uplands, divide by 20)		
current or w/o pres	with	
0.53	0.46667	

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas	
FL = delta x acres =	0.005

Delta = [with-current]
-0.07

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

APPENDIX E
FNAI Biodiversity Matrix Report

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

Florida Natural Areas Inventory

Biodiversity Matrix Query Results

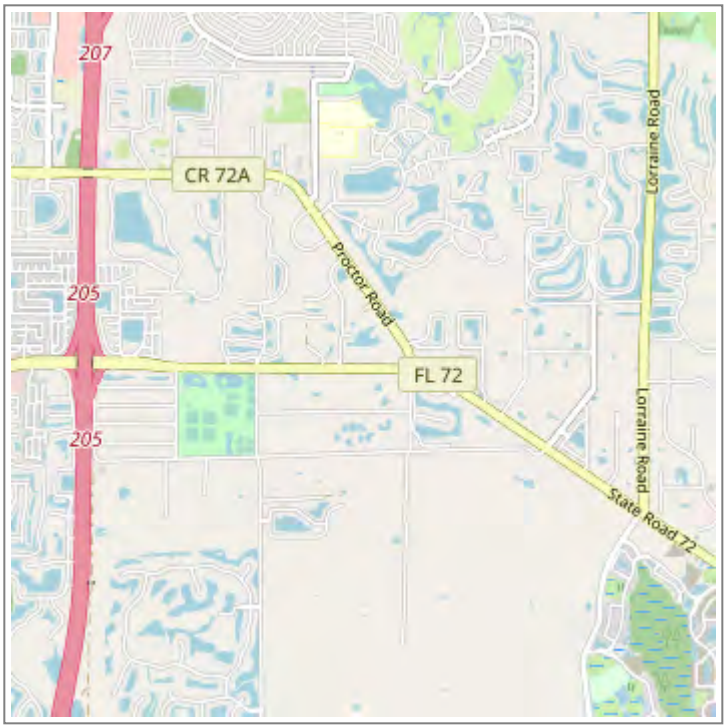
UNOFFICIAL REPORT

Created 9/1/2023

(Contact the FNAI Data Services Coordinator at 850.224.8207 or kbrinegar@fnai.fsu.edu for information on an official Standard Data Report)

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

Report for 6 Matrix Units: 25999 , 26000 , 26270 , 26271 , 26542 , 26543



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: 25999

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

3 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Haliaeetus leucocephalus Bald Eagle	G5	S3	N	N
Mesic flatwoods	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	T	FT

Matrix Unit ID: 26000

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

3 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Haliaeetus leucocephalus Bald Eagle	G5	S3	N	N
Mesic flatwoods	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	T	FT

Matrix Unit ID: 26270

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
Mycteria americana Wood Stork	G4	S2	T	FT
Sciurus niger niger Southeastern Fox Squirrel	G5T5	S3	N	N

Matrix Unit ID: 26271

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

3 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Mesic flatwoods	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	T	FT
Sciurus niger niger Southeastern Fox Squirrel	G5T5	S3	N	N

Matrix Unit ID: 26542

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

4 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Drymarchon couperi Eastern Indigo Snake	G3	S2?	T	FT
Mesic flatwoods	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	T	FT
Sciurus niger niger Southeastern Fox Squirrel	G5T5	S3	N	N

Matrix Unit ID: 26543

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

3 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Mesic flatwoods	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	T	FT
Sciurus niger niger Southeastern Fox Squirrel	G5T5	S3	N	N

Matrix Unit IDs: 25999 , 26000 , 26270 , 26271 , 26542 , 26543

15 **Potential** Elements Common to Any of the 6 Matrix Units

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 sand butterfly pea	G2Q	S2	N	E
Drymarchon couperi Eastern Indigo Snake	G3	S2?	T	FT
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
Lechea cernua nodding pinweed	G3	S3	N	T
Lithobates capito Gopher Frog	G2G3	S3	N	N
Lythrum flagellare lowland loosestrife	G3	S3	N	E
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
Nolina atopocarpa Florida beargrass	G3	S3	N	T
Rhynchospora megaplumosa large-plumed beaksedge	G2	S2	N	E
Sciurus niger niger Southeastern Fox Squirrel	G5T5	S3	N	N

APPENDIX F
Eastern Indigo Snake Determination Key and Standard Protection Measures

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

August 1, 2017

Donnie Kinard
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

Subject: Consultation Key for the Eastern Indigo Snake – Revised

Dear Mr. Kinard:

This letter revises and replaces the January 25, 2010, and August 13, 2013, letters to the U.S. Army Corps of Engineers (Corps) regarding the use of the eastern indigo snake programmatic effect determination key (Key) for projects occurring within the South Florida Ecological Service's Office (SFESO) jurisdiction. This revision supersedes all prior versions of the Key in the SFESO area. The purpose of this revision is to clarify portions of the previous keys based on questions we have been asked, specifically related to habitat and refugia used by eastern indigo snakes (*Drymarchon corais couperi*), in the southern portion of their range and within the jurisdiction of the SFESO. This Key is provided pursuant to the Service's authorities under the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C.1531 *et seq.*). This Key revision has been assigned Service Consultation Code: 41420-2009-I-0467-R001.

The purpose of this Key is to assist the Corps (or other Federal action agency) in making appropriate effects determinations for the eastern indigo snake under section 7 of the Act, and streamline informal consultation with the SFESO for the eastern indigo snake when the proposed action can be walked through the Key. The Key is a tool available to the Corps (or other Federal action agency) for the purposes of expediting section 7 consultations. There is no requirement to use the Key. There will be cases when the use of the Key is not appropriate. These include, but are not limited to: where project specific information is outside of the scope of the Key or instances where there is new biological information about the species. In these cases, we recommend the Corps (or other Federal action agency) initiates traditional consultation pursuant to section 7 of the Act, and identify that consultation is being requested outside of the Key.

This Key uses project size and home ranges of eastern indigo snakes as the basis for making determinations of "may affect, but is not likely to adversely affect" (NLAA) and "may affect. and is likely to adversely affect" (may affect). Suitable habitat for the eastern indigo snake consists of a mosaic of habitats types, most of which occur throughout South Florida. Information on home ranges for individuals is not available in specific habitats in South Florida. Therefore, the SFESO uses the information from a 26-year study conducted by Layne and Steiner (1996) at Archbold Biological Station, Lake Placid, Florida, as the best available

information. Layne and Steiner (1996) determined the average home range size for a female eastern indigo snake was 46 acres and 184 acres for a male.

Projects that would remove/destroy less than 25 acres of eastern indigo snake habitat are expected to result in the loss of a portion of an eastern indigo snakes home range that would not impair the ability of the individual to feed, breed, and shelter. Therefore, the Service finds that take would not be reasonably certain to occur due to habitat loss. However, these projects have the potential to injure or kill an eastern indigo snake if the individual is crushed by equipment during site preparation or other project aspects. The Service's *Standard Protection Measures for the Eastern Indigo Snake* (Service 2013 or most current version) and the excavation of underground refugia (where a snake could be buried, trapped and/or injured), when implemented, are designed to avoid these forms of take. Consequently, projects less than 25 acres that include the Service's *Standard Protection Measures for the Eastern Indigo Snake* (Service 2013 or most current version) and a commitment to excavate underground refugia as part of the proposed action would be expected to avoid take and thus, may affect, but are not likely to adversely affect the species.

If a proposed project would impact less than 25 acres of vegetated eastern indigo snake habitat (not urban/ human-altered) completely surrounded by urban development, and an eastern indigo snake has been observed on site, the Key should not be used. The Service recommends formal consultation for this situation because of the expected increased value of the vegetated habitat within the individual's home range.

Projects that would remove 25 acres or more of eastern indigo snake habitat could remove more than half of a female eastern indigo snakes home range. This loss of habitat within a home range would be expected to significantly impair the ability of that individual to feed, breed, and shelter. Therefore, the Service finds take through habitat loss would be reasonably certain to occur and formal consultation is appropriate. Furthermore, these projects have the potential to injure or kill an eastern indigo snake if the individual is crushed by equipment during site preparation or other project aspects. The Service's *Standard Protection Measures* for the *Eastern Indigo Snake* (Service 2013 or most current version) and the excavation of underground refugia (where a snake could be buried, trapped and/or injured), when implemented, are designed to avoid these forms of take.

Eastern indigo snakes use a variety of habitat and are difficult to detect. Therefore, site specific information on the land use, observations of eastern indigo snakes within the vicinity, as well as other factors, as appropriate, will all be considered by the Service when making a final recommendation on the appropriate effects determination and whether it is appropriate to conclude consultation with the Corps (or other Federal action agency) formally or informally for projects that will impact 25 acres or more of habitat. Accordingly, when the use of the Key results in a determination of "may affect," the Corps (or other Federal action agency) is advised that consultation may be concluded informally or formally, depending on the project specific effects to eastern indigo snakes. Technical assistance from the Service can assist you in making a determination prior to submitting a request for consultation. In circumstances where the Corps (or other Federal action agency) desires to proceed with a consultation request prior to receiving

additional technical assistance from the Service, we recommend the agency documents the biological rationale for their determination and proceed with a request accordingly.

If the use of the Key results in a determination of "no effect," no further consultation is necessary with the SFESO. If the use of the Key results in a determination of "NLAA," the SFESO concurs with this determination based on the rationale provide above, and no further consultation is necessary for the effects of the proposed action on the eastern indigo snake. For "no effect" or "NLAA" determinations, the Service recommends that the Corps (or other Federal action agency) documents the pathway used to reach your no effect or NLAA determination in the project record and proceed with other species analysis as warranted.

Eastern Indigo Snake Programmatic Effect Determination Key
Revised July 2017
South Florida Ecological Service Office

Scope of the Key

This Key should be used only in the review of permit applications for effects determinations for the eastern indigo snake (*Drymarchon corais couperi*) within the South Florida Ecological Service's Office (SFESO) area (Broward, Charlotte, Collier, De Soto, Glades, Hardee, Hendry, Highlands, Lee, Indian River, Martin, Miami-Dade, Monroe, Okeechobee, Osceola, Palm Beach, Polk, Sarasota, and St. Lucie Counties). There is no designated critical habitat for the eastern indigo snake.

This Key is subject to revision as the Corps (or other Federal action agency) and Service deem necessary and in particular whenever there is new information on eastern indigo snake biology and effects of proposed projects.

The Key is a tool available to the Corps (or other Federal action agency) for the purposes of expediting section 7 consultations. There is no requirement to use the Key. There will be cases when the use of the Key is not appropriate. These include, but are not limited to: where project specific information is outside of the scope of the Key or instances where there is new biological information about the species. In these cases, we recommend the Corps (or other Federal action agency) initiates traditional consultation pursuant to section 7 of the Act, and identify that consultation is being requested outside of the Key.

Habitat

Habitat use varies seasonally between upland and wetland areas, especially in the more northern parts of the species' range. In southern parts of their range eastern indigo snakes are habitat generalists which use most available habitat types. Movements between habitat types in northern areas of their range may relate to the need for thermal refugia (protection from cold and/or heat).

In northern areas of their range eastern indigo snakes prefer an interspersion of tortoise-inhabited sandhills and wetlands (Landers and Speake 1980). In these northern regions eastern indigo

snakes most often use forested areas rich with gopher tortoise burrows, hollowed root channels, hollow logs, or the burrows of rodents, armadillos, or land crabs as thermal refugia during cooler seasons (Lawler 1977; Moler 1985a; Layne and Steiner 1996). The eastern indigo snake in the northern region is typically classified as a longleaf pine savanna specialist because here, in the northern four-fifths of its range, the eastern indigo snake is typically only found in vicinity of xeric longleaf pine–turkey oak sandhills inhabited by the gopher tortoise (Means 2006).

In the milder climates of central and southern Florida, comprising the remaining one fifth of its range, thermal refugia such as those provided by gopher tortoise burrows may not be as critical to survival of indigo snakes. Consequently, eastern indigo snakes in these regions use a more diverse assemblage of habitats such as pine flatwoods, scrubby flatwoods, floodplain edges, sand ridges, dry glades, tropical hammocks, edges of freshwater marshes, muckland fields, coastal dunes, and xeric sandhill communities; with highest population concentrations of eastern indigo snakes occurring in the sandhill and pineland regions of northern and central Florida (Service 1999). Eastern indigo snakes have also been found on agricultural lands with close proximity to wetlands (Zeigler 2006).

In south Florida, agricultural sites (*e.g.*, sugar cane fields and citrus groves) are occupied by eastern indigo snakes. The use of sugarcane fields by eastern indigo snakes was first documented by Layne and Steiner in 1996. In these areas there is typically an abundance of wetland and upland ecotones (due to the presence of many ditches and canals), which support a diverse prey base for foraging. In fact, some speculate agricultural areas may actually have a higher density of eastern indigo snakes than natural communities due to the increased availability of prey. Gopher tortoise burrows are absent at these locations but there is an abundance of both natural and artificial refugia. Enge and Endries (2009) reporting on the status of the eastern indigo snake included sugarcane fields and citrus groves in a Global Information Systems (GIS)-base map of potential eastern indigo snake habitat. Numerous sightings of eastern indigo snakes within sugarcane fields have been reported within south Florida (Florida Fish and Wildlife Conservation Commission Indigo Snake Database [Enge 2017]). A recent study associated with the Comprehensive Everglades Restoration Plan (CERP) (A-1 FEB Project formerly A-1 Reservoir; Service code: 41420-2006-F-0477) documented eastern indigo snakes within sugarcane fields. The snakes used artificial habitats such as piles of limerock, construction debris, and pump stations. Recent studies also associated with the CERP at the C-44 Project (Service code: 41420-2009-FA-0314), and C-43 Project (Service code: 41420-2007-F-0589) documented eastern indigo snakes within citrus groves. The snakes used artificial habitats such as boards, sheets of tin, construction debris, pipes, drain pipes in abandoned buildings and septic tanks.

In extreme south Florida (*i.e.*, the Everglades and Florida Keys), eastern indigo snakes also utilize tropical hardwood hammocks, pine rocklands, freshwater marshes, abandoned agricultural land, coastal prairie, mangrove swamps, and human-altered habitats. Though eastern indigo snakes have been found in all available habitats of south Florida it is thought they prefer hammocks and pine forests since most observations occur there and use of these areas is disproportionate compared to the relatively small total area of these habitats (Steiner *et al.* 1983).

Even though thermal stress may not be a limiting factor throughout the year in south Florida, eastern indigo snakes still seek and use underground refugia. On the sandy central ridge of central Florida, eastern indigo snakes use gopher tortoise burrows more (62 percent) than other underground refugia (Layne and Steiner 1996). Other underground refugia used include armadillo (*Dasypus novemcinctus*) burrows near citrus groves, cotton rat (*Sigmodon hispidus*) burrows, and land crab (*Cardisoma guanhumi*) burrows in coastal areas (Layne and Steiner 1996; Wilson and Porras 1983). Natural ground holes, hollows at the base of trees or shrubs, ground litter, trash piles, and crevices of rock-lined ditch walls are also used (Layne and Steiner 1996). These refugia are used most frequently where tortoise burrows are not available, principally in low-lying areas off the central and coastal ridges.

Minimization Measures

The Service developed protection measures for the eastern indigo snake "Standard Protection Measures for the Eastern Indigo Snake" (Service 2013) located at: https://www.fws.gov/verobeach/ReptilesPDFs/20130812_EIS%20Standard%20Protection%20Measures_final.pdf. These protections measures (or the most updated version) are considered a minimization measure for projects proposed within eastern indigo snake habitat.

Determinations

If the use of this Key results in a determination of "**no effect**," no further consultation is necessary with the SFESO.

If the use of this Key results in a determination of "**NLAA**," the SFESO concurs with this determination and no further consultation is necessary for the effects of the proposed action on the eastern indigo snake.

For no effect or NLAA determinations, the Corps (or other Federal action agency) should make a note in the project file indicating the pathway used to reach your no effect or NLAA determination.

If a proposed project would impact less than 25 acres of vegetated eastern indigo snake habitat (not urban/ human-altered) completely surrounded by urban development, and an eastern indigo snake has been observed on site, the subsequent Key should not be used. The Service recommends formal consultation for this situation because of the expected increased value of the vegetated habitat within the individual's home range.

If the use of this Key results in a determination of "**may affect**," consultation may be concluded informally or formally depending on project effects to eastern indigo snakes. Technical assistance from the Service can assist you in making a determination prior to submitting a request for consultation. In circumstances where the Corps desires to proceed with a consultation request prior to receiving additional technical assistance from the Service, we recommend the Corps document the biological rationale for their determination and proceed with a request accordingly.

A. Project is not located in open water or salt marsh.....go to B

Project is located solely in open water or salt marsh.....**no effect**

B. Permit will be conditioned for use of the Service's most current guidance for Standard Protection Measures For The Eastern Indigo Snake (currently 2013) during site preparation and project construction.....go to C

Permit will not be conditioned as above for the eastern indigo snake, or it is not known whether an applicant intends to use these measures and consultation with the Service is requested.....**may affect**

C. The project will impact less than 25 acres of eastern indigo snake habitat (*e.g.*, sandhill, scrub, pine flatwoods, pine rocklands, scrubby flatwoods, high pine, dry prairie, coastal prairie, mangrove swamps, tropical hardwood hammocks, hydric hammocks, edges of freshwater marshes, agricultural fields [including sugar cane fields and active, inactive, or abandoned citrus groves], and coastal dunes).....go to D

The project will impact 25 acres or more of eastern indigo snake habitat (*e.g.*, sandhill, scrub, pine flatwoods, pine rocklands, scrubby flatwoods, high pine, dry prairie, coastal prairie, mangrove swamps, tropical hardwood hammocks, hydric hammocks, edges of freshwater marshes, agricultural fields [including sugar cane fields and active, inactive, or abandoned citrus groves], and coastal dunes).....**may affect**

D. The project has no known holes, cavities, active or inactive gopher tortoise burrows, or other underground refugia where a snake could be buried, trapped and/or injured during project activities.....**NLAA**

The project has known holes, cavities, active or inactive gopher tortoise burrows, or other underground refugia where a snake could be buried, trapped and /or injured.....go to E

E. Any permit will be conditioned such that all gopher tortoise burrows, active or inactive, will be excavated prior to site manipulation in the vicinity of the burrow[1]. If an eastern indigo snake is encountered, the snake must be allowed to vacate the area prior to additional site manipulation in the vicinity. Any permit will also be conditioned such that holes, cavities, and snake refugia other than gopher tortoise burrows will be inspected each morning before planned site manipulation of a particular area, and, if occupied by an eastern indigo snake, no work will commence until the snake has vacated the vicinity of proposed work.....**NLAA**[2]

Permit will not be conditioned as outlined above.....**may affect**

End Key

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[1] If excavating potentially occupied burrows, active or inactive, individuals must first obtain state authorization via a Florida Fish and Wildlife Conservation Commission Authorized Gopher Tortoise Agent permit. The excavation method selected should also minimize the potential for injury of an indigo snake. Applicants should follow the excavation guidance provided within the most current Gopher Tortoise Permitting Guidelines found at http://myfwc.com/gophertortoise.

[2] Please note, if the proposed project will impact less than 25 acres of vegetated eastern indigo snake habitat (not urban/ human-altered) completely surrounded by urban development, and an eastern indigo snake has been observed on site, NLAA is not the appropriate conclusion. The Service recommends formal consultation for this situation because of the expected increased value of the vegetated habitat within the individual's home range

Working with the Fish and Wildlife Foundation of Florida, the Service has established a fund to support conservation and recovery for the eastern indigo snake. Any project that has the potential to affect the eastern indigo snake and/or its habitat is encouraged to make a voluntary contribution to this fund. If you would like additional information about how to make a contribution and how these monies are used to support eastern indigo snake recovery please contact Ashleigh Blackford, Connie Cassler, or José Rivera at 772-562-3559.

This revised Key is effective immediately upon receipt by the Corps. Should circumstances change or new information become available regarding the eastern indigo snake and/or implementation of the Key, the determinations herein may be reconsidered and this Key further revised or amended.

Thank you for your continued cooperation in the effort to conserve fish and wildlife resources. If you have any questions or comments regarding this Key, please contact the SFESO at 772-562-3909.

Sincerely,

Roxanna Hinzman
Field Supervisor
South Florida Ecological Services

Cc:
Corps, Jacksonville, Florida (Dale Beter, Muriel Blaisdell, Ingrid Gilbert, Angela Ryan, Irene Sadowski, Victoria White, Alisa Zarbo)
Service, Athens, Georgia (Michelle Elmore)
Service, Jacksonville, Florida (Annie Dziergowski)
Service, Panama City, Florida (Sean Blomquist)

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STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE

U.S. Fish and Wildlife Service

May 2024

The Standard Protection Measures for the Eastern Indigo Snake (Plan) below has been developed by the U.S. Fish and Wildlife Service (USFWS) in Florida and Georgia for use by project proponents and their construction personnel help minimize adverse impacts to eastern indigo snakes. However, implementation of this Plan does not replace any state of federal consultation or regulatory requirements. At least 30 days prior to any land disturbance activities, the project proponent shall notify the appropriate USFWS Field Office (see Field Office contact information) via e-mail that the Plan will be implemented as described below.

As long as the signatory of the e-mail certifies compliance with the below Plan (including use of the approved poster and pamphlet (USFWS Eastern Indigo Snake Conservation webpage), no further written confirmation or approval from the USFWS is needed regarding use of this Plan as a component of the project.

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

STANDARD PROTECTION MEASURES

BEFORE AND DURING CONSTRUCTION ACTIVITIES:

- All Project personnel shall be notified about the potential presence and appearance of the federally protected eastern indigo snake (*Drymarchon couperi*).
- All personnel shall be advised that there are civil and criminal penalties for harassing, harming, pursuing, hunting, shooting, wounding, killing, capturing, or collecting the species, in knowing violation of the Endangered Species Act of 1973.
- The project proponent or designated agent will post educational posters in the construction office and throughout the construction site. The posters must be clearly visible to all construction staff and shall be posted in a conspicuous location in the

Project field office until such time that Project construction has been completed and time charges have stopped.

- Prior to the onset of construction activities, the project proponent or designated agent will conduct a meeting with all construction staff (annually for multi-year projects) to discuss identification of the snake, its protected status, what to do if a snake is observed within the project area, and applicable penalties that may be imposed if state and/or federal regulations are violated. An educational pamphlet including color photographs of the snake will be given to each staff member in attendance and additional copies will be provided to the construction superintendent to make available in the onsite construction office. Photos of eastern indigo snakes may be accessed on USFWS, Florida Fish and Wildlife Conservation Commission and/or Georgia Department of Natural Resources websites.
- Each day, prior to the commencement of maintenance or construction activities, the Contractor shall perform a thorough inspection for the species of all worksite equipment.
- If an eastern indigo snake (alive, dead or skin shed) is observed on the project site during construction activities, all such activities are to cease until the established procedures are implemented according to the Plan, which includes notification of the appropriate USFWS Office. The contact information for the USFWS is provided below and on the referenced posters and pamphlets.
- During initial site clearing activities, an onsite observer is recommended to determine whether habitat conditions suggest a reasonable probability of an eastern indigo snake sighting (example: discovery of snake sheds, tracks, lots of refugia and cavities present in the area of clearing activities, and presence of gopher tortoises and burrows).
- Periodically during construction activities, the project area should be visited to observe the condition of the posters and Plan materials and replace them as needed. Construction personnel should be reminded of the instructions (above) as to what is expected if any eastern indigo snakes are seen.
- For erosion control use biodegradable, 100% natural fiber, net-free rolled erosion control blankets to avoid wildlife entanglement.

POST CONSTRUCTION ACTIVITIES:

Whether or not eastern indigo snakes are observed during construction activities, a monitoring report should be submitted to the appropriate USFWS Field Office within 60 days of project completion (See USFWS Field Office Contact Information).

USFWS FIELD OFFICE CONTACT INFORMATION

Georgia Field Office: Phone: (706) 613-9493, email: gaes_assistance@fws.gov
Florida Field Office: Phone: (352) 448-9151, email: fw4flesregs@fws.gov

POSTER & PAMPHLET INFORMATION

Posters with the following information shall be placed at strategic locations on the construction site and along any proposed access roads (final posters for Plan compliance are available on our website in English and Spanish and should be printed on 11 x 17in or larger paper and laminated (USFWS Eastern Indigo Snake Conservation webpage). Pamphlets are also available on our webpage and should be printed on 8.5 x 11in paper and folded, and available and distributed to staff working on the site.

POSTER CONTENT (ENGLISH):

ATTENTION

Federally-Threatened Eastern Indigo Snakes may be present on this site!

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

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

• Stop land disturbing activities and allow the snake time to move away from the site without interference. Do NOT attempt to touch or handle the snake.

• Take photographs of the snake, if possible, for identification and documentation purposes.

• Immediately notify supervisor/agent, and a U.S. Fish and Wildlife Service (USFWS) Ecological Services Field Office, with the location information and condition of the snake.

• If the snake is located near clearing or construction activities that will cause harm to the snake, the activities must pause until a representative of the USFWS returns the call (within one day) with further guidance.

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

• Stop land disturbing activities and immediately notify supervisor/applicant, and a USFWS Ecological Services Field Office, with the location information and condition of the snake.

• Take photographs of the snake, if possible, for identification and documentation purposes.

• Thoroughly soak the dead snake in water and then freeze the specimen. The appropriate wildlife agency will retrieve the dead snake.

DESCRIPTION: The eastern indigo snake is one of the largest non-venomous snakes in North America, reaching up to 8 ft long. Named for the glossy, blue-black scales above and slate blue below, they often have orange to reddish color (cream color in some cases)

in the throat area. They are not typically aggressive.

SIMILAR SPECIES: The black racer resembles the eastern indigo snake. However, black racers have a white or cream chin, and thinner bodies.

LIFE HISTORY: Eastern indigo snakes live in a variety of terrestrial habitat types. Although they prefer uplands, they also use wetlands and agricultural areas. They will shelter inside gopher tortoise burrows, other animal burrows, stumps, roots, and debris piles. Females may lay from 4 to 12 white eggs as early as April through June, with young hatching in late July through October.

PROTECTED STATUS: The eastern indigo snake is protected by the USFWS, Florida Fish and Wildlife Conservation Commission, and Georgia Department of Natural Resources. Any attempt to kill, harm, harass, pursue, hunt, shoot, wound, trap, capture, collect, or engage eastern indigo snakes is prohibited by the U.S. Endangered Species Act. Penalties include a maximum fine of $25,000 for civil violations and up to $50,000 and/or imprisonment for criminal offenses. Only authorized individuals with a permit (or an Incidental Take Statement associated with a USFWS Biological Opinion) may handle an eastern indigo snake.

Please contact your nearest USFWS Ecological Services Field Office if a live or dead eastern indigo snake is encountered:

Florida Office: (352) 448-9151

Georgia Office: (706) 613-9493

POSTER CONTENT (SPANISH):

ATENCIÓN

¡Especie amenazada, la culebra Índigo del Este, puede ocupar el área!

Matar, herir o hostigar culebras Índigo del Este es estrictamente prohibido bajo la Ley Federal.

SI VES UNA CULEBRA ÍNDIGO DEL ESTE O UNA CULEBRA NEGRA VIVA EN EL ÁREA:

• Pare excavación y permite el movimiento de la culebra fuera del área sin interferir. NO atentes tocar o recoger la culebra.

• Fotografié la culebra si es posible para identificación y documentación.

• Notifique supervisor/agente, y la Oficina de Campo de Servicios Ecológicos del Servicio Federal de Pesca y Vida Silvestre (USFWS) apropiada con información acerca del sitio y condición de la culebra.

• Si la culebra está cerca de un área de construcción que le pueda causar daño, las actividades deben parar hasta un representante del USFWS regrese la llamada (dentro de un día) con más orientación.

SI VES UNA CULEBRA ÍNDIGO DEL ESTE MUERTA EN EL ÁREA:

• Pare excavación. Notifique supervisor/aplicante, y la Oficina de Campo de Servicios Ecológicos apropiada con información acerca del sitio y condición de la culebra.

• Fotografié la culebra si es posible para identificación y documentación.

• Emerge completamente la culebra en agua y congele la especie hasta que personal apropiado de la agencia de vida silvestre la recoja.

DESCRIPCIÓN. La culebra Índigo del Este es una de las serpientes sin veneno más grande en Norte América, alcanzando hasta 8 pies de largo. Su nombre proviene del color azul-negro brilloso de sus escamas, pero pueden tener un color anaranjado-rojizo (color crema en algunos casos) en su mandíbula inferior. No tienden a ser agresivas.

SERPIENTES PARECIDAS. La corredora negra, que es de color negro sólido, es la única otra serpiente que se asemeja a la Índigo del Este. La corredora negra se diferencia por una mandíbula inferior color blanca o crema y un cuerpo más delgado.

HÁBITATS Y ECOLOGÍA. La culebra Índigo del Este vive en una variedad de hábitats, incluyendo tierras secas, humedales, y áreas de agricultura. Ellas buscan refugio en agujeros o huecos de tierra, en especial madrigueras de tortugas de tierra. Las hembras ponen 4 hasta 12 huevos blancos entre abril y junio, y la cría emergen entre julio y octubre.

PROTECCIÓN LEGAL. La culebra Índigo del Este es clasificada como especie amenazada por el USFWS, la Comisión de Conservación de Pesca y Vida Silvestre de Florida y el Departamento de Recursos Naturales de Georgia. Intento de matar, hostigar, herir, lastimar, perseguir, cazar, disparar, capturar, colectar o conducta parecida hacia las culebras Índigo del Este es prohibido por la Ley Federal de Especies en Peligro de Extinción. Penalidades incluyen un máximo de $25,000 por violaciones civiles y $50,000 y/o encarcelamiento por actos criminales. Solos individuales autorizados con un permiso o Determinación de toma incidental (Incidental Take Statement) asociado con una Opinión Biológico del USFWS pueden recoger una Índigo del Este.

Por favor de contactar tu Oficina de Campo de Servicios Ecológicos más cercana si encuentras una culebra Índigo del Este viva o muerta:

Oficina de Florida: (352) 448-9151

Oficina de Georgia: (706) 613-9493

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

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

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

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

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

North Florida ES Office – (904) 731-3336
Panama City ES Office – (850) 769-0552
South Florida ES Office – (772) 562-3909

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

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

LIFE HISTORY: The eastern indigo snake occurs in a wide variety of terrestrial habitat types throughout Florida. Although they have a preference for uplands, they also utilize some wetlands and agricultural areas. Eastern indigo snakes will often seek shelter inside gopher tortoise burrows and other below- and above-ground refugia, such as other animal burrows, stumps, roots, and debris piles. Females may lay from 4 - 12 white eggs as early as April through June, with young hatching in late July through October.

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

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

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

August 12, 2013

ATTENTION:

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

Please read the following information provided by the U.S. Fish and Wildlife Service to become familiar with standard protection measures for the eastern indigo snake.

ATTENTION:

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

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

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

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

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

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

August 12, 2013

APPENDIX G
Florida Bonneted Bat Acoustic Survey Report

FLORIDA BONNETED BAT (Eumops floridanus) ACOUSTIC SURVEY

State Road 72 (Clark Road)
From East of I-75 to Lorraine Road
Sarasota County, Florida

Prepared for:
Florida Department of Transportation – District 1
801 North Broadway Avenue
Bartow, FL 33830

249161000
January 2025

201 N Franklin St., Suite 1400
Tampa, FL 33602
813-620-1460

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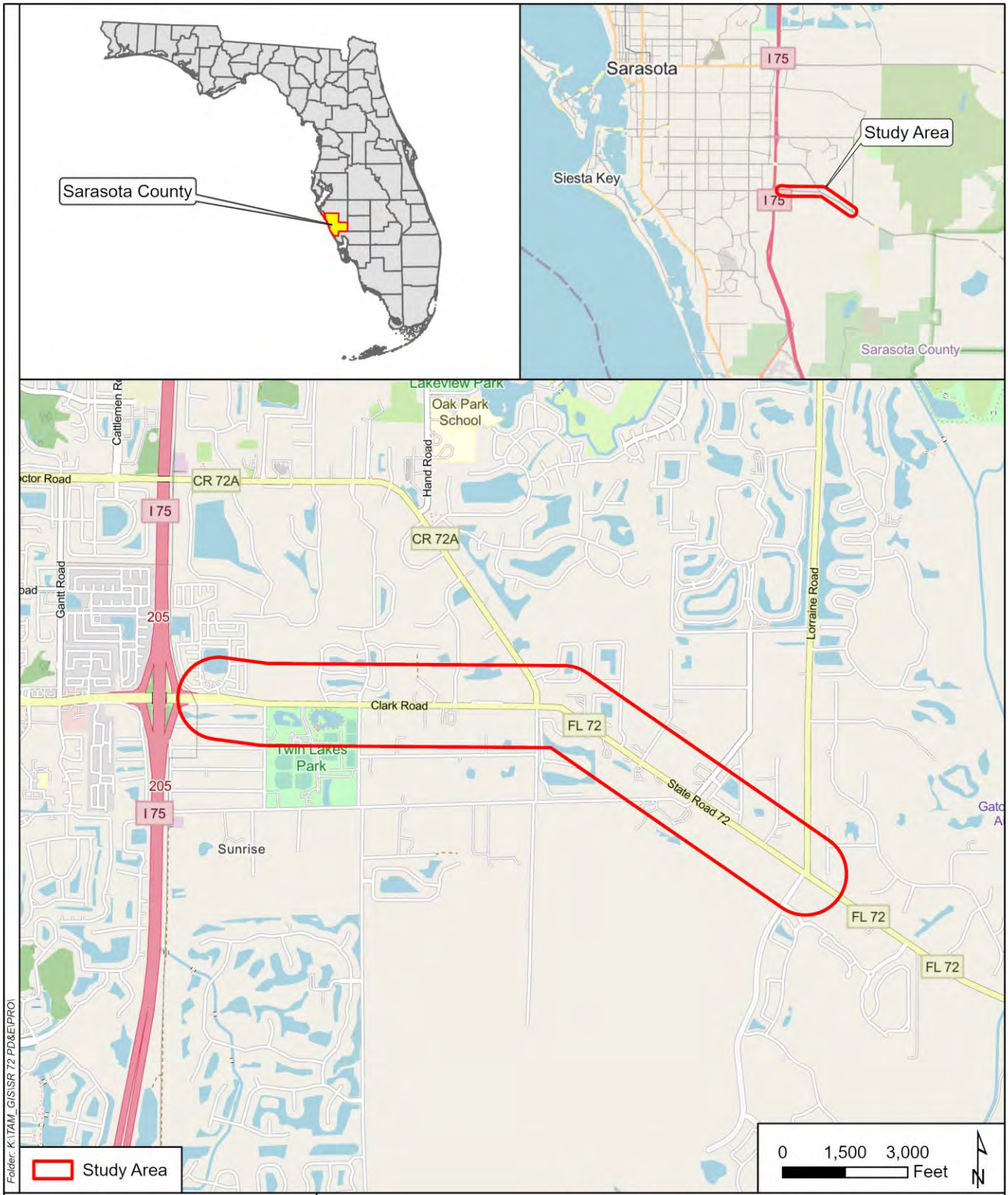
APPENDICES

1.0 INTRODUCTION

Kimley-Horn and Associates Inc. (Kimley-Horn) has prepared the following Florida bonneted bat (*Eumops floridanus*) Survey Report for the Project Development and Environment (PD&E) Study for proposed improvements to State Road (SR) 72 (Clark Road) (study area). The study area consists of a 300-meter buffer around SR 72 from approximately 110 meters east of I-75 to approximately 0.2 miles east of Lorraine Road (Rd). A Project Location Map (**Figure 1**) provides the general location of the study area. The study area is approximately 1.6 miles long and comprises 762.3 acres. The approximate center coordinates of the study area are 27° 16' 8.27" N and 82° 25' 15.95" W (1983 North American Datum (NAD) Coordinates) and is located within Sections 7, 8, 9, 15, 16, 17, and 18 of Township 37 South, Range 19 East in Sarasota County. The study area has historically been utilized as agricultural and residential lands and currently primarily consists of residential lands and roadway.

The project is located within the United States Fish and Wildlife Service's (USFWS) consultation area for the Florida bonneted bat (*Eumops floridanus*). Potential roosting and foraging habitat occur within the project area. As a result, Kimley-Horn conducted an assessment to determine the potential effects from the proposed project to the Florida bonneted bat. The assessment was prepared in accordance with Section 7 of the Endangered Species Act of 1973, as amended (87 Stat. 884; 16 U.S.C. 1531 et seq.). The acoustic surveys were conducted in March and April 2023 and in accordance with the current USFWS Florida Bonneted Bat Consultation Guidelines (June 2024; guidelines; **Appendix A**).

This report provides the methodology, results, and conclusions of the 2023 Florida bonneted bat survey conducted for the SR 72 (Clark Rd) project along with the anticipated effect determination.



Kimley»Horn

201 North Franklin Street, Suite 1400, Tampa, FL 33602
Phone (813) 620-1460
www.kimley-horn.com

Project Location Map

State Road 72 (Clark Road)
From East of I-75 to Lorraine Road
Sarasota County, Florida

1 IN = 3,000 FT	PROJECT NUMBER: 249161000	JUNE 2023	FIGURE 1

2.0 PROJECT DESCRIPTION

The Florida Department of Transportation (FDOT) District One is conducting a PD&E Study along SR 72 from east of I-75 to Lorraine Rd in Sarasota County (**Figure 1**). The purpose of this PD&E Study is to evaluate benefits, costs, and impacts of widening this portion of SR 72.

3.0 STATUS, LIFE HISTORY, AND HABITAT

The Florida bonneted bat (*Eumops floridanus*) is a federally listed species with a limited range and low population abundance. The USFWS consultation area for this species includes 17 counties in Florida: Broward, Charlotte, Collier, De Soto, Hardee, Hendry, Highlands, Glades, Lee, Martin, Miami-Dade, Monroe, Okeechobee, Osceola, Palm Beach, Polk, and Sarasota. The bat is listed as endangered by the USFWS and the Florida Fish and Wildlife Conservation Commission (FWC) primarily due to habitat loss. Additionally, the Florida bonneted bat has a small population size with few colonies, restricted range, slow reproductivity, and low fecundity. The USFWS established the current designated consultation area for this species in October 2019.

In general, Florida bonneted bats will forage over open fresh water, freshwater wetlands (permanent or seasonal), wetland and upland forests, wetland and upland shrub, and agricultural lands, as well as golf courses, parking lots, parks, and small patches of natural habitat in urban areas. The presence of roosting habitat is critical for day roosts, protection from predators, and the rearing of young. The Florida bonneted bat is known to roost in artificial structures (i.e., buildings and utility poles in urban areas), natural crevices (i.e., limestone crevices in Miami-Dade County), and tall, mature trees with structural features for breeding and sheltering (i.e., palm fronds, tree snags, tree cavities, hollows, decay, crevices, loose bark, or deformities).

The guidelines define foraging habitat as relatively open areas that provide sources of prey and drinking water including open fresh water, permanent or seasonal freshwater wetlands, wetland and upland forests, wetland and upland shrub, and agricultural areas. In urban areas, suitable foraging can be found at golf courses, parking lots, and parks.

4.0 METHODOLOGY

4.1 Preliminary Analysis

Prior to conducting acoustic surveys, a preliminary analysis of publicly available documentation and geographic information systems (GIS) data were reviewed to determine the potential habitat and occurrence of the Florida bonneted bat within the project area and to identify suitable acoustic survey sites.

The guidelines currently require a minimum of five (5) detector nights per 0.6 miles for linear projects. Based on the approximate 3-mile proposed project length, a minimum of 25 detector nights were required. A total of five (5) acoustic monitoring sites were identified to sufficiently cover the survey requirements based on project length and existing habitats along the project corridor. These sites were chosen to survey habitats most suitable for foraging and roosting, while being placed in areas with limited clutter to maximize the effectiveness of the equipment. A coordination meeting with USFWS was held on November 8, 2022 during which these monitoring sites were approved by John Wrublik (**Appendix B**) The acoustic detector deployment and the acoustic data analysis was conducted by qualified biologists with the required acoustic survey training.

4.2 Acoustic Survey

The acoustic survey was conducted from March 22 through April 2, 2023. The survey data utilized for analysis was obtained on both consecutive and nonconsecutive days due to equipment, weather, and site condition constraints. Photographs of the detector locations' representative habitats are included in **Appendix C**. The location of the acoustic survey stations is shown in **Table 1** and **Figure 2** below. Each detector location consisted of one full spectrum detector (Pettersson DX500) with an omnidirectional microphone and directional cone. The microphones were mounted approximately 18 feet above the ground on metal poles. The poles were placed on three-foot rebar stakes and secured with guywires for additional stability. The detectors were preset to automatically record for thirty (30) minutes before sunset and thirty (30) minutes after sunrise and were checked daily to ensure proper function. Weather was checked for the first five (5) hours of the survey period to ensure the following weather conditions did not occur on-site:

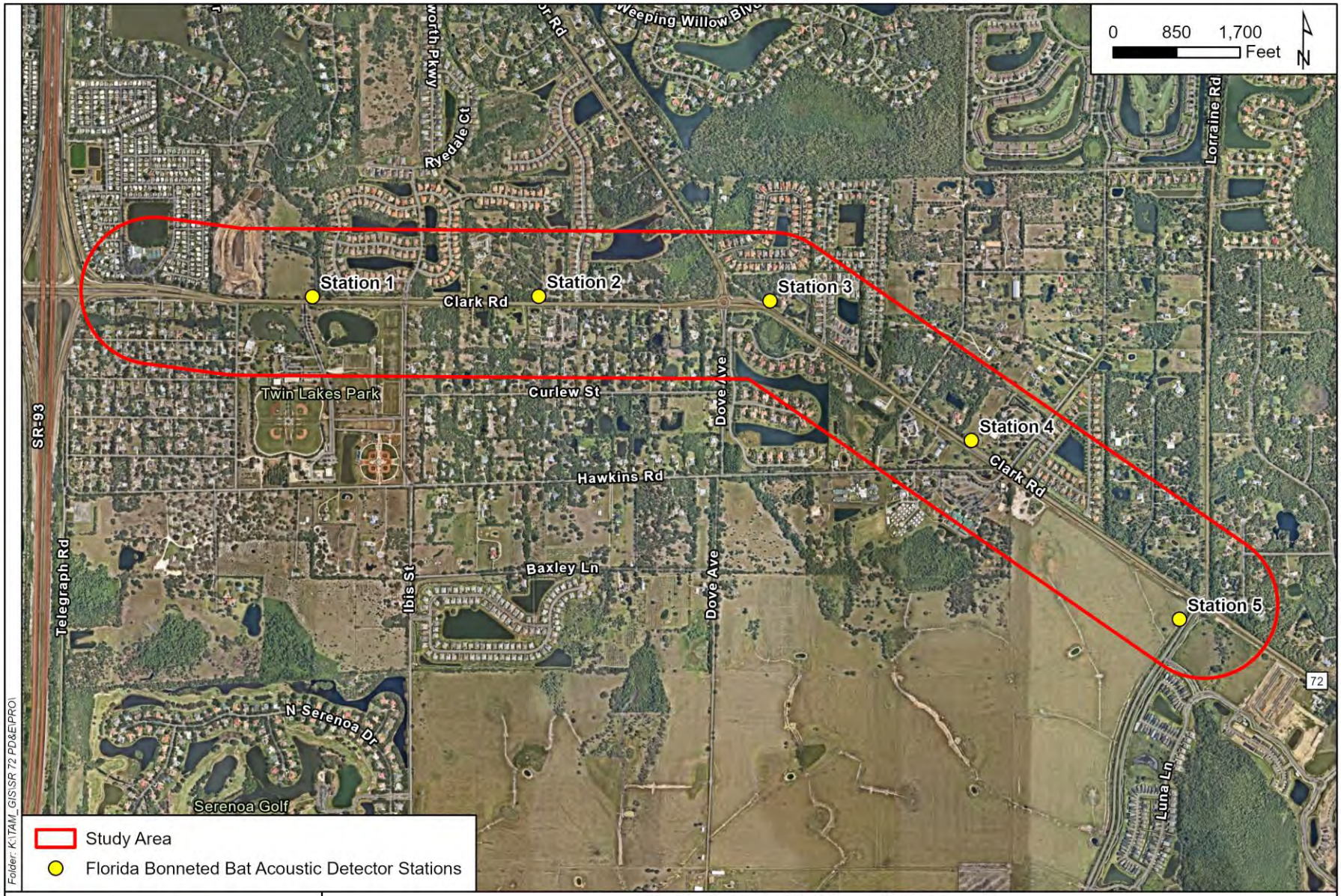
1. Temperatures below 65ºF;
2. Precipitation, including rain and/or fog, that exceeded thirty (30) minutes or more; or
3. Sustained wind speeds greater than 9 miles/hour for 30 minutes or more.

Weather documentation is included in **Appendix D**.

TABLE 1 – Acoustic Detector Deployment Location			
Location	**Latitude**	**Longitude**	**Microphone Direction**
Survey Station 1	27° 16' 09.09106144" N	082° 26' 17.02175240" W	Northwest
Survey Station 2	27° 16' 09.28492538" N	082° 25' 43.42833560" W	Northwest
Survey Station 3	27° 16' 08.78260467" N	082° 25' 09.08617495" W	Northwest
Survey Station 4	27° 15' 50.30447328" N	082° 24' 39.09921258" W	Northeast
Survey Station 5	27° 15' 26.65877731" N	082° 24' 08.12048934" W	West

4.3 Acoustic Data Analysis

The data were downloaded daily from each detector and analyzed using SonoBat Software, version 4.4.5. All recordings were screened for noise recordings and recordings of unacceptable quality. Remaining calls were analyzed to determine the presence and identification of species if possible. Additionally, recordings identified by the SonoBat Software as potential Florida bonneted bat calls were manually vetted for accuracy.



Kimley»Horn

201 North Franklin Street, Suite 1400, Tampa, FL 33602
Phone (813) 620-1460
www.kimley-horn.com

Florida Bonneted Bat Consultation Area Map

State Road 72 (Clark Road)
From East of I-75 to Lorraine Road
Sarasota County, Florida

1 IN = 1,700 FT	PROJECT NUMBER: 249161000	SEPTEMBER 2023	FIGURE 2

5.0 RESULTS

Five (5) survey stations collected data for five (5) nights, resulting in a total of 25 detector nights. Fifteen (15) files were identified by Sonobat Software as a Florida bonneted bat; however, after manual review, these files could not be positively identified to the species level and were reclassified as either noise or other low frequency bats (see **Appendix E** for call sonograms). Based on the software analysis and manual review, it was determined that a total of six (6) bat species were positively identified during the acoustic survey (**Table 2**). These bat species include:

- Brazilian free-tailed bat (*Tadarida brasiliensis*)
- Eastern red bat (*Lasiurus borealis*)
- Evening bat (Nycticeius humeralis)
- Northern yellow bat (*Lasiurus intermedius*)
- Southeastern myotis (Myotis austroriparius)
- Tricolored bat (*Perimyotis subflavus*)

TABLE 2 – Bat Species Recorded During Acoustic Survey

	Total
Survey Nights	25
Bat Species	6
Eastern red bat (*Lasiurus borealis*) files	20
Northern yellow bat (*Lasiurus intermedius)* files	94
Southeastern myotis (*Myotis austroriparius)* files	7
Evening bat (*Nycticeius humeralis*) files	354
Brazilian free-tailed bat (*Tadarida brasiliensis)* files	4,089
Tricolored bat (*Perimyotis subflavus*)	22
Florida bonneted bat (*Eumops floridanus*)	15*

*Florida bonneted bat files were manually vetted and all files were reclassified as noise or other low frequency bats.

The most common species recorded was the Brazilian free-tailed bat with 4,089 total files. The southeastern myotis had the least number of occurrences with seven (7) files total recorded. Sonobat Software auto identified 15 files as Florida bonneted bat files. However, these files were manually vetted and determined to be either noise or other low frequency bat calls. Therefore, no positively identified Florida bonneted bats were recorded during the acoustic study for this project.

6.0 CONCLUSION

This project falls within the Florida bonneted bat consultation area and contains potential roosting and foraging habitat per the *Florida Bonneted Bat Consultation Key* (USFWS 2019). An acoustic survey was conducted per USFWS Florida Bonneted Bat Consultation Guidelines from March 22 through April 2, 2023 at five (5) USFWS approved monitoring stations for a total of 25 detector nights. Sonobat Software auto identified 15 Florida bonneted bat files. However, these files were manually vetted and reclassified as noise or other low frequency bat calls. It was determined that no Florida bonneted bats were positively identified during this acoustic survey. Therefore, using the 2024 USFWS bonneted bat consultation key (**1a→2a→3c→4b→9b→11a with best management practices**), this project is anticipated to have "*may affect, not likely to adversely affect"* on the Florida bonneted bat (**Appendix F**).

Appendix A
USFWS Florida Bonneted Bat Consultation Guidelines

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960
October 22, 2019

Shawn Zinszer
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

Subject: Consultation Key for the Florida bonneted bat; 04EF2000-2014-I-0320-R001

Dear Mr. Zinszer:

This letter replaces the December 2013, Florida bonneted bat guidelines provided to the U.S. Army Corps of Engineers (Corps) to assist your agency with effect determinations within the range of the Florida bonneted bat (*Eumops floridanus*). This October 2019 revision supersedes all prior versions. The enclosed *Florida Bonneted Bat Consultation Guidelines* and incorporated *Florida Bonneted Bat Consultation Key* (Key) are provided pursuant to the U.S. Fish and Wildlife Service's (Service) authorities under the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C.1531 *et seq.*). This letter, guidelines, and Key have been assigned Service Consultation Code: 41420- 04EF2000-2014-I-0320-R001.

The purpose of the guidelines and Key is to aid the Corps (or other Federal action agency) in making appropriate effect determinations for the Florida bonneted bat under section 7 of the Act, and streamline informal consultation with the Service for the Florida bonneted bat when the proposed action is consistent with the Key. There is no requirement to use the Key. There will be cases when the use of the Key is not appropriate. These include, but are not limited to: where project specific information is outside of the scope of the Key, applicants do not wish to implement the identified survey or best management practices, or if there is new biological information about the species. In these cases, we recommend the Corps (or other Federal action agency) initiate traditional consultation pursuant to section 7 of the Act, and identify that consultation is being requested outside of the Key.

This Key uses type of habitat (*i.e*, roosting or foraging), survey results, and project size as the basis for making determinations of "may affect, but is not likely to adversely affect" (MANLAA) and "may affect, and is likely to adversely affect" (LAA). The Key is structured to focus on the type(s) of habitat that will be affected by a project. When proposed project areas provide features that could support roosting of Florida bonneted bats, it is considered roosting habitat. If evaluation of roosting habitat determines that roosting is not likely, then the area is subsequently evaluated for its value to the species as foraging habitat.

Roosting habitat

The guidelines describe the features of roosting habitat. When a project is proposed in roosting habitat, the likelihood that roosting is occurring is evaluated through surveys (*i.e.*, full acoustic or limited roost). When a roost is expected and the proposed activity will affect that roost, formal consultation is required. This is because the proposed activity is expected to take individuals through the destruction of the roost and the appropriate determination is that the project may affect, and is likely to adversely affect (LAA) the species. When roosting is expected, but all impacts to the roost can be avoided, and only foraging habitat (without roost structure) will be affected, the Service finds that it is reasonable to conclude that the proposed action is not likely to impair feeding, breeding, or sheltering. Thus, the proposed project may affect, but is not likely to affect the Florida bonneted bat (MANLAA).

The exception to this logic path is if the proposed action will affect more than 50 acres of foraging habitat in proximity to the roost. Under this scenario, we anticipate that the loss of the larger amount of foraging habitat near the roost could significantly impair feeding of young and overall breeding (*i.e.*, LAA). Consequently, these projects would require formal consultation to analyze the effect of the incidental take.

If the roost surveys demonstrate that roosting is not likely, the project is then evaluated for its effects to foraging habitat. Our evaluation of these actions is described below. The exception is for projects less than or equal to 5 acres if a limited roost survey is conducted. Limited roost surveys rely on peeping and visual surveys to determine whether roosting is likely. On these small projects, this survey strategy is believed to be more economical and is considered a reasonable effort to evaluate the potential for roosting. The Service acknowledges that this approach is less reliable in evaluating the likelihood of roosting when it is not combined with acoustic surveys. Therefore, when limited roost surveys are conducted for projects that are less than or equal to 5 acres in size and the determination is that roosting is not likely, we conclude that the proposed project may affect, but is not likely to adversely affect the species (MANLAA).

Foraging habitat

The guidelines describe the features of foraging habitat. Data informing the home range size of the Florida bonneted bats is limited. Global Positioning System (GPS) and radio-telemetry data for Florida bonneted bats documents that they move large distances and likely have large home ranges. Data from recovered GPS satellite tags on Florida bonneted bats tagged at Babcock-Webb Wildlife Management Area (BWWMA) found the maximum distance detected from a capture site was 24.2 mi (38.9 km); the greatest path length travelled in a single night was 56.3 mi (90.6 km) (Ober 2016; Webb 2018a-b). At BWWMA, researchers found that most individual locations were within one mile of the roost (point of capture) (Ober 2015). Additional data collected during the month of December documented the mean maximum distance Florida bonneted bats (n=8) with tags traveled from the roost was 9.5 mi (Webb 2018b).

The Service recognizes that the movement information comes from only one site (BWWMA and vicinity), and data are from small numbers (n=20) of tagged individuals for only short periods of time (Webb 2018a-b). We expect that across the Florida bonneted bat's range differences in

habitat quality, prey availability, and other factors will result in variable habitat use and home range sizes between locations. Foraging distances and home range sizes in high quality habitats are expected to be smaller while foraging distances and home range sizes in low quality habitat would be expected to be larger. Regardless, we use these studies as our best available information to evaluate when changes to foraging habitat may have an effect on the species ability to feed, breed, and shelter and subsequently result in incidental take. When considering where most of the nightly activity was observed, we calculate a foraging area centered on a roost with a 1 mile radius would include approximately 2,000 acres, and a foraging area centered on a 9.5 mile radius would encompass approximately 181,000 acres, on any given night.

Given the Service's limited understanding of how the Florida bonneted bat moves throughout its home range and selects foraging areas, we choose to use 50 acres of habitat as a conservative estimate to when loss of foraging habitat may affect the fitness of an individual to the extent that it would impair feeding and breeding. Projects that would remove, destroy or convert less than 50 acres of Florida bonneted bat foraging habitat are expected to result in a loss of foraging opportunities; however, this decrease is not expected to significantly impair the ability of the individual to feed and breed. Consequently, projects impacting less than 50 acres of foraging habitat that implement the identified best management practices in the Key would be expected to avoid take, and the appropriate determination is that the project may affect, but is not likely to adversely affect the species (MANLAA).

Next, the Service incorporated the level of bat activity into our Key to evaluate when a foraging area may have greater value to the species. When surveys document high bat activity, we deduce that this area has increased value and importance to the species. Thus, when high bat activity is detected in parcels with greater than 50 acres of foraging habitat, we anticipate that the loss, destruction, or conversion of this habitat could significantly impair the ability of an individual to feed and breed (*i.e.*, LAA); thus formal consultation is warranted.

If surveys do not indicate high bat activity, we anticipate that loss of this additional foraging habitat may affect, but is not likely to adversely affect the species (MANLAA). This is because although the acreage is large, the area does not appear to be important at the landscape scale of nightly foraging. Therefore, its loss is not anticipated to significantly impair the ability of an individual to feed or breed.

The exception to this approach is for projects greater than 50 acres when they occur in potential roosting habitat that is not found to support roosting or high bat activity. Under this scenario, the Service concludes that the loss of the large acreage of suitable roosting habitat has the potential to significantly impair the ability of an individual to breed or shelter (*i.e.*, LAA) because the species is cavities for roosting are expected to be limited range wide and the project will impair these limited opportunities for roosting.

Determinations

The Corps (or other Federal action agency) may reach one of several determinations when using this Key. Regardless of the determination, when acoustic bat surveys have been conducted, the Service requests that these survey results are provided to our office to increase our knowledge of

the species and improve our consultation process. Surveys results and reports should be transmitted to the Service at FBBsurveyreport@fws.gov or mail electronic file to U.S. Fish and Wildlife Service, Attention Florida bonneted bat surveys, 1339 20th Street, Vero Beach, Florida 32960. When formal consultation is requested, survey results and reports should be submitted with the consultation request to verobeach@fws.gov.

No effect: If the use of the Key results in a determination of "no effect," no further consultation is necessary with the Service. The Service recommends that the Corps (or other Federal action agency) documents the pathway used to reach the determination in the project record and proceeds with other species analyses as warranted.

May Affect, Not Likely to Adversely Affect (MANLAA): In this Key we have identified two ways that consultation can conclude informally, MANLAA-P and MANLAA-C.

> **MANLAA-P**: If the use of the Key results in a determination of "MANLAA- P," the Service concurs with this determination based on the rationale provide above, and no further consultation is necessary for the effects of the proposed action on the Florida bonneted bat. The Service recommends that the Corps (or other Federal action agency) documents the pathway used to reach the determination in the project record and proceeds with other species analyses as warranted.
>
> **MANLAA-C**: If the use of the Key results in a determination of MANLAA-C, further consultation with the Service is required to confirm that the Key has been used properly, and the Service concurs with the evaluation of the survey results. Survey results should be submitted with the consultation request.

May Affect, Likely to Adversely Affect (LAA) - When the determination in the Key is "LAA" technical assistance with the Service and modifications to the proposed action may enable the project to be reevaluated and conclude with a MANLAA-C determination. Under other circumstance, "LAA" determinations will require formal consultation.

Working with the Fish and Wildlife Foundation of Florida, the Service has established a fund to support conservation and recovery for the Florida bonneted bat. Any project that has the potential to affect the Florida bonneted bat and/or its habitat is encouraged to make a voluntary contribution to this fund. If you would like additional information about how to make a contribution and how these monies are used to support Florida bonneted bat recovery please contact Ashleigh Blackford, Connie Cassler, or José Rivera at 772-562-3909.

This revised Key is effective immediately upon receipt by the Corps. Should circumstances change or new information become available regarding the Florida bonneted bat and/or implementation of the Key, the determinations herein may be reconsidered and this Key further revised or amended. We have established an email address to collect comments on the Key and the survey protocols at: FBBguidelines@fws.gov.

Thank you for your continued cooperation in the effort to conserve fish and wildlife resources. If you have any questions regarding this Key, please contact the South Florida Ecological Services Office at 772-562-3909.

Sincerely,

Roxanna Hinzman
Field Supervisor
South Florida Ecological Services

Enclosure

Cc: electronic only
Corps, Jacksonville, Florida (Dale Beter, Muriel Blaisdell, Ingrid Gilbert, Alisa Zarbo, Melinda Charles-Hogan, Susan Kaynor, Krista Sabin, John Fellows)

LITERATURE CITED

Ober, H. 2015. Annual report to USFWS for calendar year 2015. Permit number TE23583B-1. University of Florida, Department of Wildlife Ecology and Conservation, North Florida Research and Education Center. Quincy, Florida.

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Webb, E.N. 2018a. Email to Paula Halupa *et al.* University of Florida, Department of Wildlife Ecology and Conservation. Gainesville, Florida. April 1, 2018.

Webb, E.N. 2018b. Presentation given at Florida bonneted bat working group meeting at The Conservancy of Southwest Florida. University of Florida, Department of Wildlife Ecology and Conservation. Gainesville, Florida. May 24, 2016.

U.S. Fish and Wildlife Service
South Florida Ecological Services Office

FLORIDA BONNETED BAT CONSULTATION GUIDELINES

October - 2019

The U.S. Fish and Wildlife Service's South Florida Ecological Services Field Office (Service) developed the Florida Bonneted Bat Consultation Guidelines (Guidelines) to assist in avoiding and minimizing potential negative effects to roosting and foraging habitat, and assessing effects to the Florida bonneted bat (*Eumops floridanus*) from proposed projects. The Consultation Key within the Guidelines assists applicants in evaluating their proposed projects and identifying the appropriate consultation paths under sections 7 and 10 of the Endangered Species Act of 1973 (Act), as amended (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). These Guidelines are primarily for use in evaluating regulatory projects where development and land conversions are anticipated. These Guidelines focus on conserving roosting structures in natural and semi-natural environments. The following Consultation Area map (Figure 1 and Figure 2, Appendix A), Consultation Flowchart (Figure 3), Consultation Key, Survey Framework (Appendices B-C), and **Best Management Practices (BMPs)** (Appendix D) are based upon the best available scientific information. As more information is obtained, these Guidelines will be revised as appropriate. If you have comments, or suggestions on these Guidelines or the Survey Protocols (Appendix B and C), please email your comments to FBBguidelines@fws.gov. These comments will be reviewed and incorporated in an annual review.

Terms in **bold** are further defined in the Glossary.

Wherever possible, proposed development projects within the Consultation Area should be designed to avoid and minimize take of Florida bonneted bats and to retain their habitat. Applicants are encouraged to enter into early technical assistance/consultation with the Service so we may provide recommendations for avoiding and minimizing adverse effects. Although these Guidelines focus on the effects of a proposed action (*e.g.*, development) on natural habitat, (*i.e.*, non-urban), Appendix E also provides Best Management Practices for Land Management Projects.

If you are renovating an existing artificial structure (*e.g.*, building) within the urban environment with or without additional ground disturbing activities, these Guidelines do not apply. The Service is developing separate guidelines for consultation in these situations. Until the urban guidelines are complete, please contact the Service for additional guidance.

The final listing rule for the Florida bonneted bat (Service 2013) describes threats identified for the species. Habitat loss and degradation, as well as habitat modification, have historically affected the species. Florida bonneted bats are different from most other Florida bat species because they are reproductively active through most of the year, and their large size makes them capable of foraging long distances from their roost (Ober *et al.* 2016). Consequently, this species is vulnerable to disturbances around the roost during a greater portion of the year and considerations about foraging habitat extend further than the localized roost.

Use of Consultation Area, Flowchart, and Key

Figure 1 shows the Consultation Area for the Florida bonneted bat where this consultation guidance applies. For information on how the Consultation Area was delineated see Appendix A. The Consultation Flowchart (Figure 3) and Consultation Key direct project proponents through a series of couplets that will provide a conclusion or determination for potential effects to the Florida bonneted bat. *Please Note: If additional listed species, or candidate or proposed species, or designated or proposed critical habitat may be affected, a separate evaluation will be needed for these species/critical habitats.*

Currently, the Consultation Flowchart (Figure 3) and Consultation Key cannot be used for actions proposed within the urban development boundary in Miami-Dade and Broward County. The urban development boundary is part of the Consultation Area, but it is excluded from these Guidelines because Florida bonneted bats use this area differently (roosting largely in artificial structures), and small natural foraging areas are expected to be important. Applicants with projects in this area should contact the Service for further guidance and individual consultation.

Determinations may be either "no effect," "may affect, but is not likely to adversely affect" (**MANLAA**), or "may affect, and is likely to adversely affect" (**LAA**). An applicant's willingness and ability to alter project designs could sufficiently minimize effects to Florida bonneted bats and allow for a **MANLAA** determination for this species (informal consultation). The Service is available for early technical assistance/consultation to offer recommendations to assist in project design that will minimize effects. When take cannot be avoided, applicants and action agencies are encouraged to incorporate compensation to offset adverse effects. The Service can assist with identifying compensation options (*e.g.,* conservation on site, conservation off-site, contributions to the Service's Florida bonneted bat conservation fund, *etc*.).

Using the Key and Consultation Flowchart

- "No effect" determinations do not need Service concurrence.
- "May affect, but is not likely to adversely affect" **MANLAA**. Applicants will be expected to incorporate the appropriate BMPs to reach a **MANLAA** determination.
    - **MANLAA-P** (in blue in Consultation Flowchart) have programmatic concurrence through the transmittal letter of these Guidelines, and therefore no further consultation with the Service is necessary unless assistance is needed in interpreting survey results.
    - **MANLAA-C** (in black in Consultation Flowchart) determinations require further consultation with the Service.
- "May affect, and is likely to adversely affect" (**LAA**) determinations require consultation with the Service. Project modifications could change the **LAA** determinations in numbers 5, 8, 9, 11, 12, and 17 to **MANLAA**. When take cannot be avoided, **LAA** determinations will require a biological opinion.
- The Service requests copies of surveys used to support all determinations. If a survey is required by the Consultation Key and the final determination is "no effect" or "MANLAA-P", send the survey to FBBsurveyreport@fws.gov , or mail electronic file to U.S. Fish and Wildlife Service, Attention Florida bonneted bat surveys, 1339 20th Street, Vero Beach, Florida 32960. If a survey is required by the Consultation Key and the determination is "MANLAA-C" or "LAA", submit the survey in the consultation request.

For the purpose of making a decision at Couplet 2: If any potential roosting structure is present, then the habitat is classified as **potential roosting habitat**, and the left half of the flowchart should be followed (see Figure 3). We recognize that roosting habitat may also be used by Florida bonneted bats for foraging. If the project site only consists of **foraging habitat** (*i.e.*, no suitable roosting structures), then the right side of the flowchart should be followed beginning at step 13.

For couplets 11 and 12: **Potential roosting habitat** is considered **Florida bonneted bat foraging habitat** when a determination is made that roosting is not likely.

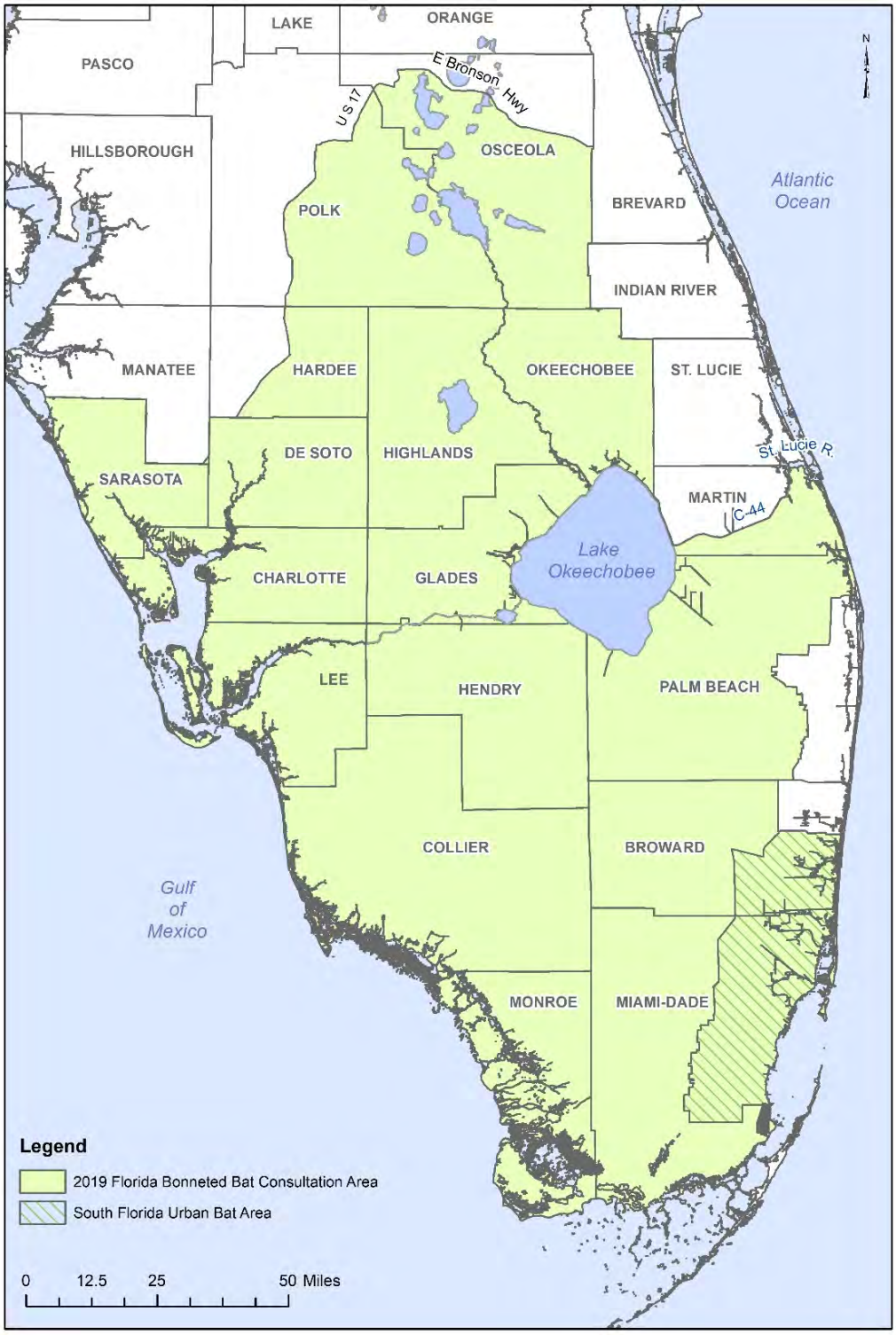

Figure 1. Florida Bonneted Bat Consultation Area. Hatched area (Figure 2) identifies the urban development boundary in Miami-Dade and Broward County. Applicants with projects in this area should contact the Service for specific guidance addressing this area and individual consultation. The Consultation Key should not be used for projects in this area.

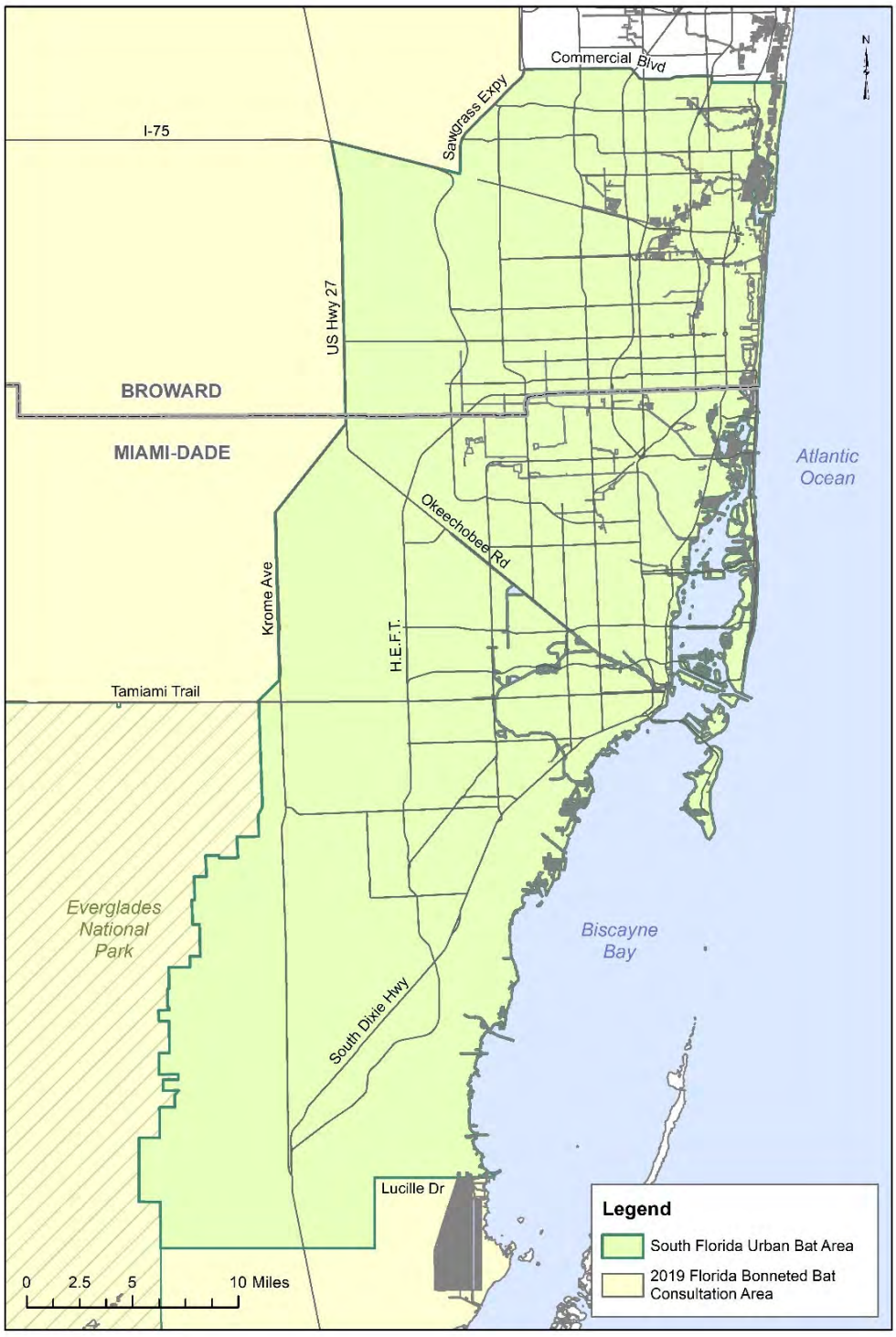

Figure 2. Urban development boundary in Miami-Dade and Broward County. The Consultation Key should not be used for projects in this area. Applicants with projects in this South Florida Urban Bat Area should contact the Service for specific guidance addressing this area and individual consultation.

Florida Bonneted Bat Consultation Key[#]

Use the following key to evaluate potential effects to the Florida bonneted bat (FBB) from the proposed project. Refer to the Glossary as needed.

1a. Proposed project or land use change is partially or wholly within the Consultation Area (Figure 1).....**Go to 2**
1b. Proposed project or land use change is wholly outside of the Consultation Area (Figure 1).....**No Effect**

2a. Potential FBB roosting habitat exists within the project area……**Go to 3**
2b. No potential FBB roosting habitat exists within the project area..……**Go to 13**

3a. Project size/footprint* ≤ 5 acres (2 hectares)…….. **Conduct Limited Roost Survey (Appendix C)** then **Go to 4**
3b. Project size/footprint* > 5 acres (2 hectares)…….....**Conduct Full Acoustic/Roost Surveys (Appendix B)** then **Go to 6**

4a. Results show FBB roosting is likely ……**Go to 5**
4b. Results do not show FBB roosting is likely…….**MANLAA-P if BMPs (Appendix D) used and survey reports are submitted. Programmatic concurrence.**

5a. Project will affect roosting habitat……..**LAA$^+$ Further consultation with the Service required.**
5b. Project will not affect roosting habitat…….. **MANLAA-C with required BMPs (Appendix D). Further consultation with the Service required.**

6a. Results show some FBB activity……**Go to 7**
6b. Results show no FBB activity……**No Effect**

7a. Results show FBB roosting is likely..……**Go to 8**
7b. Results do not show FBB roosting is likely..……**Go to 10**

8a. Project will not affect roosting habitat……**Go to 9**
8b. Project will affect roosting habitat……..……**LAA$^+$ Further consultation with the Service required.**

9a. Project will affect* > 50 acres (20 hectares) (wetlands and uplands) of foraging habitat……..…….**LAA$^+$ Further consultation with the Service required.**
9b. Project will affect* ≤ 50 acres (20 hectares) (wetlands and uplands) of foraging habitat…….. **MANLAA-C with required BMPs (Appendix D). Further consultation with the Service required.**

10a. Results show high FBB activity/use…..…….....**Go to 11**
10b. Results do not show high FBB activity/use…..…….....**Go to 12**

11a. Project will affect* > 50 acres (20 hectares) (wetlands and uplands) of FBB habitat (roosting and/or foraging)…..……..…..... **LAA$^+$ Further consultation with the Service required.**
11b. Project will affect* ≤ 50 acres (20 hectares) (wetlands and uplands) of FBB habitat (roosting and/or foraging)……..... **MANLAA-C with required BMPs (Appendix D). Further consultation with the Service required.**

12a. Project will affect* > 50 acres (20 hectares) (wetlands and uplands) of FBB habitat…..……..…..... **LAA$^+$ Further consultation with the Service required.**
12b. Project will affect* ≤ 50 acres (20 hectares) (wetlands and uplands) of FBB habitat……....…..... **MANLAA-P if BMPs (Appendix D) used and survey reports are submitted. Programmatic concurrence.**

13a. FBB foraging habitat exists within the project area and foraging habitat will be affected…..……..**Go to 14**

13b. FBB foraging habitat exists within the project area and foraging habitat will not be affected **OR** no FBB foraging habitat exists within the project area…..……..**No Effect**

14a. Project size* > 50 acres (20 hectares) (wetlands and uplands) ……..…….**Go to 15**

14b. Project size* ≤ 50 acres (20 hectares) (wetlands and uplands) ……...….. **MANLAA-P if BMPs (Appendix D) used. Programmatic concurrence.**

15a. Project is within 8 miles (12.9 kilometers) of high quality potential roosting areas^……..……**Conduct Full Acoustic Survey (Appendix B) and Go to 16**

15b. Project is not within 8 miles (12.9 kilometers) of high quality potential roosting area^…….....….**MANLAA-P if BMPs (Appendix D) used. Programmatic concurrence.**

16a. Results show some FBB activity……...…….....**Go to 17**

16b. Results show no FBB activity……..…….…....**No Effect**

17a. Results show high FBB activity/use……...…...…....**LAA[+] Further consultation with the Service required.**

17b. Results do not show high FBB activity/use……..……... **MANLAA-P if BMPs (Appendix D) used and survey reports submitted. Programmatic concurrence.**

[#] If you are within the urban environment and you are renovating an existing artificial structure (with or without additional ground disturbing activities), these Guidelines do not apply. The Service is developing separate guidelines for consultation in these situations. Until the urban guidelines are complete, please contact the Service for additional guidance

*****Includes wetlands and uplands that are going to be altered along with a 250- foot (76.2- meter) buffer around these areas if the parcel is larger than the altered area.

[+]Project modifications could change the **LAA** determinations in numbers 5, 8, 9, 11, 12, and 17 to **MANLAA** determinations.

^Determining if **high quality potential roosting areas** are within 8 mi (12.9 km) of a project is intended to be a desk-top exercise looking at most recent aerial imagery, not a field exercise.

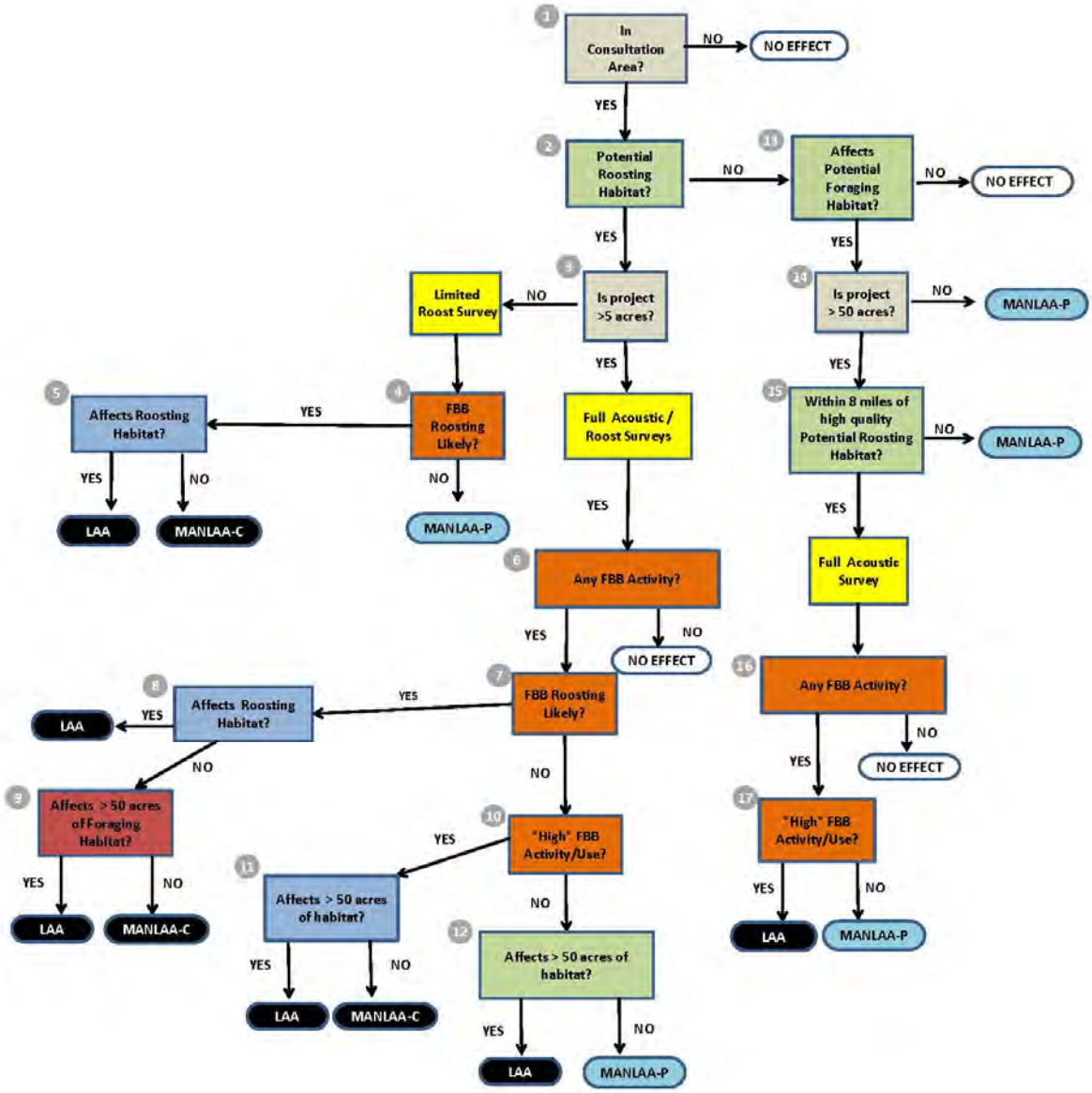

Figure 3. Florida bonneted bat Consultation Flowchart. "**No effect**" determinations do not need Service concurrence. "May affect, but not likely to adversely affect", **MANLAA-P,** in blue have programmatic concurrence through the transmittal letter of these Guidelines, and therefore no further consultation with the Service is necessary unless assistance is needed in interpreting survey results. **MANLAA-C** determinations in black require further consultation with the Service. Applicants are expected to incorporate the appropriate **BMPs** to reach a **MANLAA** determination. "May affect, and is likely to adversely affect", **LAA, (**also in black) determinations require consultation with the Service. Further consultation with the Service may identify project modifications that could change the **LAA** determinations in numbers 5, 8, 9, 11, 12, and 17 to **MANLAA** determinations. The Service requests Florida bonneted bat survey reports for all determinations.

GLOSSARY

BMPs – Best Management Practices. Recommendations for actions to conserve roosting and foraging habitat to be implemented before, during, and after proposed development, land use changes, and land management activities.

FBB Activity – Florida bonneted bat (FBB) activity is when any Florida bonneted bat calls are recorded during an acoustic survey or human observers see or hear Florida bonneted bats on a site.

FORAGING HABITAT - Comprised of relatively open (*i.e.,* uncluttered or reduced numbers of obstacles, such as fewer tree branches and leaves, in the flight environment) areas to find and catch prey, and sources of drinking water. In order to find and catch prey, Florida bonneted bats forage in areas with a reduced number of obstacles. This includes: open fresh water, permanent or seasonal freshwater wetlands, within and above wetland and upland forests, wetland and upland shrub, and agricultural lands (Bailey *et al.* 2017). In urban and residential areas drinking water, prey base, and suitable foraging can be found at golf courses, parking lots, and parks in addition to relatively small patches of natural habitat.

FULL ACOUSTIC/ROOST SURVEY - This is a comprehensive survey that will involve systematic acoustic surveys (*i.e.,* surveys conducted 30 minutes prior to sunset to 30 minutes after sunrise, over multiple consecutive nights). Depending upon acoustic results and habitat type, targeted roost searches through thorough visual inspection using a tree-top camera system or observations at emergence (*e.g.,* looking and listening for bats to come out of tree cavities around sunset) or more acoustic surveys may be necessary. See Appendix B for a full description.

HIGH FBB ACTIVITY/USE - High Florida bonneted bat (FBB) activity/use or importance of an area can be defined using several parameters (*e.g*., types of calls, numbers of calls). An area will be considered to have high FBB activity/use if **ANY** of the following are found: (a) multiple FBB feeding buzzes are detected; (b) FBB social calls are recorded; (c) large numbers of Florida bonneted bat calls (9 or more) are recorded throughout one night. Each of these parameters is considered to indicate that an area is actively used and important to FBBs, however, the Service will further evaluate the activity/use of the area within the context of the site (*i.e.,* spatial distribution of calls, site acreage, habitat on site, as well as adjacent habitat) and provide additional guidance.

HIGH QUALITY POTENTIAL ROOSTING AREAS - Sizable areas (>50 acres) [20 hectares] that contain large amounts of high-quality, natural roosting structure – (*e.g.,* predominantly native, mature trees; especially pine flatwoods or other areas with a large number of cavity trees, tree hollows, or high woodpecker activity).

LAA - May Affect, and is Likely to Adversely Affect. The appropriate conclusion if any adverse effect to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not: discountable, insignificant, or

beneficial [see definition of "may affect, but is not likely to adversely affect" (**MANLAA**)]. In the event the overall effect of the proposed action is beneficial to the listed species, but also is likely to cause some adverse effects, then the proposed action is "likely to adversely affect" the listed species. If incidental take is anticipated to occur as a result of the proposed action, an "is likely to adversely affect" (**LAA**) determination should be made. An "is likely to adversely affect" determination requires the initiation of formal section 7 consultation.

LIMITED ROOST SURVEY - This is a reduced survey that may include the following methods: acoustics, observations at emergence (*e.g.,* looking and listening for bats to come out of tree cavities around sunset), and visual inspection of trees with cavities or loose bark using tree-top cameras (or combination of these methods). Methods are fairly flexible and dependent upon composition and configuration of project site and willingness and ability of applicant and partners to conserve roosting structures on site. See also Appendix C for a full description.

MANLAA - May Affect, but is Not Likely to Adversely Affect. The appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur. Based on best judgment, a person would not: (1) be able to meaningfully measure, detect, or evaluate insignificant effects; or (2) expect discountable effects to occur. To use these Guidelines and Consultation Key applicants must incorporate the appropriate **BMPs** (Appendix D) to reach a **MANLAA** determination.

In this Consultation Key we have identified two ways that consultation can conclude informally, **MANLAA-P and MANLAA-C**:

> **MANLAA-P**: programmatic concurrence is provided through the transmittal letter of these Guidelines, no additional consultation is required with the Service for Florida bonneted bats. All survey results must be submitted to Service.
>
> **MANLAA-C**: further consultation with the Service is required to confirm that the Consultation Key has been used properly, and the Service concurs with the evaluation of the survey results. Request for consultation must include survey results.

NO EFFECT - The appropriate conclusion when the action agency determines its proposed action will not affect listed species or designated critical habitat.

POTENTIAL ROOSTING HABITAT - Includes forest and other areas with tall, mature trees or other areas with suitable roost structures (*e.g.,* utility poles, artificial structures). Forest is defined as all types including: pine flatwoods, scrubby flatwoods, pine rocklands, royal palm hammocks, mixed or hardwood hammocks, cypress, sand pine scrub, or other forest types. (Forrest types currently include exotic forests such as melaleuca, please contact the Service for additional guidance as needed). More specifically, this includes habitat in which suitable structural features for breeding and sheltering are present. In general, roosting habitat contains one or more of the following structures: tree snags, and trees with cavities, hollows, deformities, decay, crevices, or loose bark. Structural characteristics are of primary importance.

Florida bonneted bats have been found roosting in habitat with the following structural features, but may also occur outside of these parameters:

- trees greater than 33 feet (10 meters) in height, greater than 8 inches (20 centimeters) in diameter at breast height (DBH), with cavity elevations higher than 16 feet (5 meters) above ground level (Braun de Torrez 2019);
- areas with a high incidence of large or mature live trees with various deformities (*e.g.,* large cavities, hollows, broken tops, loose bark, and other evidence of decay) (*e.g.,* pine flatwoods);
- rock crevices (*e.g.,* limestone in Miami-Dade County); and/or
- artificial structures, mimicking natural roosting conditions (*e.g.,* bat houses, utility poles, buildings), situated in natural or semi-natural habitats.

In order for a building to be considered a roosting structure, it should be a minimum of 15 feet high and contain one or more of the following features: chimneys, gaps in soffits, gaps along gutters, or other structural gaps or crevices (outward entrance approximately 1 inch (2.5 centimeters) in size or greater. Structures similar to the above (*e.g.,* bridges, culverts, minimum of 15 feet high) are expected to also provide roosting habitat, based upon the species' morphology and behavior (Keeley and Tuttle 1999). Florida bonneted bat roosts will be situated in areas with sufficient open space for these bats to fly (*e.g.,* open or semi-open canopy, canopy gaps, above the canopy, and edges which provide relatively uncluttered conditions [*i.e.,* reduced numbers of obstacles, such as fewer tree branches and leaves, in the flight environment]).

For the purpose of this Consultation Key*: Roosting habitat refers to habitat with structures that can be used for daytime and maternity roosting. Roosting at night between periods of foraging can occur in a broader range of structure types. For the purposes of this guidance we are focusing on day roosting habitat.*

ROOSTING IS LIKELY– Determining likelihood of roosting is challenging. The Service has provided the following definition for the express purpose of these Guidelines. Researchers use additional cues to assist in locating roosts. As additional indicators are identified and described we expect our Guidelines will be improved.

In this Consultation Key the Service will consider the following evidence indicative that roosting is likely nearby (*i.e.,* reasonably certain to occur) if **ANY** of the following are documented: (a) Florida bonneted bat calls are recorded within 30 minutes before sunset to 1½ hours following sunset or within 1½ hours before sunrise; (b) emergence calls are recorded; (c) human observers see (or hear) Florida bonneted bats flying from or to potential roosts; (d) human observers see and identify Florida bonneted bats within a natural roost or artificial roost; and/or (e) other bat sign (*e.g*., guano, staining, etc.) is found that is identified to be Florida bonneted bat through additional follow-up.

In addition to the aforementioned events, researchers consider roosting likely in an area when (1) large numbers of Florida bonneted bat calls are recorded throughout the night (*e.g.,* ≥ 25 files per night at a single acoustic station when 5 second file lengths are recorded); (2) large numbers of FBB calls are recorded over multiple nights (*e.g.,* an average of ≥ 20 files per night from a single detector when 5 second file lengths are recorded); or (3) social calls are recorded. Because social calls and large numbers of calls recorded over one or more nights can be indicative of high

FBB activity/use or when roosting is likely, the Service is choosing not to use these as indicators to make the determination that roosting is likely. Instead we are relying on the indicators that are only expected to occur at or very close to a roost location [(a)-(e) above].

TAKE - to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct. [ESA §3(19)] Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined by the Service as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. [50 CFR §17.3].

Literature Cited

Bailey, A.M., H.K. Ober, A.R. Sovie, and R.A. McCleery. 2017. Impact of land use and climate on the distribution of the endangered Florida bonneted bat. Journal of Mammalogy. 98:1586-1593.

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Keeley, B.W., and M.D. Tuttle. 1999. Bats in American bridges. Bat Conservation International, Inc. Austin, Texas.

Ober, H.K., E.C. Braun de Torrez, J.A. Gore, A.M. Bailey, J.K. Myers, K.N. Smith, and R.A. McCleery. 2016. Social organization of an endangered subtropical species, Eumops floridanus, the Florida bonneted bat. Mammalia 2016:1-9.

U.S. Fish and Wildlife Service. 2013. Endangered and threatened wildlife and plants; endangered species status for the Florida bonneted bat. Federal Register 78:61004-61043.

Appendix A. **Delineation and Justification for Consultation Area**

The Consultation Area (Figure 1) represents the general range of the species. The Consultation Area represents the area within which consideration should be given to potential effects to Florida bonneted bats from proposed projects or actions. Coordination and consultation with the Service helps to determine whether proposed actions and activities may affect listed species. This Consultation Area defines the area where proposed actions and activities may affect the Florida bonneted bat.

This area was delineated using confirmed presence data, key habitat features, reasonable flight distances and home range sizes. Where data were lacking, we used available occupancy models that predict probability of occurrence (Bailey *et al.* 2017). Below we describe how each one of these data sources was used to determine the overall Consultation Area.

Presence data: Presence data included locations for: (1) confirmed Florida bonneted bat acoustic detections; (2) known roost sites (occupied or formerly occupied; includes natural roosts, bat houses, and utility poles); (3) live Florida bonneted bats observed or found injured; (4) live Florida bonneted bats captured during research activities; and (5) Florida bonneted bats reported as dead. The Geographic Information Systems (GIS) dataset incorporates information from January 2003 to May 2019.

The vast majority of the presence data came from acoustic surveys. The species' audible, low frequency, distinct, echolocation calls are conducive for acoustic surveys. However, there are limitations in the range of detection from ultrasonic devices, and the fast, high-flying habits of this species can confound this. Overall, detection probabilities for Florida bonneted bats are generally considered to be low. For example, in one study designed to investigate the distribution and environmental associations of Florida bonneted bat, Bailey *et al.* 2017 found overall nightly detection probability was 0.29. Based on the estimated detection probabilities in that study, it would take 9 survey nights (1 detector per night) to determine with 95% certainty whether Florida bonneted bat are present at a sampling point. Positive acoustic detection data are extremely valuable. However, it is important to recognize that there are issues with false negatives due to limitations of equipment, low detection probabilities, difference in detection due to prey availability and seasonal movement over the landscape, and in some circumstances improperly conducted surveys (*i.e.,* short duration or in unsuitable weather conditions).

Key habitat features: We considered important physical and biological features with a focus on potential roosting habitat and applied key concepts of bat conservation (*i.e*., need to conserve roosting habitat, foraging habitat, and prey base). To date, all known natural Florida bonneted bat roosts (n=19 have been found in live trees and snags of the following types: slash pine, longleaf pine, royal palm, and cypress (Braun de Torrez 2018). Several of the recent roost discoveries are located in fire-maintained vegetation communities, and it appears that Florida bonneted bats are fire-adapted and can benefit from prescribed burn regimes that closely mimic historical fire patterns (Ober *et al.* 2018).

From a landscape and roosting perspective, we consider key habitat features to include forested areas and other areas with mature trees, wetlands, areas used by red-cockaded woodpeckers

(*Picoides borealis*; RCW), and fire-managed and other conservation areas. However, recent work suggests that Florida bonneted bats do not use pinelands more than other land cover types (Bailey *et al.* 2017). In fact, Bailey *et al.* 2017 detected Florida bonneted bats in all land cover types investigated in their study (e.g., agricultural, developed, upland, and wetland). For the purposes of these consultation guidelines, we are focusing on the conservation of potential roosting habitats across the species' range. However, we also recognize the need for comprehensive consideration of foraging habitats, habitat connectivity, and long-term suitability.

Flight distances and home range sizes: Like most bats, Florida bonneted bats are colonial central-place foragers that exploit distant and scattered resources (Rainho and Palmeirim 2011). Morphological characteristics (narrow wings, high wing-aspect ratio) make *Eumops* spp. well-adapted for efficient, low-cost, swift, and prolonged flight in open areas (Findley *et al*. 1972, Norberg and Rayner 1987). Other Eumops including Underwood's mastiff bat (*Eumops underwoodi*), and Greater mastiff bat or Western mastiff bat (*Eumops perotis*) are known to forage and/or travel distances ranging from 6.2 miles to 62 miles from the roost with multiple studies documenting flight distances approximately 15- 18 miles from the roost (Tibbitts *et al* 2002, Vaugh 1959 as cited in Best *et al*. 1996, Siders *et al.* 1999, Siders 2005, Vaughan 1959 as cited in Siders 2005.)

Like other *Eumops,* Florida bonneted bats are strong fliers, capable of travelling long distances (Belwood 1992). Recent Global Positioning System (GPS) and radio-telemetry data for Florida bonneted bats documents that they also move large distances and likely have large home ranges. Data from recovered GPS satellite tags on Florida bonneted bats tagged at Babcock-Webb Wildlife Management Area (WMA), found the maximum distance detected from a capture site was 24.2 mi (38.9 km); the greatest path length travelled in a single night was 56.3 mi (90.6 km) (Ober 2016; Webb 2018a-b). Additional data collected during the month of December documented the mean maximum distance of Florida bonneted bats (n=8) with tags traveled from the roost was 9.5 mi (Webb 2018b). The Service recognizes that the movement information comes from only one site (Babcock-Webb WMA and vicinity), and data are from small numbers (n=20) of tagged individuals for only short periods of time (Webb 2018a-b). We expect that across the Florida bonneted bat's range differences in habitat quality, prey availability, and other factors will result in variable habitat use and home range sizes between locations. Foraging distances and home range sizes in high quality habitats are expected to be smaller while foraging distances and home range sizes in low quality habitat would be expected to be larger. Consequently, because Babcock-Webb WMA provides high quality roosting habitat, this movement data could represent the low end of individual flight distances from a roost.

Given the species' morphology and habits (*e.g*., central-place forager) and considering available movement data from other *Eumops* and Florida bonneted bats discussed above, we opted to use 15 miles (24 km) as a reasonable estimate of the distance Florida bonneted bats would be expected to travel from a roost on any given night. For the purposes of delineating a majority of the Consultation Area, we used available confirmed presence point location data and extended out 15 miles (24 km), with modifications for habitat features (as described above). As more movement data are obtained and made available, this distance estimate may change in the future.

Occupancy model – Research by Bailey *et al.* (2017) indicates the species' range is larger than previously known. Their model performed well across a large portion of the previously known

range when considering confirmed Florid bonneted bat locations; thus it is anticipated to be useful where limited information is available for the species.

We used the model output from Bailey *et al.* (2017) to more closely examine areas where we are data-deficient (*i.e.,* areas where survey information is particularly lacking). We considered 0.27 probability of occurrence a filter for high likelihood of occurrence because 0.27 was the model output for Babcock-Webb WMA, an area where Florida bonneted bats are known to occupy and heavily use. Large portions of Sarasota, Martin, and Palm Beach counties were identified as having probability of occurrence of 0.27. The consultation area should include areas where the species has a high likelihood of occurring. Based on this reasoned approach, all of Sarasota County, portions of Martin County, and greater parts of Palm Beach County were included in the Consultation Area.

We recognize that there are areas in the northern portion of the range where the model is less successful predicting occurrence based on the known Florida bonneted bat locations (*i.e*., the model predicts low likelihood of occurrence on Avon Park Air Force range, where the species is known to roost). Consequently, the Service is proactively working with partners to conduct surveys in the areas added based on the model to confirm that inclusion of these portions of the aforementioned counties is appropriate. The Consultation Area may be adjusted based on changes in this information.

Literature Cited -Appendix A

Bailey, A.M., H.K. Ober, A.R. Sovie, and R.A. McCleery. 2017. Impact of land use and climate on the distribution of the endangered Florida bonneted bat. Journal of Mammalogy. 98:1586-1593.

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Appendix B: Full Acoustic / Roost Survey Framework

Purpose: The purpose of this survey is to: (1) determine if Florida bonneted bats are likely to be actively roosting or using the site; (2) locate active roost(s) and avoid the loss of the structure, if possible; and, (3) avoid or minimize the take of individuals. In some cases, changes in project designs or activities can help avoid and minimize take. For example, project proponents may be able to retain suspected roosts or conserve roosting and foraging habitats. Changing the timing or nature of activities can also help reduce the losses of non-volant young or effects to pregnant or lactating females. If properly conducted, acoustic surveys are the most effective way to determine presence and assess habitat use. If the applicant is unable to follow or does not want to follow the Full Acoustic/Roost Survey framework when recommended according to the Key, the Corps (or other Action Agency) will not be able to use these Guidelines and will need to provide a biologically supported rational using the best available information for their determination in their request for consultation.

General Description: This is a *comprehensive survey effort*, and robust acoustic surveys (*i.e.,* surveys conducted 30 minutes prior to sunset to 30 minutes after sunrise, over multiple nights) are a fundamental component of the approach. Depending upon acoustic results and habitat type, it may also include: observations at emergence (*e.g.,* emergence surveys during which observers look and listen for bats to come out of roost structures around sunset), visual inspection of trees/snags (*i.e.,* those with cavities, hollows, and loose bark) and other roost structures with tree-top cameras, or follow-up targeted acoustic surveys. Methods are dependent upon composition and configuration of project site and willingness and ability of applicant and partners to conserve roosting and foraging habitats on site.

General Survey Protocol:

[Note: The Service will provide more information in separate detailed survey protocols in the near future. This will include specific information on: detector types, placement, orientation, verification of proper functioning, analysis, reporting requirements, etc.]

- Approach is intended for project sites > 5 acres (2 hectares).
- For sites containing roosting habitat, acoustic surveys should primarily focus on assessing roosting habitat within the project site that will be lost or modified (*i.e.,* areas that will not be conserved), and locations on the property within 250 feet (76.2 meters) of areas that will not be conserved. This will help avoid or minimize the loss of an active roost and individuals. Secondarily, since part of the purpose is to determine if Florida bonneted bats are using the site, acoustic devices should also be placed near open water and wetlands to maximize chances of detection and aid in assessing foraging habitat that may be lost.
- For sites that do not contain ANY roosting habitat, but do contain foraging habitat (see Figure 3 - Consultation Flowchart and Key, Step 2 [no], Step 13 [yes]), efforts should focus on assessing foraging habitat within the project site that will be lost or modified (*i.e.,* areas that will not be conserved).
- Acoustic surveys should be performed by those who are trained and experienced in setting up, operating, and maintaining acoustic equipment; and retrieving, saving,

analyzing, and interpreting data. Surveyors should have completed one or more of the available bat acoustic courses/workshops, or be able to show similar on-the-job or academic experience (Service 2018).

- Due to the variation in the quality of recordings, the influence of clutter, the changing performances of software packages over time, and other factors, manual verification is recommended (Loeb *et al.* 2015). Files that are identified to species from auto-ID programs must be visually reviewed and manually verified by experienced personnel.
- Acoustic devices should be set up to record from 30 minutes prior to sunset to 30 minutes after sunrise for multiple nights, under suitable weather conditions.
- Acoustic surveys can be conducted any time of year as long as weather conditions meet the criteria. If any of the following weather conditions exist at a survey site during acoustic sampling, note the time and duration of such conditions, and repeat the acoustic sampling effort for that night: (a) temperatures fall below 65°F (18.3°C) during the first 5 hours of survey period; (b) precipitation, including rain and/or fog, that exceeds 30 minutes or continues intermittently during the first 5 hours of the survey period; and (c) sustained wind speeds greater than 9 miles/hour (4 meters/second; 3 on Beaufort scale) for 30 minutes or more during the first 5 hours of the survey period (Service 2018). At a minimum, nightly weather conditions for survey sites should be checked using the nearest NOAA National Weather Service station and summarized in the survey reports. Although not required at this time, it has been demonstrated that conducting surveys on warm nights late in the spring can help maximize detection probabilities (Ober *et al.* 2016; Bailey *et al.* 2017).
- Acoustic devices should be calibrated and properly placed. Microphones should be directed away from surrounding vegetation, not beneath tree canopy, away from electrical wires and transmission lines, away from echo-producing surfaces, and away from external noises. Directional microphones should be aimed to sample the majority of the flight path/zone. Omnidirectional microphones should be deployed on a pole in the center of the flight path/zone and oriented horizontally. For monitoring possible roost sites, microphones should be directed to maximize likelihood of detection.
- To standardize recordings, acoustic device recordings should have a 2-second trigger window and a maximum file length of 15 seconds.
- The number of acoustic survey sites and nights needed for the assessment is dependent upon the overall acreage of suitable habitat proposed to be impacted by the action.
    - For non-linear projects, a minimum of 16 detector nights per 20 acres of suitable habitat expected to be impacted is recommended.
    - For linear projects (*e.g.,* roadways, transmission lines), a minimum of five detector nights per 0.6 mi (0.97 km) is recommended. Detectors can be moved to multiple locations within each kilometer surveyed, but must remain in a single location throughout any given night.
    - For any site, and in particular for sites > 250 acres, please contact the Service to assist in designing an appropriate approach.
- If results of acoustic surveys show **high Florida bonneted bat activity** or **Florida bonneted bat roosting likely** (*e.g.,* high activity early in the evening) (see definitions in Glossary), follow-up methods such as emergence surveys, visual inspection of the roosting structures, or follow-up acoustic surveys are recommended to locate potential roosts. Using a combination of methods may be helpful.

- For bat emergence surveys, multiple observers should be stationed at potential roosts if weather conditions (as above) are suitable. Surveyors should be quietly stationed 30 minutes before sunset so they are ready to look and listen for emerging FBBs from sunset to 1½ hours after sunset. When conducting emergence surveys it is best to orient observers so that the roost is silhouetted in the remaining daylight; facing west can help maximize the ability to notice movement of animals out of a roost structure.
- Visual inspection of trees with cavities and loose bark during the day may be helpful. Active RCW trees should not be visually inspected during the RCW breeding season (April 15 through June 15).
- Visual inspection alone is not recommended due to the potential for roosts to be too high for cameras to reach, too small for cameras to fit, or shaped in a way that contents are out of view (Braun de Torrez *et al.* 2016).
- If roosting is suspected on site, use tree-top cameras during the day to search those trees/snags or other structures that have potential roost features (*i.e.,* cavities, hollows, crevices, or other structure for permanent shelter). If unsuccessful (*e.g.,* cannot see entire contents within a given cavity, cannot reach cavity, cannot see full extent of cavity) OR occupied roosts are found with the tree-top camera within the area in which high Florida bonneted bat activity/likely Florida bonneted bats roosting were identified, we recommend emergence surveys and/or acoustics to verify occupancy and/or identify bat species.
- Provide report showing effort, methods, weather conditions, findings, and summary of acoustic data relating to Florida bonneted bats (*e.g.,* # of calls, time of calls, and station number) organized by the date on which the data were collected. Sonograms of all calls with signatures at or below 20kHz shall be included in the report. The report shall be provided to the Corps project manager assigned to the project for which the survey was conducted and to the Service via the email address **verobeach@fws.gov. Raw acoustic data should be provided to the Service for all surveys. Raw acoustic data should be provided as "all raw data" and "all raw data with signatures at or below 20kHz". Data can be submitted to the Service via flash drive, memory stick, or hard drive. Data can be submitted digitally to verobeach@fws.gov or via mail to U.S. Fish and Wildlife Service, Attn: Florida bonneted bat data manager, 1339 20th Street, Vero Beach, Florida 32960.**
- Negative surveys are valid for 1 year after completion of the survey.

If you have comments, or suggestions on this survey protocols, please email your comments to FBBguidelines@fws.gov. These comments will be reviewed and incorporated in an annual review.

Literature Cited – Appendix B

Bailey, A.M., H.K. Ober, A.R. Sovie, and R.A. McCleery. 2017. Impact of land use and climate on the distribution of the endangered Florida bonneted bat. Journal of Mammalogy. 98:1586-1593.

Braun de Torrez, E.C., H.K. Ober, and R.A. McCleery. 2016. Use of a multi-tactic approach to locate and endangered Florida bonneted bat roost. Southeastern Naturalist 15(2):235-242.

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U.S. Fish and Wildlife Service. 2018. Range-wide Indiana bat survey guidelines. https://www.fws.gov/midwest/endangered/mammals/inba/surveys/pdf/2018RangewideIBatSurveyGuidelines.pdf

Appendix C: Limited Roost Survey Framework

Purpose: The purpose of this survey is to: (1) determine if Florida bonneted bats are likely to be actively roosting within suitable structures on-site; (2) locate active roost(s) and avoid the loss of the structure, if possible; and, (3) avoid or minimize the take of individuals. In some cases, changes in project designs or activities can help avoid and minimize take. For example, applicants and partners may be able to retain the suspected roosts or conserve roosting and foraging habitats. Changing the timing of activities can also help reduce the losses of non-volant young or effects to pregnant or lactating females.

General Description: This is a *reduced survey effort* that may include the following methods: visual inspection of trees/snags (*i.e.,* those with cavities, hollows, and loose bark) and other roost structures with tree-top cameras, observations at emergence (*e.g.,* emergence surveys during which observers look and listen for bats to come out of roost structures around sunset), acoustic surveys, or a combination of these methods. Methods are fairly flexible and dependent upon composition and configuration of project site and willingness and ability of applicant and partners to conserve roosting habitat on site.

General Survey Protocol:

[Note: The Service will provide more information in separate, detailed survey protocols in the near future. This will include specific information on: detector types, placement, orientation, verification of proper functioning, analysis, reporting requirements, etc.]

- Approach is **intended only for small project sites** (*i.e.,* sites ≤ 5 acres [2 hectares]).
- Efforts should focus on assessing potential roosting structures within the project site that will be lost or modified (*i.e.,* areas that will not be conserved), or are located on the property within 250 feet (76.2 meters) of areas that will not be conserved.

Identification of potential roost structures

- This step is necessary prior to any of the methods that follow.
- Run line transects through roosting habitat close enough that all trees and snags are easily inspected. Transect spacing will vary with habitat structure and season from a maximum of 91 m (300 ft) between transects in very open pine stands to 46 m (150 ft) or less in areas with dense mid-story. Transects should be oriented north to south, to optimize cavity detectability because many RCW cavity entrances are oriented in a westerly direction (Service 2004).
- Visually inspect all trees and snags or other structures for evidence of cavities, hollows, crevices that can be used for permanent shelter. Using binoculars, examine structures for cavities, loose bark, hollows, or other crevices that are large enough for Florida bonneted bats (diameter of opening > or = to 1 inch (2.5 cm) (Braun de Torrez *et al*. 2016).
- When potential roosting structures are found, record their location in the field using a Global Positioning System (GPS) unit.

Visual Inspection of trees and snags with tree-top cameras

- Visually inspect all cavities using a video probe (peeper) and assess the cavity contents.

Active RCW trees should not be visually inspected during the RCW breeding season (April 15 through June 15).

- Visual inspection alone is valid only when the entire cavity is observed and the contents can be identified. Typically, acoustics at emergence will also be needed to definitively identify bat species, if bats are present or suspected.
- If bats are suspected, or if contents cannot be determined, or if the entire cavity cannot be observed with the video probe; follow methods for an Acoustic Survey or an Emergence Survey (below). If the Corps (or other action agency) or applicant does not wish to conduct acoustic or emergence surveys, the Corps (or other action agency) cannot use the key and must request formal consultation with the Service.
- Record tree species or type of cavity structure, tree diameter and height, cavity height, cavity orientation and cavity contents.

Emergence Surveys

- For bat emergence surveys, multiple observers should be stationed at potential roosts if weather conditions (as described below in Acoustic Surveys) are suitable.
- Surveyors should be quietly stationed 30 minutes prior to sunset so they are ready to look and listen for emerging Florida bonneted bats from sunset to 1½ hours after sunset.
- When conducting emergence surveys it is best to orient observers so that the roost is silhouetted in the remaining daylight; facing west can help maximize the ability to notice movement of animals out of a roost structure.
- Record number of bats that emerged, the time of emergence, and if bat calls were heard.

Acoustic surveys

- Acoustic surveys should be performed by those who are trained and experienced in setting up, operating, and maintaining acoustic equipment; and retrieving, saving, analyzing, and interpreting data. Surveyors should have completed one or more of the available bat acoustic courses/workshops, or be able to show similar on-the-job or academic experience (Service 2018).
- Due to the variation in the quality of recordings, the influence of clutter, and the changing performances of software packages over time, and other factors, manual verification is recommended (Loeb *et al.* 2015). Files that are identified to species from auto-ID programs must be visually reviewed and manually verified by experienced personnel.
- Acoustic devices should be set up to record from 30 minutes prior to sunset to 30 minutes after sunrise for multiple nights, under suitable weather conditions.
- Acoustic surveys can be conducted any time of year as long as weather conditions meet the criteria. If any of the following weather conditions exist at a survey site during acoustic sampling, note the time and duration of such conditions, and repeat the acoustic sampling effort for that night: (a) temperatures fall below 65°F (18.3°C) during the first 5 hours of survey period; (b) precipitation, including rain and/or fog, that exceeds 30 minutes or continues intermittently during the first 5 hours of the survey period; and (c) sustained wind speeds greater than 9 miles/hour (4 meters/second; 3 on Beaufort scale) for 30 minutes or more during the first 5 hours of the survey period (Service 2018). At a minimum, nightly weather conditions for survey sites should be checked using the nearest NOAA National Weather Service station and summarized in the survey reports. Although not required at this time, it has been demonstrated that conducting surveys on

warm nights late in the spring can help maximize detection probabilities (Ober *et al.* 2016; Bailey *et al.* 2017).

- Acoustic devices should be calibrated and properly placed. Microphones should be directed away from surrounding vegetation, not beneath tree canopy, away from electrical wires and transmission lines, away from echo-producing surfaces, and away from external noises. Directional microphones should be aimed to sample the majority of the flight path/zone. Omnidirectional microphones should be deployed on a pole in the center of the flight path/zone and oriented horizontally. For monitoring possible roost sites, microphones should be directed to maximize likelihood of detection.
- To standardize recordings, acoustic device recordings should have a 2-second trigger window and a maximum file length of 15 seconds.
- Acoustic surveys should be conducted over a minimum of four nights.
- If acoustic devices cannot be left in place for the entire night for multiple nights as above, then a combination of short acoustic surveys (from sunset and extending for 1½ hours), stationed observers for emergence surveys or visual inspection of trees/snags with tree-top cameras may be acceptable. Contact the Service for guidance under this circumstance.

Reporting

- Provide report showing effort, methods, weather conditions, findings, and summary of acoustic data relating to Florida bonneted bat by date (*e.g.*, # of calls, time of calls). Sonograms of all calls with signatures at or below 20kHz shall be included in the report. The report shall be provided to the Corps project manager assigned to the project for which the survey was conducted and to the Service via the email address **verobeach@fws.gov. Raw acoustic data should be provided to the Service for all surveys. Raw acoustic data should be provided as "all raw data" and "all raw data with signatures at or below 20kHz". Data can be submitted to the Service via flash drive, memory stick, or hard drive. Data can be submitted digitally to verobeach@fws.gov or via mail to U.S. Fish and Wildlife Service, Attn: Florida bonneted bat data manager, 1339 20th Street, Vero Beach, Florida 32960.**
- Negative surveys are valid for 1 year after completion of the survey

If you have comments, or suggestions on this survey protocols, please email your comments to FBBguidelines@fws.gov. These comments will be reviewed and incorporated in an annual review.

Literature Cited – Appendix C

Bailey, A.M., H.K. Ober, A.R. Sovie, and R.A. McCleery. 2017. Impact of land use and climate on the distribution of the endangered Florida bonneted bat. Journal of Mammalogy. 98:1586-1593.

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U.S. Fish and Wildlife Service. 2004. South Florida Ecological Services Office DRAFT July 12, 2004 Species Conservation Guidelines South Florida Red-cockaded Woodpecker. Appendix A. Red-cockaded Woodpecker South Florida Survey Protocol. July 12, 2004. South Florida Ecological Service Office, Vero Beach Florida. https://www.fws.gov/verobeach/BirdsPDFs/200407SlopesCompleteRedCockadedWoodpecker.pdf

U.S. Fish and Wildlife Service. 2018. Range-wide Indiana bat survey guidelines. https://www.fws.gov/midwest/endangered/mammals/inba/surveys/pdf/2018RangewideIBatSurveyGuidelines.pdf

Appendix D: Best Management Practices (BMPs) for Development Projects

Ongoing research and monitoring will continue to increase the understanding of the Florida bonneted bat and its habitat needs and will continue to inform habitat and species management recommendations. These BMPs incorporate what is known about the species and also include recommendations that are beneficial to all bat species in Florida. These BMPs are intended to provide recommendations for improving conditions for use by Florida bonneted bats, and to help conserve Florida bonneted bats that may be foraging or roosting in an area.

The BMPs required to reach a "may affect, but is not likely to adversely affect" (MANLAA) determination vary depending on the couplet from the Consultation Key used to reach that particular MANLAA. The requirements for each couplet are provided below followed by the list of BMPs. If the applicant is unable or does not want to do the required BMPs, then the Corps (or other Action Agency) will not be able to use this Guidance and formal consultation with the Service is required.

Couplet Number for MANLAA from Consultation Key	Required BMPs
4b	BMP number 1 if more than 3 months has occurred between the survey and start of the project, and any 3 BMPs out of BMPs 4 through 13
5b	BMP number 2, and any 3 BMPs out of BMPs 3 through 13
9b	BMPs number 2 and 3, and any 4 BMPs out of BMPs 5 through 13
11b	BMPs number 1 and 4, and any 4 BMPs out of BMPs 5 through 13
12b	BMP number 1, and any 3 BMPs out of BMPs 3 through 13
14b	Any 2 BMPs out of BMPs 3 through 13
15b	Any 3 BMPs out of BMPs 3 through 13
17b	Any 4 BMPs out of BMPs 3 through 13

BMPs for development, construction, and other general activities:

1. If potential roost trees or structures need to be removed, check cavities for bats within 30 days prior to removal of trees, snags, or structures. When possible, remove structure outside of breeding season (*e.g.*, January 1 – April 15). If evidence of use by any bat species is observed, discontinue removal efforts in that area and coordinate with the Service on how to proceed.
2. When using heavy equipment, establish a 250 foot (76 m) buffer around known or suspected roosts to limit disturbance to roosting bats.
3. For every 5 acres of impact, retain a minimum of 1.0 acre of native vegetation. If upland habitat is impacted, then upland habitat with native vegetation should be retained.
4. For every 5 acres of impact, retain a minimum of 0.25 acre of native vegetation. If upland habitat is impacted, then upland habitat with native vegetation should be retained..
5. Conserve open freshwater and wetland habitats to promote foraging opportunities and avoid impacting water quality. Created/restored habitat should be designed to replace the function of native habitat.

6. Conserve and/or enhance riparian habitat. A 50-ft (15.2 m) buffer is recommended around water bodies and stream edges. In cases where artificial water bodies (*i.e.,* stormwater ponds) are created, enhance edges with native plantings especially in cases in which wetland habitat was affected.
7. Avoid or limit widespread application of insecticides (*e.g.,* mosquito control, agricultural pest control) in areas where Florida bonneted bats are known or expected to forage or roost.
8. Conserve natural vegetation to promote insect diversity, availability, and abundance. For example, retain or restore 25% of the parcel in native contiguous vegetation.
9. Retain mature trees and snags that could provide roosting habitat. These may include live trees of various sizes and dead or dying trees with cavities, hollows, crevices, and loose bark. See "Roosting Habitat" in "Background" above.
10. Protect known Florida bonneted bat roost trees, snags or structures and trees or snags that have been historically used by Florida bonneted bats for roosting, even if not currently occupied, by retaining a 250 foot (76 m) disturbance buffer around the roost tree, snag, or structure to ensure that roost sites remain suitable for use in the future.
11. Avoid and minimize the use of artificial lighting, retain natural light conditions, and install wildlife friendly lighting (*i.e*., downward facing and lowest lumens possible). Avoid permanent night-time lighting to the greatest extent practicable.
12. Incorporate engineering designs that discourage bats from using buildings or structures. If Florida bonneted bats take residence within a structure, contact the Service and Florida Fish and Wildlife Conservation Commission prior to attempting removal or when conducting maintenance activities on the structure.
13. Use or allow prescribed fire to promote foraging habitat.

Appendix E: Additional Best Management Practices (BMPs) for Land Management Projects

Ecological Land Management

The Service reviews and develops Ecological Land Management projects that use land management activities to restore and maintain native, natural communities that are beneficial to bats. These activities include prescribed fire, mechanical treatments to reduce vegetation densities, timber thinning to promote forest health, trail maintenance, and the treatment of exotic vegetation. The following BMPs provide recommendations for conserving Florida bonneted bat roosting and foraging habitat during ecological land management activities. The Service recommends incorporating these BMP into ecological land management plans.

If potential roost trees need to be removed, check cavities for bats prior to removal of trees or snags. If evidence of use by any bat species is observed, discontinue removal efforts in that area and coordinate with the Service on how to proceed.

Ecological Land Management BMPs:

- Protect potential roosting habitat during ecological land management activities, if feasible. Avoid removing trees or snags with cavities.
- Rake and/or manually clear vegetation around the base of known or suspected roost trees to remove fuel prior to prescribed burning.
- If possible, use ignition techniques such as spot fires or backing fire to limit the intensity of fire around the base of the tree or snag containing the roost. The purpose of this action is to prevent the known or suspected roost tree or snag from catching fire and also to attempt to limit the exposure of the roosting bats to heat and smoke. A 250-ft (76 m) buffer is recommended.
- If prescribed fire is being implemented to benefit Florida bonneted bats, Braun de Torrez et al. (2018) noted that fire in the dry/spring season could be most beneficial.
- When creating firebreaks or conducting fire-related mechanical treatment, mark and avoid any known or suspected bat roosts.
- When using heavy equipment, establish a buffer of 250 feet (76 m) around known roosts to limit disturbance to roosting bats.
- Establish forest management efforts to maintain tree species and size class diversity to ensure long-term supply of potential roost sites.
- For every 5 acres (2 hectares) of timber that is harvested, retain a clump of trees 1-2 acres (0.4 - 0.8 hectare) in size containing potential roost trees, especially pines and royal palms (live or dead). Additionally, large snags in open canopy should be preserved.

Literature Cited – Appendix E

Braun de Torrez, E.C., H.K. Ober, and R.A. McCleery. 2018. Activity of an Endangered Bat Increases Immediately Following Prescribed Fire. The Journal of Wildlife Management.

Appendix B
USFWS Coordination

DRAFT

USFWS Species Surveys Discussion

SUBJECT:	Clark Road (SR 72) PD&E Study, from east of I-75 to Lorraine Road FPID No. 444634-1-22-01; Contract No. CAI05; ETDM 14441; Sarasota County
MEETING DATE:	Tuesday 11/08/2022
MEETING TIME:	11:00 AM – 11:15 AM
LOCATION:	TEAMS Meeting (click link in meeting invite)

1) Introductions

2) Project Overview
   a) Project Limits from east of I-75 to Lorraine Road, approximately 3 miles
   b) Scope of work includes widening from 2 to 4 lanes with a closed drainage system and ponds
   c) Need is driven by increasing traffic volumes resulting from ongoing residential development

3) Natural Environment
   a) ETDM #14441, Moderate degree of effect for protected species and habitat
   b) Species surveys in scope:
      i) Florida Bonneted Bat
      ii) Caracara
   c) Survey methodology
      i) Five (5) FBB Stations proposed. ***John Wrublik: Seems acceptable.***
      ii) One (1) Caracara station proposed. ***JW: Seems acceptable based on field conditions.***
   d) Status of the Tricolored bat. ***JW: Nothing is set in stone yet. If it does get listed, we would have to follow back up regarding survey guidance.***

4) Next Steps
   a) Species surveys early 2023
   b) Public Meeting March 2023
   c) Draft Natural Resource Evaluation Report Summer 2023

5) New Action Items - ***None***

USFWS Species Surveys Discussion

SUBJECT: Clark Road (SR 72) PD&E Study, from east of I-75 to Lorraine Road
FPID No. 444634-1-22-01; Contract No. CAI05; ETDM 14441; Sarasota County

MEETING DATE: Tuesday 11/08/2022

MEETING TIME: 11:00 AM – 11:15 AM

LOCATION: TEAMS Meeting (click link in meeting invite)

Name	Initial	Organization	E-mail
Cris Schooley	***Online***	Kimley-Horn	Cris.Schooley@kimley-horn.com
Jeffrey James	***Online***	FDOT	Jeffrey.James@dot.state.fl.us
Nicole Selly	***Online***	KCA for FDOT	NSelly@kcaeng.com
Patrick Bateman	***Online***	FDOT	Patrick.Bateman@dot.state.fl.us
Sarah Johnson	***Online***	Kimley-Horn	Sarah.Johnson@kimley-horn.com
John Wrublik	***Online***	USFWS	John_wrublik@fws.gov

Appendix C
Photographic Log

Station 1

Station 2

Station 3

Station 4

Station 5

Appendix D
Weather Documentation

Search Locations

Log in (/log…

Recent Cities

Sarasota, FL (/weather/us/fl/sarasota/27.34,-82.53) North Fort Myers, FL (33917) (/weather/us/fl/north-fort-myers/26.70,-81.88)

27.4 °N, **82.51** °W

Sarasota, FL Weather History

71° SARASOTA-BRADENTON INTERNATIONAL AIRPORT STATION (/DASHBOARD/PWS/KFLSARAS160?CM_VEN=LOCALWX_PWSDASH) | CHANGE

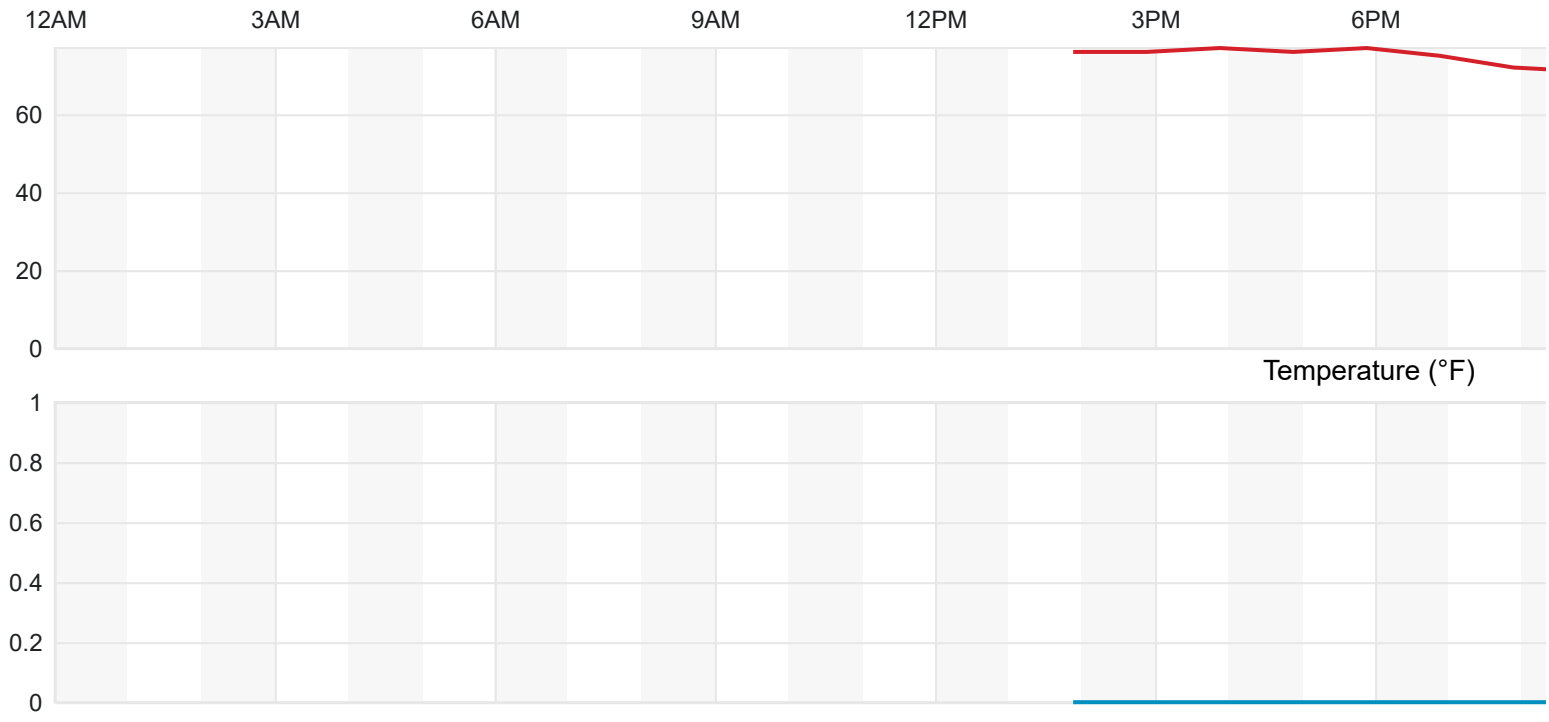
HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)

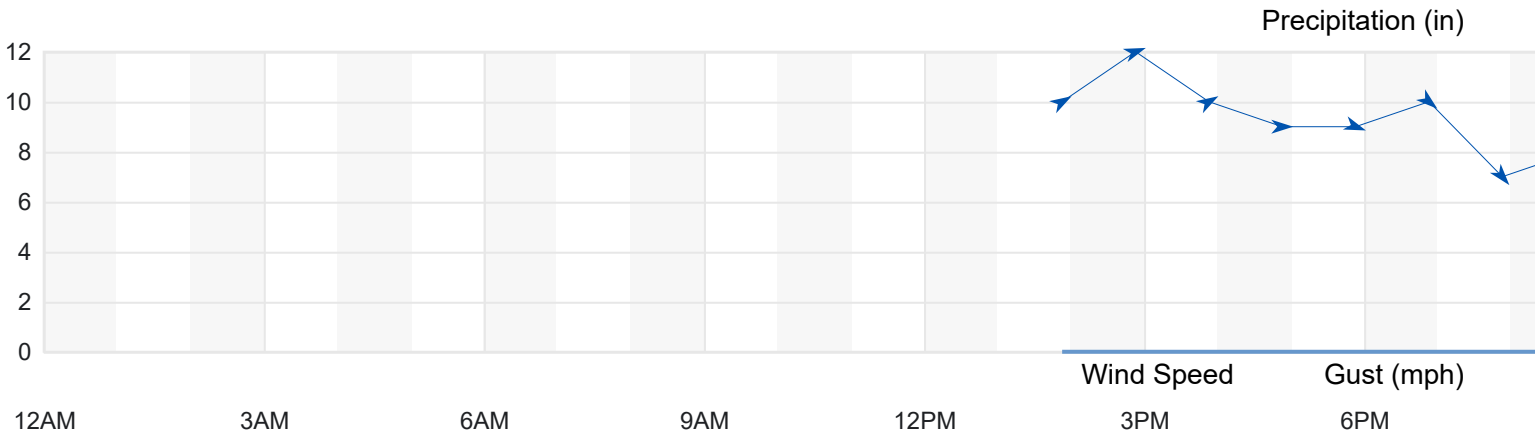
- TODAY (/WEATHER/US/FL/SARASOTA/KSRQ)
- HOURLY (/HOURLY/US/FL/SARASOTA/KSRQ)
- 10-DAY (/FORECAST/US/FL/SARASOTA/KSRQ)
- CALENDAR (/CALENDAR/US/FL/SARASOTA/KSRQ)
- HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)
- WUNDERMAP (/WUNDERMAP?LAT=27.404&LON=-82.512)

Daily Weekly Monthly

(/history/daily/us/fl/sarasota/KSRQ/date/2023-3-22) (/history/daily/us/fl/sarasota/KSRQ/date/2023-3-22) (/history/daily/us/fl/sarasota/KSRQ/date/2023-3)

March 22 2023 View





Summary

Temperature (°F)	Actual	Historic Avg.	Record
High Temp	77	78.9	88
Low Temp	0	59.1	39
Day Average Temp	67.36	69	-

Precipitation (in)	Actual	Historic Avg.	Record
Precipitation (past 24 hours from 17:53:00)	0.00	4.90	-

Dew Point (°F)	Actual	Historic Avg.	Record
Dew Point	55.09	-	-
High	62	-	-
Low	0	-	-
Average	55.09	-	-

Wind (mph)	Actual	Historic Avg.	Record
Max Wind Speed	12	-	-
Visibility	10	-	-

Sea Level Pressure (in)	Actual	Historic Avg.	Record
Sea Level Pressure	30.24	-	-

Astronomy	Day Length	Rise	Set
Actual Time	12h 9m	7:33 AM	7:43 PM

Temperature (°F)	Actual	Historic Avg.	Record
Civil Twilight		7:10 AM	8:06 PM
Nautical Twilight		6:42 AM	8:33 PM
Astronomical Twilight		6:15 AM	9:01 PM
Moon: waxing crescent		8:13 AM	8:56 PM

Daily Observations

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Prec
1:53 PM	76 °F	60 °F	58 %	WSW	10 mph	0 mph	30.21 in	0.0 ir
2:53 PM	76 °F	60 °F	58 %	WSW	12 mph	0 mph	30.18 in	0.0 ir
3:53 PM	77 °F	60 °F	56 %	WSW	10 mph	0 mph	30.16 in	0.0 ir
4:53 PM	76 °F	61 °F	60 %	W	9 mph	0 mph	30.16 in	0.0 ir
5:53 PM	77 °F	60 °F	56 %	WNW	9 mph	0 mph	30.16 in	0.0 ir
6:53 PM	75 °F	61 °F	62 %	NW	10 mph	0 mph	30.16 in	0.0 ir
7:53 PM	72 °F	61 °F	68 %	NW	7 mph	0 mph	30.17 in	0.0 ir
8:53 PM	71 °F	62 °F	73 %	N	8 mph	0 mph	30.19 in	0.0 ir
9:53 PM	71 °F	61 °F	70 %	NNE	6 mph	0 mph	30.22 in	0.0 ir
10:53 PM	70 °F	60 °F	71 %	ENE	5 mph	0 mph	30.23 in	0.0 ir
11:53 PM	0 °F	0 °F	0 %		0 mph	0 mph	30.24 in	0.0 ir

27.4 °N, **82.51** °W

Sarasota, FL Weather History

84° SARASOTA-BRADENTON INTERNATIONAL AIRPORT STATION (/DASHBOARD/PWS/KFLSARAS160?CM_VEN=LOCALWX_PWSDASH) | CHANGE

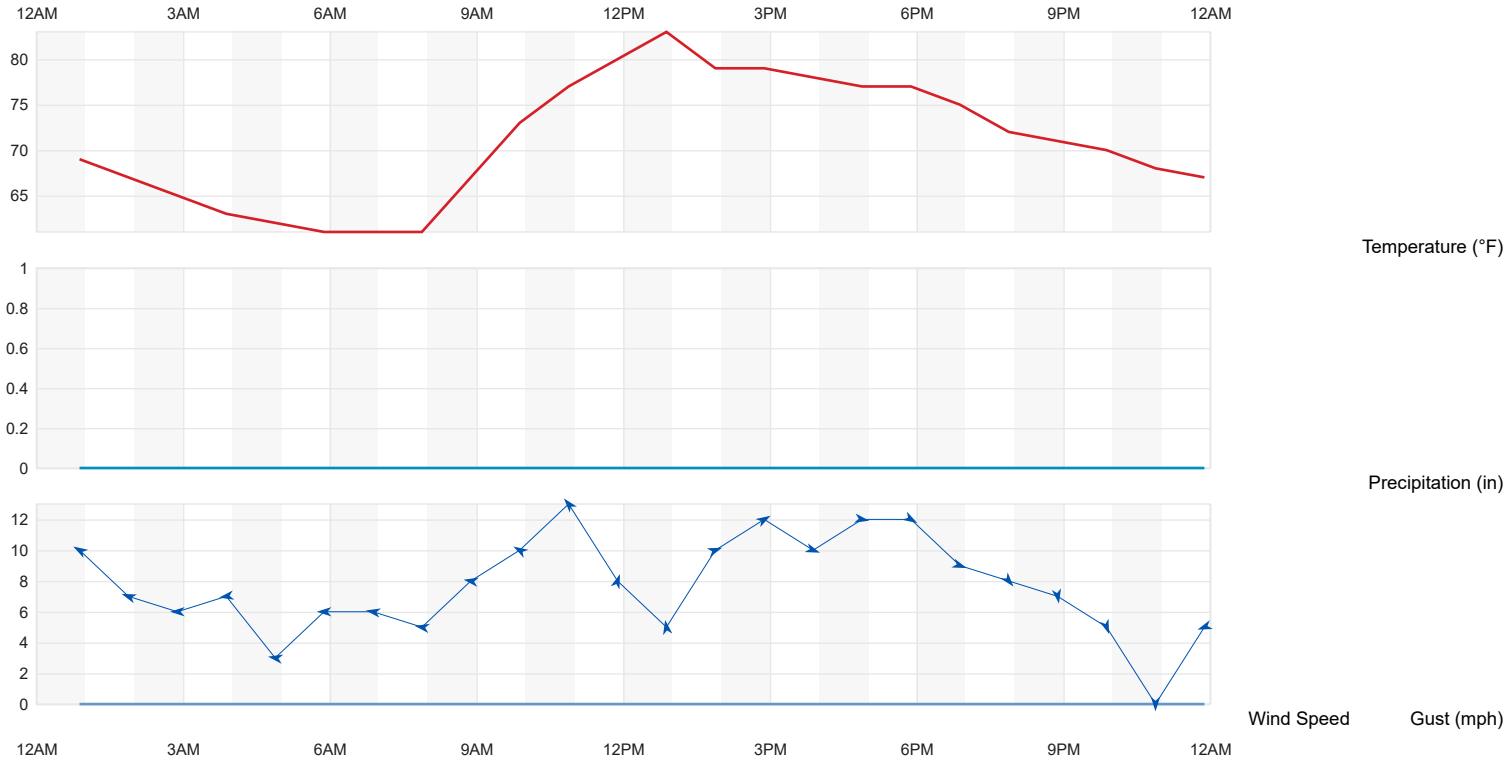
HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)

- TODAY (/WEATHER/US/FL/SARASOTA/KSRQ)
- HOURLY (/HOURLY/US/FL/SARASOTA/KSRQ)
- 10-DAY (/FORECAST/US/FL/SARASOTA/KSRQ)
- CALENDAR (/CALENDAR/US/FL/SARASOTA/KSRQ)
- HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)
- WUNDERMAP (/WUNDERMAP?LAT=27.404&LON=-82.512)

Daily Weekly Monthly

(/history/daily/[illegible]/KSRQ/date/2023-3-23) (/history/weekly/[illegible]/KSRQ/date/2023-3-23) (/history/monthly/[illegible]/KSRQ/date/2023-3)

March 23 2023 View



Summary

Temperature (°F)	Actual	Historic Avg.	Record
High Temp	83	79.1	88
Low Temp	61	59.2	38
Day Average Temp	70.92	69.1	-
Precipitation (in)	Actual	Historic Avg.	Record

Temperature (°F)	Actual	Historic Avg.	Record
Precipitation (past 24 hours from 04:53:00)	0.00	4.90	-

Dew Point (°F)	Actual	Historic Avg.	Record
Dew Point	60.42	-	-
High	64	-	-
Low	56	-	-
Average	60.42	-	-

Wind (mph)	Actual	Historic Avg.	Record
Max Wind Speed	13	-	-
Visibility	10	-	-

Sea Level Pressure (in)	Actual	Historic Avg.	Record
Sea Level Pressure	30.23	-	-

Astronomy	Day Length	Rise	Set
Actual Time	12h 11m	7:32 AM	7:43 PM
Civil Twilight		7:08 AM	8:07 PM
Nautical Twilight		6:41 AM	8:34 PM
Astronomical Twilight		6:14 AM	9:01 PM
Moon: waxing crescent		8:47 AM	9:59 PM

Daily Observations

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
12:53 AM	69 °F	56 °F	63 %	ESE	10 mph	0 mph	30.23 in	0.0 in	N/A
1:53 AM	67 °F	57 °F	70 %	ESE	7 mph	0 mph	30.22 in	0.0 in	Fair
2:53 AM	65 °F	57 °F	75 %	E	6 mph	0 mph	30.21 in	0.0 in	Fair
3:53 AM	63 °F	57 °F	81 %	E	7 mph	0 mph	30.19 in	0.0 in	Fair
4:53 AM	62 °F	56 °F	80 %	E	3 mph	0 mph	30.18 in	0.0 in	Fair
5:53 AM	61 °F	57 °F	87 %	E	6 mph	0 mph	30.18 in	0.0 in	Fair
6:53 AM	61 °F	57 °F	87 %	E	6 mph	0 mph	30.18 in	0.0 in	Fair
7:53 AM	61 °F	57 °F	87 %	E	5 mph	0 mph	30.19 in	0.0 in	Fair
8:53 AM	67 °F	60 °F	79 %	E	8 mph	0 mph	30.21 in	0.0 in	Fair
9:53 AM	73 °F	61 °F	66 %	ESE	10 mph	0 mph	30.22 in	0.0 in	Fair
10:53 AM	77 °F	61 °F	58 %	SE	13 mph	0 mph	30.22 in	0.0 in	Fair
11:53 AM	80 °F	59 °F	48 %	SSW	8 mph	0 mph	30.22 in	0.0 in	Fair
12:53 PM	83 °F	59 °F	44 %	S	5 mph	0 mph	30.20 in	0.0 in	Partly Cloudy
1:53 PM	79 °F	62 °F	56 %	WSW	10 mph	0 mph	30.17 in	0.0 in	Fair
2:53 PM	79 °F	63 °F	58 %	WSW	12 mph	0 mph	30.15 in	0.0 in	Fair
3:53 PM	78 °F	64 °F	62 %	WNW	10 mph	0 mph	30.13 in	0.0 in	Fair
4:53 PM	77 °F	64 °F	64 %	W	12 mph	0 mph	30.11 in	0.0 in	Fair
5:53 PM	77 °F	64 °F	64 %	WNW	12 mph	0 mph	30.10 in	0.0 in	Fair
6:53 PM	75 °F	64 °F	69 %	WNW	9 mph	0 mph	30.10 in	0.0 in	Fair
7:53 PM	72 °F	62 °F	71 %	NW	8 mph	0 mph	30.10 in	0.0 in	Fair
8:53 PM	71 °F	64 °F	78 %	N	7 mph	0 mph	30.11 in	0.0 in	Fair
9:53 PM	70 °F	64 °F	81 %	NNW	5 mph	0 mph	30.12 in	0.0 in	Fair

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
10:53 PM	68 °F	63 °F	84 %	CALM	0 mph	0 mph	30.14 in	0.0 in	Fair
11:53 PM	67 °F	62 °F	84 %	ENE	5 mph	0 mph	30.13 in	0.0 in	Fair

27.4 °N, **82.51** °W

Sarasota, FL Weather History

85° SARASOTA-BRADENTON INTERNATIONAL AIRPORT STATION (/DASHBOARD/PWS/KFLSARAS160?CM_VEN=LOCALWX_PWSDASH) | CHANGE

HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)

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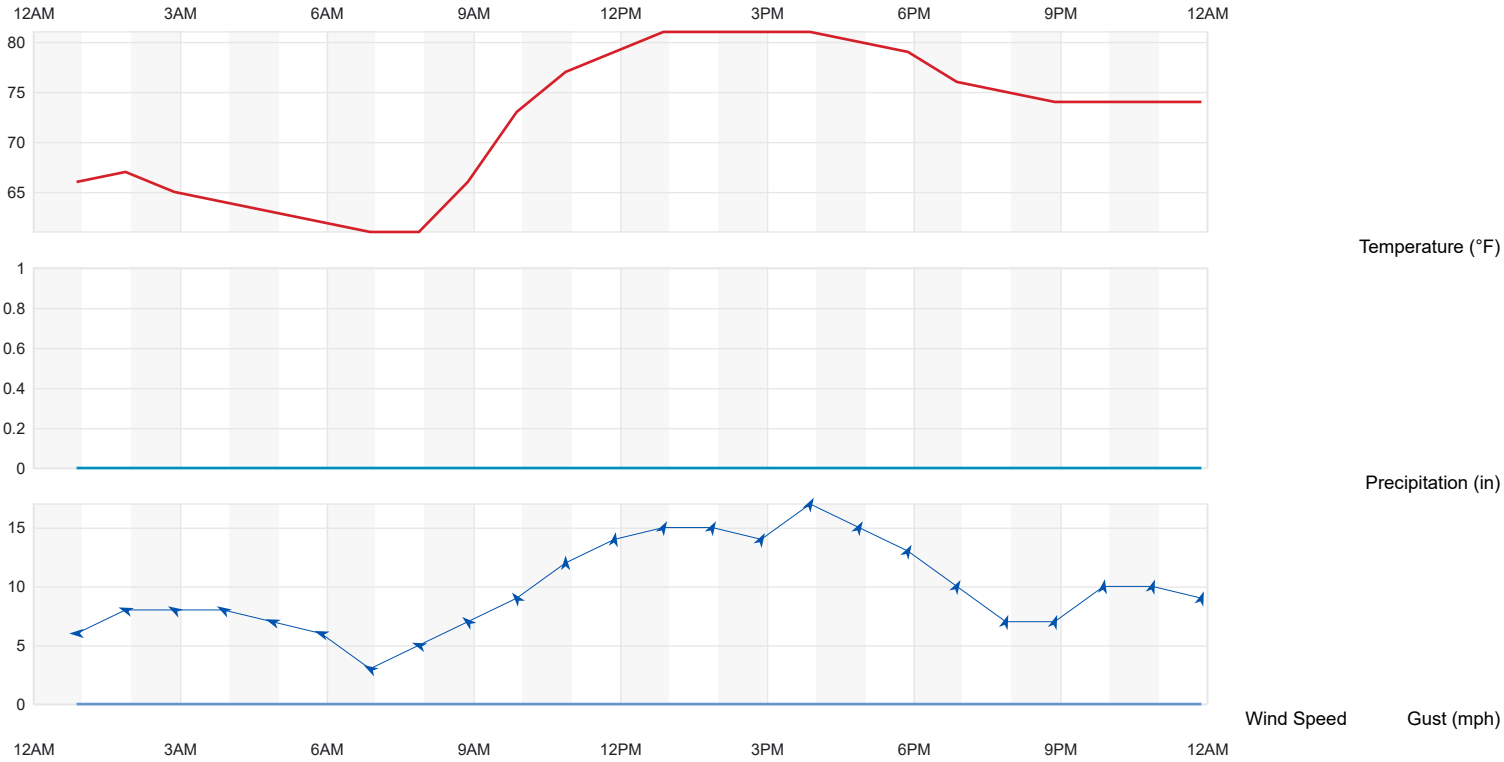
- HOURLY (/HOURLY/US/FL/SARASOTA/KSRQ)
- 10-DAY (/FORECAST/US/FL/SARASOTA/KSRQ)
- CALENDAR (/CALENDAR/US/FL/SARASOTA/KSRQ)
- HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)
- WUNDERMAP (/WUNDERMAP?LAT=27.404&LON=-82.512)

Daily | Weekly | Monthly

(/history/daily/[illegible]/KSRQ/date/2023-3-24) (/history/weekly/[illegible]/KSRQ/date/2023-3-24) (/history/monthly/[illegible]/KSRQ/date/2023-3)

March | 24 | 2023 | View



Summary

Temperature (°F)	Actual	Historic Avg.	Record
High Temp	81	79.2	87
Low Temp	61	59.3	38
Day Average Temp	72.25	69.3	-
Precipitation (in)	Actual	Historic Avg.	Record

Temperature (°F)	Actual	Historic Avg.	Record
Precipitation (past 24 hours from 04:53:00)	0.00	4.90	-
Dew Point (°F)	Actual	Historic Avg.	Record
Dew Point	63.46	-	-
High	69	-	-
Low	58	-	-
Average	63.46	-	-
Wind (mph)	Actual	Historic Avg.	Record
Max Wind Speed	17	-	-
Visibility	10	-	-
Sea Level Pressure (in)	Actual	Historic Avg.	Record
Sea Level Pressure	30.12	-	-
Astronomy	Day Length	Rise	Set
Actual Time	12h 13m	7:31 AM	7:44 PM
Civil Twilight		7:07 AM	8:07 PM
Nautical Twilight		6:40 AM	8:34 PM
Astronomical Twilight		6:13 AM	9:02 PM
Moon: waxing crescent		9:23 AM	11:01 PM

Daily Observations

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
12:53 AM	66 °F	62 °F	87 %	E	6 mph	0 mph	30.12 in	0.0 in	Fair
1:53 AM	67 °F	60 °F	79 %	ESE	8 mph	0 mph	30.10 in	0.0 in	Fair
2:53 AM	65 °F	60 °F	84 %	ESE	8 mph	0 mph	30.08 in	0.0 in	Fair
3:53 AM	64 °F	59 °F	84 %	ESE	8 mph	0 mph	30.06 in	0.0 in	Fair
4:53 AM	63 °F	59 °F	87 %	ESE	7 mph	0 mph	30.05 in	0.0 in	Fair
5:53 AM	62 °F	58 °F	86 %	ESE	6 mph	0 mph	30.05 in	0.0 in	Fair
6:53 AM	61 °F	58 °F	90 %	ESE	3 mph	0 mph	30.05 in	0.0 in	Fair
7:53 AM	61 °F	58 °F	90 %	ESE	5 mph	0 mph	30.06 in	0.0 in	Fair
8:53 AM	66 °F	60 °F	81 %	SE	7 mph	0 mph	30.07 in	0.0 in	Fair
9:53 AM	73 °F	62 °F	68 %	SE	9 mph	0 mph	30.07 in	0.0 in	Fair
10:53 AM	77 °F	62 °F	60 %	S	12 mph	0 mph	30.08 in	0.0 in	Fair
11:53 AM	79 °F	61 °F	54 %	S	14 mph	0 mph	30.07 in	0.0 in	Mostly Cloudy
12:53 PM	81 °F	63 °F	54 %	SSW	15 mph	0 mph	30.06 in	0.0 in	Fair
1:53 PM	81 °F	63 °F	54 %	SSW	15 mph	0 mph	30.04 in	0.0 in	Fair
2:53 PM	81 °F	65 °F	58 %	SSW	14 mph	0 mph	30.01 in	0.0 in	Fair
3:53 PM	81 °F	66 °F	60 %	SSW	17 mph	0 mph	29.98 in	0.0 in	Fair
4:53 PM	80 °F	67 °F	64 %	SSW	15 mph	0 mph	29.98 in	0.0 in	Fair
5:53 PM	79 °F	67 °F	66 %	SSW	13 mph	0 mph	29.97 in	0.0 in	Fair
6:53 PM	76 °F	68 °F	76 %	SSW	10 mph	0 mph	29.97 in	0.0 in	Fair
7:53 PM	75 °F	69 °F	82 %	SSW	7 mph	0 mph	29.98 in	0.0 in	Fair
8:53 PM	74 °F	69 °F	85 %	SSW	7 mph	0 mph	29.98 in	0.0 in	Fair
9:53 PM	74 °F	69 °F	85 %	S	10 mph	0 mph	29.97 in	0.0 in	Fair

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
10:53 PM	74 °F	69 °F	85 %	SSW	10 mph	0 mph	29.98 in	0.0 in	Fair
11:53 PM	74 °F	69 °F	85 %	SSW	9 mph	0 mph	29.98 in	0.0 in	Fair

27.4 °N, **82.51** °W

Sarasota, FL Weather History

84° SARASOTA-BRADENTON INTERNATIONAL AIRPORT STATION (/DASHBOARD/PWS/KFLSARAS160?CM_VEN=LOCALWX_PWSDASH) | CHANGE

HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)

- TODAY (/WEATHER/US/FL/SARASOTA/KSRQ)
- HOURLY (/HOURLY/US/FL/SARASOTA/KSRQ)
- 10-DAY (/FORECAST/US/FL/SARASOTA/KSRQ)
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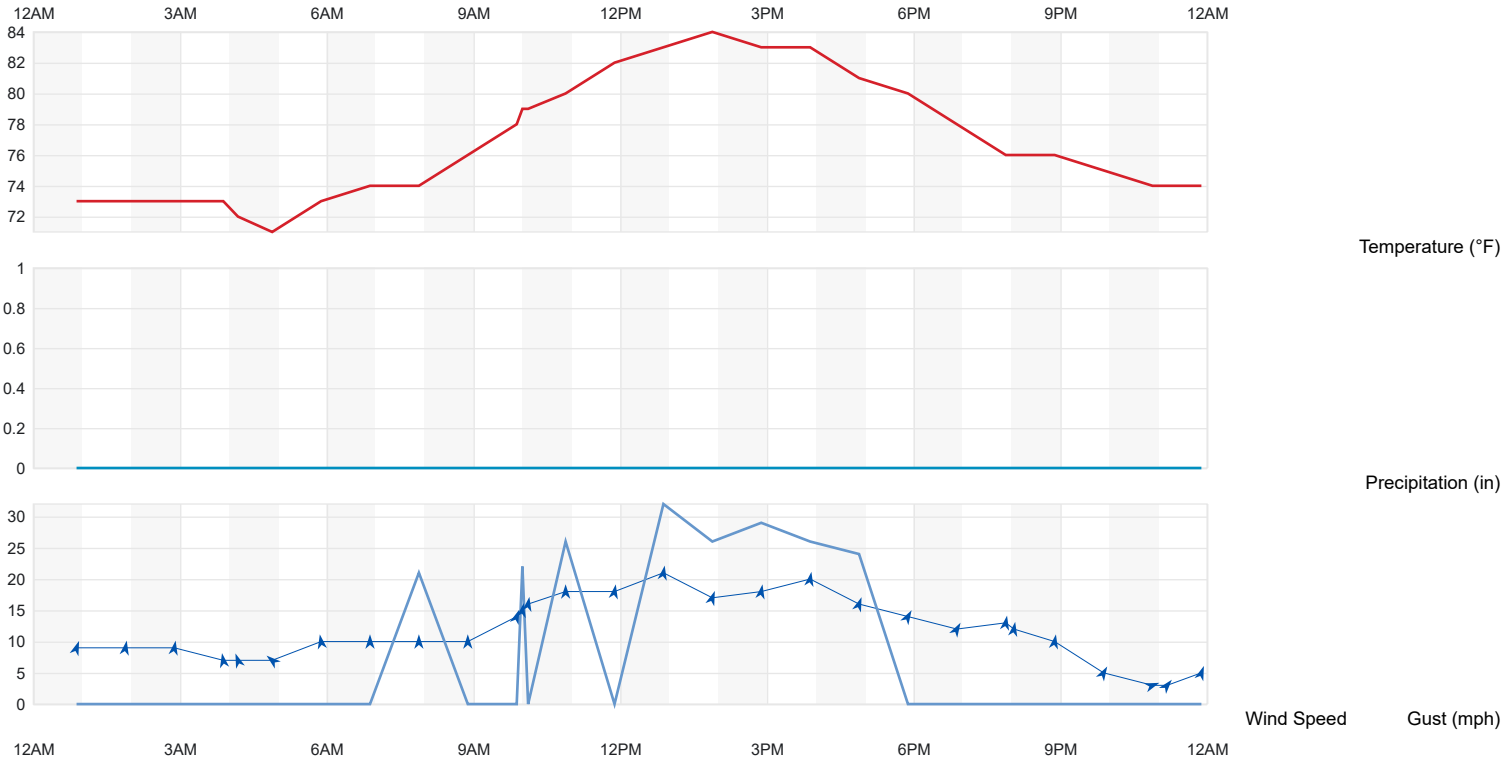
- HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)
- WUNDERMAP (/WUNDERMAP?LAT=27.404&LON=-82.512)

Daily Weekly Monthly

(/history/daily/[illegible]/KSRQ/date/2023-3-25) 3-25) 3)

March 25 2023 View



Summary

Temperature (°F)	Actual	Historic Avg.	Record
High Temp	84	79.3	90
Low Temp	71	59.5	36
Day Average Temp	76.79	69.4	-
Precipitation (in)	Actual	Historic Avg.	Record

Temperature (°F)	Actual	Historic Avg.	Record
Precipitation (past 24 hours from 04:53:00)	0.00	4.80	-
Dew Point (°F)	Actual	Historic Avg.	Record
Dew Point	71.45	-	-
High	73	-	-
Low	69	-	-
Average	71.45	-	-
Wind (mph)	Actual	Historic Avg.	Record
Max Wind Speed	21	-	-
Visibility	10	-	-
Sea Level Pressure (in)	Actual	Historic Avg.	Record
Sea Level Pressure	30.01	-	-
Astronomy	Day Length	Rise	Set
Actual Time	12h 14m	7:29 AM	7:44 PM
Civil Twilight		7:06 AM	8:08 PM
Nautical Twilight		6:39 AM	8:35 PM
Astronomical Twilight		6:11 AM	9:02 PM
Moon: waxing crescent		10:00 AM	-

Daily Observations

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
12:53 AM	73 °F	70 °F	90 %	SSW	9 mph	0 mph	29.96 in	0.0 in	Fair
1:53 AM	73 °F	70 °F	90 %	S	9 mph	0 mph	29.96 in	0.0 in	Fair
2:53 AM	73 °F	70 °F	90 %	S	9 mph	0 mph	29.96 in	0.0 in	Fair
3:53 AM	73 °F	70 °F	90 %	S	7 mph	0 mph	29.95 in	0.0 in	Fair
4:11 AM	72 °F	70 °F	93 %	SSE	7 mph	0 mph	29.94 in	0.0 in	Mostly Cloudy
4:53 AM	71 °F	69 °F	93 %	SE	7 mph	0 mph	29.93 in	0.0 in	Cloudy
5:53 AM	73 °F	71 °F	93 %	S	10 mph	0 mph	29.93 in	0.0 in	Cloudy
6:53 AM	74 °F	71 °F	91 %	S	10 mph	0 mph	29.95 in	0.0 in	Cloudy
7:53 AM	74 °F	71 °F	91 %	S	10 mph	21 mph	29.96 in	0.0 in	Mostly Cloudy
8:53 AM	76 °F	72 °F	87 %	S	10 mph	0 mph	29.99 in	0.0 in	Mostly Cloudy
9:53 AM	78 °F	72 °F	81 %	SSW	14 mph	0 mph	30.00 in	0.0 in	Mostly Cloudy
10:00 AM	79 °F	72 °F	79 %	S	15 mph	22 mph	30.00 in	0.0 in	Mostly Cloudy
10:07 AM	79 °F	72 °F	79 %	S	16 mph	0 mph	30.00 in	0.0 in	Mostly Cloudy
10:53 AM	80 °F	72 °F	76 %	S	18 mph	26 mph	30.00 in	0.0 in	Partly Cloudy
11:53 AM	82 °F	72 °F	71 %	S	18 mph	0 mph	30.00 in	0.0 in	Fair
12:53 PM	83 °F	71 °F	67 %	S	21 mph	32 mph	29.99 in	0.0 in	Fair / Windy
1:53 PM	84 °F	72 °F	67 %	SSW	17 mph	26 mph	29.98 in	0.0 in	Fair
2:53 PM	83 °F	72 °F	69 %	S	18 mph	29 mph	29.96 in	0.0 in	Fair
3:53 PM	83 °F	72 °F	69 %	S	20 mph	26 mph	29.95 in	0.0 in	Fair
4:53 PM	81 °F	72 °F	74 %	SSW	16 mph	24 mph	29.95 in	0.0 in	Fair
5:53 PM	80 °F	72 °F	76 %	SSW	14 mph	0 mph	29.95 in	0.0 in	Fair
6:53 PM	78 °F	72 °F	81 %	SSW	12 mph	0 mph	29.96 in	0.0 in	Fair

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
7:53 PM	76 °F	72 °F	87 %	S	13 mph	0 mph	29.96 in	0.0 in	Fair
8:03 PM	76 °F	73 °F	91 %	S	12 mph	0 mph	29.96 in	0.0 in	Fair
8:53 PM	76 °F	72 °F	87 %	S	10 mph	0 mph	29.97 in	0.0 in	Fair
9:53 PM	75 °F	72 °F	90 %	SSW	5 mph	0 mph	29.99 in	0.0 in	Fair
10:53 PM	74 °F	72 °F	93 %	WSW	3 mph	0 mph	30.01 in	0.0 in	Fair
11:11 PM	74 °F	72 °F	93 %	SW	3 mph	0 mph	30.00 in	0.0 in	Fair
11:53 PM	74 °F	72 °F	93 %	SSW	5 mph	0 mph	30.00 in	0.0 in	Fair

Search Locations

Log in (/log…

Recent Cities

Sarasota, FL (/weather/us/fl/sarasota/27.34,-82.53) North Fort Myers, FL (33917) (/weather/us/fl/north-fort-myers/26.70,-81.88)

27.4 °N, **82.51** °W

Sarasota, FL Weather History

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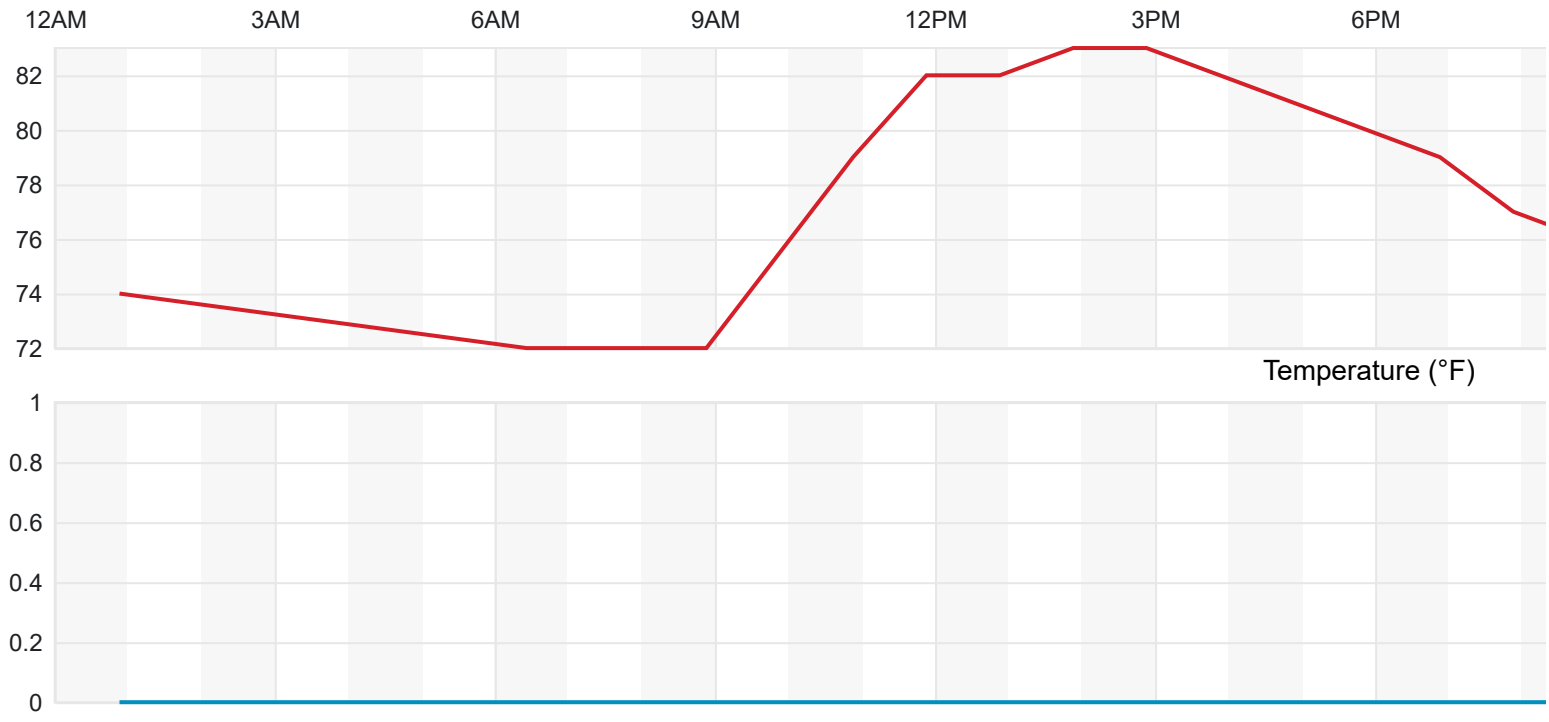
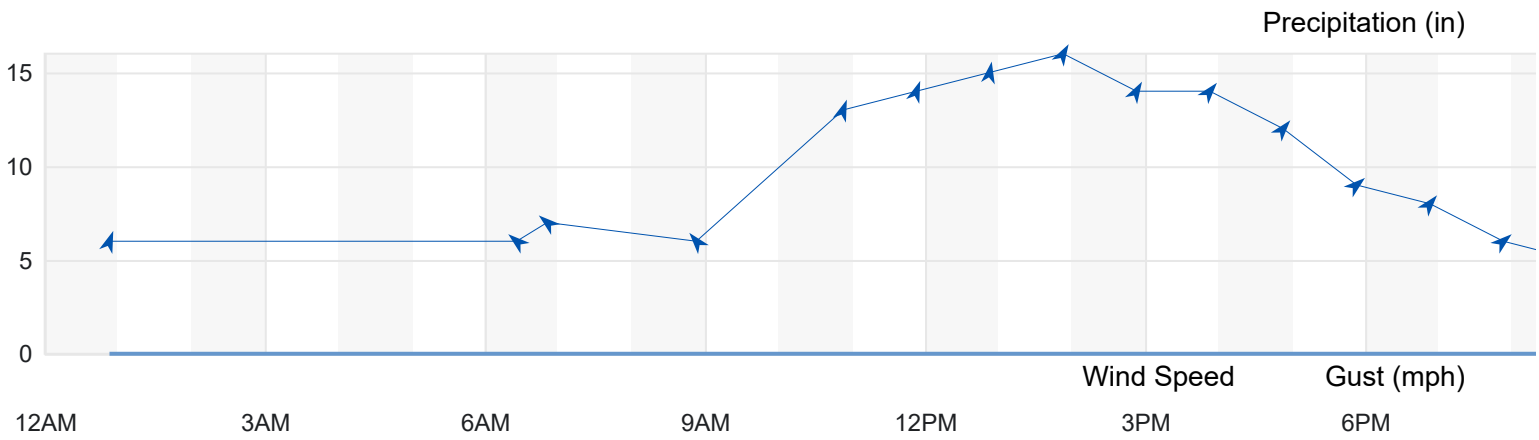
- 10-DAY (/FORECAST/US/FL/SARASOTA/KSRQ)
- CALENDAR (/CALENDAR/US/FL/SARASOTA/KSRQ)
- HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)
- WUNDERMAP (/WUNDERMAP?LAT=27.404&LON=-82.512)

Daily Weekly Monthly

(/history/daily/us/fl/sarasota/KSRQ/date/2023-3-26) (/history/daily/us/fl/sarasota/KSRQ/date/2023-3-26) (/history/daily/us/fl/sarasota/KSRQ/date/2023-3)

March 26 2023 View





Summary

Temperature (°F)	Actual	Historic Avg.	Record
High Temp	83	79.4	90
Low Temp	72	59.6	42
Day Average Temp	77.78	69.5	-
Precipitation (in)	Actual	Historic Avg.	Record
Precipitation (past 24 hours from 04:53:00)	0.00	4.80	-
Dew Point (°F)	Actual	Historic Avg.	Record
Dew Point	71.22	-	-
High	72	-	-
Low	70	-	-
Average	71.22	-	-
Wind (mph)	Actual	Historic Avg.	Record
Max Wind Speed	16	-	-
Visibility	10	-	-
Sea Level Pressure (in)	Actual	Historic Avg.	Record
Sea Level Pressure	30.05	-	-
Astronomy	Day Length	Rise	Set
Actual Time	12h 16m	7:28 AM	7:45 PM

Temperature (°F)	Actual	Historic Avg.	Record
Civil Twilight		7:05 AM	8:08 PM
Nautical Twilight		6:38 AM	8:35 PM
Astronomical Twilight		6:10 AM	9:03 PM
Moon: waxing crescent		10:41 AM	12:03 AM

Daily Observations

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Prec
12:53 AM	74 °F	72 °F	93 %	SSW	6 mph	0 mph	30.00 in	0.0 ir
6:26 AM	72 °F	72 °F	100 %	SE	6 mph	0 mph	29.99 in	0.0 ir
6:51 AM	72 °F	72 °F	100 %	SE	7 mph	0 mph	30.00 in	0.0 ir
8:53 AM	72 °F	72 °F	100 %	SE	6 mph	0 mph	30.04 in	0.0 ir
10:53 AM	79 °F	71 °F	77 %	SSW	13 mph	0 mph	30.05 in	0.0 ir
11:53 AM	82 °F	71 °F	69 %	SSW	14 mph	0 mph	30.04 in	0.0 ir
12:53 PM	82 °F	72 °F	71 %	S	15 mph	0 mph	30.03 in	0.0 ir
1:53 PM	83 °F	71 °F	67 %	SSW	16 mph	0 mph	30.03 in	0.0 ir
2:53 PM	83 °F	71 °F	67 %	SSW	14 mph	0 mph	30.02 in	0.0 ir
3:53 PM	82 °F	71 °F	69 %	SW	14 mph	0 mph	30.00 in	0.0 ir
4:53 PM	81 °F	72 °F	74 %	SW	12 mph	0 mph	30.00 in	0.0 ir
5:53 PM	80 °F	71 °F	74 %	SW	9 mph	0 mph	29.98 in	0.0 ir
6:53 PM	79 °F	71 °F	77 %	SW	8 mph	0 mph	29.98 in	0.0 ir
7:53 PM	77 °F	71 °F	82 %	SW	6 mph	0 mph	29.97 in	0.0 ir
8:53 PM	76 °F	71 °F	85 %	SSW	5 mph	0 mph	29.97 in	0.0 ir
9:53 PM	76 °F	71 °F	85 %	ESE	3 mph	0 mph	29.99 in	0.0 ir
10:53 PM	76 °F	70 °F	82 %	ESE	5 mph	0 mph	30.00 in	0.0 ir
11:53 PM	74 °F	70 °F	87 %	SSE	6 mph	0 mph	30.00 in	0.0 ir

Search Locations

Log in (Log…

Recent Cities

Sarasota, FL (/weather/us/fl/sarasota/27.34,-82.53) North Fort Myers, FL (33917) (/weather/us/fl/north-fort-myers/26.70,-81.88)

27.4 °N, **82.51** °W

Sarasota, FL Weather History

85° SARASOTA-BRADENTON INTERNATIONAL AIRPORT STATION (/DASHBOARD/PWS/KFLSARAS160?CM_VEN=LOCALWX_PWSDASH) | CHANGE

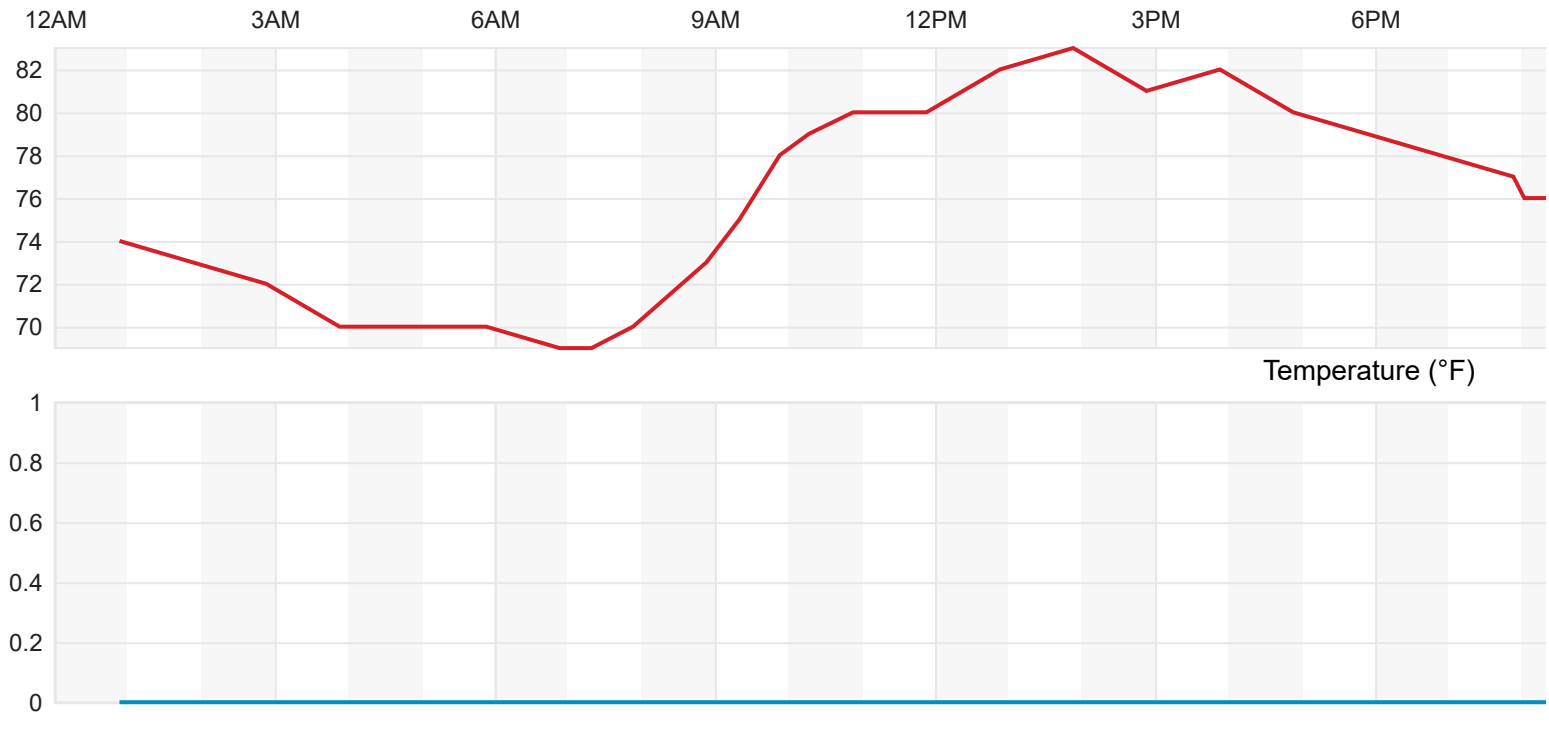
HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)

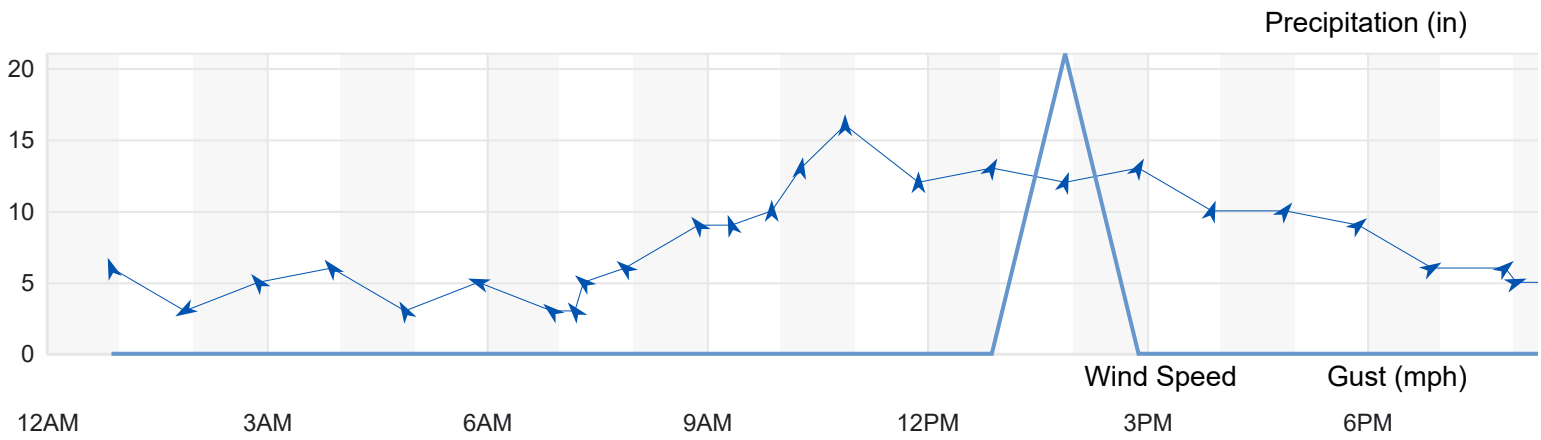
- TODAY (/WEATHER/US/FL/SARASOTA/KSRQ)
- HOURLY (/HOURLY/US/FL/SARASOTA/KSRQ)
- 10-DAY (/FORECAST/US/FL/SARASOTA/KSRQ)
- CALENDAR (/CALENDAR/US/FL/SARASOTA/KSRQ)
- HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)
- WUNDERMAP (/WUNDERMAP?LAT=27.404&LON=-82.512)

Daily Weekly Monthly

(/history/daily/us/fl/sarasota/KSRQ/date/2023-3-27) (/history/daily/us/fl/sarasota/KSRQ/date/2023-3-27) (/history/daily/us/fl/sarasota/KSRQ/date/2023-3)

March 27 2023 View





Summary

Temperature (°F)	Actual	Historic Avg.	Record
High Temp	83	79.6	91
Low Temp	69	59.8	40
Day Average Temp	75.49	69.7	-
Precipitation (in)	Actual	Historic Avg.	Record
Precipitation (past 24 hours from 04:53:00)	0.00	4.80	-
Dew Point (°F)	Actual	Historic Avg.	Record
Dew Point	70.6	-	-
High	73	-	-
Low	67	-	-
Average	70.6	-	-
Wind (mph)	Actual	Historic Avg.	Record
Max Wind Speed	16	-	-
Visibility	10	-	-
Sea Level Pressure (in)	Actual	Historic Avg.	Record
Sea Level Pressure	30.06	-	-
Astronomy	Day Length	Rise	Set
Actual Time	12h 18m	7:27 AM	7:45 PM

Temperature (°F)	Actual	Historic Avg.	Record
Civil Twilight		7:04 AM	8:09 PM
Nautical Twilight		6:37 AM	8:36 PM
Astronomical Twilight		6:09 AM	9:03 PM
Moon: waxing crescent		11:28 AM	1:03 AM

Daily Observations

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Prec
12:53 AM	74 °F	69 °F	85 %	SSE	6 mph	0 mph	29.99 in	0.0 ir
1:53 AM	73 °F	69 °F	87 %	ENE	3 mph	0 mph	30.00 in	0.0 ir
2:53 AM	72 °F	68 °F	87 %	SE	5 mph	0 mph	30.00 in	0.0 ir
3:53 AM	70 °F	68 °F	93 %	SE	6 mph	0 mph	29.99 in	0.0 ir
4:53 AM	70 °F	69 °F	97 %	SSE	3 mph	0 mph	29.99 in	0.0 ir
5:53 AM	70 °F	68 °F	93 %	ESE	5 mph	0 mph	30.00 in	0.0 ir
6:53 AM	69 °F	68 °F	96 %	SE	3 mph	0 mph	30.01 in	0.0 ir
7:12 AM	69 °F	68 °F	96 %	SE	3 mph	0 mph	30.02 in	0.0 ir
7:19 AM	69 °F	67 °F	93 %	SE	5 mph	0 mph	30.02 in	0.0 ir
7:53 AM	70 °F	68 °F	93 %	SE	6 mph	0 mph	30.02 in	0.0 ir
8:53 AM	73 °F	70 °F	90 %	SE	9 mph	0 mph	30.03 in	0.0 ir
9:20 AM	75 °F	70 °F	84 %	SSE	9 mph	0 mph	30.03 in	0.0 ir
9:53 AM	78 °F	70 °F	76 %	S	10 mph	0 mph	30.03 in	0.0 ir
10:17 AM	79 °F	70 °F	74 %	S	13 mph	0 mph	30.03 in	0.0 ir
10:53 AM	80 °F	70 °F	71 %	S	16 mph	0 mph	30.04 in	0.0 ir
11:53 AM	80 °F	71 °F	74 %	S	12 mph	0 mph	30.04 in	0.0 ir
12:53 PM	82 °F	70 °F	67 %	SSW	13 mph	0 mph	30.03 in	0.0 ir
1:53 PM	83 °F	71 °F	67 %	SSW	12 mph	21 mph	30.03 in	0.0 ir
2:53 PM	81 °F	71 °F	72 %	SSW	13 mph	0 mph	30.02 in	0.0 ir
3:53 PM	82 °F	72 °F	71 %	SSW	10 mph	0 mph	30.01 in	0.0 ir
4:53 PM	80 °F	72 °F	76 %	SW	10 mph	0 mph	30.00 in	0.0 ir
5:53 PM	79 °F	72 °F	79 %	SW	9 mph	0 mph	30.00 in	0.0 ir

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Prec
6:53 PM	78 °F	72 °F	81 %	WSW	6 mph	0 mph	30.01 in	0.0 ir
7:53 PM	77 °F	72 °F	84 %	SW	6 mph	0 mph	30.02 in	0.0 ir
8:02 PM	76 °F	73 °F	91 %	WSW	5 mph	0 mph	30.02 in	0.0 ir
8:53 PM	76 °F	73 °F	91 %	WSW	5 mph	0 mph	30.03 in	0.0 ir
9:04 PM	76 °F	73 °F	91 %	W	6 mph	0 mph	30.03 in	0.0 ir
9:44 PM	76 °F	73 °F	91 %	W	5 mph	0 mph	30.04 in	0.0 ir
9:53 PM	76 °F	72 °F	87 %	WSW	3 mph	0 mph	30.04 in	0.0 ir
10:53 PM	75 °F	72 °F	90 %	CALM	0 mph	0 mph	30.06 in	0.0 ir
11:01 PM	75 °F	72 °F	90 %	WNW	3 mph	0 mph	30.06 in	0.0 ir
11:08 PM	75 °F	72 °F	90 %	WNW	3 mph	0 mph	30.06 in	0.0 ir
11:21 PM	75 °F	72 °F	90 %	WNW	5 mph	0 mph	30.06 in	0.0 ir
11:34 PM	75 °F	72 °F	90 %	NNW	3 mph	0 mph	30.06 in	0.0 ir
11:53 PM	74 °F	72 °F	93 %	NNW	3 mph	0 mph	30.05 in	0.0 ir

27.4 °N, **82.51** °W

Sarasota, FL Weather History

85° SARASOTA-BRADENTON INTERNATIONAL AIRPORT STATION (/DASHBOARD/PWS/KFLSARAS160?CM_VEN=LOCALWX_PWSDASH) | CHANGE

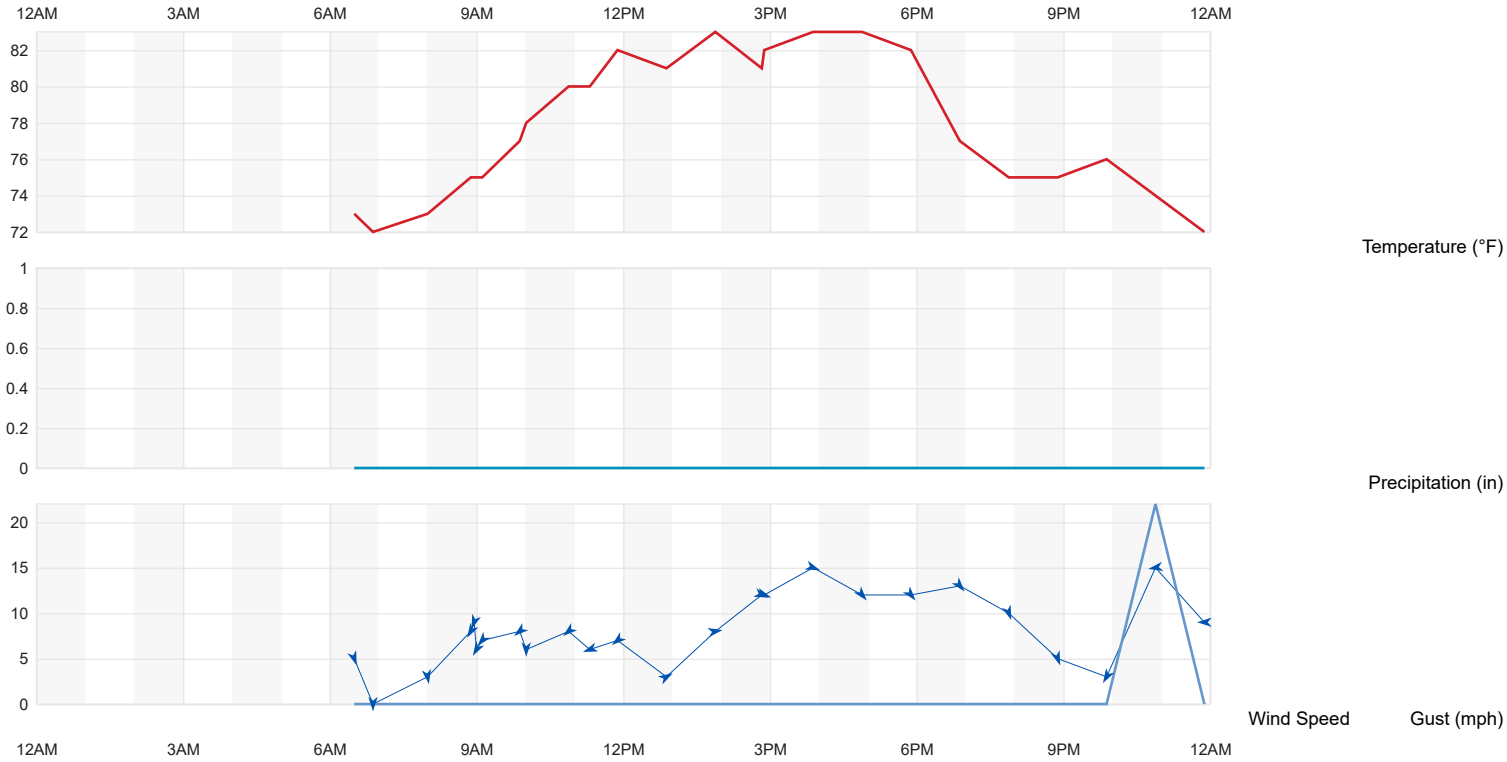
HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)

- TODAY (/WEATHER/US/FL/SARASOTA/KSRQ)
- HOURLY (/HOURLY/US/FL/SARASOTA/KSRQ)
- 10-DAY (/FORECAST/US/FL/SARASOTA/KSRQ)
- CALENDAR (/CALENDAR/US/FL/SARASOTA/KSRQ)
- HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)
- WUNDERMAP (/WUNDERMAP?LAT=27.404&LON=-82.512)

Daily Weekly Monthly

(/history/daily/[illegible]/KSRQ/date/2023-3-29) 3-29) 3)

March 29 2023 View



Summary

Temperature (°F)	Actual	Historic Avg.	Record
High Temp	83	79.8	90
Low Temp	72	60.1	43
Day Average Temp	77.56	70	-
Precipitation (in)	Actual	Historic Avg.	Record

Temperature (°F)	Actual	Historic Avg.	Record
Precipitation (past 24 hours from 10:30:00)	0.00	4.70	-

Dew Point (°F)	Actual	Historic Avg.	Record
Dew Point	65.68	-	-
High	70	-	-
Low	58	-	-
Average	65.68	-	-

Wind (mph)	Actual	Historic Avg.	Record
Max Wind Speed	15	-	-
Visibility	10	-	-

Sea Level Pressure (in)	Actual	Historic Avg.	Record
Sea Level Pressure	30.07	-	-

Astronomy	Day Length	Rise	Set
Actual Time	12h 21m	7:25 AM	7:46 PM
Civil Twilight		7:02 AM	8:10 PM
Nautical Twilight		6:34 AM	8:37 PM
Astronomical Twilight		6:07 AM	9:05 PM
Moon: waxing gibbous		1:10 PM	2:53 AM

Daily Observations

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
6:30 AM	73 °F	70 °F	88 %	NNW	5 mph	0 mph	29.96 in	0.0 in	Fair
6:53 AM	72 °F	70 °F	94 %	CALM	0 mph	0 mph	29.98 in	0.0 in	Mostly Cloudy
8:00 AM	73 °F	70 °F	88 %	N	3 mph	0 mph	29.99 in	0.0 in	Mostly Cloudy
8:53 AM	75 °F	69 °F	82 %	NNE	8 mph	0 mph	30.01 in	0.0 in	Mostly Cloudy
8:57 AM	75 °F	70 °F	83 %	NNE	9 mph	0 mph	30.01 in	0.0 in	Partly Cloudy
9:00 AM	75 °F	68 °F	79 %	NNE	6 mph	0 mph	30.01 in	0.0 in	Fair
9:07 AM	75 °F	68 °F	79 %	NE	7 mph	0 mph	30.01 in	0.0 in	Mostly Cloudy
9:53 AM	77 °F	67 °F	71 %	NE	8 mph	0 mph	30.01 in	0.0 in	Mostly Cloudy
10:01 AM	78 °F	67 °F	68 %	VAR	6 mph	0 mph	30.02 in	0.0 in	Partly Cloudy
10:53 AM	80 °F	66 °F	62 %	NE	8 mph	0 mph	30.02 in	0.0 in	Mostly Cloudy
11:19 AM	80 °F	65 °F	60 %	ENE	6 mph	0 mph	30.02 in	0.0 in	Fair
11:53 AM	82 °F	65 °F	56 %	NE	7 mph	0 mph	30.02 in	0.0 in	Fair
12:53 PM	81 °F	64 °F	56 %	WSW	3 mph	0 mph	30.02 in	0.0 in	Partly Cloudy
1:53 PM	83 °F	64 °F	53 %	W	8 mph	0 mph	30.01 in	0.0 in	Fair
2:50 PM	81 °F	66 °F	61 %	WNW	12 mph	0 mph	30.00 in	0.0 in	Partly Cloudy
2:53 PM	82 °F	66 °F	58 %	WNW	12 mph	0 mph	30.00 in	0.0 in	Mostly Cloudy
3:53 PM	83 °F	64 °F	53 %	WNW	15 mph	0 mph	29.99 in	0.0 in	Fair
4:53 PM	83 °F	65 °F	54 %	NW	12 mph	0 mph	29.98 in	0.0 in	Fair
5:53 PM	82 °F	66 °F	58 %	NW	12 mph	0 mph	29.99 in	0.0 in	Fair
6:53 PM	77 °F	65 °F	66 %	NW	13 mph	0 mph	30.01 in	0.0 in	Fair
7:53 PM	75 °F	64 °F	69 %	NNW	10 mph	0 mph	30.02 in	0.0 in	Fair
8:53 PM	75 °F	64 °F	69 %	NNW	5 mph	0 mph	30.04 in	0.0 in	Mostly Cloudy

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
9:53 PM	76 °F	62 °F	62 %	NNE	3 mph	0 mph	30.05 in	0.0 in	Partly Cloudy
10:53 PM	74 °F	58 °F	57 %	E	15 mph	22 mph	30.06 in	0.0 in	Fair
11:53 PM	72 °F	59 °F	64 %	E	9 mph	0 mph	30.07 in	0.0 in	Fair

Search Locations

Log in (Log…

Recent Cities

Sarasota, FL (/weather/us/fl/sarasota/27.34,-82.53) North Fort Myers, FL (33917) (/weather/us/fl/north-fort-myers/26.70,-81.88)

27.4 °N, **82.51** °W

Sarasota, FL Weather History

84° SARASOTA-BRADENTON INTERNATIONAL AIRPORT STATION (/DASHBOARD/PWS/KFLSARAS160?CM_VEN=LOCALWX_PWSDASH) | CHANGE

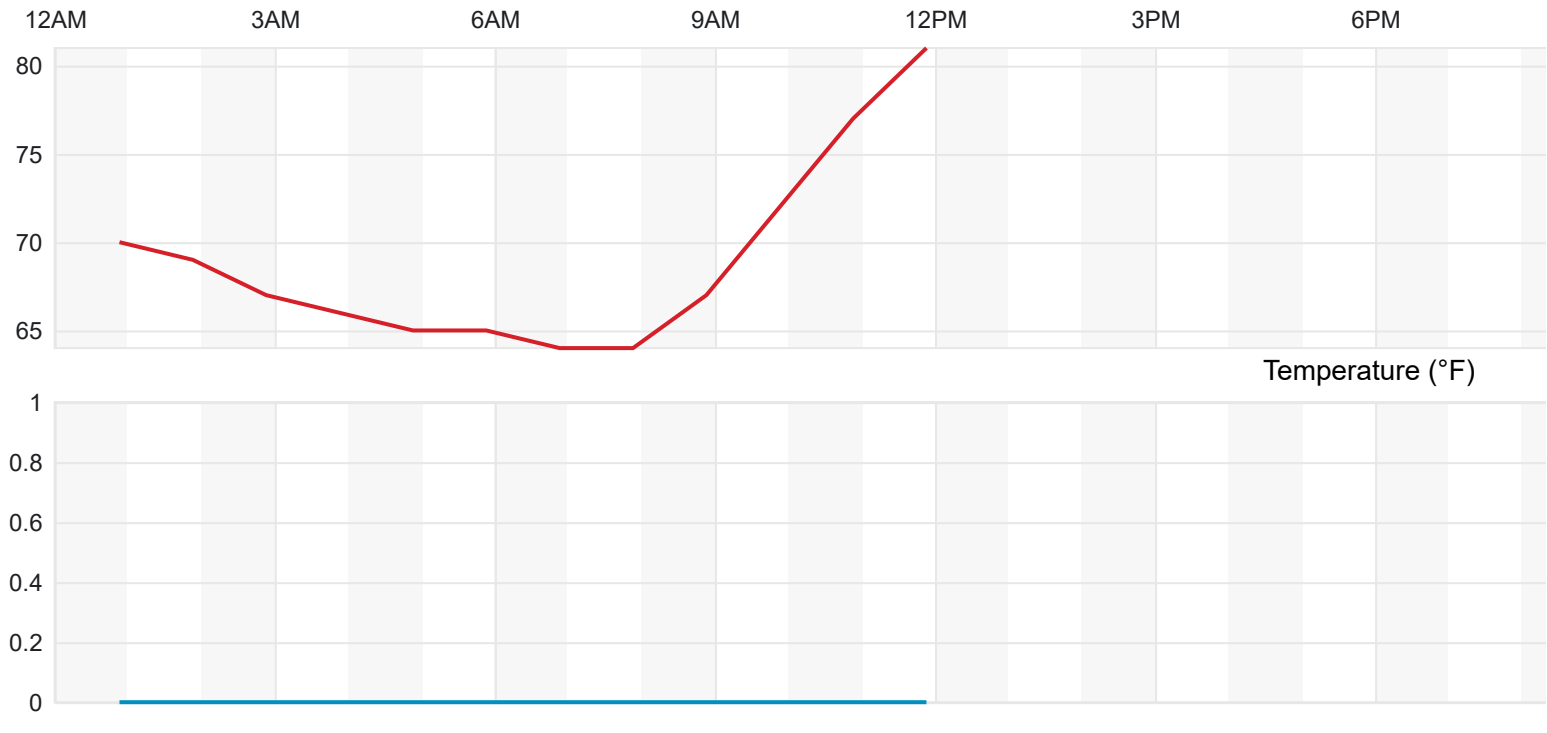
HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)

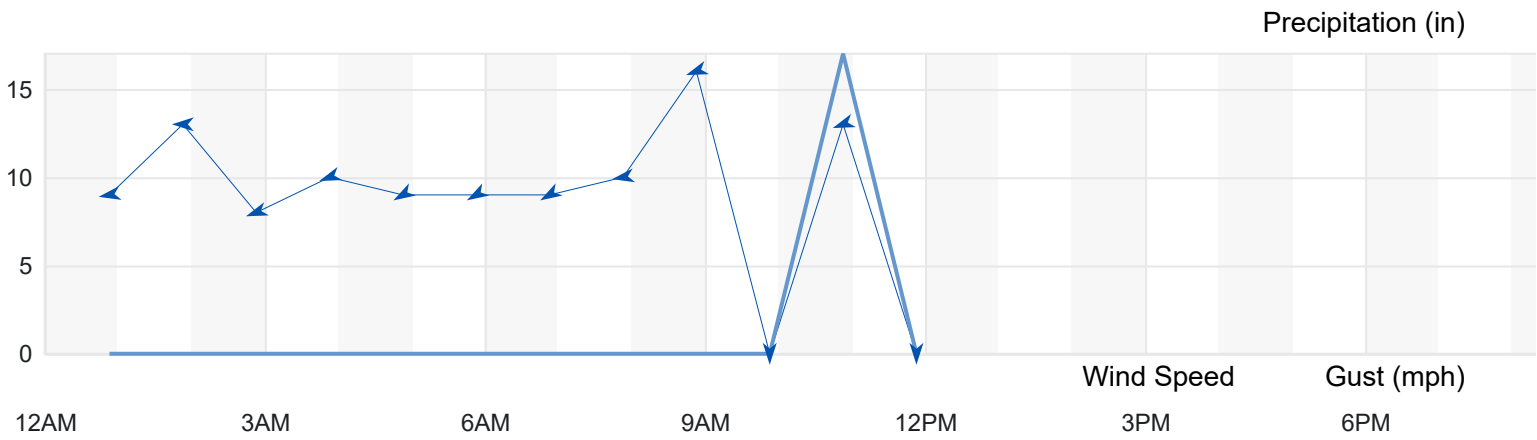
- TODAY (/WEATHER/US/FL/SARASOTA/KSRQ)
- HOURLY (/HOURLY/US/FL/SARASOTA/KSRQ)
- 10-DAY (/FORECAST/US/FL/SARASOTA/KSRQ)
- CALENDAR (/CALENDAR/US/FL/SARASOTA/KSRQ)
- HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)
- WUNDERMAP (/WUNDERMAP?LAT=27.404&LON=-82.512)

Daily Weekly Monthly

(/history/daily/us/fl/sarasota/KSRQ/date/2023-3-30) (/history/daily/us/fl/sarasota/KSRQ/date/2023-3-30) (/history/daily/us/fl/sarasota/KSRQ/date/2023-3)

March 30 2023 View





Summary

Temperature (°F)	Actual	Historic Avg.	Record
High Temp	84	80	90
Low Temp	64	60.2	45
Day Average Temp	70.08	70.1	-

Precipitation (in)	Actual	Historic Avg.	Record
Precipitation (past 24 hours from 04:53:00)	0.00	4.70	-

Dew Point (°F)	Actual	Historic Avg.	Record
Dew Point	58	-	-
High	60	-	-
Low	56	-	-
Average	58	-	-

Wind (mph)	Actual	Historic Avg.	Record
Max Wind Speed	16	-	-
Visibility	10	-	-

Sea Level Pressure (in)	Actual	Historic Avg.	Record
Sea Level Pressure	30.13	-	-

Astronomy	Day Length	Rise	Set
Actual Time	12h 22m	7:24 AM	7:47 PM

Temperature (°F)	Actual	Historic Avg.	Record
Civil Twilight		7:00 AM	8:10 PM
Nautical Twilight		6:33 AM	8:37 PM
Astronomical Twilight		6:05 AM	9:05 PM
Moon: waxing gibbous		2:05 PM	3:41 AM

Daily Observations

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Preci
12:53 AM	70 °F	60 °F	71 %	E	9 mph	0 mph	30.07 in	0.0 in
1:53 AM	69 °F	59 °F	70 %	E	13 mph	0 mph	30.06 in	0.0 in
2:53 AM	67 °F	59 °F	76 %	ENE	8 mph	0 mph	30.05 in	0.0 in
3:53 AM	66 °F	58 °F	75 %	ENE	10 mph	0 mph	30.05 in	0.0 in
4:53 AM	65 °F	57 °F	75 %	ENE	9 mph	0 mph	30.06 in	0.0 in
5:53 AM	65 °F	56 °F	73 %	ENE	9 mph	0 mph	30.07 in	0.0 in
6:53 AM	64 °F	56 °F	75 %	ENE	9 mph	0 mph	30.08 in	0.0 in
7:53 AM	64 °F	56 °F	75 %	E	10 mph	0 mph	30.10 in	0.0 in
8:53 AM	67 °F	57 °F	70 %	ENE	16 mph	0 mph	30.11 in	0.0 in
9:53 AM	72 °F	58 °F	61 %		0 mph	0 mph	30.12 in	0.0 in
10:53 AM	77 °F	60 °F	56 %	ENE	13 mph	17 mph	30.13 in	0.0 in
11:53 AM	81 °F	59 °F	47 %		0 mph	0 mph	30.13 in	0.0 in

27.4 °N, **82.51** °W

Sarasota, FL Weather History ★

84° SARASOTA-BRADENTON INTERNATIONAL AIRPORT STATION (/DASHBOARD/PWS/KFLSARAS160?CM_VEN=LOCALWX_PWSDASH) | CHANGE

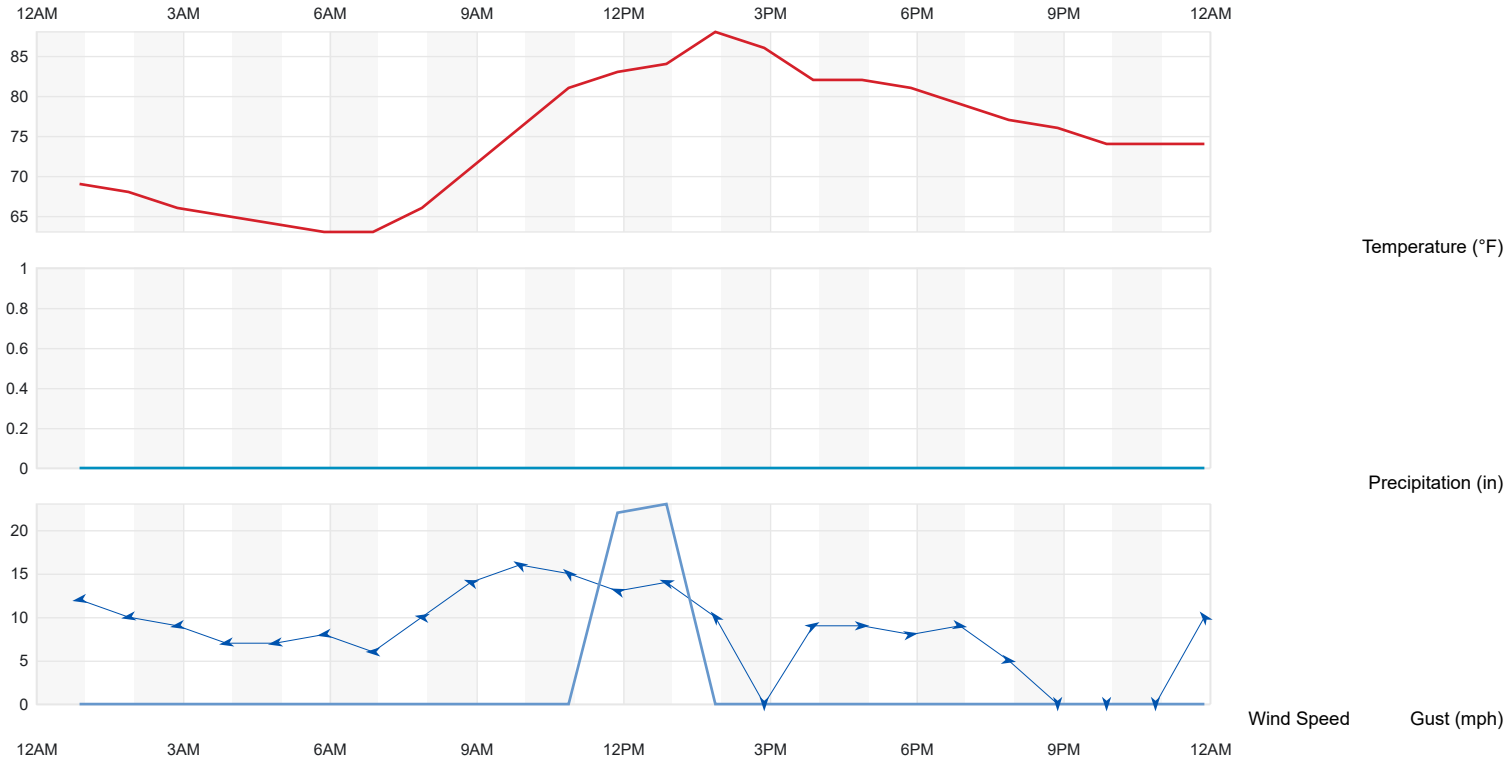
HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)

- TODAY (/WEATHER/US/FL/SARASOTA/KSRQ)
- HOURLY (/HOURLY/US/FL/SARASOTA/KSRQ)
- 10-DAY (/FORECAST/US/FL/SARASOTA/KSRQ)
- CALENDAR (/CALENDAR/US/FL/SARASOTA/KSRQ)
- HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)
- WUNDERMAP (/WUNDERMAP?LAT=27.404&LON=-82.512)

Daily Weekly Monthly

(/history/daily/[illegible]/KSRQ/date/2023-3-31) 3-31) 3)

March 31 2023 View



Summary

Temperature (°F)	Actual	Historic Avg.	Record
High Temp	88	80.1	88
Low Temp	63	60.4	38
Day Average Temp	74.67	70.3	-
Precipitation (in)	Actual	Historic Avg.	Record

Temperature (°F)	Actual	Historic Avg.	Record
Precipitation (past 24 hours from 04:53:00)	0.00	4.60	-

Dew Point (°F)	Actual	Historic Avg.	Record
Dew Point	61.04	-	-
High	66	-	-
Low	57	-	-
Average	61.04	-	-

Wind (mph)	Actual	Historic Avg.	Record
Max Wind Speed	16	-	-
Visibility	10	-	-

Sea Level Pressure (in)	Actual	Historic Avg.	Record
Sea Level Pressure	30.18	-	-

Astronomy	Day Length	Rise	Set
Actual Time	12h 24m	7:23 AM	7:47 PM
Civil Twilight		6:59 AM	8:11 PM
Nautical Twilight		6:32 AM	8:38 PM
Astronomical Twilight		6:04 AM	9:06 PM
Moon: waxing gibbous		3:01 PM	4:23 AM

Daily Observations

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
12:53 AM	69 °F	58 °F	68 %	E	12 mph	0 mph	30.16 in	0.0 in	Fair
1:53 AM	68 °F	58 °F	70 %	E	10 mph	0 mph	30.16 in	0.0 in	Fair
2:53 AM	66 °F	59 °F	78 %	E	9 mph	0 mph	30.15 in	0.0 in	Fair
3:53 AM	65 °F	59 °F	81 %	E	7 mph	0 mph	30.14 in	0.0 in	Fair
4:53 AM	64 °F	59 °F	84 %	E	7 mph	0 mph	30.14 in	0.0 in	Fair
5:53 AM	63 °F	59 °F	87 %	E	8 mph	0 mph	30.14 in	0.0 in	Fair
6:53 AM	63 °F	59 °F	87 %	E	6 mph	0 mph	30.15 in	0.0 in	Fair
7:53 AM	66 °F	60 °F	81 %	E	10 mph	0 mph	30.16 in	0.0 in	Fair
8:53 AM	71 °F	61 °F	70 %	ESE	14 mph	0 mph	30.17 in	0.0 in	Fair
9:53 AM	76 °F	60 °F	58 %	ESE	16 mph	0 mph	30.18 in	0.0 in	Fair
10:53 AM	81 °F	59 °F	47 %	SE	15 mph	0 mph	30.18 in	0.0 in	Fair
11:53 AM	83 °F	59 °F	44 %	ESE	13 mph	22 mph	30.18 in	0.0 in	Fair
12:53 PM	84 °F	58 °F	41 %	ESE	14 mph	23 mph	30.16 in	0.0 in	Fair
1:53 PM	88 °F	57 °F	35 %	SE	10 mph	0 mph	30.14 in	0.0 in	Fair
2:53 PM	86 °F	57 °F	37 %		0 mph	0 mph	30.12 in	0.0 in	Fair
3:53 PM	82 °F	65 °F	56 %	WSW	9 mph	0 mph	30.11 in	0.0 in	Fair
4:53 PM	82 °F	64 °F	54 %	W	9 mph	0 mph	30.09 in	0.0 in	Fair
5:53 PM	81 °F	64 °F	56 %	W	8 mph	0 mph	30.09 in	0.0 in	Fair
6:53 PM	79 °F	66 °F	64 %	W	9 mph	0 mph	30.10 in	0.0 in	Fair
7:53 PM	77 °F	66 °F	69 %	W	5 mph	0 mph	30.10 in	0.0 in	Fair
8:53 PM	76 °F	65 °F	69 %	CALM	0 mph	0 mph	30.11 in	0.0 in	Partly Cloudy
9:53 PM	74 °F	65 °F	73 %	CALM	0 mph	0 mph	30.12 in	0.0 in	Fair

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
10:53 PM	74 °F	65 °F	73 %	CALM	0 mph	0 mph	30.14 in	0.0 in	Fair
11:53 PM	74 °F	63 °F	68 %	SE	10 mph	0 mph	30.14 in	0.0 in	Fair

).taboola.com/en/?template=colorbox&utm_source=theweatherchannel-wunderground&utm_medium=referral&utm_content=thumbnails-b:History Thumbnails:)
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Georgia Seniors Rave About This Genius Fungus Solution

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(https://wellnessguide101.com/go/62d5974f3b157090e206fde2?aff=1169&sub=25_Kerassentials_Desk_S&xcode=GiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiDPpT4ov-KHnv_NmuAE&pub=1194714_theweatherchannel-wunderground&aux=Kerassentials&aff_unique3=23583793&aff_unique5=3677998709&tblci=GiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiDPpT4ov-KHnv_NmuAE#tblciGiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiDPpT4ov-KHnv_NmuAE)
(https://trk.healthy-tracker.com/515ac48a-4c9b-4437-9e03-46cfaa9ebf5d?site=theweatherchannel-wunderground&site_id=1194714&thumbnail=http%3A%2F%2Fcdn.taboola.com%2Flibtrc%2Fstatic%2Fthumbnails%2F6f9f004f9d613ef8a7e313d2b7854d30.jpg&title=Cardiologist%3A+Too+Much+Belly+Fat%3F+Do+This+Before+Bed&04-04+18%3A35%3A12&platform=Desktop&click_id=GiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiC181wox8j7wMmCjpFO&c_id=GiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiC181wox8j7wMmCjpFO&utm_sLGqgI8LD6ZtlyUZj76cMsWnw=&tblci=GiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiC181wox8j7wMmCjpFO#tblciGiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiC181wox8j7wMmCjpFO)

Cardiologist: Too Much Belly Fat? Do This Before Bed

Healthy Guru

(https://trk.healthy-tracker.com/515ac48a-4c9b-4437-9e03-46cfaa9ebf5d?site=theweatherchannel-wunderground&site_id=1194714&thumbnail=http%3A%2F%2Fcdn.taboola.com%2Flibtrc%2Fstatic%2Fthumbnails%2F6f9f004f9d613ef8a7e313d2b7854d30.jpg&title=Cardiologist%3A+Too+Much+Belly+Fat%3F+Do+This+Before+Bed&04-04+18%3A35%3A12&platform=Desktop&click_id=GiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiC181wox8j7wMmCjpFO&c_id=GiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiC181wox8j7wMmCjpFO&utm_sLGqgI8LD6ZtlyUZj76cMsWnw=&tblci=GiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiC181wox8j7wMmCjpFO#tblciGiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiC181wox8j7wMmCjpFO)
(https://hairlavie.com/lp/how-to-stop-female-hair-loss-tab?tr=nrX2DJO&utm_source=taboola&utm_medium=referral#tblciGiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiDnoloojpnzq5Ssmdq4AQ)

#1 Tip for Thinning Hair

Hair La Vie

(https://hairlavie.com/lp/how-to-stop-female-hair-loss-tab?tr=nrX2DJO&utm_source=taboola&utm_medium=referral#tblciGiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiDnoloojpnzq5Ssmdq4AQ)
(https://tsclass-glo.lifeforcreative.com/t/clk?id=LYGGmSX4l5cwA4EfwPNWLhX&s1=23513477&s2=1194714&s3=theweatherchannel-wunderground&s4=Classmates_US_DESK_RON_TCPA_new+Feb2023&s5=GiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiCXoD4osum_gIGOod_BAQ&s9=3658103351&s10=2023-04-04+18%3A35%3A12#tblciGiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiCXoD4osum_gIGOod_BAQ)

Look For Any High School Yearbook, It's Free

Classmates

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(https://trk.pennypinchers.com/5d1a71a3-418b-4555-9afa-f6c52ac9ebd1?ad_site_name=theweatherchannel-wunderground&ad_site_id=1194714&title=Georgia%3A+Say+Bye+To+Your+Car+Insurance+If+You+Live+Near+Atlanta&platform=Desktop&cid=21954175&aid=3581344867&thumbnail=http%3A%2F%2Fcdn.taboola.com%2Flibtrc%2Fs

Georgia: Say Bye To Your Car Insurance If You Live Near Atlanta

Penny Pinchers

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(https://trk.g2healthtrk.com/0fd825c0-4d19-44bf-938f-b1159a942049?site=theweatherchannel-wunderground&site_id=1194714&title=Removing+Moles+%26+Skin+Tags+Has+Never+Been+This+Easy%21&platform=Desktop&campaign_id=24152845&campaign_item_id=3675455464&thumbnail=https%3A%2F%2Faffbank.com%tool%2F83%2F833db7f1c41be1e83e0cadd8603d8bd7.png&campaign_name=ad162-US-desktop&click_id=GiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiD5p1wonMDR1peonN-mAQ&tblci=GiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiD5p1wonMDR1peonN-mAQ#tblciGiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiD5p1wonMDR1peonN-mAQ)

Removing Moles & Skin Tags Has Never Been This Easy!

Daily Health Mag

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(https://trk.g2healthtrk.com/0fd825c0-4d19-44bf-938f-b1159a942049?site=theweatherchannel-wunderground&site_id=1194714&title=Removing+Moles+%26+Skin+Tags+Has+Never+Been+This+Easy%21&platform=Desktop&campaign_id=24152845&campaign_item_id=3675455464&thumbnail=https%3A%2F%2Faffbank.com%tool%2F83%2F833db7f1c41be1e83e0cadd8603d8bd7.png&campaign_name=ad162-US-desktop&click_id=GiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiD5p1wonMDR1peonN-mAQ&tblci=GiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiD5p1wonMDR1peonN-mAQ#tblciGiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiD5p1wonMDR1peonN-mAQ)
(https://cos-rd.com/18/9066?postback=GiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiD-_lMo_Lfw0Nnoyss1&campaign=23353816&creative=3672750355&publisher=theweatherchannel-wunderground&source=wunderground.com&tblci=GiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiD-_lMo_Lfw0Nnoyss1#tblciGiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiD-_lMo_Lfw0Nnoyss1)

Think Twice Before Buying from These 2 Stores (The Ugly Truth)

Online Shopping Tools

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(http://www.mnbasd77.com/aff_c?offer_id=2024&aff_id=2600&url_id=6346&source=Bul&aff_sub=24385153_%5BVK%5D-2024_Leaffilter_Desk-USwide_Video&aff_sub2=theweatherchannel-wunderground-1194714&aff_sub3=3679240352&aff_sub5=GiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiC35UsokOG685_chPJ-&tblci=GiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiC35UsokOG685_chPJ-#tblciGiAnsspjsosXpDEWO_NcZXadGOGjkhqs46YeuIAE0CwgHiC35UsokOG685_chPJ-)

If You’re Over 65, Try This Instead Of Gutter Cleaning (It’s Genius)

27.4 °N, **82.51** °W

Sarasota, FL Weather History ★

84° SARASOTA-BRADENTON INTERNATIONAL AIRPORT STATION (/DASHBOARD/PWS/KFLSARAS160?CM_VEN=LOCALWX_PWSDASH) | CHANGE

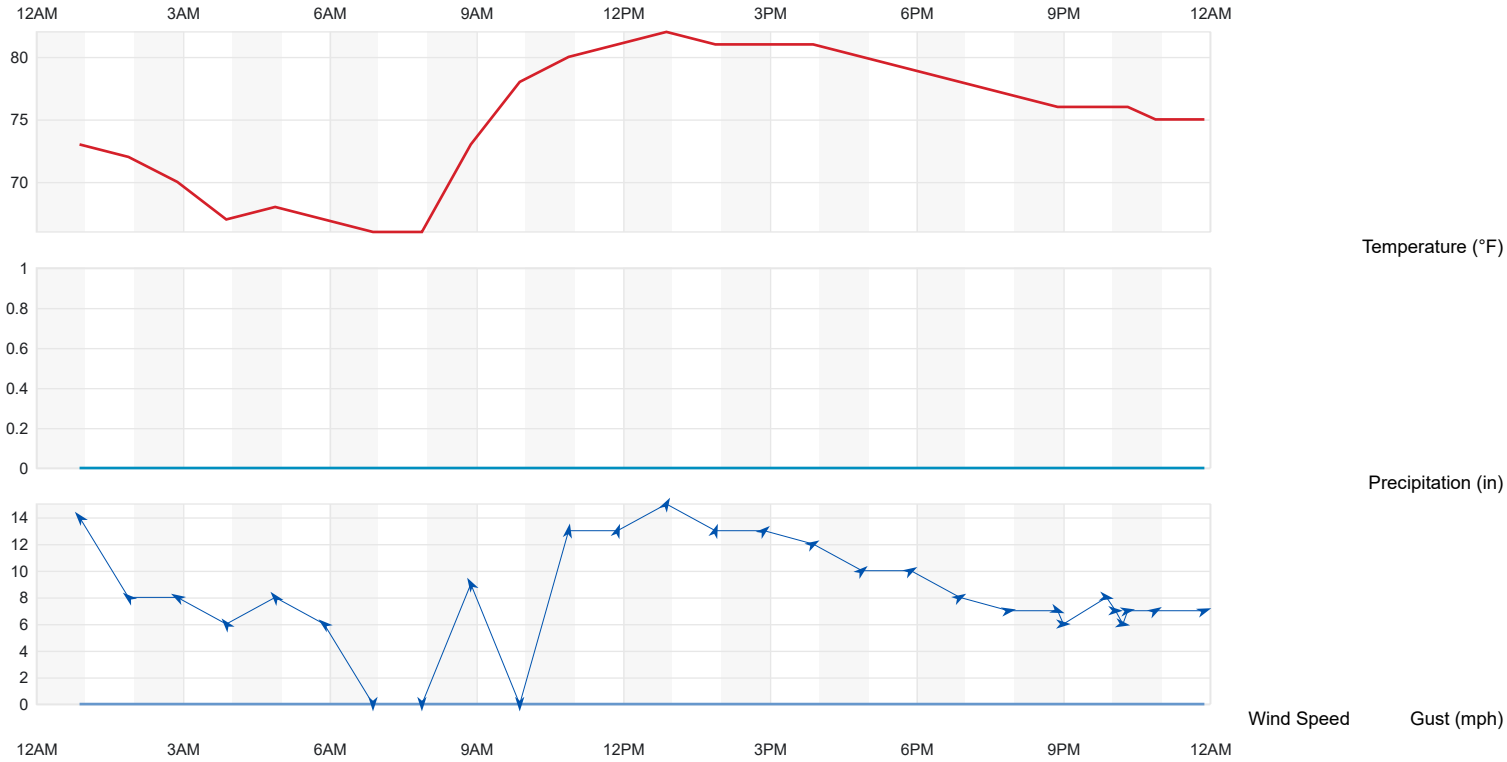
HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)

- TODAY (/WEATHER/US/FL/SARASOTA/KSRQ)
- HOURLY (/HOURLY/US/FL/SARASOTA/KSRQ)
- 10-DAY (/FORECAST/US/FL/SARASOTA/KSRQ)
- CALENDAR (/CALENDAR/US/FL/SARASOTA/KSRQ)
- HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)
- WUNDERMAP (/WUNDERMAP?LAT=27.404&LON=-82.512)

Daily Weekly Monthly

(/history/daily/us/fl/sarasota/KSRQ/date/2023-4-1) (/history/weekly/us/fl/sarasota/KSRQ/date/2023-4-1) (/history/monthly/us/fl/sarasota/KSRQ/date/2023-4)

April 1 2023 View



Summary

Temperature (°F)	Actual	Historic Avg.	Record
High Temp	82	80.3	88
Low Temp	66	60.5	42
Day Average Temp	75.21	70.4	-
Precipitation (in)	Actual	Historic Avg.	Record

Temperature (°F)	Actual	Historic Avg.	Record
Precipitation (past 24 hours from 04:53:00)	0.00	4.60	-

Dew Point (°F)	Actual	Historic Avg.	Record
Dew Point	67.82	-	-
High	72	-	-
Low	61	-	-
Average	67.82	-	-

Wind (mph)	Actual	Historic Avg.	Record
Max Wind Speed	15	-	-
Visibility	10	-	-

Sea Level Pressure (in)	Actual	Historic Avg.	Record
Sea Level Pressure	30.13	-	-

Astronomy	Day Length	Rise	Set
Actual Time	12h 26m	7:22 AM	7:48 PM
Civil Twilight		6:58 AM	8:11 PM
Nautical Twilight		6:31 AM	8:39 PM
Astronomical Twilight		6:03 AM	9:06 PM
Moon: waxing gibbous		3:57 PM	5:01 AM

Daily Observations

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
12:53 AM	73 °F	61 °F	66 %	SE	14 mph	0 mph	30.13 in	0.0 in	Fair
1:53 AM	72 °F	61 °F	68 %	SE	8 mph	0 mph	30.12 in	0.0 in	Fair
2:53 AM	70 °F	61 °F	73 %	ESE	8 mph	0 mph	30.11 in	0.0 in	Fair
3:53 AM	67 °F	61 °F	81 %	SE	6 mph	0 mph	30.10 in	0.0 in	Fair
4:53 AM	68 °F	61 °F	78 %	SE	8 mph	0 mph	30.08 in	0.0 in	Fair
5:53 AM	67 °F	61 °F	81 %	SE	6 mph	0 mph	30.08 in	0.0 in	Fair
6:53 AM	66 °F	61 °F	84 %	CALM	0 mph	0 mph	30.08 in	0.0 in	Fair
7:53 AM	66 °F	62 °F	87 %	CALM	0 mph	0 mph	30.10 in	0.0 in	Fair
8:53 AM	73 °F	64 °F	73 %	SSE	9 mph	0 mph	30.10 in	0.0 in	Fair
9:53 AM	78 °F	67 °F	68 %		0 mph	0 mph	30.11 in	0.0 in	Fair
10:53 AM	80 °F	69 °F	69 %	S	13 mph	0 mph	30.12 in	0.0 in	Fair
11:53 AM	81 °F	69 °F	67 %	SSW	13 mph	0 mph	30.13 in	0.0 in	Fair
12:53 PM	82 °F	70 °F	67 %	SSW	15 mph	0 mph	30.12 in	0.0 in	Fair
1:53 PM	81 °F	70 °F	69 %	SSW	13 mph	0 mph	30.11 in	0.0 in	Fair
2:53 PM	81 °F	70 °F	69 %	SW	13 mph	0 mph	30.08 in	0.0 in	Fair
3:53 PM	81 °F	71 °F	72 %	WSW	12 mph	0 mph	30.07 in	0.0 in	Fair
4:53 PM	80 °F	71 °F	74 %	SW	10 mph	0 mph	30.04 in	0.0 in	Fair
5:53 PM	79 °F	71 °F	77 %	WSW	10 mph	0 mph	30.04 in	0.0 in	Fair
6:53 PM	78 °F	72 °F	81 %	WSW	8 mph	0 mph	30.04 in	0.0 in	Fair
7:53 PM	77 °F	72 °F	84 %	W	7 mph	0 mph	30.05 in	0.0 in	Mostly Cloudy
8:53 PM	76 °F	72 °F	87 %	WNW	7 mph	0 mph	30.06 in	0.0 in	Mostly Cloudy
9:00 PM	76 °F	72 °F	87 %	W	6 mph	0 mph	30.05 in	0.0 in	Mostly Cloudy

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
9:53 PM	76 °F	71 °F	85 %	W	8 mph	0 mph	30.07 in	0.0 in	Mostly Cloudy
10:04 PM	76 °F	72 °F	87 %	W	7 mph	0 mph	30.07 in	0.0 in	Mostly Cloudy
10:13 PM	76 °F	71 °F	85 %	W	6 mph	0 mph	30.07 in	0.0 in	Partly Cloudy
10:19 PM	76 °F	72 °F	87 %	W	7 mph	0 mph	30.07 in	0.0 in	Mostly Cloudy
10:53 PM	75 °F	72 °F	90 %	WSW	7 mph	0 mph	30.06 in	0.0 in	Mostly Cloudy
11:53 PM	75 °F	72 °F	90 %	WSW	7 mph	0 mph	30.06 in	0.0 in	Mostly Cloudy

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Sarasota, FL (/weather/us/fl/sarasota/27.34,-82.53) North Fort Myers, FL (33917) (/weather/us/fl/north-fort-myers/26.70,-81.88)

27.4 °N, **82.51** °W

Sarasota, FL Weather History

84° SARASOTA-BRADENTON INTERNATIONAL AIRPORT STATION (/DASHBOARD/PWS/KFLSARAS160?CM_VEN=LOCALWX_PWSDASH) | CHANGE

HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)

- TODAY (/WEATHER/US/FL/SARASOTA/KSRQ)
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- HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)
- WUNDERMAP (/WUNDERMAP?LAT=27.404&LON=-82.512)

Daily Weekly Monthly

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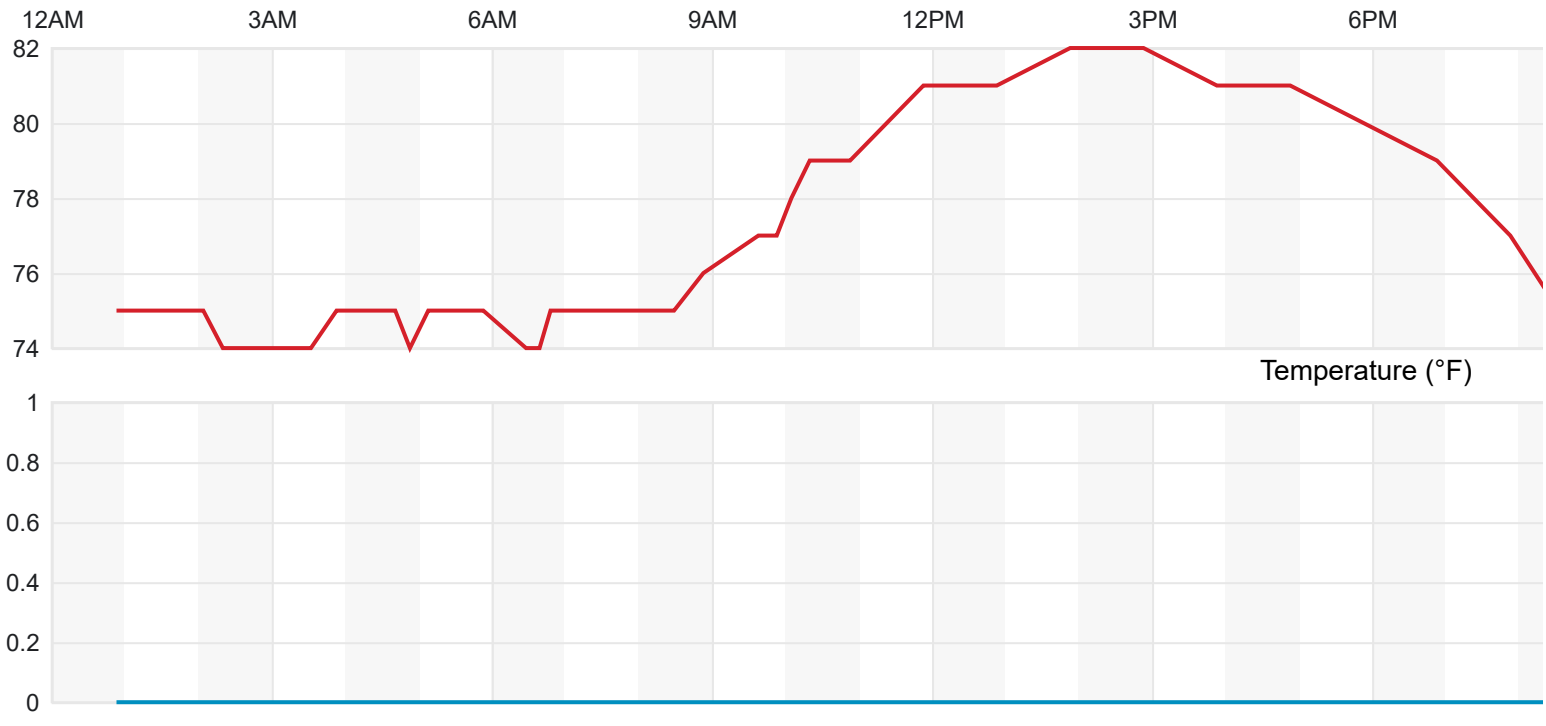
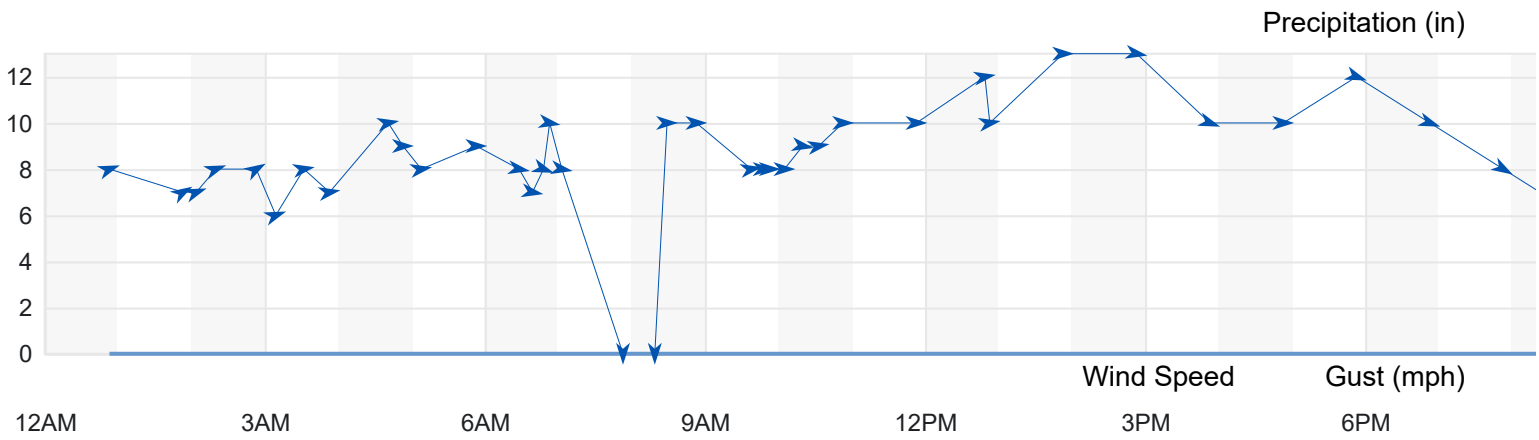
April | 2 | 2023 | View





Summary

Temperature (°F)	Actual	Historic Avg.	Record
High Temp	82	80.5	90
Low Temp	74	60.7	40
Day Average Temp	76.6	70.6	-
Precipitation (in)	Actual	Historic Avg.	Record
Precipitation (past 24 hours from 04:53:00)	0.00	4.60	-
Dew Point (°F)	Actual	Historic Avg.	Record
Dew Point	71	-	-
High	72	-	-
Low	68	-	-
Average	71	-	-
Wind (mph)	Actual	Historic Avg.	Record
Max Wind Speed	13	-	-
Visibility	10	-	-
Sea Level Pressure (in)	Actual	Historic Avg.	Record
Sea Level Pressure	30.06	-	-
Astronomy	Day Length	Rise	Set
Actual Time	12h 27m	7:20 AM	7:48 PM

Temperature (°F)	Actual	Historic Avg.	Record
Civil Twilight		6:57 AM	8:12 PM
Nautical Twilight		6:29 AM	8:39 PM
Astronomical Twilight		6:02 AM	9:07 PM
Moon: waxing gibbous		4:51 PM	5:35 AM

Daily Observations

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Prec
12:53 AM	75 °F	71 °F	87 %	WSW	8 mph	0 mph	30.05 in	0.0 ir
1:53 AM	75 °F	72 °F	90 %	WSW	7 mph	0 mph	30.03 in	0.0 ir
2:04 AM	75 °F	72 °F	90 %	WSW	7 mph	0 mph	30.02 in	0.0 ir
2:20 AM	74 °F	72 °F	93 %	WSW	8 mph	0 mph	30.02 in	0.0 ir
2:53 AM	74 °F	71 °F	91 %	WSW	8 mph	0 mph	30.01 in	0.0 ir
3:09 AM	74 °F	71 °F	91 %	WSW	6 mph	0 mph	30.01 in	0.0 ir
3:32 AM	74 °F	72 °F	93 %	W	8 mph	0 mph	30.00 in	0.0 ir
3:53 AM	75 °F	72 °F	90 %	W	7 mph	0 mph	30.00 in	0.0 ir
4:41 AM	75 °F	71 °F	87 %	W	10 mph	0 mph	29.99 in	0.0 ir
4:53 AM	74 °F	71 °F	91 %	W	9 mph	0 mph	29.99 in	0.0 ir
5:08 AM	75 °F	71 °F	87 %	W	8 mph	0 mph	29.99 in	0.0 ir
5:53 AM	75 °F	71 °F	87 %	W	9 mph	0 mph	29.99 in	0.0 ir
6:28 AM	74 °F	71 °F	91 %	W	8 mph	0 mph	30.00 in	0.0 ir
6:39 AM	74 °F	71 °F	91 %	W	7 mph	0 mph	30.00 in	0.0 ir
6:48 AM	75 °F	72 °F	89 %	WNW	8 mph	0 mph	30.01 in	0.0 ir
6:53 AM	75 °F	71 °F	87 %	W	10 mph	0 mph	30.01 in	0.0 ir
7:03 AM	75 °F	71 °F	87 %	W	8 mph	0 mph	30.01 in	0.0 ir
7:53 AM	75 °F	71 °F	87 %		0 mph	0 mph	30.03 in	0.0 ir
8:19 AM	75 °F	72 °F	90 %		0 mph	0 mph	30.03 in	0.0 ir
8:29 AM	75 °F	72 °F	90 %	W	10 mph	0 mph	30.03 in	0.0 ir
8:53 AM	76 °F	72 °F	87 %	W	10 mph	0 mph	30.03 in	0.0 ir
9:38 AM	77 °F	72 °F	84 %	W	8 mph	0 mph	30.04 in	0.0 ir

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Prec
9:48 AM	77 °F	72 °F	83 %	W	8 mph	0 mph	30.04 in	0.0 ir
9:53 AM	77 °F	72 °F	84 %	W	8 mph	0 mph	30.05 in	0.0 ir
10:05 AM	78 °F	72 °F	81 %	W	8 mph	0 mph	30.05 in	0.0 ir
10:20 AM	79 °F	72 °F	79 %	W	9 mph	0 mph	30.05 in	0.0 ir
10:33 AM	79 °F	72 °F	79 %	W	9 mph	0 mph	30.05 in	0.0 ir
10:53 AM	79 °F	72 °F	79 %	W	10 mph	0 mph	30.05 in	0.0 ir
11:53 AM	81 °F	72 °F	74 %	W	10 mph	0 mph	30.06 in	0.0 ir
12:49 PM	81 °F	72 °F	74 %	W	12 mph	0 mph	30.05 in	0.0 ir
12:53 PM	81 °F	72 °F	74 %	W	10 mph	0 mph	30.05 in	0.0 ir
1:53 PM	82 °F	71 °F	69 %	W	13 mph	0 mph	30.04 in	0.0 ir
2:53 PM	82 °F	71 °F	69 %	W	13 mph	0 mph	30.02 in	0.0 ir
3:53 PM	81 °F	70 °F	69 %	WNW	10 mph	0 mph	30.00 in	0.0 ir
4:53 PM	81 °F	70 °F	69 %	W	10 mph	0 mph	29.98 in	0.0 ir
5:53 PM	80 °F	69 °F	69 %	WNW	12 mph	0 mph	29.98 in	0.0 ir
6:53 PM	79 °F	69 °F	72 %	WNW	10 mph	0 mph	29.98 in	0.0 ir
7:53 PM	77 °F	68 °F	74 %	WNW	8 mph	0 mph	30.00 in	0.0 ir
8:53 PM	74 °F	68 °F	82 %	NW	6 mph	0 mph	30.00 in	0.0 ir
9:53 PM	74 °F	68 °F	82 %	WNW	3 mph	0 mph	30.00 in	0.0 ir
10:53 PM	75 °F	69 °F	82 %	WNW	6 mph	0 mph	30.00 in	0.0 ir
11:53 PM	74 °F	69 °F	85 %	WNW	6 mph	0 mph	29.98 in	0.0 ir

27.4 °N, **82.51** °W

Sarasota, FL Weather History ★

84° SARASOTA-BRADENTON INTERNATIONAL AIRPORT STATION (/DASHBOARD/PWS/KFLSARAS160?CM_VEN=LOCALWX_PWSDASH) | CHANGE

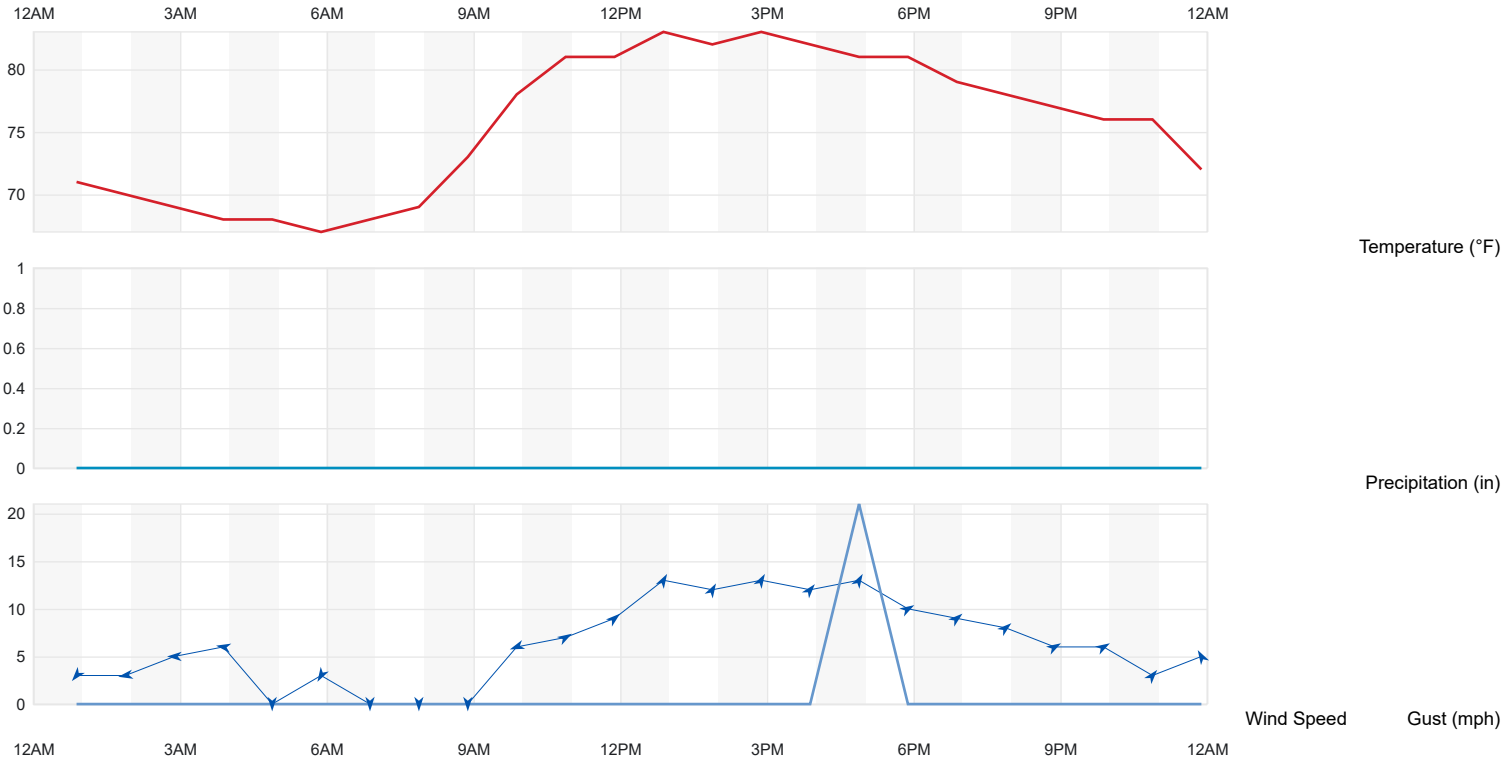
HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)

- TODAY (/WEATHER/US/FL/SARASOTA/KSRQ)
- HOURLY (/HOURLY/US/FL/SARASOTA/KSRQ)
- 10-DAY (/FORECAST/US/FL/SARASOTA/KSRQ)
- CALENDAR (/CALENDAR/US/FL/SARASOTA/KSRQ)
- HISTORY (/HISTORY/DAILY/US/FL/SARASOTA/KSRQ)
- WUNDERMAP (/WUNDERMAP?LAT=27.404&LON=-82.512)

Daily Weekly Monthly

(/history/daily/[illegible]/KSRQ/date/2023-4-3) (/history/weekly/[illegible]/KSRQ/date/2023-4-3) (/history/monthly/[illegible]/KSRQ/date/2023-4)

April 3 2023 View



Summary

Temperature (°F)	Actual	Historic Avg.	Record
High Temp	83	80.6	91
Low Temp	67	60.8	42
Day Average Temp	75.54	70.7	-
Precipitation (in)	Actual	Historic Avg.	Record

Temperature (°F)	Actual	Historic Avg.	Record
Precipitation (past 24 hours from 04:53:00)	0.00	4.60	-

Dew Point (°F)	Actual	Historic Avg.	Record
Dew Point	67.42	-	-
High	70	-	-
Low	64	-	-
Average	67.42	-	-

Wind (mph)	Actual	Historic Avg.	Record
Max Wind Speed	13	-	-
Visibility	10	-	-

Sea Level Pressure (in)	Actual	Historic Avg.	Record
Sea Level Pressure	30.01	-	-

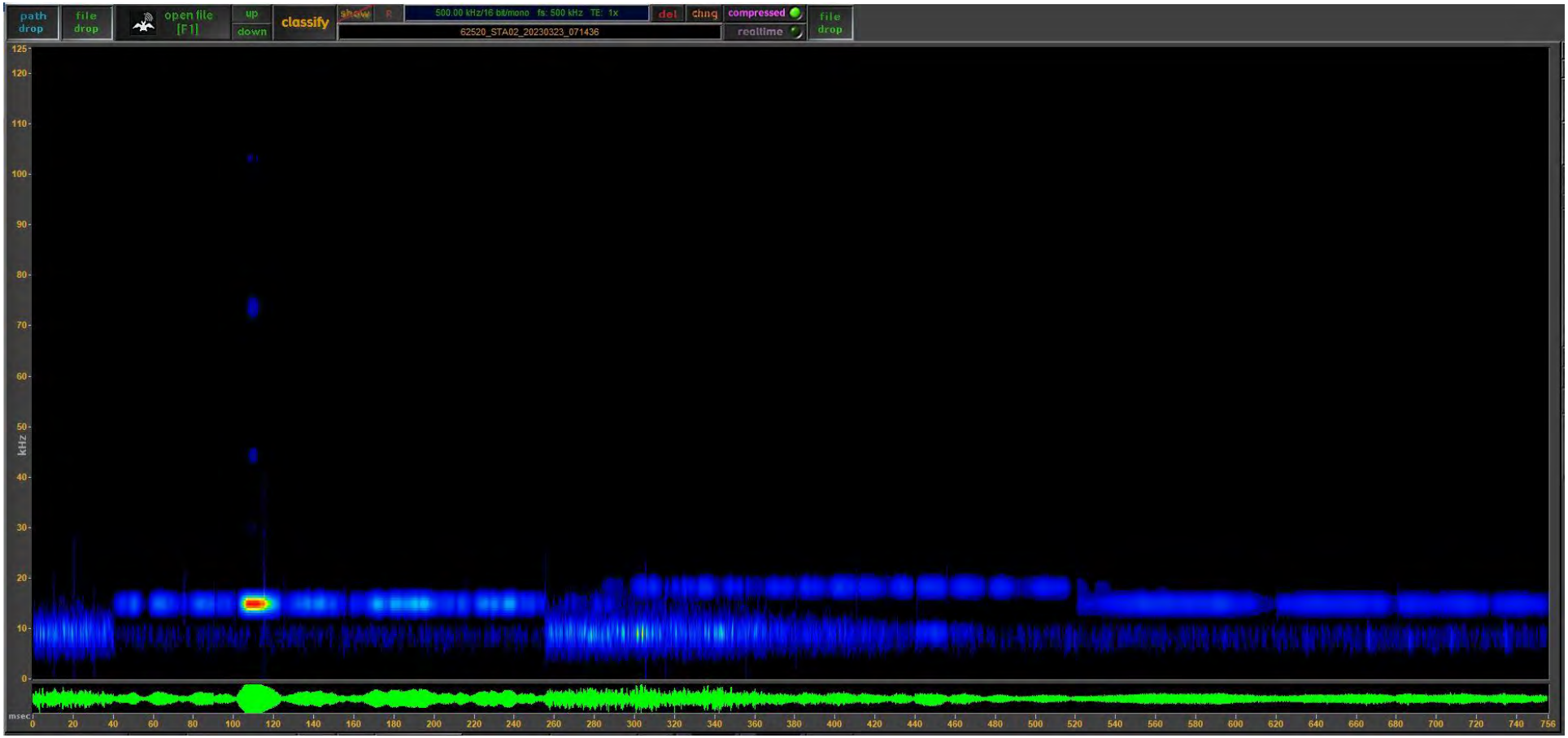
Astronomy	Day Length	Rise	Set
Actual Time	12h 29m	7:19 AM	7:49 PM
Civil Twilight		6:56 AM	8:12 PM
Nautical Twilight		6:28 AM	8:40 PM
Astronomical Twilight		6:00 AM	9:08 PM
Moon: waxing gibbous		5:46 PM	6:05 AM

Daily Observations

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
12:53 AM	71 °F	67 °F	87 %	NE	3 mph	0 mph	29.98 in	0.0 in	Fair
1:53 AM	70 °F	67 °F	90 %	E	3 mph	0 mph	29.96 in	0.0 in	Fair
2:53 AM	69 °F	67 °F	93 %	E	5 mph	0 mph	29.96 in	0.0 in	Fair
3:53 AM	68 °F	66 °F	93 %	E	6 mph	0 mph	29.95 in	0.0 in	Fair
4:53 AM	68 °F	66 °F	93 %	CALM	0 mph	0 mph	29.94 in	0.0 in	Fair
5:53 AM	67 °F	66 °F	97 %	NNE	3 mph	0 mph	29.95 in	0.0 in	Fair
6:53 AM	68 °F	67 °F	96 %	CALM	0 mph	0 mph	29.97 in	0.0 in	Fair
7:53 AM	69 °F	67 °F	93 %	CALM	0 mph	0 mph	29.97 in	0.0 in	Fair
8:53 AM	73 °F	70 °F	90 %	CALM	0 mph	0 mph	29.99 in	0.0 in	Fair
9:53 AM	78 °F	67 °F	68 %	ENE	6 mph	0 mph	29.99 in	0.0 in	Fair
10:53 AM	81 °F	67 °F	62 %	WSW	7 mph	0 mph	30.00 in	0.0 in	Fair
11:53 AM	81 °F	66 °F	60 %	SW	9 mph	0 mph	30.01 in	0.0 in	Fair
12:53 PM	83 °F	64 °F	53 %	SSW	13 mph	0 mph	30.00 in	0.0 in	Fair
1:53 PM	82 °F	64 °F	54 %	SSW	12 mph	0 mph	29.99 in	0.0 in	Fair
2:53 PM	83 °F	67 °F	58 %	SSW	13 mph	0 mph	29.98 in	0.0 in	Fair
3:53 PM	82 °F	68 °F	62 %	SW	12 mph	0 mph	29.97 in	0.0 in	Fair
4:53 PM	81 °F	68 °F	65 %	SSW	13 mph	21 mph	29.96 in	0.0 in	Fair
5:53 PM	81 °F	68 °F	65 %	WSW	10 mph	0 mph	29.96 in	0.0 in	Fair
6:53 PM	79 °F	69 °F	72 %	SW	9 mph	0 mph	29.96 in	0.0 in	Fair
7:53 PM	78 °F	69 °F	74 %	SW	8 mph	0 mph	29.96 in	0.0 in	Fair
8:53 PM	77 °F	70 °F	79 %	WSW	6 mph	0 mph	29.97 in	0.0 in	Fair
9:53 PM	76 °F	70 °F	82 %	WSW	6 mph	0 mph	29.98 in	0.0 in	Fair

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
10:53 PM	76 °F	70 °F	82 %	SW	3 mph	0 mph	29.98 in	0.0 in	Fair
11:53 PM	72 °F	68 °F	87 %	SSE	5 mph	0 mph	29.98 in	0.0 in	Fair

Appendix E
Sonobat Sonogram Files



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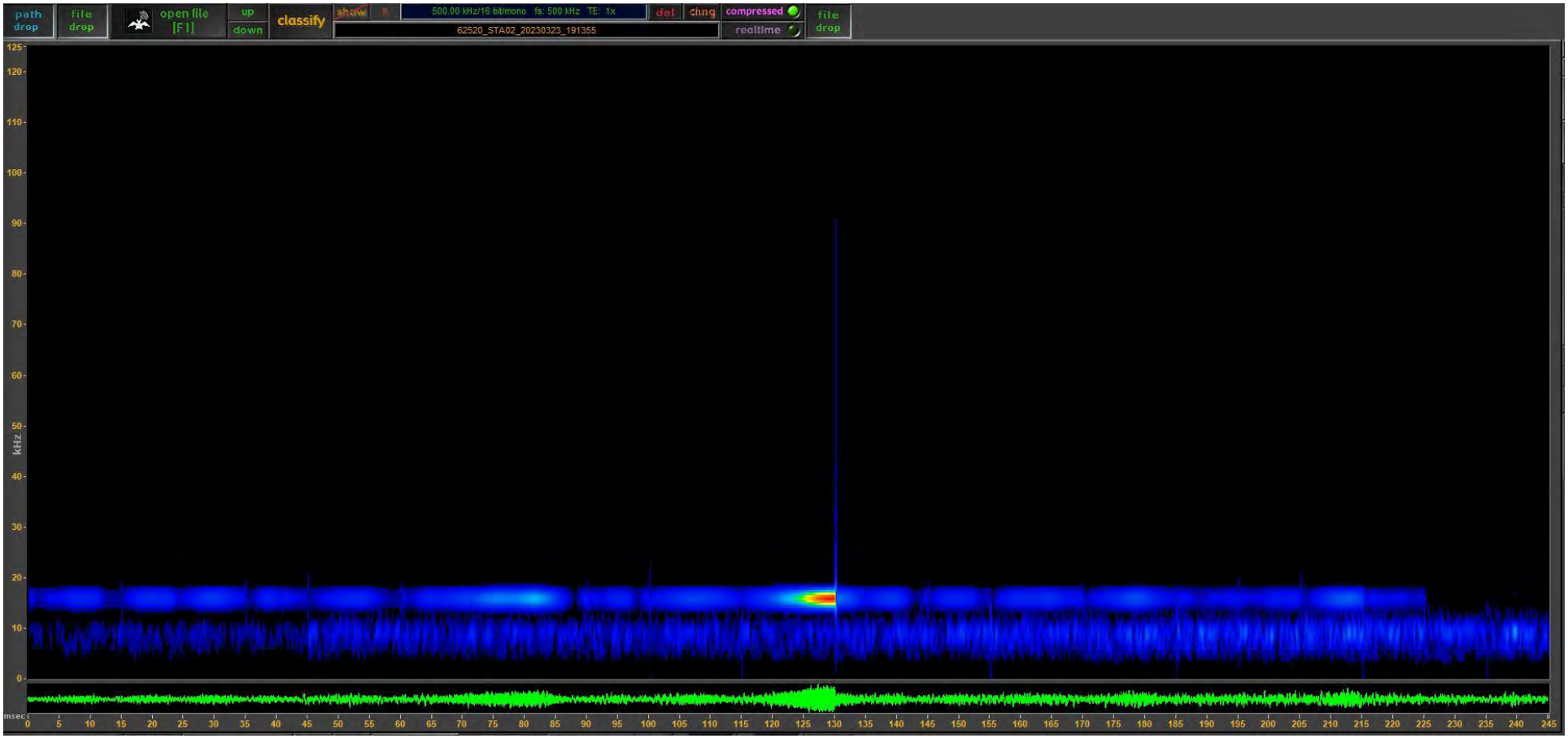

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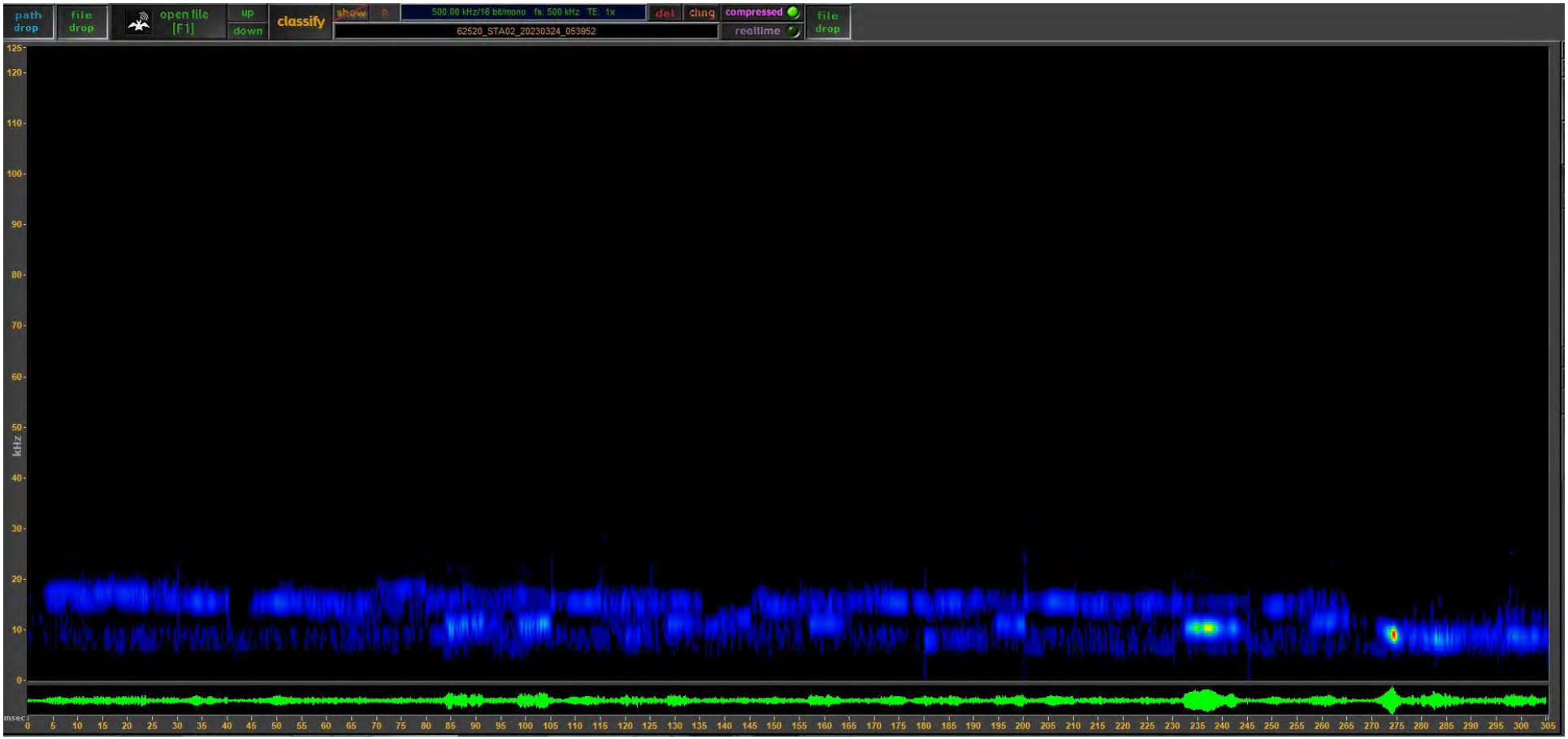

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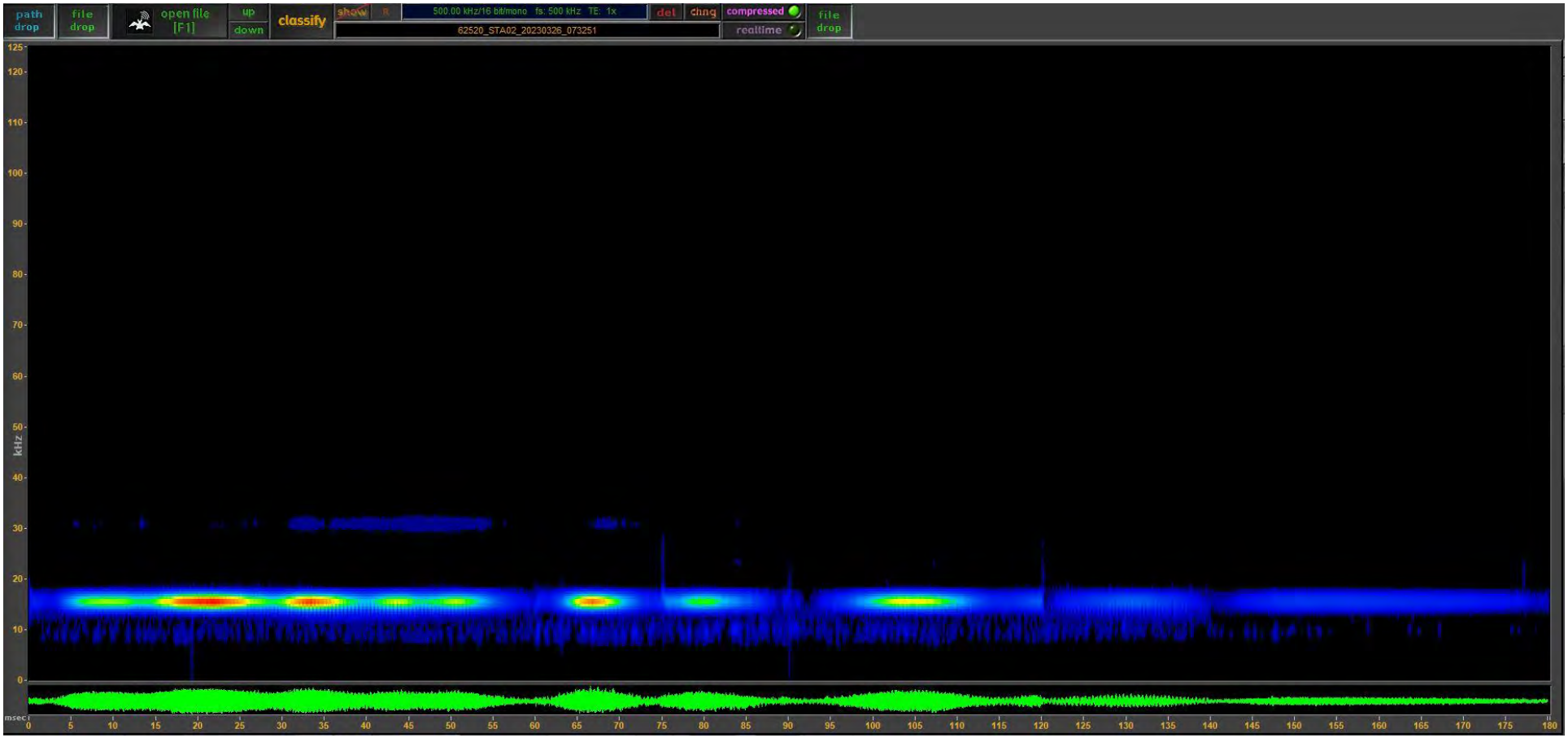

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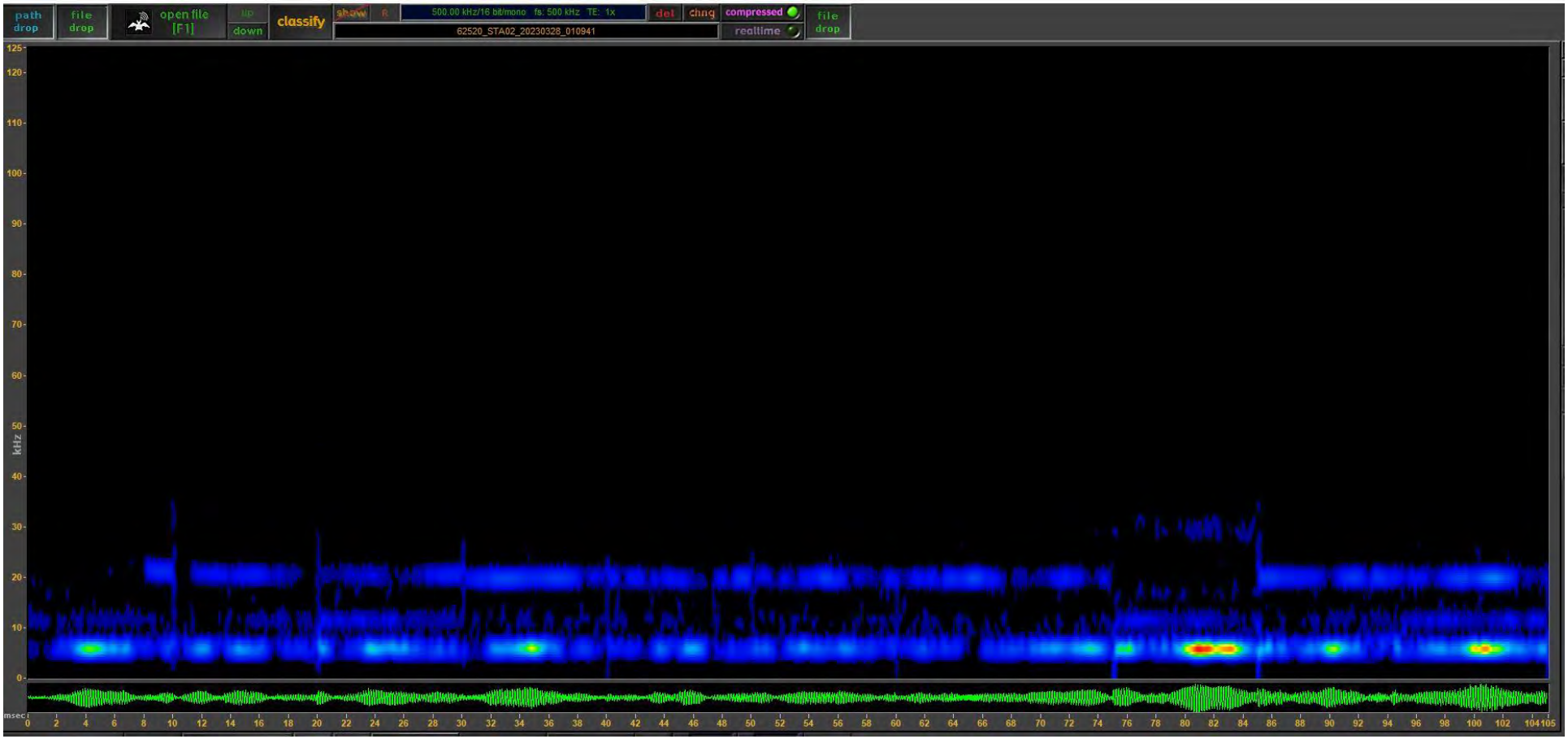

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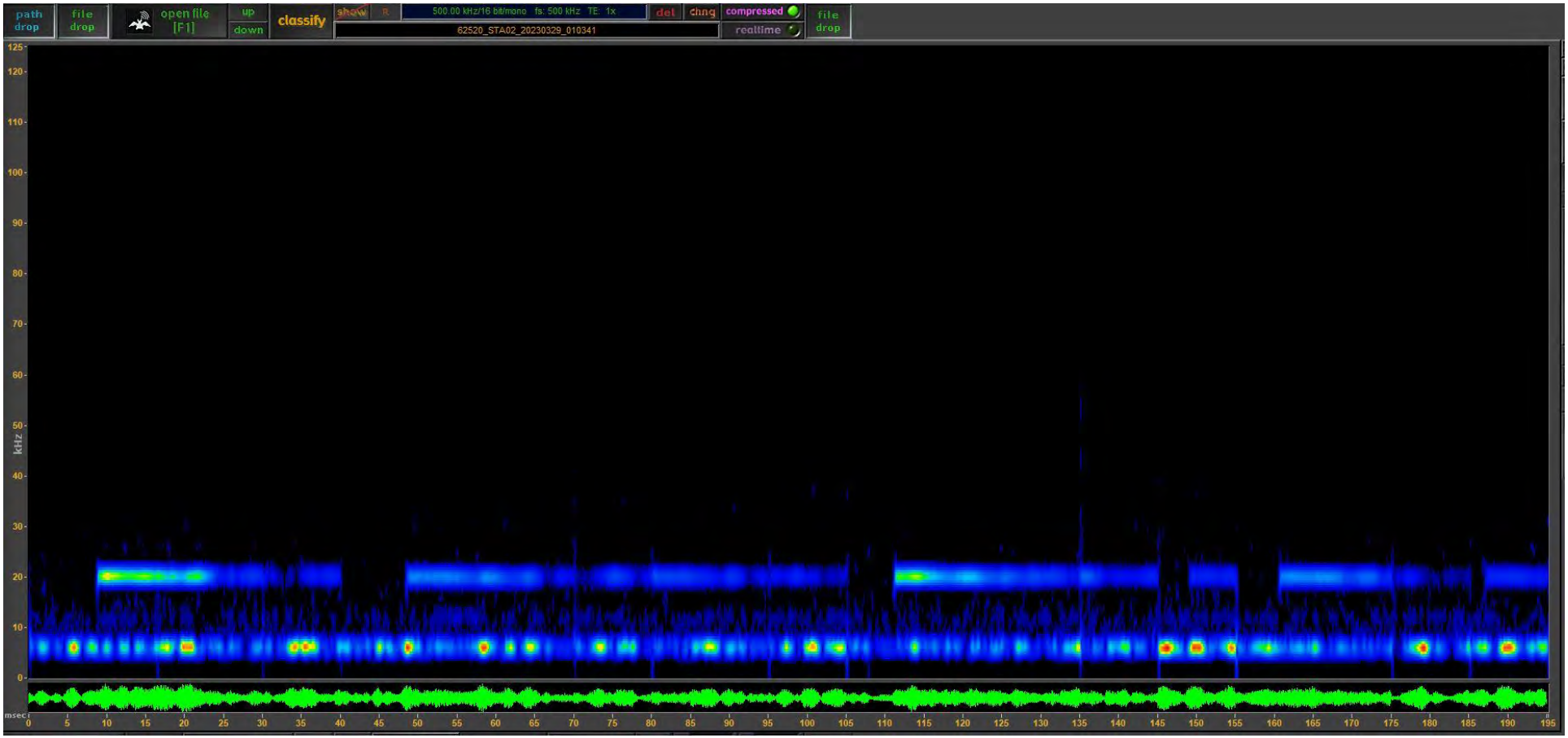

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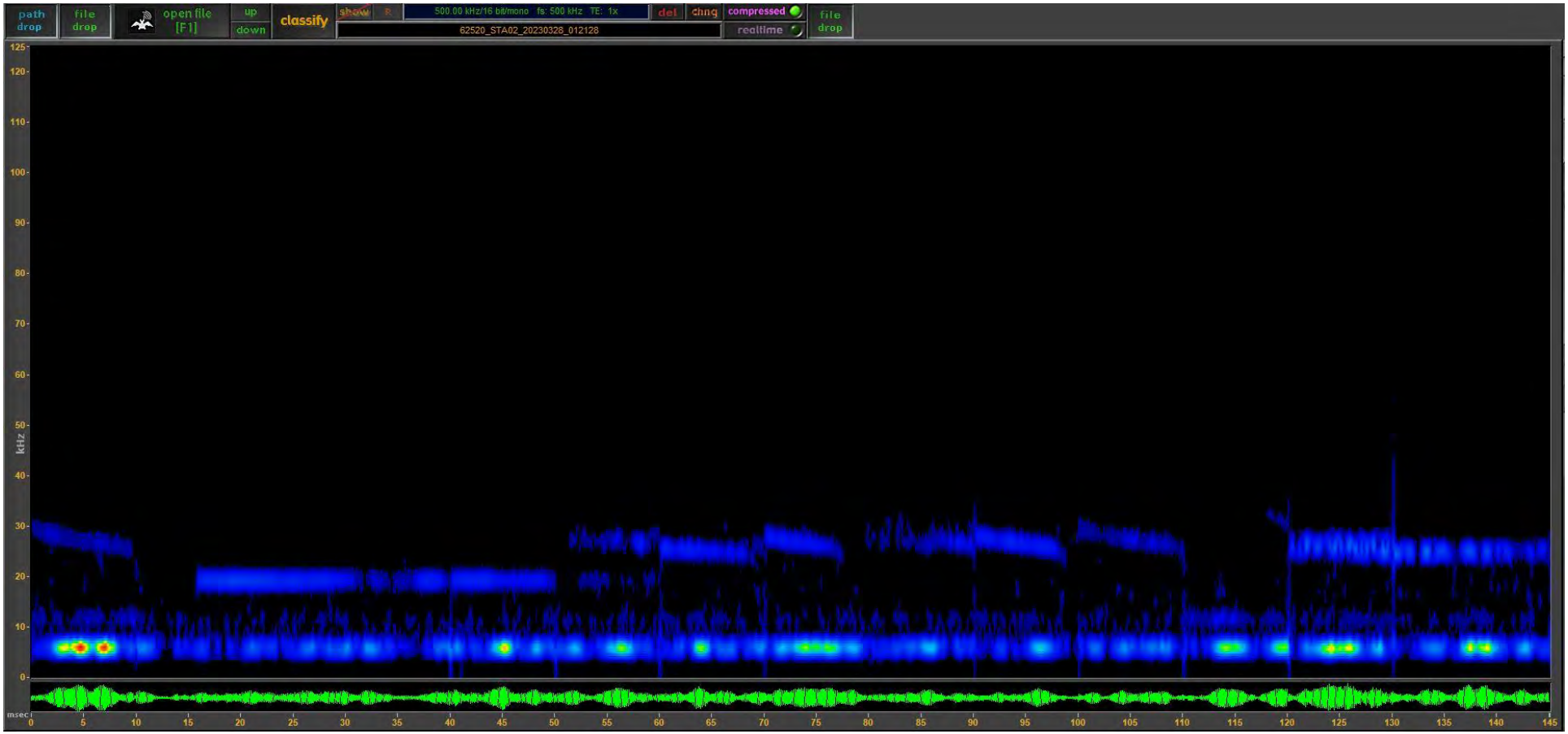

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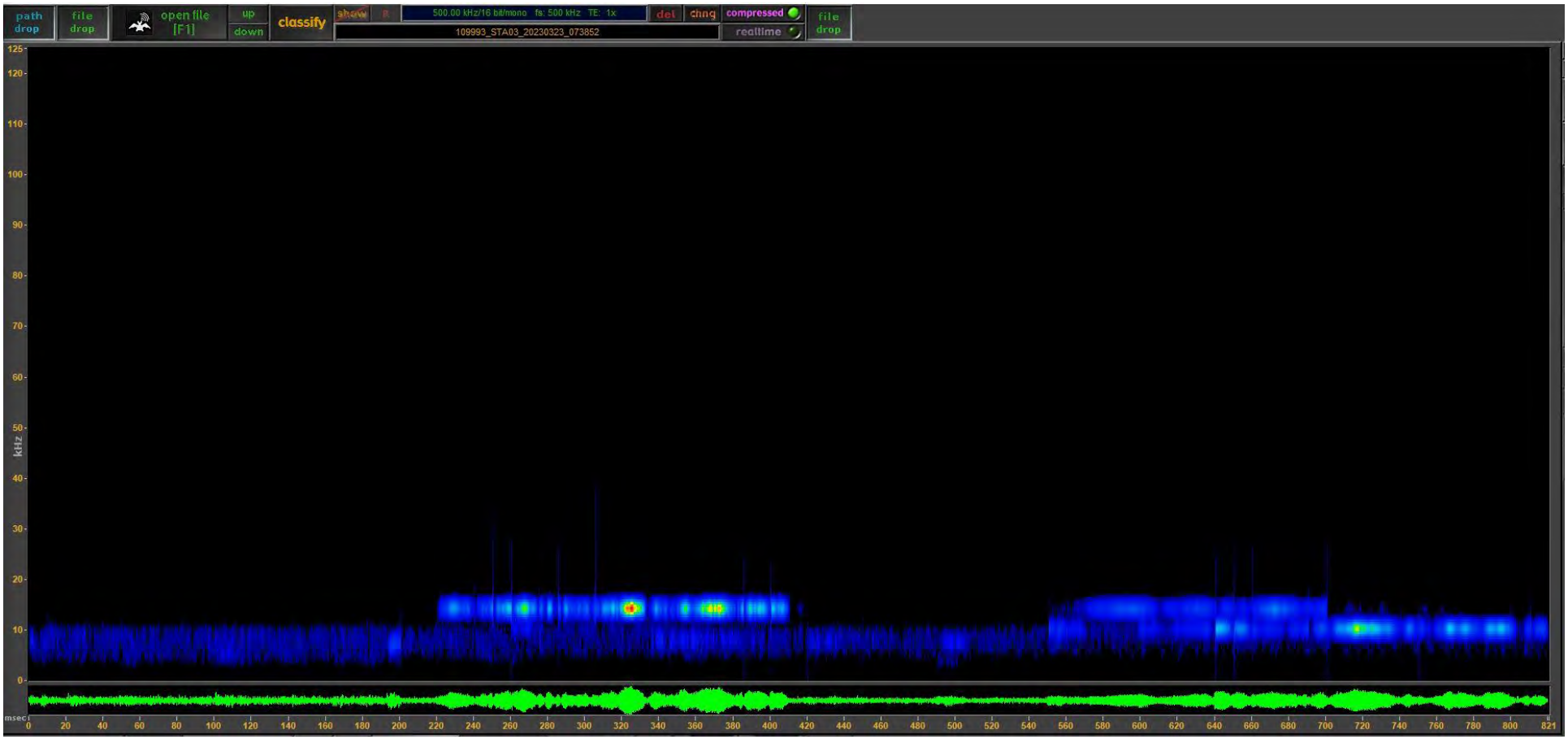

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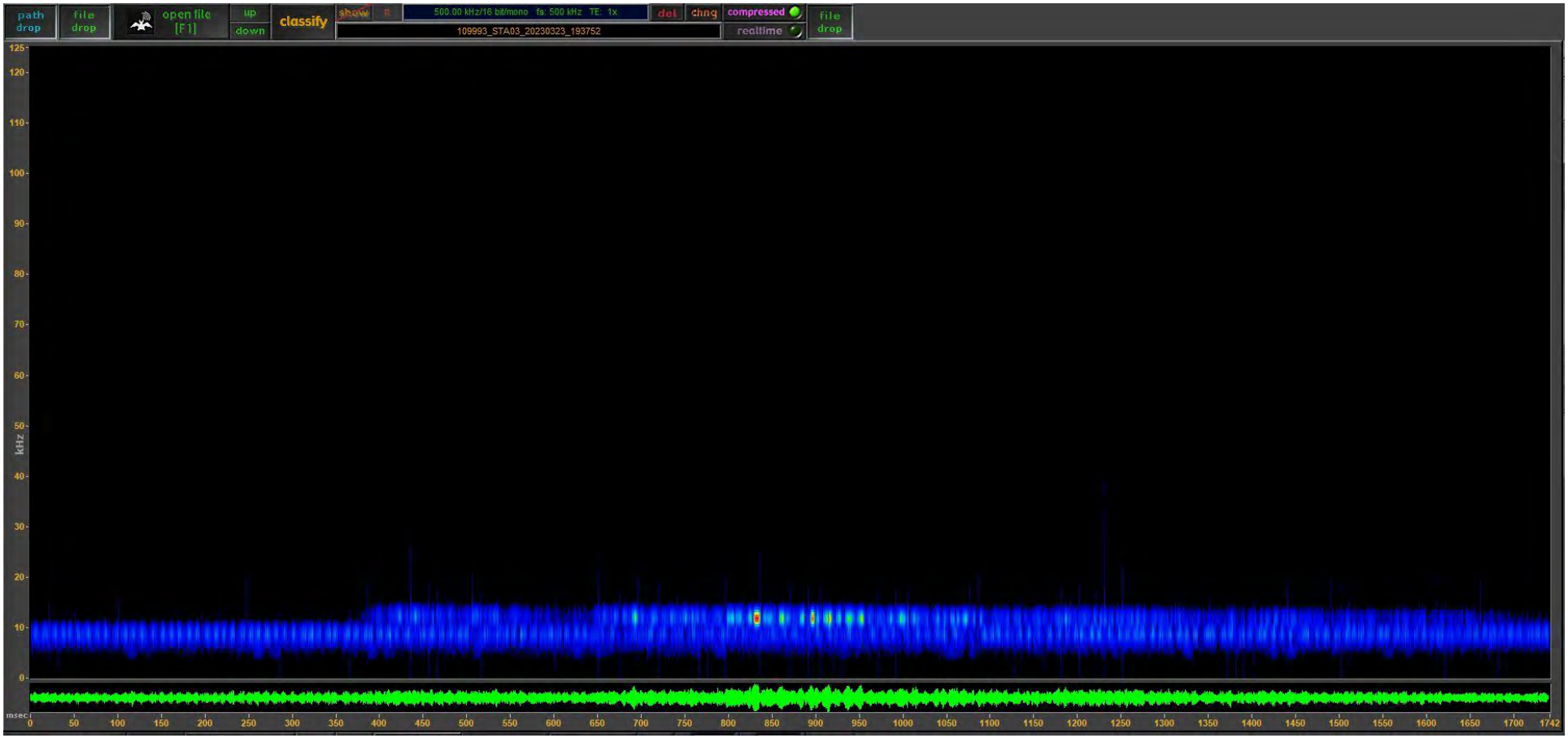

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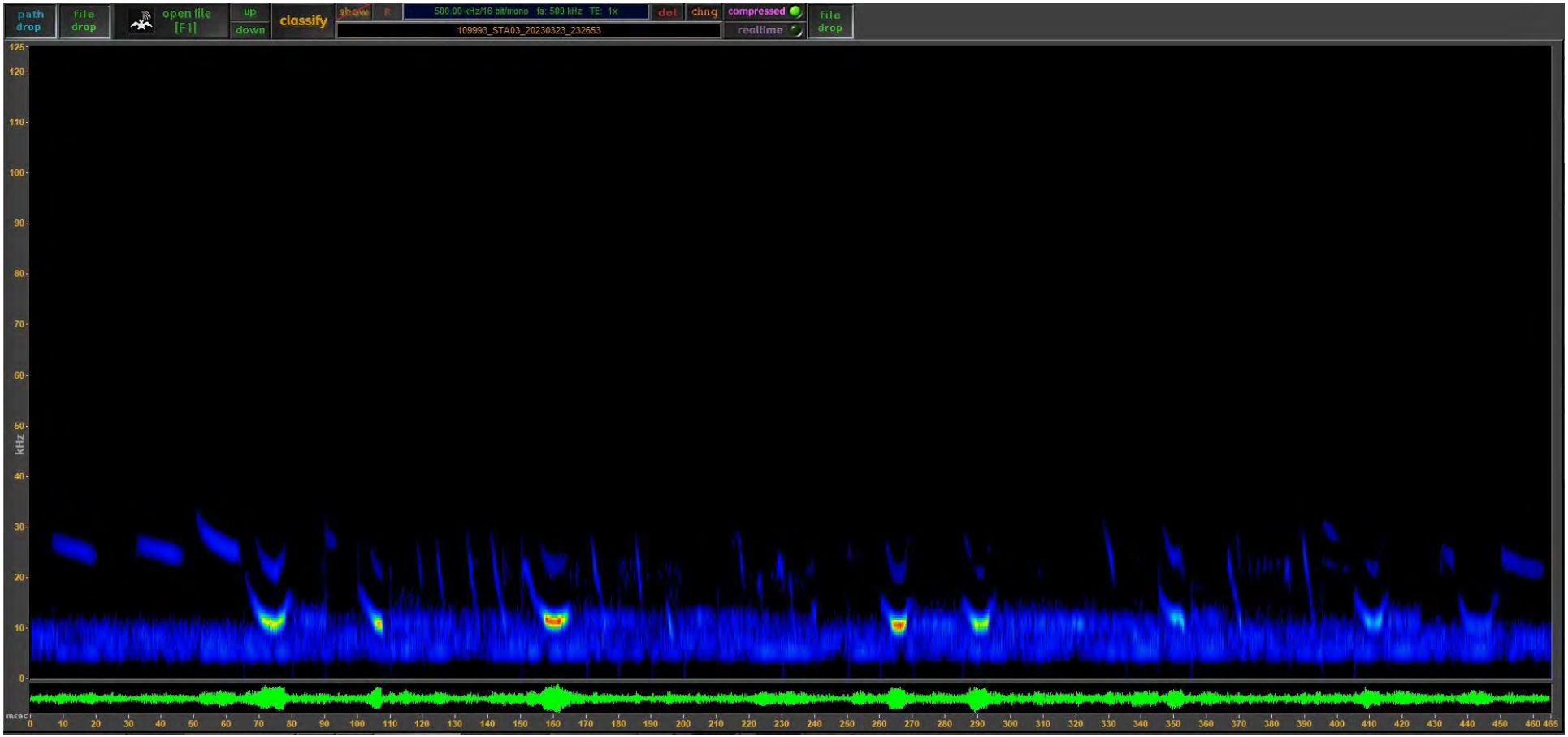

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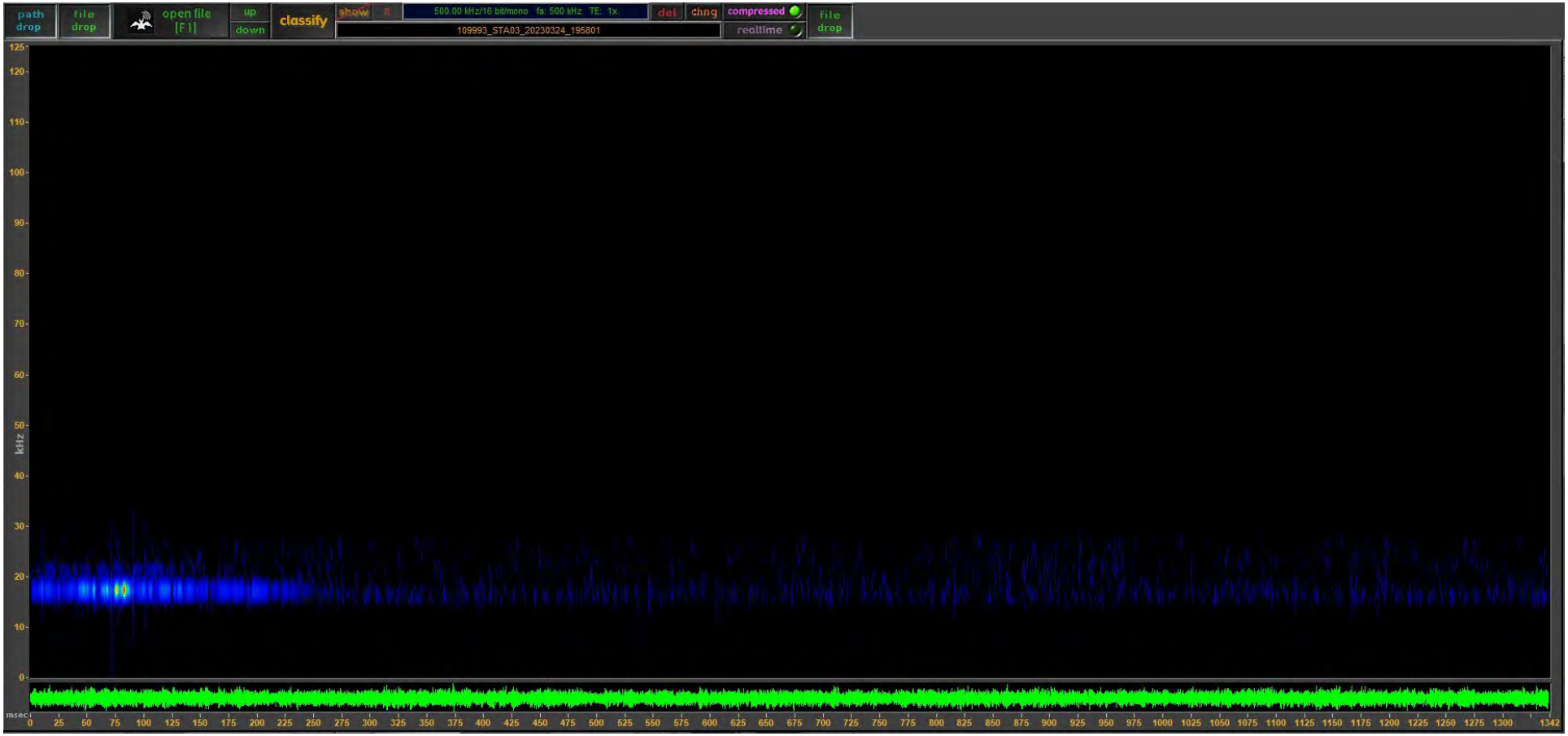

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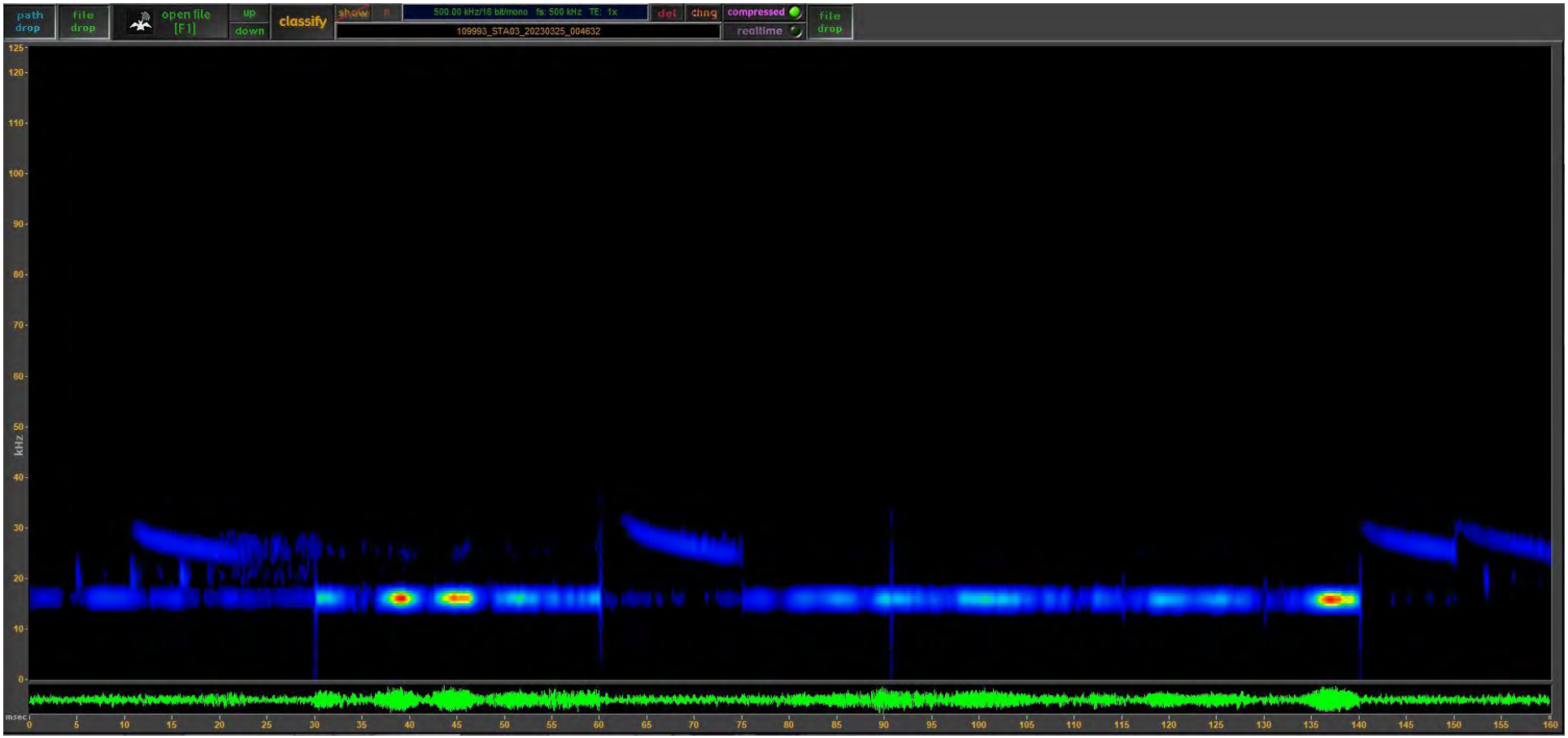

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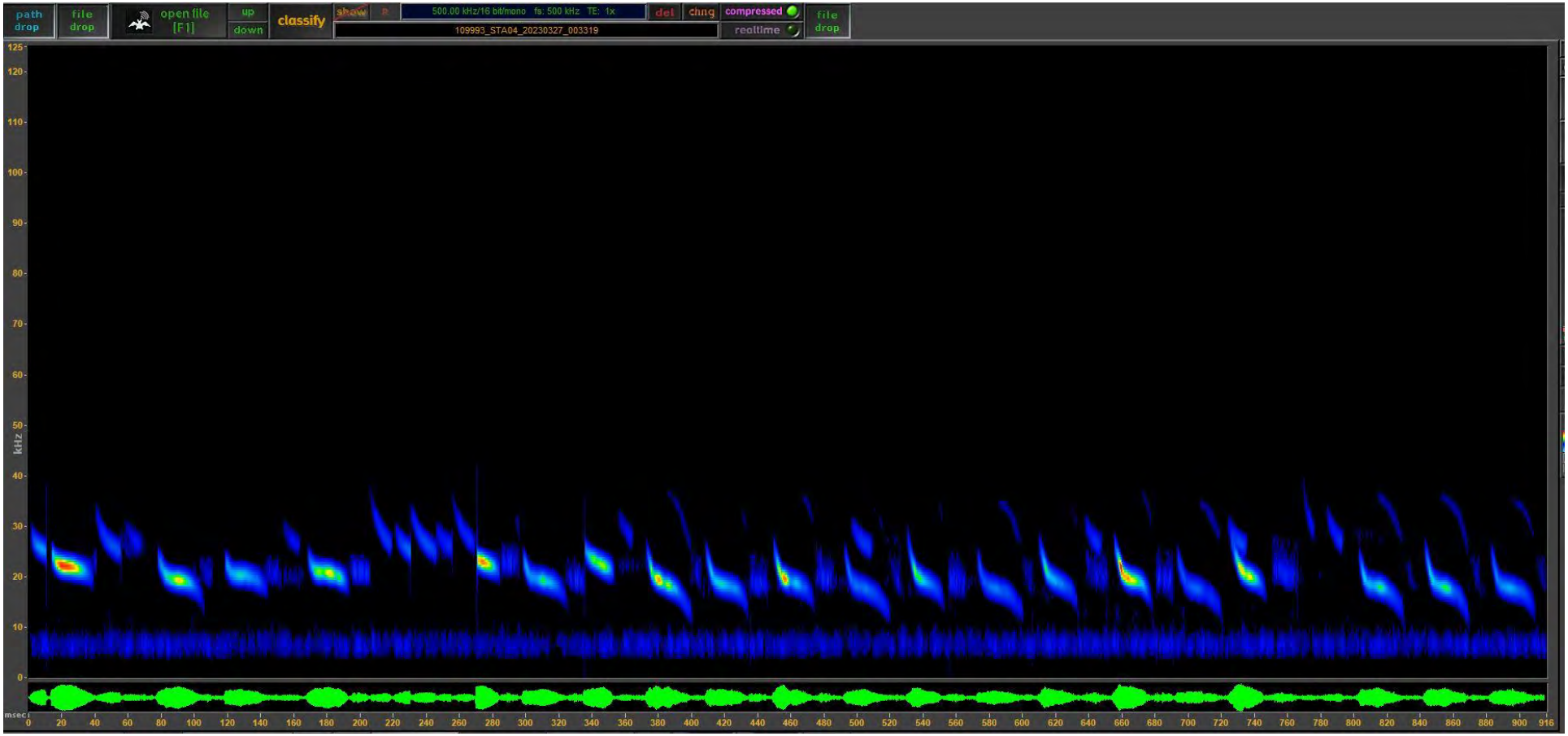

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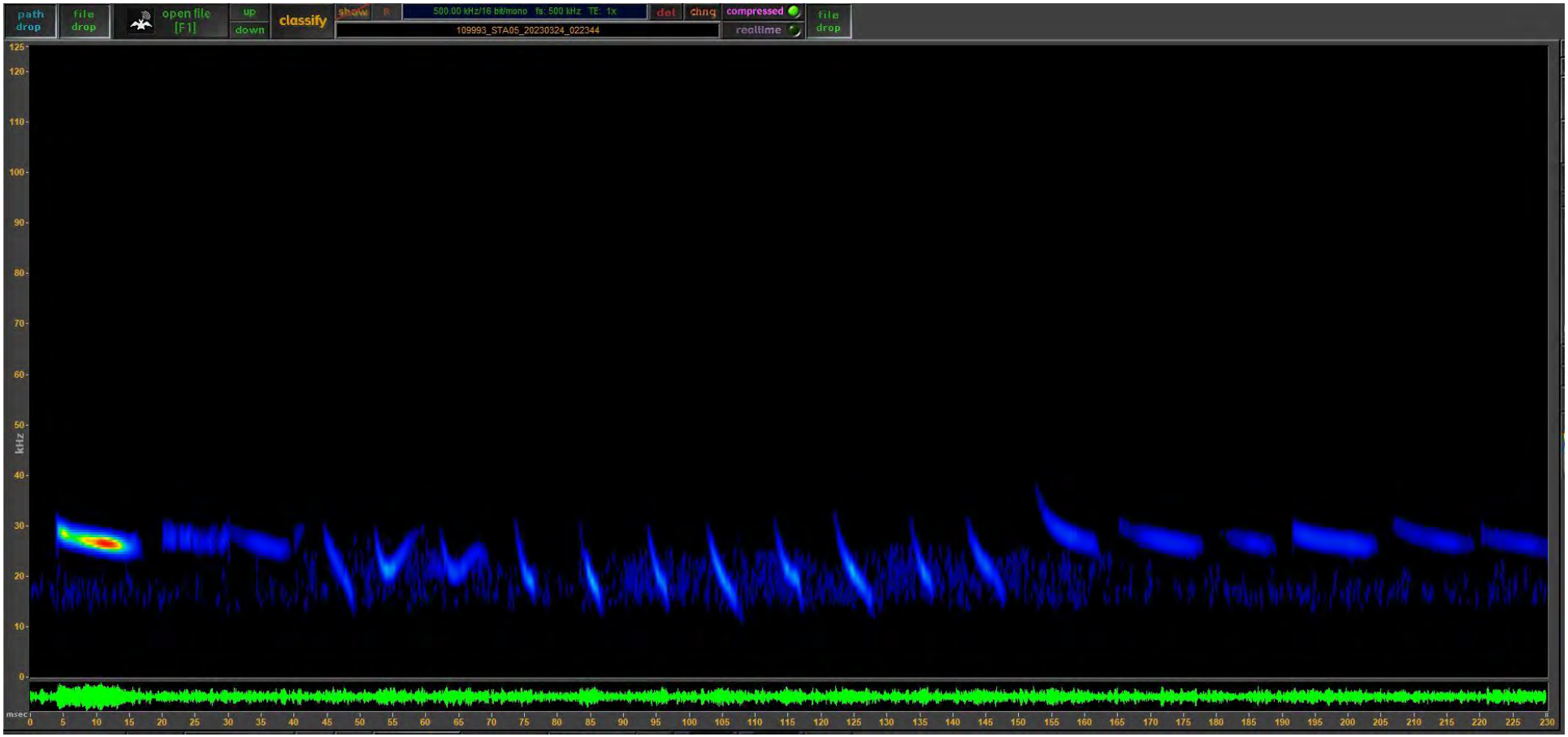

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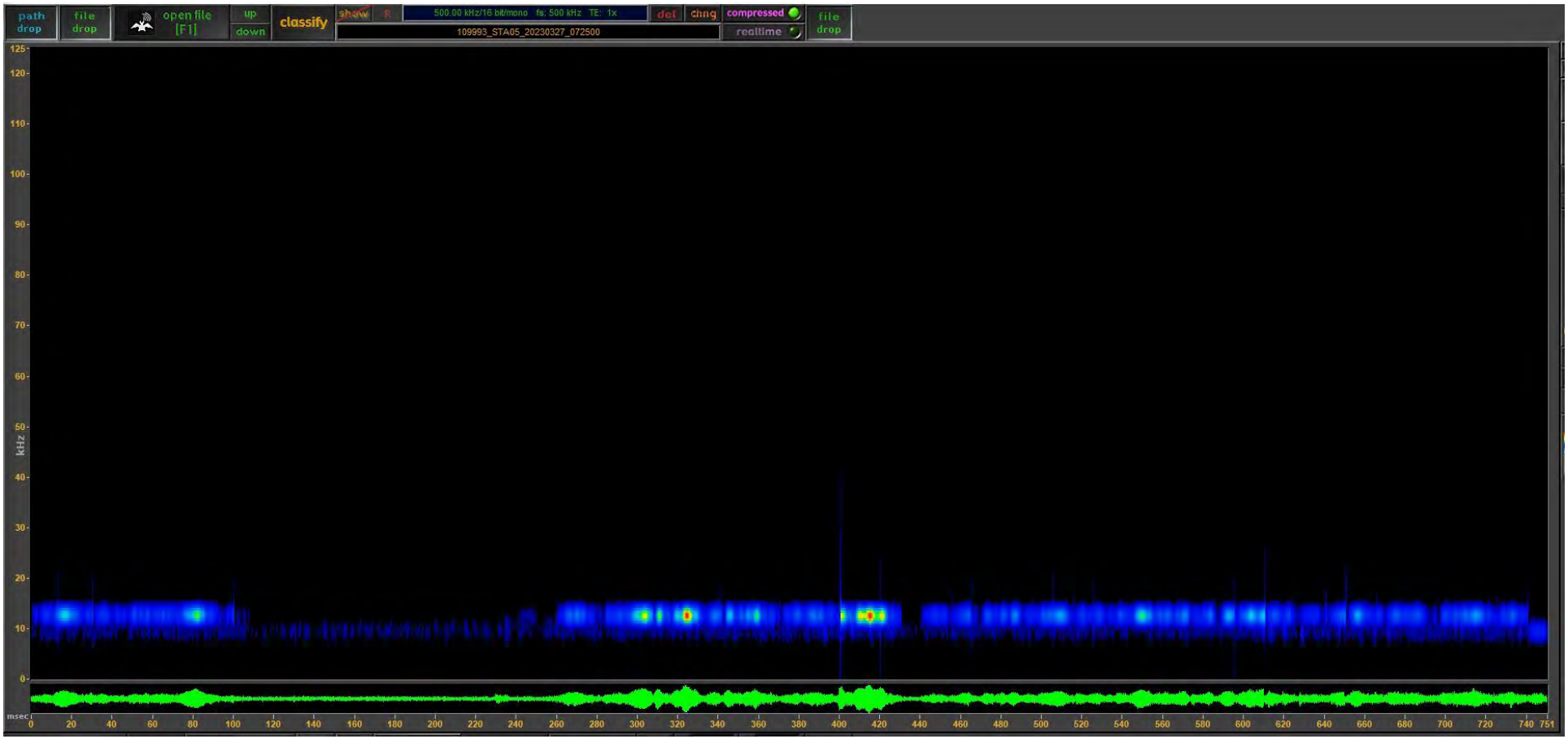

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Appendix F
USFWS Florida Bonneted Bat Programmatic Key

Florida Bonneted Bat Consultation Key[#]

Use the following key to evaluate potential effects to the Florida bonneted bat (FBB) from the proposed project. Refer to the Glossary as needed.

1a. Proposed project or land use change is partially or wholly within the Consultation Area (Figure 1).....**Go to 2**
1b. Proposed project or land use change is wholly outside of the Consultation Area (Figure 1).....**No Effect**

2a. Potential FBB roosting habitat exists within the project area.....**Go to 3**
2b. No potential FBB roosting habitat exists within the project area.....**Go to 13**

3a. Project size/footprint* ≤ 5 acres (2 hectares)..... **Conduct Limited Roost Survey (Appendix C)** then **Go to 4**
3b. Project size/footprint* > 5 acres (2 hectares).....**Conduct Full Acoustic/Roost Surveys (Appendix B)** then **Go to 6**

4a. Results show FBB roosting is likely .....**Go to 5**
4b. Results do not show FBB roosting is likely.....**MANLAA-P if BMPs (Appendix D) used and survey reports are submitted. Programmatic concurrence.**

5a. Project will affect roosting habitat.....**LAA[+] Further consultation with the Service required.**
5b. Project will not affect roosting habitat..... **MANLAA-C with required BMPs (Appendix D). Further consultation with the Service required.**

6a. Results show some FBB activity.....**Go to 7**
6b. Results show no FBB activity.....**No Effect**

7a. Results show FBB roosting is likely.....**Go to 8**
7b. Results do not show FBB roosting is likely.....**Go to 10**

8a. Project will not affect roosting habitat.....**Go to 9**
8b. Project will affect roosting habitat.....**LAA[+] Further consultation with the Service required.**

9a. Project will affect* > 50 acres (20 hectares) (wetlands and uplands) of foraging habitat.....**LAA[+] Further consultation with the Service required.**
9b. Project will affect* ≤ 50 acres (20 hectares) (wetlands and uplands) of foraging habitat..... **MANLAA-C with required BMPs (Appendix D). Further consultation with the Service required.**

10a. Results show high FBB activity/use.....**Go to 11**
10b. Results do not show high FBB activity/use.....**Go to 12**

11a. Project will affect* > 50 acres (20 hectares) (wetlands and uplands) of FBB habitat (roosting and/or foraging).....**LAA[+] Further consultation with the Service required.**
11b. Project will affect* ≤ 50 acres (20 hectares) (wetlands and uplands) of FBB habitat (roosting and/or foraging)..... **MANLAA-C with required BMPs (Appendix D). Further consultation with the Service required.**

12a. Project will affect* > 50 acres (20 hectares) (wetlands and uplands) of FBB habitat.....**LAA[+] Further consultation with the Service required.**
12b. Project will affect* ≤ 50 acres (20 hectares) (wetlands and uplands) of FBB habitat..... **MANLAA-P if BMPs (Appendix D) used and survey reports are submitted. Programmatic concurrence.**

13a. FBB foraging habitat exists within the project area and foraging habitat will be affected…..……..**Go to 14**

13b. FBB foraging habitat exists within the project area and foraging habitat will not be affected **OR** no FBB foraging habitat exists within the project area…..……..**No Effect**

14a. Project size* > 50 acres (20 hectares) (wetlands and uplands) ……..…….**Go to 15**

14b. Project size* ≤ 50 acres (20 hectares) (wetlands and uplands) ……...….. **MANLAA-P if BMPs (Appendix D) used. Programmatic concurrence.**

15a. Project is within 8 miles (12.9 kilometers) of high quality potential roosting areas^……..……**Conduct Full Acoustic Survey (Appendix B) and Go to 16**

15b. Project is not within 8 miles (12.9 kilometers) of high quality potential roosting area^…….....….**MANLAA-P if BMPs (Appendix D) used. Programmatic concurrence.**

16a. Results show some FBB activity……...…….....**Go to 17**

16b. Results show no FBB activity……..…….…....**No Effect**

17a. Results show high FBB activity/use……...…...…....**LAA[+] Further consultation with the Service required.**

17b. Results do not show high FBB activity/use……..……... **MANLAA-P if BMPs (Appendix D) used and survey reports submitted. Programmatic concurrence.**

[#] If you are within the urban environment and you are renovating an existing artificial structure (with or without additional ground disturbing activities), these Guidelines do not apply. The Service is developing separate guidelines for consultation in these situations. Until the urban guidelines are complete, please contact the Service for additional guidance

*****Includes wetlands and uplands that are going to be altered along with a 250- foot (76.2- meter) buffer around these areas if the parcel is larger than the altered area.

[+]Project modifications could change the **LAA** determinations in numbers 5, 8, 9, 11, 12, and 17 to **MANLAA** determinations.

^Determining if **high quality potential roosting areas** are within 8 mi (12.9 km) of a project is intended to be a desk-top exercise looking at most recent aerial imagery, not a field exercise.

APPENDIX H
Audubon's Crested Caracara Survey Report

AUDUBON'S CRESTED CARACARA (Polyborus plancus audubonnii) SURVEY REPORT

State Road 72 (Clark Road)
From East of I-75 to Lorraine Road
Sarasota County, Florida

Prepared for:
Florida Department of Transportation – District 1
801 North Broadway Avenue
Bartow, FL 33830

249161000
June 2023

201 N Franklin St., Suite 1400
Tampa, FL 33602
813-620-1460

Table of Contents

TABLES

FIGURES

APPENDICES

1.0 Introduction

Kimley-Horn and Associates Inc. (Kimley-Horn) has prepared the following Audubon's Crested Caracara (*Polyborus plancus audubonii*) (caracara) Survey Report for the proposed improvements to State Road (SR) 72 (Clark Road) from east of I-75 to Lorraine Road (Rd) (Study Area) (**Figure 1**). A Project Location Map (**Figure 1**) provides the general location of the Study Area. The proposed improvements include the widening of 3.39 miles of two-lane undivided SR 72 (Clark Road) from east of I-75 to Lorraine Rd. The approximate center coordinates of the Study Area are Latitude: 27°15'40.12"N and Longitude: 82°24'23.21"W (1983 North American Datum (NAD) Coordinates). The Study Area has historically been utilized as improved pastures, though today much of the it is residential lands. The portion of SR 72 within the Study Area was created before 1948.

Kimley-Horn conducted caracara surveys within the Study Area beginning on January 6, 2023 and ending on April 28, 2023, in accordance with U.S. Fish and Wildlife Service (USFWS) *Crested Caracara (Polyborus plancus audubonii) Draft Survey Protocol – Additional Guidance (2016-2017 Breeding Season)* issued December 2016. The purpose of the surveys was to evaluate the presence of, and the potential for nesting and/or foraging by, caracara within the Study Area.

2.0 Existing Environmental Characteristics

2.1 Existing Land Uses

Land cover within 984 feet (300 meters) of the Study Area consists of residential low density (FLUCFCS 110), residential medium density (FLUCFCS 120), residential high density (FLUCFC 130), commercial and services (FLUCFCS 140), institutional (FLUCFCS 170), recreational (FLUCFCS 180), open land (FLUCFCS 190), cropland and pastureland (FLUCFCS 210), shrub and brushland (FLUCFCS 320), pine flatwoods (FLUCFCS 411), upland hardwood conifer mixed (FLUCFCS 434), reservoirs (FLUCFCS 530), stream and lake swamps bottomland (FLUCFCS 615), wetland forested mixed (FLUCFCS 630), freshwater marshes (FLUCFCS 641), wet prairies (FLUCFCS 643), emergent aquatic vegetation (FLUCFCS 644), and transportation (FLUCFCS 810). Surrounding land uses in the vicinity of the Study Area include agricultural, commercial, and residential lands (**Figure 2**).

3.0 Audubon's Crested Caracara Survey

3.1 Survey Design and Planning

Pursuant to the USFWS's *Crested Caracara Survey Protocol – Additional Guidance* (issued December 2016) a survey design was developed by Kimley Horn. One (1) station was located within the Study Area such that potential caracara habitat on-site could be easily observed. John Wrublik, USFWS, approved the number and location of the survey station in a technical assistance meeting with FDOT on November 8, 2022 (**Appendix A** – **Agency Coordination**).

Station 1 was located in a pasture on the south side of SR 72 approximately 0.3 miles northwest of the intersection of SR 72 and Lorraine Rd. This station was positioned to provide an unobstructed view of potential caracara habitat within the Study Area (**Figure 3**).

3.2 Methodology

Surveys were conducted once every other week from January 6, 2023 to April 28, 2023 beginning at least 15 minutes prior to sunrise and continuing for three (3) hours. No evening surveys were conducted. From a stationary position, the surveyors would search for caracara activity and the presence of other birds that might elicit a response from caracara or indicate the presence of carrion that may attract caracaras. All surveys were conducted from inside the vehicle with high-powered binoculars, and, if applicable, surveyors would move to the truck bed to obtain a clearer view of the area. General weather conditions, including temperature, cloud cover, and wind speed, were recorded at the beginning and end of each survey. Surveys were not conducted in rainy conditions or when wind speeds were above 12 mph. Observers noted general bird activity, observance of other listed species besides caracara, and the timing of any significant activity. The tables below provide the locations of the one (1) station and the qualifications of the observers.

Table 1. Station locations within the Study Area.

Station No.	Latitude	Longitude	Section/Township/Range	County
Station 1	27°15'35.78"N	82°24'20.72"W	Sec. 2, Township 37S, Range 19E	Sarasota

Table 2. Summary of Observer Qualifications.

Observer	Years of Birding Experience (as of start of survey)	Hours of Caracara Experience (as of start of survey)	Approximate Number of Caracara Nests Previously Found	Secondary or Primary Observer
Sarah Johnson	25 years	18 years	6	Secondary
Rick Browne	5 years	80 hours	1	Secondary
Frank Suarez	5 years	80 hours	3	Secondary
Jeff Hemphill	6 years	60 hours	1	Primary
Danielle Puls	6 years	40 hours	0	Primary
Hannah Smith	5 years	Training (20 hours)	0	Secondary/Primary

3.3 Survey Results

No adult or juvenile caracaras were observed during field surveys within the Study Area. The corresponding field data sheets are provided in **Appendix B** and station photographs are provided in **Appendix C**.

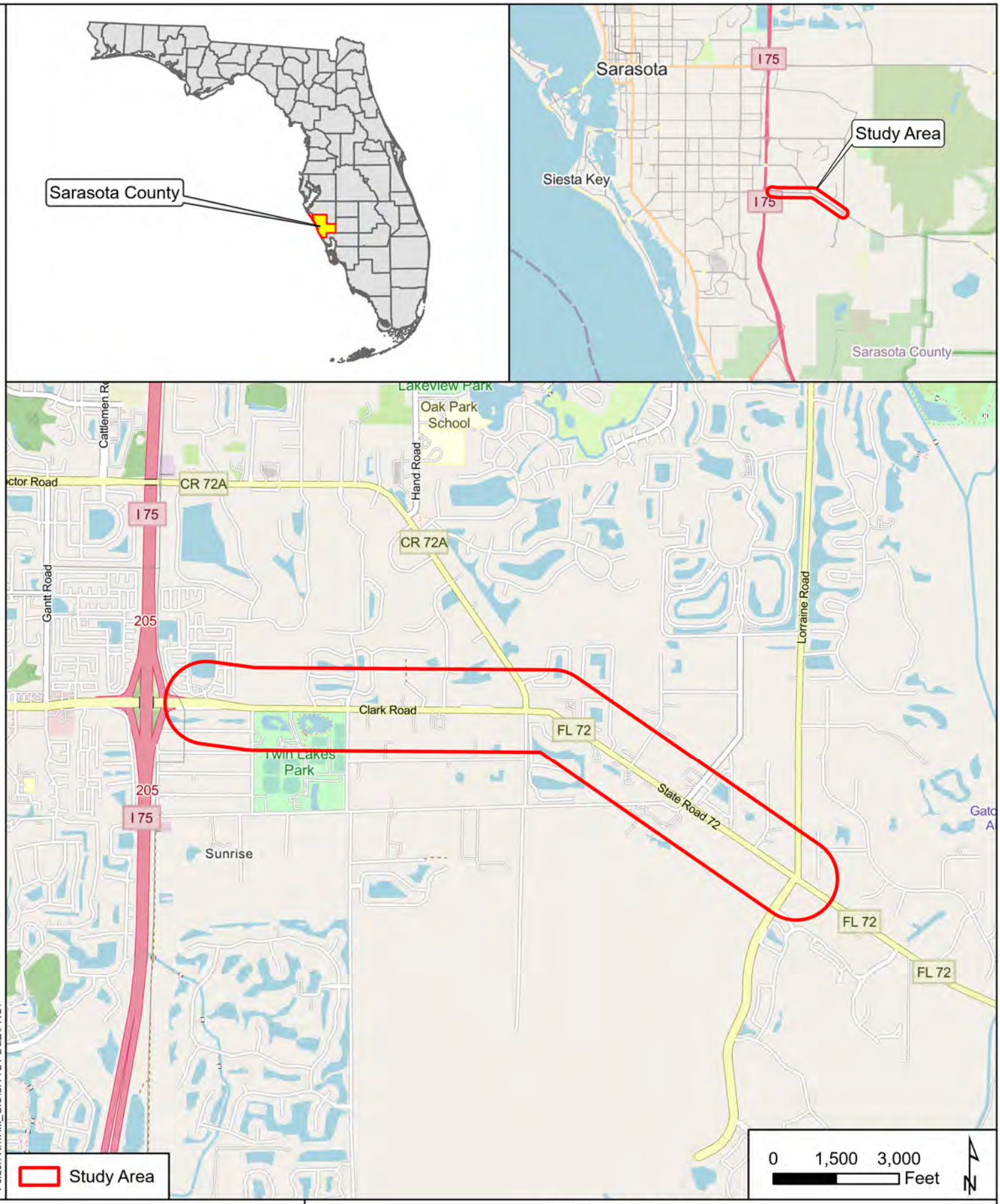
Other bird species documented during the survey timeframe included American crow (*Corvus brachyrhynchos*), American kestrel (*Falco sparverius*), anhinga (*Anhinga anhinga*), bald eagle (*Haliaeetus leucocephalus*), black vulture (*Coragyps atratus*), boat-tailed grackle (*Quiscalus major*), cattle egret (*Ardea alba*), common ground dove (*Columbina passerina*), double-crested cormorant (*Nannopterum auritum*), eastern bluebird (*Sialia sialis*), eastern meadowlark (*Sturnella magna*), eastern phoebe (*Sayornis phoebe*), fish crow (*Corvus ossifragus*), Florida sandhill crane (*Grus canadensis pratensis*), glossy ibis (*Plegadis falcinellus*), great blue heron (*Ardea herodias*), great egret (*Ardea alba*), little blue heron (*Egretta caerulea*), loggerhead shrike (*Lanius ludovicianus*), mourning dove (*Zenaida macroura*), northern mockingbird (*Mimus polyglottos*), osprey (*Pandion haliaetus*), pileated woodpecker (*Dryocopus pileatus*), red shouldered hawk (*Buteo lineatus*), American robin (*Turdus migratorius*), roseate spoonbill (*Platalea ajaja*), Savannah sparrow

(*Passerculus sandwichensis*), tricolored heron (*Egretta tricolor*), turkey vulture (*Cathartes aura*), white ibis (*Eudocimus albus*), wood stork (*Mycteria americana*), and yellow rumped warbler (*Setophaga coronate*).

4.0 Conclusions

Suitable habitat for the caracara is present within the Study Area, though no caracaras were observed during surveys. Based on results of the surveys, it was concluded that no active nests are located within the Study Area, and the area was not utilized by caracaras for foraging.

Based on the potential suitable habitat within the Study Area and the results of the 2023 caracara survey, it is anticipated that the project "*may affect, not likely to adversely affect*" the Audubon's crested caracara.



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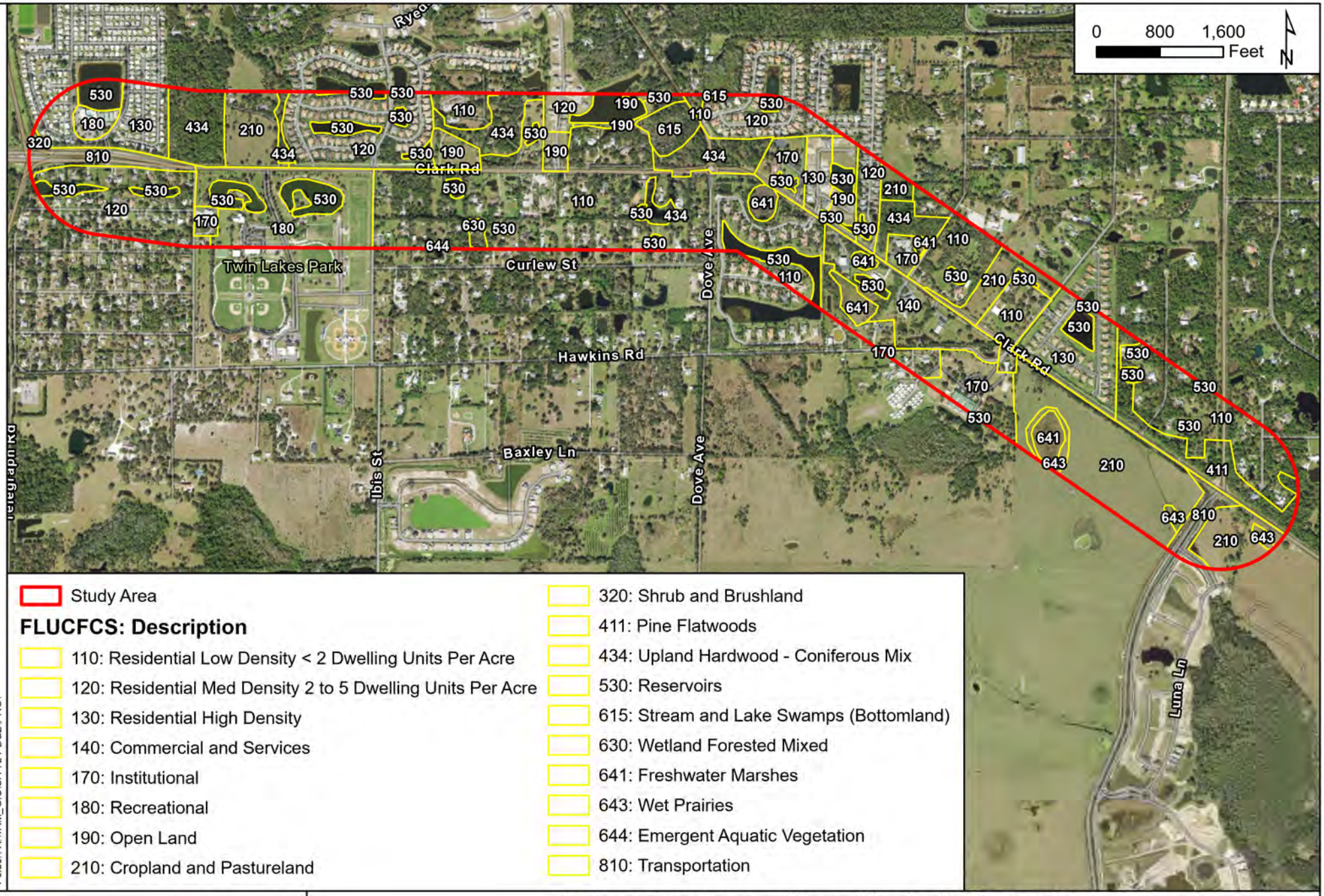
Kimley»Horn

201 North Franklin Street, Suite 1400, Tampa, FL 33602
Phone (813) 620-1460
www.kimley-horn.com

Project Location Map

State Road 72 (Clark Road)
From East of I-75 to Lorraine Road
Sarasota County, Florida

1 IN = 3,000 FT	PROJECT NUMBER: 249161000	JUNE 2023	FIGURE 1



Folder: K:\TAM_GIS\SR 72 PD&E\PRO\

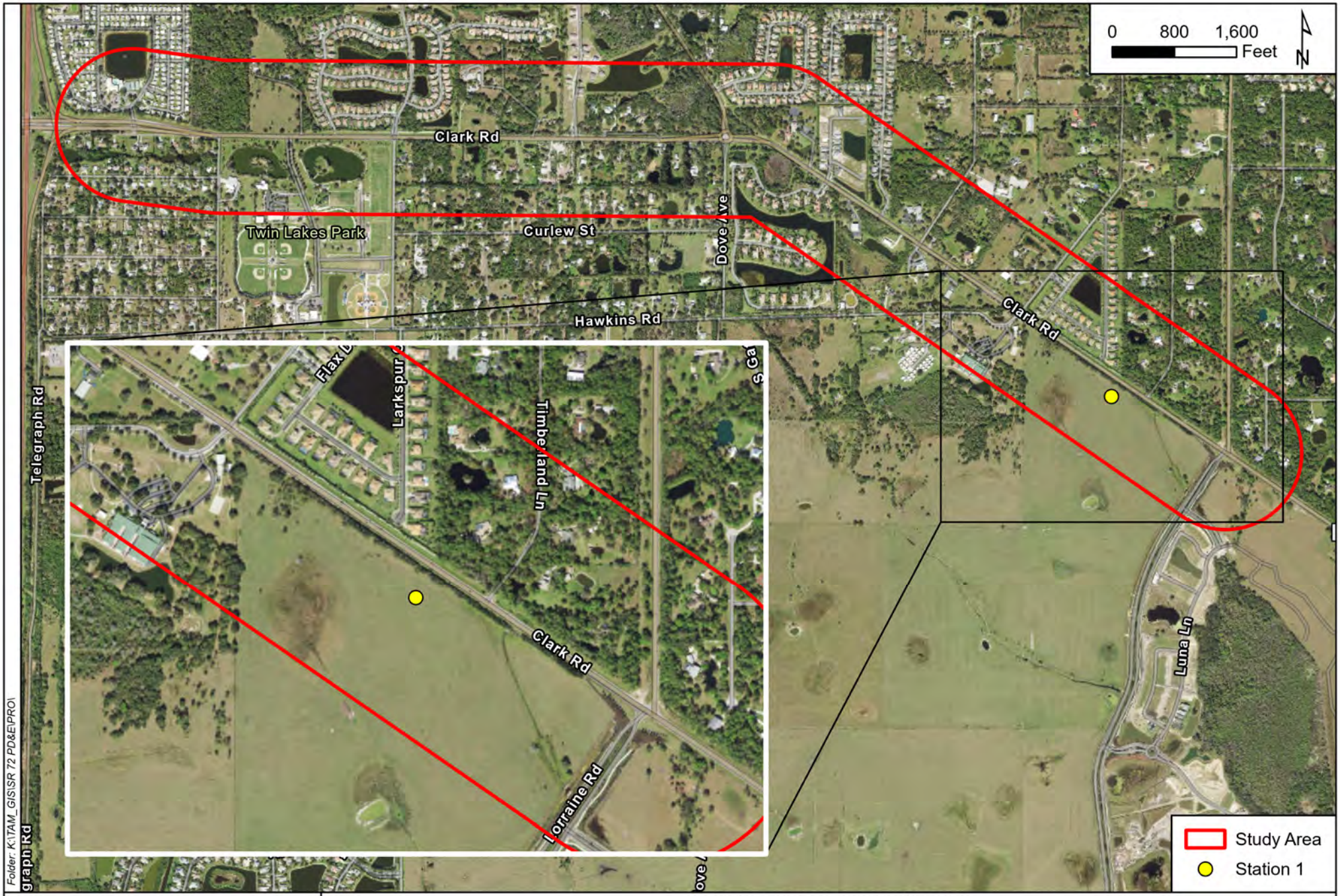
Kimley»Horn

201 North Franklin Street, Suite 1400, Tampa, FL 33602
Phone (813) 620-1460
www.kimley-horn.com

Florida Land Use, Cover, and Forms Classification System Map

State Road 72 (Clark Road)
From East of I-75 to Lorraine Road
Sarasota County, Florida

1 IN = 1,600 FT	PROJECT NUMBER: 249161000	JUNE 2023	FIGURE 2



Folder: K:\TAM_GIS\SR 72 PD&E\PRO\

Kimley»Horn

201 North Franklin Street, Suite 1400, Tampa, FL 33602
Phone (813) 620-1460
www.kimley-horn.com

2023 Caracara Survey Station Map

State Road 72 (Clark Road)
From East of I-75 to Lorraine Road
Sarasota County, Florida

1 IN = 1,633 FT	PROJECT NUMBER: 249161000	JUNE 2023	FIGURE 3

APPENDIX A – AGENCY COORDINATION

FINAL

USFWS Species Surveys Discussion

SUBJECT:	Clark Road (SR 72) PD&E Study, from east of I-75 to Lorraine Road FPID No. 444634-1-22-01; Contract No. CAI05; ETDM 14441; Sarasota County
MEETING DATE:	Tuesday 11/08/2022
MEETING TIME:	11:00 AM – 11:15 AM
LOCATION:	TEAMS Meeting (click link in meeting invite)

1) Introductions

2) Project Overview
   a) Project Limits from east of I-75 to Lorraine Road, approximately 3 miles
   b) Scope of work includes widening from 2 to 4 lanes with a closed drainage system and ponds
   c) Need is driven by increasing traffic volumes resulting from ongoing residential development

3) Natural Environment
   a) ETDM #14441, Moderate degree of effect for protected species and habitat
   b) Species surveys in scope:
      i) Florida Bonneted Bat
      ii) Caracara
   c) Survey methodology
      i) Five (5) FBB Stations proposed. ***John Wrublik: Seems acceptable.***
      ii) One (1) Caracara station proposed. ***JW: Seems acceptable based on field conditions.***
   d) Status of the Tricolored bat. ***JW: Nothing is set in stone yet. If it does get listed, we would have to follow back up regarding survey guidance.***

4) Next Steps
   a) Species surveys early 2023
   b) Public Meeting March 2023
   c) Draft Natural Resource Evaluation Report Summer 2023

5) New Action Items - ***None***

USFWS Species Surveys Discussion

SUBJECT: Clark Road (SR 72) PD&E Study, from east of I-75 to Lorraine Road
FPID No. 444634-1-22-01; Contract No. CAI05; ETDM 14441; Sarasota County

MEETING DATE: Tuesday 11/08/2022

MEETING TIME: 11:00 AM – 11:15 AM

LOCATION: TEAMS Meeting (click link in meeting invite)

Name	Initial	Organization	E-mail
Cris Schooley	***Online***	Kimley-Horn	Cris.Schooley@kimley-horn.com
Jeffrey James	***Online***	FDOT	Jeffrey.James@dot.state.fl.us
Nicole Selly	***Online***	KCA for FDOT	NSelly@kcaeng.com
Patrick Bateman	***Online***	FDOT	Patrick.Bateman@dot.state.fl.us
Sarah Johnson	***Online***	Kimley-Horn	Sarah.Johnson@kimley-horn.com
John Wrublik	***Online***	USFWS	John_wrublik@fws.gov

APPENDIX B - CARACARA SURVEY FORMS

USFWS Crested Caracara Draft Survey Protocol –
Additional Guidance (Breeding Season)

Caracara Survey Form (updated)

Project Name: SR 72

Location/Observation Block/Lat-Long: Station 1

Date	Start Time	Stop Time	Observer Name(s) and Experience Level(s)
1/4/23	6:50am	10:30 am	JH & HS (training)

Weather

Time	Air Temp	Wind Speed and Direction	% Cloud Cover	Cloud Type	Rain/Fog
Start: 6:50am	54°	7mph N	0	N/A	no
Finish: 10:30am	61°	10mph N	0	N/A	no

Observation Point Information

General Site and Habitat Conditions; Other Activities in the Area
2 bald eagle, great blue heron, crows, mourning dove, kestrel, shrike, meadowlark, vulture, sandhill crane, tri-colored heron, eastern bluebird

2 parents
1 juvenile

Observations

(flight data, perching, preening, courtship, feeding, nest building, incubation, head throwback, diving, reaction to passing planes/traffic/pedestrians, other bird species, etc)

Observer Location	Age A/Im	Time	Description of behavior, flight path, etc

USFWS Crested Caracara Draft Survey Protocol –
Additional Guidance (Breeding Season)

Caracara Survey Form (updated)

Project Name: SR 72

Location/Observation Block/Lat-Long:

Date	Start Time	Stop Time	Observer Name(s) and Experience Level(s)
1/19/23	7:10 am	10:10 am	JH & HS (T)

Weather

Time	Air Temp	Wind Speed and Direction	% Cloud Cover	Cloud Type	Rain/Fog
Start: 7:10 am	61°	6 mph SE	30%	Altocumulus	No
Finish: 10:10 am	71°	9 mph SSE	0%	NA	No

Observation Point Information

General Site and Habitat Conditions; Other Activities in the Area
great blue heron, sandhill crane, bald eagle, eastern phoebe, cattle egret, kestrel, crow, vulture

Observations

(flight data, perching, preening, courtship, feeding, nest building, incubation, head throwback, diving, reaction to passing planes/traffic/pedestrians, other bird species, etc)

Observer Location	Age A/Im	Time	Description of behavior, flight path, etc

USFWS Crested Caracara Draft Survey Protocol –
Additional Guidance (Breeding Season)

Caracara Survey Form (updated)

Project Name: SR72

Location/Observation Block/Lat-Long:

Date	Start Time	Stop Time	Observer Name(s) and Experience Level(s)
2/2/23	6:59	10:14	Danielle Pals Assistant

Weather

Time	Air Temp	Wind Speed and Direction	% Cloud Cover	Cloud Type	Rain/Fog
Start: 6:59	61	ESE 1mph	30%	cumulus	None
Finish: 10:14	74	SSE 5mph	0%	N/A	None

Observation Point Information

General Site and Habitat Conditions; Other Activities in the Area
sandhill crane, boattail grackle, cattle egret, mocking bird, cattle, great egret, robin, anhinga, roseatte spoonbill, meadow lark loggerhead shrike, great blue heron, cormorant, rabbit, pileated, kestrel, bald eagle, redshouldered hawk

Observations

(flight data, perching, preening, courtship, feeding, nest building, incubation, head throwback, diving, reaction to passing planes/traffic/pedestrians, other bird species, etc)

Observer Location	Age A/Im	Time	Description of behavior, flight path, etc

USFWS Crested Caracara Draft Survey Protocol –
Additional Guidance (Breeding Season)

Caracara Survey Form (updated)

Project Name: SR 72
Location/Observation Block/Lat-Long: Station 1

Date	Start Time	Stop Time	Observer Name(s) and Experience Level(s)
2/17/2023	7:05 am	10:05 am	JH & HS (training)

Weather

Time	Air Temp	Wind Speed and Direction	% Cloud Cover	Cloud Type	Rain/Fog
Start: 7:05 am	61°F	0-3mph	70%	Stratus	fog, clearing after 30 min.
Finish: 10:05 am	76°F	5-8 mph	10%	cirrus	

Observation Point Information

General Site and Habitat Conditions; Other Activities in the Area
roseate spoonbill, bald eagle, crow, great blue heron, savannah sparrow, yellow rumped warbler, sandhill crane, double-crested cormorant, pileated woodpecker, wood stork, glossy ibis, meadowlark

Observations

(flight data, perching, preening, courtship, feeding, nest building, incubation, head throwback, diving, reaction to passing planes/traffic/pedestrians, other bird species, etc)

Observer Location	Age A/Im	Time	Description of behavior, flight path, etc

USFWS Crested Caracara Draft Survey Protocol –
Additional Guidance (2023 Breeding Season)

Caracara Survey Form (updated)

Project Name: SR 72 Station 1

Location/Observation Block/Lat-Long:

Date	Start Time	Stop Time	Observer Name(s) and Experience Level(s)
3/3	6:45	10:00	Jeff Hemphill 2 yrs

Weather

Time	Air Temp	Wind Speed and Direction	% Cloud Cover	Cloud Type	Rain/Fog
Start:	69F	2mph S	50		Fog
Finish:	80F	10-12 mph N	20		No fog

Observation Point Information

General Site and Habitat Conditions; Other Activities in the Area
- Fog lifted quick - Wind picked up at end of survey Great blue heron, sandhill crane, LBH, crow, bald eagle, wood stork, dove, cormorant, osprey

Observations

(flight data, perching, preening, courtship, feeding, nest building, incubation, head throwback, diving, reaction to passing planes/traffic/pedestrians, other bird species, etc)

Observer Location	Age A/Im	Time	Description of behavior, flight path, etc

USFWS Crested Caracara Draft Survey Protocol –
Additional Guidance (Breeding Season)

Caracara Survey Form (updated)

Project Name: SR 72

Location/Observation Block/Lat-Long: station 1

Date	Start Time	Stop Time	Observer Name(s) and Experience Level(s)
3/17/23	7:22 Am	10:22 Am	HS

Weather

Time	Air Temp	Wind Speed and Direction	% Cloud Cover	Cloud Type	Rain/Fog
Start: 7:22 Am	57°	3-4 mph SE	0 %	none	none
Finish: 10:22 Am	68°	4-5 mph S	10 %	Cirrus	none

Observation Point Information

General Site and Habitat Conditions; Other Activities in the Area
mourning dove, pileated woodpecker, crow, white ibis, meadowlark, shrike

Observations

(flight data, perching, preening, courtship, feeding, nest building, incubation, head throwback, diving, reaction to passing planes/traffic/pedestrians, other bird species, etc)

Observer Location	Age A/Im	Time	Description of behavior, flight path, etc

USFWS Crested Caracara Draft Survey Protocol –
Additional Guidance (Breeding Season)

Caracara Survey Form (updated)

Project Name: SR 72

Location/Observation Block/Lat-Long:

Date	Start Time	Stop Time	Observer Name(s) and Experience Level(s)
3/31/23	7:06	10:21	Danielle Puls

Weather

Time	Air Temp	Wind Speed and Direction	% Cloud Cover	Cloud Type	Rain/Fog
Start: 7:06	63°f	E 6mph	—	—	—
Finish: 10:21	77	SSE 15mph	—	—	—

Observation Point Information

General Site and Habitat Conditions; Other Activities in the Area
Cattle, crows, white ibis, great egret, cormorant, great blue heron roseatte spoonbills, mocking bird, warbler, hawk, meadowlark, osprey, black vultures, mourningdove, sandhills

Observations

(flight data, perching, preening, courtship, feeding, nest building, incubation, head throwback, diving, reaction to passing planes/traffic/pedestrians, other bird species, etc)

Observer Location	Age A/Im	Time	Description of behavior, flight path, etc

USFWS Crested Caracara Draft Survey Protocol –
Additional Guidance (Breeding Season)

Caracara Survey Form (updated)

Project Name: SR 72

Location/Observation Block/Lat-Long: Station 1

Date	Start Time	Stop Time	Observer Name(s) and Experience Level(s)
4/14/23	6:50 Am	9:50 Am	HS

Weather

Time	Air Temp	Wind Speed and Direction	% Cloud Cover	Cloud Type	Rain/Fog
Start: 6:50Am	68°F	4mph SE	—	—	Fog
Finish: 9:50 Am	76°F	6mph S.	70%	Cumulus	

Observation Point Information

General Site and Habitat Conditions; Other Activities in the Area
meadowlark, red-shouldered hawk, mockingbird, crow sandhill crane, white ibis

Observations

(flight data, perching, preening, courtship, feeding, nest building, incubation, head throwback, diving, reaction to passing planes/traffic/pedestrians, other bird species, etc)

Observer Location	Age A/Im	Time	Description of behavior, flight path, etc

USFWS Crested Caracara Draft Survey Protocol –
Additional Guidance (Breeding Season)

Caracara Survey Form (updated)

Project Name: GR 72

Location/Observation Block/Lat-Long: Station 1

Date	Start Time	Stop Time	Observer Name(s) and Experience Level(s)
4/28/2023	6:38 Am	9:40 Am	HS

Weather

Time	Air Temp	Wind Speed and Direction	% Cloud Cover	Cloud Type	Rain/Fog
Start: 6:38 Am	70° F	2mph SE	0%	none	none
Finish: 9:40 Am	79° F	9 mph S	90%	stratus	none

Observation Point Information

General Site and Habitat Conditions; Other Activities in the Area
great blue heron, white ibis (flying), meadow lark, mocking bird, red-shouldered hawk, crow

Observations

(flight data, perching, preening, courtship, feeding, nest building, incubation, head throwback, diving, reaction to passing planes/traffic/pedestrians, other bird species, etc)

Observer Location	Age A/Im	Time	Description of behavior, flight path, etc

APPENDIX C –CARACARA SURVEY STATIONS PHOTOGRAPHIC LOG

Station 1 - North facing

Station 1 - East facing

Station 1 - South facing

Station 1 - West facing

APPENDIX I
Wood Stork Foraging Assessment Memorandum

WOOD STORK FORAGING HABITAT ASSESSMENT

1.0 INTRODUCTION

The Florida Department of Transportation (FDOT) District One is conducting a Project Development and Environment (PD&E) study to evaluate roadway capacity and safety improvements along State Road 72 (SR 72) from east of I-75 to Lorraine Road (Rd) in Sarasota County, Florida. The purpose of this PD&E Study is to evaluate engineering and environmental data and document information that will support FDOT District One in determining the type, preliminary design, and location of the proposed improvements. The selected preferred alternative is the Preferred Alternative. The study was conducted in order to meet the requirements of the FDOT, the National Environmental Policy Act (NEPA), and other related federal and state laws, rules, and regulations.

2.0 WOOD STORK NESTING AND SUITABLE FORAGING HABITAT

The wood stork (*Mycteria americana*) is primarily associated with freshwater and estuarine habitats that are used for nesting, roosting, and foraging. Wood storks typically nest colonially in medium to tall trees that occur in stands located in swamps or on islands surrounded by relatively broad expanses of open water. Successful breeding sites are those that have limited human disturbance and low exposure to land-based predators. Nesting sites protected from land-based predators are characterized as areas surrounded by large expanses of open water or where the nest trees are inundated at the onset of nesting and remain inundated throughout most of the breeding cycle.

In addition to limited human disturbance and land-based predation, successful nesting depends on the availability of suitable foraging habitat. Because of their specialized feeding behavior, wood storks forage most effectively in shallow-water areas with highly concentrated prey. Typical foraging sites for the wood stork include freshwater marshes, depressions in cypress heads, swamps sloughs, managed impoundments, stock ponds, shallow-seasonally flooded roadside or agricultural ditches, and narrow tidal creeks or shallow tidal pools. Suitable foraging habitat is described as wetland or open water areas that are relatively calm, uncluttered by dense thickets of aquatic vegetation and have a water depth between 5 and 15 inches. Preferred foraging habitat includes wetlands exhibiting a mosaic of submerged and/or emergent aquatic vegetation, and shallow, open-water areas subject to hydraulic regimes that exhibit short and long hydroperiods. The vegetative component provides nursery habitat for small fish, crayfish, frogs, and other aquatic prey, and the shallow open-water areas provide sites for concentration of the prey during daily or seasonal low water periods. In Sarasota County, suitable wetland and open water habitats within 18.6 miles of a wood stork nesting colony are considered Core Foraging Areas (CFA) by the U.S. Fish and Wildlife Service (USFWS).

The loss of wetland habitats, or wetland function, has been the primary cause of the wood stork population decline in the United States. The alteration of wetlands and the manipulation of wetland hydroperiods to suit human needs have also reduced the amount of available habitat to wood storks

and affected prey base availability. The altered hydrology of these systems has also enhanced the invasion of these systems by exotic plant species. These exotic plants can produce a dense understory and closed canopy, limiting suitability of these wetland systems for foraging by wood storks, although a sufficient prey base may be present in the wetlands.

Four (4) variables are indicative of the necessities and functions of optimal or suitable foraging habitat required by the wood stork:

1. Vegetation Density: the density of vegetation within habitats suitable for wood stork foraging;
2. Wetland Hydroperiods: the hydroperiod of the wetland, which includes two (2) subcomponents; (1) the fish and crayfish density per hydroperiod; and (2) the fish and crayfish biomass per hydroperiod;
3. Prey Size Suitability: the suitability of prey size for the wood stork, which provides an adjustment to the fish and crayfish biomass per hydroperiod and is referenced hereafter as the "wood stork suitability prey base"; and
4. Competition with other wading bird species: the likelihood that the wood stork is the wading bird species that actually consumes the concentrated prey.

3.0 SUITABLE FORAGING HABITATS WITHIN THE PREFERRED ALTERNATIVE

The proposed Preferred Alternative contains wood stork foraging habitat and is located within the 18.6-mile CFA of five (5) active wood stork nesting colonies: Casey Key Sorrento Inlet, Blackburn Bay, North Port Charlotte, North Port Charlotte North, and Dona Bay. There are approximately 3.15 acres of wetlands and 1.39 acres of surface waters that could be utilized by the wood stork for foraging in the Preferred Alternative. These wetlands were grouped by similar habitat types and evaluated relative to exotic species density and hydroperiod.

Exotic Vegetation Density

Wood stork habitat quality can be adversely affected by the level of exotic species infestation within wetlands and surface waters. The availability of the prey base for wood storks and other foraging wading birds is reduced by the restriction of access caused from dense and thick exotic vegetation. **Table 1** provides the foraging suitability value (FSV) percentages used in the Wood Stork Biomass Analysis.

The wetland habitats within the SR 72 Preferred Alternative vary in the percentage of exotic vegetation. As a result, FSVs of 64, 37, and 3 were assigned to the potential foraging habitat available to wood storks within the proposed Preferred Alternative.

Table 1 – Exotic Vegetation Cover Percentage Foraging Suitability Value

PERCENTAGE OF EXOTIC VEGETATION	FSV (PERCENT)
Between 0 and 25 Percent Exotics	100
Between 25 and 50 Percent Exotics	64
Between 50 and 75 Percent Exotics	37
Between 75 and 90 Percent Exotics	3
Between 90 and 100 Percent Exotics	0

Hydroperiod

The hydroperiod of the wetlands potentially affected by a project is an important consideration in determining effects on wood stork foraging habitat as fish and crayfish (potential foraging biomass) are highly dependent on hydroperiod. Wetlands and surface waters within the project area were grouped according to hydroperiod class. **Table 2** provides the number of days inundated associated with each hydroperiod class.

Table 2 – Hydroperiod Class

HYDROPERIOD CLASS	NUMBER OF DAYS INUNDATED
1	0-60
2	60-120
3	120-180
4	180-240
5	240-300
6	300-330
7	330-365

4.0 IMPACTS

The proposed Preferred Alternative widens SR 72 from east of I-75 to Lorraine Rd to four lanes and includes a shared use path on both sides. No habitat fragmentation will occur as a result of project construction. This section analyzes the impacts of the proposed project on the wood stork and wood stork foraging habitat.

For assessment purposes, this wood stork biomass analysis addresses the loss of 10.99 acres of wetlands and surface waters within the proposed right-of-way of the Preferred Alternative.

The analysis determined that the Preferred Alternative will result in the net loss of 14.02 kg total (fish and crayfish) biomass. Of the 14.02 kg, 4.27 kg is from short hydroperiod wetlands and surface waters and 9.75 kg is from long hydroperiod wetlands and surface waters. **Table 2** presents the analysis of the impacts to wood stork foraging habitat and forage for the Preferred Alternative.

Table 3 – Preferred Alternative Wood Stork Foraging Analysis Summary

Hydroperiods	Impact Acreage	% exotics	FSV	m^2	m^2 suitable	Crayfish & fish biomass g/m^2	Biomass loss (kg)
Short Hydroperiods							
Class 2: 60-120 days	0.46	76-100	0.03	1,854.46	1,854.46	0.20	0.01
Long Hydroperiods							
Class 5: 240-300 days	1.78	26-50	0.64	7,207.51	7,207.51	1.90	4.39
Class 6: 300-330 days	0.80	51-75	0.37	3,221.40	3,221.40	1.09	1.30
Class 7: 330-365 days	1.33	26-50	0.64	5,371.81	5,371.81	2.36	4.06
Total	**10.99**			**44,494.66**	**44,494.66**	**6.42**	**14.02**

5.0 MITIGATION

Impacts to wetlands within the Preferred Alternative will be mitigated for within the CFA of one or more of the affected rookeries or at a regional mitigation bank that has been approved by the USFWS or pursuant to Section 373.4137, F.S. Wetland mitigation will include compensation for the loss of wood stork foraging habitat and prey resulting from construction of the proposed project. Compensation for the loss of wetlands, as well as wood stork habitat and foraging area (short and long term hydroperiod wetlands), will be provided at a state and federal approved mitigation bank.

6.0 SUMMARY

The proposed Preferred Alternative contains wood stork foraging habitat and is located within the 18.6-mile CFA of five (5) active wood stork nesting colonies: Casey Key Sorrento Inlet, Blackburn Bay, North Port Charlotte, North Port Charlotte North, and Dona Bay. There are 10.99 acres of wetlands and surface waters that could be utilized by the wood stork for foraging in the Preferred Alternative. Wood stork foraging biomass productivity is calculated based on hydroperiods of class of affected wetlands. The Preferred Alternative will impact 7.09 acres of short hydroperiod wetlands and surface waters and 3.90 acres of long hydroperiod wetlands and surface waters (**Table 3**). Analysis results concluded that the Preferred Alternative will result in the net loss of 14.02 kg total (fish and crayfish) biomass, 4.27 kg biomass from short hydroperiod wetlands and surface waters and 9.75 kg biomass from long hydroperiods wetlands and surface waters. Loss of potential wood stork foraging habitat attributable to the project will be offset by providing the equivalent credits at a USFWS-approved mitigation bank.

7.0 REFERENCES

Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Office of Biological Services. Technical Publication FWS/OBS-79/31. 131 pp.

Kahl, M.P., Jr. 1964. Food Ecology of the Wood Stork (*Mycteria americana*) in Florida. Ecological Monographs 34:97 117.

Ogden, J.C. 1990. *Habitat Management Guidelines for the Wood Stork in the Southeast Region.* U.S. Fish and Wildlife Service Southeast Region. Atlanta, Georgia. 14 pp.

U.S. Fish and Wildlife Service. 2012. Wood Stork Foraging Habitat Assessment Methodology.

U.S. Fish and Wildlife Service. 1997. Revised Recovery Plan for the U.S. Breeding Population of the Wood Stork. U.S. Fish and Wildlife Service, Atlanta, Georgia. 41 pp.

U.S. Fish and Wildlife Service. 2010. United States Department of the Interior, Fish and Wildlife Service, Jacksonville District Corps of Engineers, South Florida Programmatic Concurrence for the Wood Stork, Wood Stork Effect Determination Key. 34 pp.

U.S. Fish and Wildlife Service. 2019. Wood Stork Nesting Colonies and Core Foraging Areas, GIS Shapefiles.

The SFESO recognizes a 29.9 kilometer [km] (18.6-mile) core foraging area (CFA) around all known wood stork colonies in south Florida. Enclosure 2 (to be updated as necessary) provides locations of colonies and their CFAs in south Florida that have been documented as active within the last 10 years. The Service believes loss of suitable wetlands within these CFAs may reduce foraging opportunities for the wood stork. To minimize adverse effects to the wood stork, we recommend compensation be provided for impacts to foraging habitat. The compensation should consider wetland type, location, function, and value (hydrology, vegetation, prey utilization) to ensure that wetland functions lost due to the project are adequately offset. Wetlands offered as compensation should be of the same hydroperiod and located within the CFAs of the affected wood stork colonies. The Service may accept, under special circumstances, wetland compensation located outside the CFAs of the affected wood stork nesting colonies. On occasion, wetland credits purchased from a "Service Approved" mitigation bank located outside the CFAs could be acceptable to the Service, depending on location of impacted wetlands relative to the permitted service area of the bank, and whether or not the bank has wetlands having the same hydroperiod as the impacted wetland.

In an effort to reduce correspondence in effect determinations and responses, the Service is providing the Wood Stork Effect Determination Key below. If the use of this key results in a Corps determination of "no effect" for a particular project, the Service supports this determination. If the use of this Key results in a determination of NLAA, the Service concurs with this determination[1]. This Key is subject to revisitation as the Corps and Service deem necessary.

The Key is as follows:

A. Project within 0.76 km (0.47 mile)[2] of an active colony site[3] ..... "*may affect*[4]"

Project impacts Suitable Foraging Habitat (SFH)[5] at a location greater than 0.76 km (0.47 mile) from a colony site..... ....."*go to* B"

---

[1] With an outcome of "no effect" or "NLAA" as outlined in this key, and the project has less than 20.2 hectares (50 acres) of wetland impacts, the requirements of section 7 of the Act are fulfilled for the wood stork and no further action is required. For projects with greater than 20.2 hectares (50 acres) of wetland impacts, written concurrence of NLAA from the Service is necessary.

[2] Within the secondary zone (the average distance from the border of a colony to the limits of the secondary zone is 0.76 km (2,500 feet, or 0.47 mi).

[3] An active colony is defined as a colony that is currently being used for nesting by wood storks or has historically over the last 10 years been used for nesting by wood storks.

[4] Consultation may be concluded informally or formally depending on project impacts.

[5] Suitable foraging habitat (SFH) includes wetlands that typically have shallow-open water areas that are relatively calm and have a permanent or seasonal water depth between 5 to 38 cm (2 to 15 inches) deep. Other shallow non-wetland water bodies are also SFH. SFH supports and concentrates, or is capable of supporting and concentrating small fish, frogs, and other aquatic prey. Examples of SFH include, but are not limited to freshwater marshes, small ponds, shallow, seasonally flooded roadside or agricultural ditches, seasonally flooded pastures, narrow tidal creeks or shallow tidal pools, managed impoundments, and depressions in cypress heads and swamp sloughs.

Project does not affect SFH……..…..*"no effect[1]".*

B. Project impact to SFH is less than 0.20 hectare (one-half acre)[6]……..……*NLAA[1]"*

Project impact to SFH is greater in scope than 0.20 hectare (one-half acre)...……*go to* C

C. Project impacts to SFH not within the CFA (29.9 km, 18.6 miles) of a colony site ……..…….…….……*go to* D

Project impacts to SFH within the CFA of a colony site …….……...…….*go to* E

D. Project impacts to SFH have been avoided and minimized to the extent practicable; compensation (Service approved mitigation bank or as provided in accordance with Mitigation Rule 33 CFR Part 332) for unavoidable impacts is proposed in accordance with the CWA section 404(b)(1) guidelines; and habitat compensation replaces the foraging value matching the hydroperiod[7] of the wetlands affected and provides foraging value similar to, or higher than, that of impacted wetlands. See Enclosure 3 for a detailed discussion of the hydroperiod foraging values, an example, and further guidance[8]…….. *NLAA[1]"*

Project not as above.……... *"may affect[4]"*

E. Project provides SFH compensation in accordance with the CWA section 404(b)(1) guidelines and is not contrary to the HMG; habitat compensation is within the appropriate CFA or within the service area of a Service-approved mitigation bank; and habitat compensation replaces foraging value, consisting of wetland enhancement or restoration matching the hydroperiod[7] of the wetlands affected, and provides foraging value similar

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[6] On an individual basis, SFH impacts to wetlands less than 0.20 hectare (one-half acre) generally will not have a measurable effect on wood storks, although we request that the Corps require mitigation for these losses when appropriate. Wood storks are a wide ranging species, and individually, habitat change from impacts to SFH less than one-half acre are not likely to adversely affect wood storks. However, collectively they may have an effect and therefore regular monitoring and reporting of these effects are important.

[7] Several researchers (Flemming et al. 1994; Ceilley and Bortone 2000) believe that the short hydroperiod wetlands provide a more important pre-nesting foraging food source and a greater early nestling survivor value for wood storks than the foraging base (grams of fish per square meter) than long hydroperiod wetlands provide. Although the short hydroperiod wetlands may provide less fish, these prey bases historically were more extensive and met the foraging needs of the pre-nesting storks and the early-age nestlings. Nest productivity may suffer as a result of the loss of short hydroperiod wetlands. We believe that most wetland fill and excavation impacts permitted in south Florida are in short hydroperiod wetlands. Therefore, we believe that it is especially important that impacts to these short hydroperiod wetlands within CFAs are avoided, minimized, and compensated for by enhancement/restoration of short hydroperiod wetlands.

[8] For this Key, the Service requires an analysis of foraging prey base losses and enhancements from the proposed action as shown in the examples in Enclosure 3 for projects with greater than 2.02 hectares (5 acres) of wetland impacts. For projects with less than 2.02 hectares (5 acres) of wetland impacts, an individual foraging prey base analysis is not necessary although type for type wetland compensation is still a requirement of the Key.

to, or higher than, that of impacted wetlands. See Enclosure 3 for a detailed discussion of the hydroperiod foraging values, an example, and further guidance[8] ……..*"NLAA[1]"*

Project does not satisfy these elements ……..……..……..*"may affect[4]"*

This Key does not apply to Comprehensive Everglades Restoration Plan projects, as they will require project-specific consultations with the Service.

Monitoring and Reporting Effects

For the Service to monitor cumulative effects, it is important for the Corps to monitor the number of permits and provide information to the Service regarding the number of permits issued where the effect determination was: "may affect, not likely to adversely affect." We request that the Corps send us an annual summary consisting of: project dates, Corps identification numbers, project acreages, project wetland acreages, and project locations in latitude and longitude in decimal degrees.

Thank you for your cooperation and effort in protecting federally listed species. If you have any questions, please contact Allen Webb at extension 246.

Sincerely yours,

Paul Souza
Field Supervisor
South Florida Ecological Services Office

Enclosures

cc: w/enclosures (electronic only)
Corps, Jacksonville, Florida (Stu Santos)
EPA, West Palm Beach, Florida (Richard Harvey)
FWC, Vero Beach, Florida (Joe Walsh)
Service, Jacksonville, Florida (Billy Brooks)

APPENDIX J
Agency Coordination

Johnson, Sarah

From: Wrublik, John <john_wrublik@fws.gov>
Sent: Thursday, April 3, 2025 7:30 AM
To: Barnett, Emily
Subject: Re: [EXTERNAL] 444634-1 SR 72 Widening from East of I-75 to Lorrainne Road - FBB and Caracara Effect Determination Questions

Emily, see my responses, below

1. The FBB and caracara surveys for this project were conducted in 2023. None were recorded/observed. If we are sending this NRE for concurrence shortly, will you accept these surveys and no effect determinations?

Yes, the surveys conducted in 2023 would be acceptable to the U.S. Fish and Wildlife Service (Service), and yes the no effect determinations for the FBB and caracara are acceptable to the Service (since the FBB and the caracara were not observed during the surveys, it would be logical to conclude that the species are not reasonably certain to occur on project site and not be affected by the project). Please remember when a "no effect" determination is made by the Federal action agency (i.e., FDOT on behalf of FHWA) for a Federally listed species, there is no need for the action agency to consult further with the Service on that species and concurrence from the Service is not required, nor does the Service currently have any mechanism in the regulations for Section 7 of the Endangered Species Act of 1973 to provide concurrence for a determination of no effect .

2. If not, would it be acceptable to have MANLAA for the FBB with the following logic? Since suitable nesting and foraging habitat is located in the project area, change the effect determination to MANLAA instead of no effect. You cannot follow the key with an expired survey, but the information regarding the negative survey would be included to support the MANLAA. We would then commit to updated surveys in design.

See my response to question 1

3. For caracara, based on the presence of suitable habitat and the negative survey, we would propose a MANLAA determination and a commitment to redo the surveys in design.

As stated above, a no effect determination for the caracara would be acceptable to the Service. Moreover, the Service supports and appreciates FDOT's commitment to repeat the caracara surveys in the design phase of the project.

If you have any other questions, please let me know.

John

John M. Wrublik
U.S. Fish and Wildlife Service
777 37th Street, Suite D-101

Vero Beach, Florida 32960
Office: (772) 226-8130
email: John_Wrublik@fws.gov

From: Barnett, Emily <Emily.Barnett@dot.state.fl.us>
Sent: Wednesday, April 2, 2025 4:23 PM
To: Wrublik, John <john_wrublik@fws.gov>
Subject: [EXTERNAL] 444634-1 SR 72 Widening from East of I-75 to Lorrainne Road - FBB and Caracara Effect Determination Questions

Good afternoon, John,

I was nice speaking with you today. I had questions about another project that came up that I was hoping to briefly ask you about, specifically for the write-up of the 444634-1 SR 72 (from I-75 to Lorrainne Road) NRE before we send it your way. I have attached the meeting notes from the methodology meeting that was held with you/USFWS, I was not in attendance, but others from FDOT were. I did not want to ask you to look through all the data from the surveys now, especially considering the NRE should be coming shortly, but if that is at all helpful with this coordination, I would be more than happy to send you any additional documentation you need to assist in answering the questions below.

1. The FBB and caracara surveys for this project were conducted in 2023. None were recorded/observed. If we are sending this NRE for concurrence shortly, will you accept these surveys and no effect determinations?
2. If not, would it be acceptable to have MANLAA for the FBB with the following logic? Since suitable nesting and foraging habitat is located in the project area, change the effect determination to MANLAA instead of no effect. You cannot follow the key with an expired survey, but the information regarding the negative survey would be included to support the MANLAA. We would then commit to updated surveys in design.
3. For caracara, based on the presence of suitable habitat and the negative survey, we would propose a MANLAA determination and a commitment to redo the surveys in design.

Please let me know if you need any further information!

Thank you,

Emily Barnett
Environmental Project Manager
Florida Department of Transportation, District One
801 North Broadway Avenue
Bartow, Florida 33830
(863) 519-2805
Emily.Barnett@dot.state.fl.us

FINAL

USFWS Species Surveys Discussion

SUBJECT:	Clark Road (SR 72) PD&E Study, from east of I-75 to Lorraine Road FPID No. 444634-1-22-01; Contract No. CAI05; ETDM 14441; Sarasota County
MEETING DATE:	Tuesday 11/08/2022
MEETING TIME:	11:00 AM – 11:15 AM
LOCATION:	TEAMS Meeting (click link in meeting invite)

1) Introductions

2) Project Overview
   a) Project Limits from east of I-75 to Lorraine Road, approximately 3 miles
   b) Scope of work includes widening from 2 to 4 lanes with a closed drainage system and ponds
   c) Need is driven by increasing traffic volumes resulting from ongoing residential development

3) Natural Environment
   a) ETDM #14441, Moderate degree of effect for protected species and habitat
   b) Species surveys in scope:
      i) Florida Bonneted Bat
      ii) Caracara
   c) Survey methodology
      i) Five (5) FBB Stations proposed. ***John Wrublik: Seems acceptable.***
      ii) One (1) Caracara station proposed. ***JW: Seems acceptable based on field conditions.***
   d) Status of the Tricolored bat. ***JW: Nothing is set in stone yet. If it does get listed, we would have to follow back up regarding survey guidance.***

4) Next Steps
   a) Species surveys early 2023
   b) Public Meeting March 2023
   c) Draft Natural Resource Evaluation Report Summer 2023

5) New Action Items - ***None***

USFWS Species Surveys Discussion

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FPID No. 444634-1-22-01; Contract No. CAI05; ETDM 14441; Sarasota County

MEETING DATE: Tuesday 11/08/2022

MEETING TIME: 11:00 AM – 11:15 AM

LOCATION: TEAMS Meeting (click link in meeting invite)

Name	Initial	Organization	E-mail
Cris Schooley	***Online***	Kimley-Horn	Cris.Schooley@kimley-horn.com
Jeffrey James	***Online***	FDOT	Jeffrey.James@dot.state.fl.us
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Sarah Johnson	***Online***	Kimley-Horn	Sarah.Johnson@kimley-horn.com
John Wrublik	***Online***	USFWS	John_wrublik@fws.gov