

APPENDIX K

Florida Scrub-Jay Survey Technical Memorandum

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
TECHNICAL REPORT COVERSHEET

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ENVIRONMENTAL
MANAGEMENT
08/22

Florida Scrub-Jay Survey Technical Memorandum

Florida Department of Transportation

District 1

SR 70 Project Development and Environment Study

Limits of Project: from Jefferson Avenue to County Road 29

Highlands County, Florida

Financial Management Number: 414506-1-22-01

ETDM Number: 14364, 14518

Date: January 29, 2024

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.

SR 70 PROJECT DEVELOPMENT AND ENVIRONMENT STUDY FROM JEFFERSON AVENUE TO COUNTY ROAD 29 FPID NO. 414506-1-22-01

Florida Scrub-Jay Survey Technical Memorandum

**Prepared for
Florida Department of Transportation
District One**

**January 2024
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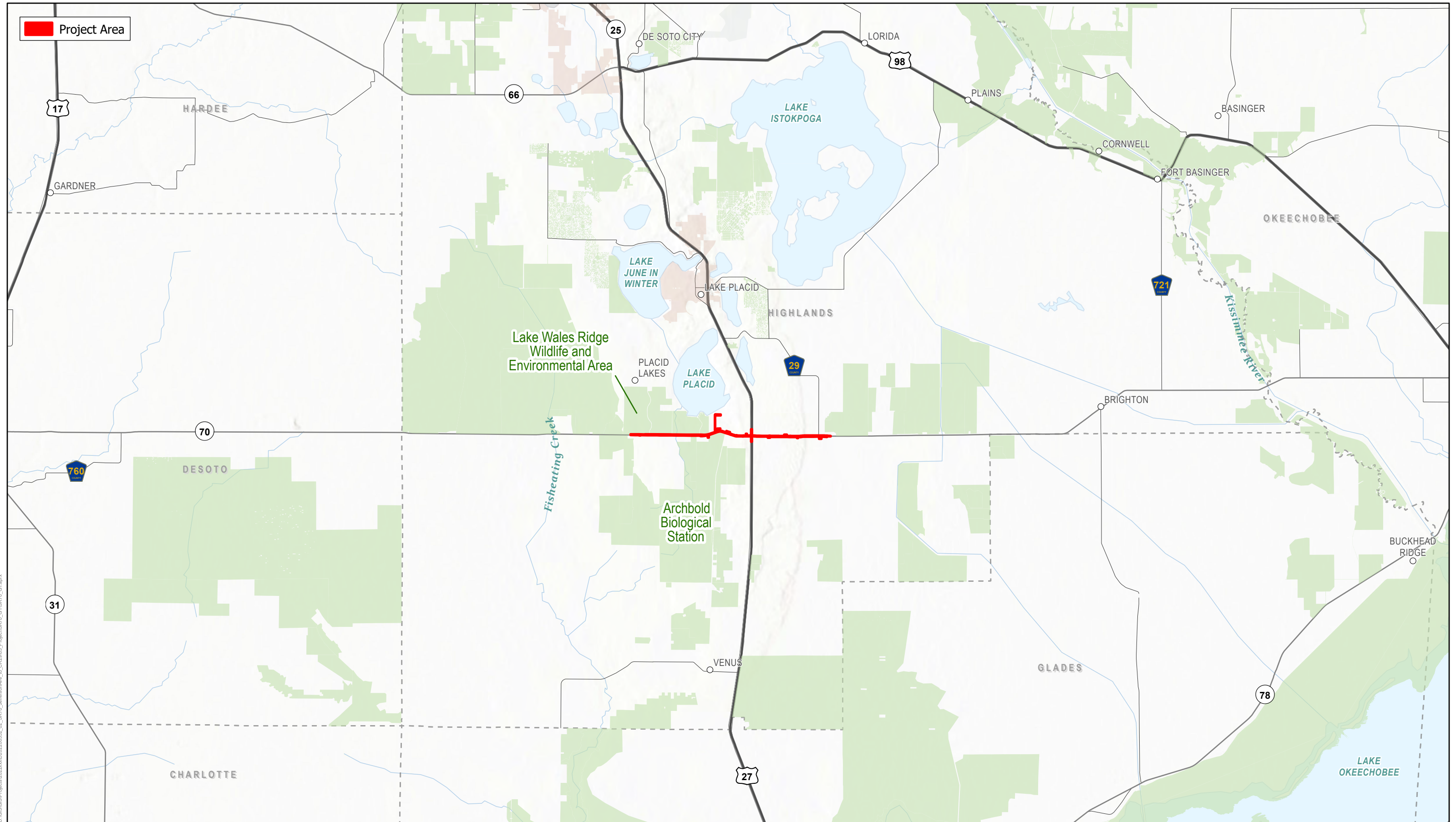
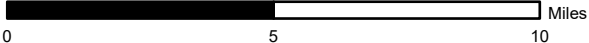


Figure 1 - Project Location

FPID #: 414506-1-22-01
SR 70 PD&E Study, from Jefferson Avenue to CR 29
Highlands County, Florida



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Data Source: ESA, ESRI, FDOT





SR 70 Project Development & Environment Study from Jefferson Avenue to CR 29

Florida Scrub-Jay Survey Technical Memorandum

Introduction

The Florida Department of Transportation (FDOT) District One is conducting a Project Development and Environment (PD&E) Study for the SR 70 roadway improvement project, from Jefferson Avenue to County Road (CR) 29, located within Highlands County, Florida (**Figure 1**). The proposed improvements will widen SR 70 from a two-lane undivided facility to a four-lane divided roadway. The project is approximately 7.1 miles in length. The project area is located within the U.S. Fish and Wildlife Service (USFWS) Consultation Area (CA) for the Florida scrub-jay (*Aphelocoma coerulescens*). The Florida Natural Area Inventory (FNAI), Florida Fish and Wildlife Conservation Commission (FWC), and Archbold Biological Station (ABS) have documented Florida scrub-jays (scrub-jay) within segments of the proposed project area, and suitable scrub habitat exists throughout much of the project area (**Figure 2**).

In an effort to gather information needed to determine the potential effects the proposed project may have on the scrub-jay, environmental scientists conducted scrub-jay surveys throughout the central and eastern segments of the project area during the months of March through May 2023, in accordance with the *USFWS Florida Scrub-Jay Survey Guidelines* (USFWS 2007). For the purposes of this memorandum, the proposed right-of-way (ROW) for the Recommended Alternative was used for the project boundary.

The western segment of the project area falls within the Lake Wales Ridge Wildlife and Environmental Area (LWRWEA) - Lake Placid Scrub and McJunckin Tract management areas. These areas are managed by FWC and ABS. The western segment of the project area has been surveyed for scrub-jays on a yearly basis by ABS and FWC personnel as part of a joint research project. Rather than resurvey these areas, environmental scientists utilized the most recent survey data within the LWRWEA – Lake Placid Scrub and McJunckin Tract as well as ABS, collected by agency personnel, to determine the potential effects the proposed project may have on the scrub-jay.

Notably, the FDOT conducted scrub-jay surveys in the spring of 2018, during the initial phases of the project. The *SR 70 PD&E Florida Scrub-Jay Survey Technical Memorandum* (October 2019) is included as **Appendix A**. Since the acceptable timeframe

for the 2018 surveys had passed, additional surveys in the 2023 scrub-jay season were deemed necessary as the PD&E study has progressed. Additionally, surveys conducted by ABS during the spring 2024 season have been incorporated into this report.

Species and Habitat Description

The scrub-jay is a blue and gray bird about the size of a blue jay. Scrub-jays have blue wings, head, and tail, and gray back and underparts, and a whitish forehead and neck. Unlike blue jays, this species does not have black markings or a crest. The entire project area is located within the USFWS Florida scrub-jay CA. Optimal scrub-jay habitat consists of low growing, scattered scrub canopy species with patches of bare sandy soil such as those found in sand pine scrub, xeric oak scrub, scrubby flatwoods, and scrubby coastal strand habitats. In areas where these types of habitats are unavailable, scrub-jays may be found in less optimal habitats such as pine flatwoods with scattered oaks or citrus orchards.

Suitable habitats for the scrub-jay are not only the more “classic” xeric oak scrub, scrubby pine flatwoods, scrubby coastal strand, and sand pine scrub, but also include: improved, unimproved, and woodland pastures (Florida Land Use, Cover and Forms Classification System (FLUCFCS) 211, 212, 213); citrus groves (FLUCFCS 221); rangeland (FLUCFCS 310-330); pine flatwoods (FLUCFCS 441); longleaf pine xeric oak (FLUCFCS 412); sand pine (FLUCFCS 413); sand pine plantations (FLUCFCS 4411); forest regeneration areas (FLUCFCS 443); sand other than beaches (FLUCFCS 720); disturbed rural land in transition without positive indicators of intended activity (FLUCFCS 741); and disturbed burned areas (FLUCFCS 745). The presence of scrub oaks, no matter how sparsely distributed, is a key indicator of “scrub” habitat. Fitzpatrick et al. (1991) defined three classes of scrub-jay habitat:

Type I – any upland plant community in which percent cover of the substrate by scrub oak species is 15 percent or more.

Type II – any plant community, not meeting the definition of Type I habitat, in which one or more scrub oak species is represented.

Type III – any upland or seasonally dry wetland within 400 meters (m)/0.25 miles (mi) of any area designated as Type I or II habitats.

Scrub-jays are extremely habitat-specific, sedentary, and territorial. They form family groups, and fledglings remain with their parents in their natal territory as helpers. Helpers participate in sentinel duties (McGowan and Woolfenden 1989), territorial defense, predator-mobbing, and the feeding of both nestlings (Stallcup and Woolfenden 1978) and fledglings. In central Florida, scrub-jays range from southwestern Clay through Putnam and Marion counties, south through Polk, Highlands, and Glades counties. Territory averages nine to ten (10) hectares (ha), with a minimum size of about five ha. In suitable

habitat, fewer than five percent of scrub-jays disperse more than eight kilometers (km) (Fitzpatrick et al. 1994b).

The distribution and status of the scrub-jay across its entire range was updated during 1992 and 1993 (Fitzpatrick et al. 1994b). Based upon that survey, the overall Florida population of scrub-jays was divided into five sub-regions, corresponding to the major sand deposits located on the peninsula. Three of these sub-regions are considered core populations because they contain well over half of the state's remaining scrub-jays. These population cores occur at Merritt Island/Cape Canaveral Complex, Ocala National Forest, and on the southern Lake Wales Ridge, and are respectively named the Atlantic Coast Subregion, the Ocala Subregion, and the Lake Wales Ridge Subregion (Fitzpatrick et al. 1994a).

Xeric oak scrub on the Lake Wales Ridge is predominantly comprised of four species of stunted, low-growing oaks: sand live oak (*Quercus geminata*), Chapman oak, (*Q. chapmanii*), myrtle oak, (*Q. myrtifolia*), and scrub oak, (*Q. inopina*) (Myers 1990). In optimal habitat for scrub-jays, these oak species are one to three meters high, interspersed with 10 to 50 percent unvegetated sandy openings, and a sand pine (*Pinus clausa*) canopy of less than 20 percent (Woolfenden and Fitzpatrick 1990). Trees and dense herbaceous vegetation are rare. Other vegetation noted along with the oaks includes saw palmetto (*Serenoa repens*) and scrub palmetto (*Sabal etonia*), as well as woody shrubs such as Florida rosemary (*Ceratiola ericoides*) and rusty lyonia (*Lyonia ferruginea*).

The project is located within the southern Lake Wales Ridge Subregion discussed above. According to the 1992 and 1993 statewide Florida scrub-jay surveys, six scrub-jay observations were documented within the project area. Data from the 1992-1993 statewide survey and data from ABS and LWRWEA collected from the years 1995-2024 has documented a total of 1385 scrub-jay observations within a one mile buffer of the project area. The 2018 scrub-jay surveys documented individual scrub-jays and family groups within the project area, and the results of those surveys are included in **Appendix A**. Current ABS and LWRWEA data are summarized in subsequent sections of this technical memorandum.

Status

The scrub-jay is federally designated as a threatened species by the USFWS and protected by the Endangered Species Act of 1973 (ESA), as amended (87 Stat. 884; 16 U.S.C. 1531 et seq.) on June 3, 1987 (52 FR 20715 20719). Also, the FWC currently lists the scrub-jay as threatened.

Continuing loss, fragmentation, and degradation of scrub habitat has resulted in a decline of greater than 90 percent of the original pre-settlement population of scrub-jays. A 1992 range-wide estimate gives an overall population of approximately 10,000 birds. The largest populations are found on federal lands (Merritt Island National Wildlife Refuge and Ocala National Forest) but are declining. Land management practices on these lands are

of concern. Smaller populations are found scattered along Lake Wales Ridge in Polk and Highlands Counties, with a major protected population at Archbold Biological Station. Cars and cats take their toll on scrub-jays in developed areas. Scrub-jays are also susceptible to population crashes because of catastrophic fires or disease, so protection of additional secure populations is essential.

Methodology

The following available existing data related to the project site and its natural environmental features was collected and reviewed:

- *SR 70 PD&E Florida Scrub-Jay Survey Technical Memorandum* (October 2019);
- 2023 Highlands County State of Florida true-color world imagery from Environmental Systems Research Institute (ESRI)/FDOT (1/9/2023);
- United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Soil Survey Geographic (Ssurgo) Database for Florida – October 2021, 2017 NRCS *Soil Survey of Highlands County*;
- 2019 USFWS National Wetland Inventory (NWI) data;
- FDOT FLUCFCS, Third edition (1999);
- 2017-2019 Florida Geographic Data Library (FGDL) South Florida Water Management District (SFWMD) FLUCFCS; and
- 2020 FGDL Southwest Florida Water Management District (SWFWMD) FLUCFCS;
- 2021 FGDL Land Use and Cover by Water Management District in Florida 2014-2019
- FNAI element occurrence records and protected resources data; and
- FWC wildlife observation database and protected species occurrence records.

Based on this data, and the documented scrub-jay sightings in the vicinity, it was determined that scrub-jay surveys should be conducted throughout the central and eastern segments of the corridor as well as the off-site pond locations.

In 2018, scrub-jay surveys were performed using a total of 66 playback stations within suitable habitat along both sides of SR 70. These locations were reviewed in the field prior to the current survey and six of these stations (26, 27, 32, 33, 34, and 61) were determined to be unsuitable scrub-jay habitat or were no longer within the vicinity of the project and were removed. In March 2023, prior to the start of surveys, four (4) additional stations (9,

10, 11, and 12) were determined unsuitable due to the current intersection improvement project at the SR 70/US 27 intersection.

The remaining 56 call stations were identified as suitable scrub habitat for scrub-jays and are presented in **Appendix B**. Existing land use and habitats within the project area were classified using FLUCFCS (FDOT 1999). Land uses and habitat types within the project area included urban and built-up (FLUCFCS 110, 118, 130, 140, 150, and 190), agriculture (FLUCFCS 211, 212, 213, 220, 221, 240, 260, and 261), rangeland (FLUCFCS 320 and 330), upland forests (FLUCFCS 422 and 434), water (FLUCFCS 530), wetlands (FLUCFCS 615, 617, 621, 630, 640, 641, 643, 653), and transportation, communication, and utilities (FLUCFCS 810, 820, 830).

Surveys conducted by project scientists began approximately 1.2 miles east of the SR 70/Placid View Drive intersection and extended east to the project's eastern terminus.

To determine presence or absence of scrub-jays, scientists conducted playback surveys at each sampling station using recorded scrub-jay calls on five days in March (March 22, 23, 28, 29, and 30), seven days in April (April 4, 5, 6, 18, 20, 21, and 26), and three days in May (May 3, 4, and 23) of the 2023 survey season.

Recorded calls were played through a portable speaker once daily for a total of at least five days at each survey station. Calls were played for at least one minute in all four cardinal directions at each station, pausing for a minimum of thirty (30) seconds between calls. Representative photographs taken in each cardinal direction at each station are presented in **Appendix C**.

Weather conditions, start times, end times, the number of scrub-jays observed, and general comments during each of the separate survey events at each station are included in survey data sheets included in **Appendix D**.

Per the USFWS scrub-jay guidelines (USFWS 2007), playback survey events were conducted on calm, clear days starting approximately one hour after sunrise and terminating before midday heat. Surveys were not conducted if winds higher than eight miles per hour (mph) were encountered, in mist or fog, or during rain.

ABS and LWRWEA scrub-jay survey data from survey seasons 2022-2024 was used to support this technical memorandum. Survey locations relevant to the project area include ABS, LWRWEA - Lake Placid Scrub, and LWRWEA - McJunkin Tract. Standard protocols were adhered to during scrub-jay surveys and territory establishment by ABS and FWC personnel. The ABS/LWRWEA boundaries began approximately 1.2 miles east of the SR 70/Placid View Drive intersection and extend west beyond the SR 70 project area. The survey results are presented in **Appendix D**.

Results

Florida Scrub-Jay Suitable Habitat Results

Within the project area there are 168.08 acres of suitable scrub-jay habitat. The majority of suitable habitat consists of shrub and brushland (FLUCFCS 320) and citrus groves (FLUCFCS 221). These habitat types make up more than 59 percent of the available suitable scrub-jay habitat within the project area. **Table 1** summarizes the suitable habitat types and acres within the project area.

TABLE 1
FLORIDA SCRUB-JAY SUITABLE HABITAT WITHIN THE PROJECT BOUNDARY

FLUCFCS Code	Florida Scrub-Jay Habitat	Area (acres)
211	Improved Pastures	28.30
212	Unimproved Pastures	7.37
213	Woodland Pastures	2.13
220	Tree Crops	49.69
221	Citrus Groves	10.86
240	Nurseries and Vineyards	4.03
260	Other Open Lands (Rural)	11.07
261	Fallow Crop Land	1.05
320	Shrub and Brushland	38.41
330	Mixed Rangeland	4.87
422	Brazilian Pepper	3.59
434	Hardwood – Coniferous Mixed	6.71
Total		168.08

Sources:
2017-2019 FGD L SFWMD FLUCFCS
2020 FGD L SFWMD FLUCFCS
2021 FDGL FLUCCS by WMD

FDOT Florida Scrub-Jay Family Group Results

Of the 56 stations that were surveyed by project scientists in spring 2023, 20 stations were documented with scrub-jay sightings on 50 separate occasions. The number of scrub-jay observations during all events totaled 144 individuals. However, because groups of scrub-jays frequently followed project scientists from station to station during playback events, individuals may have been counted multiple times. It is estimated that there was a total of 19 scrub-jay individuals (18 adults and one juvenile) observed in total across all survey events. Based on surveys, the 19 scrub-jay individuals make up five separate scrub-jay family groups (Territories A, B, C, D, and E). Scrub-jay habitat Types I, II, and III were evaluated within the occupied habitat of the five territories within the project area; the extent of each territory and habitat type outside of the project area was not determined. The figure presented in **Appendix B** summarizes the results of the scrub-jay surveys and includes survey stations, observations by survey round, and territory boundaries.

Table 2 summarizes the locations and dates of scrub-jay observations by territory and identifies the total estimated number of scrub-jays associated with each territory. The number of individual scrub-jays, which were observed and counted at previously visited stations during the same monitoring event, are also indicated in **Table 2**.

TABLE 2
FLORIDA SCRUB-JAY OBSERVATIONS

Round # / Date	Playback Station	Number of Adults Observed	Number of Juveniles Observed	Total Number of Scrub-Jays Observed
Territory A¹				
Round 1 - 3/23/2023	1	3	0	3
Round 4 - 4/4/2023	2	Unk	Unk	Unk
TE - 4/26/2023	1	3	0	3
Subtotal Territory A		6	0	6
Subtotal – Estimated Individuals Associated with Territory A¹		6	0	6
Territory B				
Round 4 - 4/4/2023	13	2	0	2
Round 5 - 5/3/2023	13	3	0	3
TE - 5/3/2023	14	3*	0	3*
Subtotal Territory B		8 (3*)	0	8 (3*)
Subtotal – Estimated Individuals Associated with Territory B²		5	0	5
Territory C				
Round 1 - 3/23/2023	48	1	0	1
TE - 4/21/2023	40	4	0	4 ³
Round 4 / TE - 5/3/2023	43	4	0	4
Round 4 / TE - 5/3/2023	44	4*	0	4*
Round 4 / TE - 5/3/2023	45	4*	0	4*
Round 4 / TE - 5/3/2023	46	4*	0	4*
Round 5 / TE - 5/3/2023	47	4*	0	4*
Round 5 - 5/4/2023	41	3	0	3
TE - 5/23/2023	40	3	0	3
TE - 5/23/2023	41	6 (3*)	0	6 (3*)
TE - 5/23/2023	42	6*	0	6*
TE - 5/23/2023	43	5*	0	5*
TE - 5/23/2023	44	3*	0	3*
TE - 5/23/2023	45	2*	0	2*
Subtotal Territory C		53 (35*)	0	53 (35*)

Round # / Date	Playback Station	Number of Adults Observed	Number of Juveniles Observed	Total Number of Scrub-Jays Observed
Subtotal – Estimated Individuals Associated with Territory C²		18		18
Territory D				
Round 1 - 3/22/2023	38	3	0	3
Round 1 - 3/22/2023	39	3*	0	3*
Round 2 - 3/28/2023	38	3	0	3
Round 4 - 3/30/2023	38	3	0	3
Round 5 - 3/30/2023	39	2*	0	2*
Round 3 - 4/4/2023	22	3	0	3
Round 5 - 4/5/2023	38	2	0	2
TE - 4/6/2023	39	2	0	2
TE - 4/21/2023	40	1	0	1 ⁴
TE - 4/21/2023	39	2 (1*)	0	2 (1*)
TE - 4/21/2023	38	3 (2*)	0	3 (2*)
TE - 4/21/2023	37	4 (3*)	0	4 (3*) ⁵
Subtotal Territory D		31 (11*)	0	31 (11*)
Subtotal – Estimated Individuals Associated with Territory D²		20	0	20
Territory E				
Round 1 - 3/22/2023	36	3	0	3
Round 2 - 3/28/2023	36	3	0	3
Round 2 - 3/28/2023	37	3*	0	3*
Round 3 - 3/29/2023	35	2	1	3
Round 4 - 3/30/2023	35	3	0	3
Round 4 - 3/30/2023	36	2*	0	2*
Round 3 - 4/4/2023	24	2	0	2
Round 5 - 4/5/2023	35	Unk	Unk	Unk
TE - 4/6/2023	24	2	0	2
TE - 4/6/2023	36	2*	0	2*
TE - 4/20/2023	35	3	0	3
TE - 4/20/2023	36	3*	0	3*
TE - 4/21/2023	36	3	0	3
TE - 4/21/2023	37	1*	0	1* ⁶
Round 5 / TE - 5/3/2023	24	3	0	3
Incidental Observation (Survey Round 5 at Station 25) - 5/3/2023	35	1	0	1
Subtotal Territory E		36 (11*)	1	37 (11*)
Subtotal - Estimated Individuals Associated with Territory E²		25	1	26

Round # / Date	Playback Station	Number of Adults Observed	Number of Juveniles Observed	Total Number of Scrub-Jays Observed
Total Scrub-Jay Observations		134 (60*)	1	135 (60*)
Total Estimated Distinct Individual ¹		74	1	75

NOTES:

TE = Territory Establishment

*Individuals counted at a previous station within territory during that survey event.

¹FSJ surveys for Territory A were conducted by ESA scientists in spring 2023. New survey data from Archbold Biological Station for the April 2024 survey observed FSJ territories within the boundaries of Territory A. The ABS results are the most up to date and will be used for the results of this report.

²Subtotal Estimated Individuals Associated with Territory and Total Estimated Distinct Individuals includes total of distinct individuals observed across all events.

³During Territory Establishment on April 21, 2023, scientists observed five scrub-jays (SJs), however, one SJ was being dive bombed and it was deducted that this SJ was not part of the family unit in Territory C. Station 40 appears to be the boundary line between Territory C and Territory D. Therefore, observation of the one SJ was not counted towards estimated individual count for Territory C.

⁴Same as Note 2. One SJ counted for Territory D.

⁵During Territory Establishment on April 21, 2023, scientists observed five SJs, however, one SJ approached from the E and the other came from the NW. Scientists deducted that the driveway at Bear Road, just west of Station 37 is the boundary line between Territory D and Territory E. The four FSJ observations were therefore included in the count for Territory D and the one SJ was included in observation count for Territory E.

⁶See Note 4 for reasoning for observation count.

Scrub-jay observations within each territory are detailed below and survey data is summarized in **Appendix D**:

- Territory A – Three (3) adult scrub-jays were observed on March 23 (Round 1); on April 4 (Round 2) an unknown number of scrub-jays were heard calling northwest of Station 2; on April 26 (Territory Establishment), scientists mapped the boundary of Territory A and the same three (3) adult scrub-jays (one adult with a double silver band on its left leg) were observed. Results of the ABS FSJ surveys from April 2024 established FSJ territories (LP17W, A-BN, and NURS) within the footprint and adjacent to Territory A. The ABS results are the most up to date and will be used in lieu of spring 2023 surveys conducted for Territory A.
- Territory B – Two (2) scrub-jays were observed on April 4 (Round 4); three (3) adult scrub-jays were observed on May 3 (Round 5 and Territory Establishment).
- Territory C – One (1) adult scrub-jay was observed on March 23 (Round 1); four (4) adult scrub-jays were observed on April 21 (Territory Establishment); four (4) scrub-jays were observed on May 3 (Round 4, 5, and Territory Establishment); three (3) scrub-jays were observed on May 4 (Round 5); six (6) scrub-jays were observed on May 23 (Territory Establishment).
- Territory D – Three (3) scrub-jays were observed on March 22, 28, 30, and April 4 (Rounds 1, 2, 4, and 5); two (2) scrub-jays were observed on April 5 and 6 (Rounds 3 and 5); four (4) scrub-jays were observed on April 21 (Territory Establishment).

- Territory E – Three (3) scrub-jays were observed on March 22, 28, 29, and 30 (Rounds 1-4); two (2) scrub-jays were observed on April 4 (Round 3); on April 5 (Round 5), Florida scrub-jay calls were played, but a swallow-tail kite was observed flying overhead and surveys were stopped after two (2) minutes – an unknown number of scrub-jays were heard calling in vicinity; two (2) scrub-jays were heard calling on April 6 (Territory Establishment); three (3) scrub-jays were observed on April 20 (Territory Establishment); four (4) scrub-jays were observed on April 21 (Territory Establishment); three (3) scrub-jays were observed on May 3 (Round 5 and Territory Establishment).

Each territory is depicted in **Appendix B**, **Table 3** summarizes occupied scrub-jay habitats within the project area and each scrub-jay territory is discussed below.

TABLE 3
FDOT FLORIDA SCRUB-JAY OCCUPIED TERRITORY WITHIN THE PROJECT BOUNDARY

Territory	Type I Habitat Acreage	Type II Habitat Acreage	Type III Habitat Acreage	Total Occupied Habitat
B	1.61	-	3.03	4.64
C	3.78	-	9.72	13.50
D	-	-	4.72	4.72
E	-	-	7.66	7.66
Total	5.39	-	25.13	30.52

Territory A

Territory A was delineated within the project boundary based on the results of field reviews. The limits of Territory A encompass Stations 1 and 2, located south of Monroe Road in the north and south ROW areas of SR 70 (Appendix B, Sheet 3 of 9). Based on field observations during three survey events on March 23, April 4, and April 26, project biologists suspect that three adult scrub-jays and no juveniles were associated with Territory A during the 2023 survey season (Table 2).

The proposed project is anticipated to impact the entirety of Territory A within the project boundary, which totals 3.69 acres of scrub-jay habitat. Scrub-jay habitat within Territory A is comprised of 1.60 acres of Type II and 2.09 acres of Type III habitat. Field notes and observations within Territory A are summarized below and are included in **Appendix D**.

- On March 23, 2023, three scrub-jays were observed in the citrus groves at Station 1 and flew north across SR 70.
- One April 4, 2023, an unknown number of scrub-jays were heard calling at a location northwest of Station 2.
- On April 26, scientists mapped the territory of three scrub-jays (one with double silver band on left leg) using some of the grove and the scrub habitat on the north

side of SR 70. Three scrub-jays were confirmed at Station 1 but did not follow to Station 2 on south side of SR 70, while scientists played calls.

- Habitat types present at Stations 1 and 2 consist of citrus groves, open sand patches, and ROW areas exhibit a variety of maintained herbs and forbs.
- ABS survey data results from April 2024 defined Territory LP17W, A-BN, and NURS within and adjacent to Territory A. These new territory boundaries will be used since they are the most up to date.

Territory B

Territory B was delineated within the project boundary based on the results of field reviews. The limits of Territory B encompass Stations 13 and 14, located south of Ekhoﬀ Lane in the south ROW areas of SR 70 (Appendix B, Sheet 6 of 9). A stormwater pond is proposed in the south ROW, and scrub-jay surveys extended south to include this area. Based on field observations during two survey events on April 4 and May 3, project biologists suspect that there were three adult scrub-jays and no juveniles associated with Territory B during the 2023 survey season (Table 2).

The proposed project is anticipated to impact the entirety of Territory B within the project boundary, which totals 4.64 acres of scrub-jay habitat. Scrub-jay habitat within Territory B is comprised of 1.61 acres of Type I and 3.03 acres of Type III habitat. Field notes and observations within Territory B are summarized below and are included in Appendix D.

- On April 4, 2023, two scrub-jays approached Station 13 from the south-southwest direction.
- On May 3, 2023, scientists performed surveys and established territory boundary limits for Territory B. Three scrub-jays approached Station 13 from the south. The scrub-jays followed calls along the south ROW of SR 70. The western territory limits were located just north of the stormwater pond west of Station 13, and the eastern territory limits were observed where the open xeric scrub habitat transitions to a pine flatwoods habitat with a tall pine canopy.
- Habitat types present at Stations 13 and 14 consist of shrub and brushland and xeric oak scrub habitat. Dominant vegetation includes mixed oaks, sand pine, and saw palmetto.

Territory C

The boundaries of Territory C were delineated within the project area based on the results of field reviews. The limits of Territory C encompass Stations 40-48 and the natural vegetation in the south ROW, located from just west of Highlands Boulevard to west of Dade Avenue in the north and south ROW areas of SR 70 (Appendix B, Sheet 7 of 9). Based on field observations during five (5) survey events on March 23, April 21, May 3,

May 4, and May 23, project biologists suspect that six (6) scrub-jays were associated with Territory C during the 2023 survey season (Table 2).

The proposed project is anticipated to impact the entirety of Territory C within the project boundary, which totals 13.50 acres of scrub-jay habitat. Scrub-jay habitat within Territory C is comprised of 3.78 acres of Type I and 9.72 acres of Type III habitat. Field notes and observations within Territory C are summarized below and are included in **Appendix D**.

- On March 23, 2023, one adult scrub-jay approached Station 48 from the west-northwest and alighted on an oak tree approximately 50 feet north of the station, then flew north.
- On April 21, 2023, scientists performed surveys to establish territory boundaries of scrub-jay families in the north ROW. Several scrub-jays were observed throughout the stretch of Stations 35- 41, but it was hypothesized that Territory C consisted of the scrub areas that included Station 40 and 41 and extended to the north beyond the project area limits. During surveys, four scrub-jays approached from the northwest. One additional scrub-jay approached from the northeast, but the four other scrub-jays exhibited aggressive behavior towards this individual. The one scrub-jay kept a distance and eventually flew back to the east. It was determined that Station 40 marks the eastern boundary line between Territory C and Territory D. Scientists continued to the west to Station 41, but the four scrub-jays did not follow. At this time, scientists hypothesized that Station 41 was the western territory limits for this group of scrub-jays.
- On May 3, 2023, scientists performed scrub-jay surveys at call stations along the south ROW of SR 70 (near Station 20). Scientists parked in the south ROW near the line of natural vegetation and observed three scrub-jays north of SR 70, just east of Citrus Boulevard (in between Stations 42 and 43). Prior to this day, scrub-jays had not been observed at these stations during the 2023 surveys. Scientists played calls from the south ROW, but the scrub-jays did not cross SR 70 to the south. Scientists then traveled to Station 20 (in the citrus grove), played calls, but no scrub-jays were observed. When scientists returned to the truck, the same three scrub-jays were still in the same location (north of SR 70). Scientists drove towards Station 21 and parked in the ROW near the line of natural vegetation. The three scrub-jays followed but remained on the north side of SR 70 (at the approximate location of Station 41). Scientists played calls from the ROW, but the scrub-jays did not cross SR 70 to the south. Scientists then traveled to Station 21 (in the citrus grove), played calls, but no scrub-jays were observed. Scientists drove towards Station 22, but the three scrub-jays remained at Station 41.
- Scientists returned to the location where the three scrub-jays were initially observed (just east of Citrus Boulevard in between Stations 42 and 43) later in the day on May 3, 2023. Scientists played calls, and four scrub-jays approached from the east. At this time, scientists hypothesized, from earlier observations that day,

that Station 41 marked the eastern boundary of the territory, so they traveled west to map the limits. The same scrub-jays followed scientists to Station 47. There were several instances where the scrub-jays crossed SR 70 to the south and landed in the line of natural vegetation along the south ROW, as scientists traveled west. A hawk was observed circling overhead, so scientists stopped surveys at Station 47.

- On May 4, 2023, three scrub-jays approached from northeast of Station 41. One scrub-jay flew south across SR 70 and perched in an oak tree (the line of natural vegetation in the south ROW). Scientists noted that when they arrived at Station 41, another group of scrub-jays were heard calling in the citrus grove to the south of SR 70. Another group of scrub-jays were heard calling northeast of Station 41.
- On May 23, 2023, scientists returned to Territory C to finalize the western territory boundary. Scientists played calls at Station 40, and three scrub-jays approached from the northwest. Scientists traveled to Station 41, the same three scrub-jays approached, and three additional scrub-jays flew in from the west-northwest. Two of the new scrub-jays flew in close to the other three, while the one new scrub-jay kept a distance, approximately 20 feet north. The five scrub-jays appeared comfortable with each other, and no signs of aggression were observed. At one point the five scrub-jays were perched close together in an oak tree, overgrown with muscadine vines. They remained close together moving frequently to different branches on the same tree. At one point, two scrub-jays were perched together closely on a tree branch. A few moments later, a second pair exhibited similar behavior, perched close together on a different tree branch. Scientists traveled to Station 42, where the same six scrub-jays followed. Two scrub-jays crossed SR 70 to the south and landed in the line of natural vegetation along the ROW. Scientists traveled to Stations 43 and 44 and three scrub-jays followed from the east. At Station 45, two scrub-jays followed from the east. At Station 46, no scrub-jays were observed. Scientists played calls in the ROW area, south of Station 46, but no scrub-jays approached.
- Habitat types present at Stations 40-48 consist of sand live oak scrub ranging from 6-20 feet high, in various stations, with an oak scrub sub-canopy. Sand pine was observed in Station 41. Additional vegetation included scrub hickory (*Carya floridana*), saw palmetto, and gopher apple (*Geobalanus oblongifolius*). Various stations had scattered open patches dominated by spike moss (*Selaginella sp.*). A Brazilian-pepper (*Schinus terebinthifolia*) thicket was present at the edge of oak scrub/xeric hammock, near the ROW.

Territory D

Territory D was delineated within the project boundary based on the results of field reviews. The limits of Territory D encompass Station 22, the area just west of Station 37, and Stations 38 and 39, which are located just west of Dade Avenue to west of Bear Road in the north and south ROW areas of SR 70, which includes a portion of the citrus grove

south of SR 70 (Station 22) (Appendix B, Sheet 7 of 9). Based on field observations during seven survey events on March 22, 28, 30, April 4, 5, 6, and 21, project biologists suspect that four adult scrub-jays and no juveniles were associated with Territory D during the 2023 survey season (Table 2).

The proposed project is anticipated to impact the entirety of Territory D within the project boundary, which totals 4.72 acres of Type III scrub-jay habitat. Field notes and observations within Territory D are summarized below and are included in Appendix D.

- On March 22, 2023, one adult scrub-jay approached from the north, alighting on an oak tree approximately 100 feet east-northeast of Station 38. Additional calls were heard from the west, and eventually two scrub-jays approached from the west, in the vicinity of the sand pines. Surveys were also conducted at Station 39, where scientists heard scrub-jay calls from the east-northeast. Three adult scrub-jays approached from the east-northeast and landed approximately 30 feet to the northwest of Station 39, then flew overhead and landed approximately 20 feet east of the station.
- On March 28, 2023, three scrub-jays were observed flying north and south across SR 70 within Station 38.
- On March 30, 2023, three scrub-jays approached Station 38 from the north. Scientists moved to Station 39, and two scrub-jays approached from the north.
- On April 4, 2023, three scrub-jays were observed at Station 22.
- On April 5, 2023, one scrub-jay was heard calling, and one scrub-jay was observed at Station 38. The observed jay was then seen flying toward the direction of the calling jay.
- On April 6, 2023, scientists heard two scrub-jays calling approximately 100 yards due north of Station 39.
- On April 21, 2023, scientists returned to Territory D to establish boundary limits of the territory. At Station 40, four scrub-jays approached from the northwest. One additional scrub-jay approached from the northeast, but the four other scrub-jays exhibited aggressive behavior towards this individual. The one scrub-jay kept a distance and eventually flew back to the east. When scientists traveled east, the group of four scrub-jays flew northwest, while the one jay continued to follow observers east. It was determined that the eastern boundary line between Territory C and Territory D was just east of Station 40. Traveling east to Station 39, the same individual followed, and two additional scrub-jays flew in from the north. The three scrub-jays followed scientists east to just west of Station 37 and west of Bear Road, where they remained perched in a large oak tree. One scrub-jay stayed in the oak tree while the other two flew away in a north-northwest direction.

-
- Habitat types present at the area west of Station 37 and Station 38 consists predominantly of shrub and brushland with an open pasture area. A xeric oak scrub habitat was present at Station 39, dominant vegetation included mixed oaks and saw palmetto. A Brazilian-pepper thicket along the ROW was present throughout the Territory. Habitat at Station 22 consists predominantly of citrus grove.

Territory E

Territory E was delineated within the project boundary based on the results of field reviews. The limits of Territory E encompass Stations 24, 35, 36, and up to Station 37, located from west of the driveway at Bear Road to approximately 0.30 miles east of Bear Road in the north and south ROW areas of SR 70, including a portion of citrus grove south of SR 70 (Station 24) (Appendix B, Sheet 7 of 9). The eastern limits of the territory were defined as where the shrub and brushland habitat transitions to a forested wetland. Based on field observations during ten (10) survey events on March 22, 28, 29, 30, April 4, 5, 6, 20, 21, and May 3, project biologists suspect that two adult scrub-jays and one juvenile were associated with Territory E during the 2023 survey season (Table 2).

The proposed project is anticipated to impact the entirety of Territory E within the project boundary, which totals 7.66 acres of Type III scrub-jay habitat. Field notes and observations within Territory E are summarized below and are included in Appendix D.

- On March 22, 2023, three adult scrub-jays approached from the east-northeast. The jays exhibited aggressive behavior and stopped approximately 20 feet west of Station 36.
- On March 28, 2023, three scrub-jays were observed flying north and south across SR 70 within Stations 36-37.
- On March 29, 2023, two adults and one juvenile scrub-jay flew in from the north to Station 35.
- On March 30, 2023, three adults flew in from the northwest to Station 35. Scientists moved east to Station 36, and two of the jays followed from Station 35.
- On April 4, 2023, two scrub-jays approached Station 24 flying from the northeast south toward the station, crossing SR 70.
- On April 5, 2023, scrub-jays were heard calling in the vicinity of Station 35. A swallow-tail kite circled overhead, scientists stopped surveys, but still heard the scrub-jays calling. None were observed.
- On April 6, 2023, scientists played calls at Station 36 and heard two scrub-jays calling, south of SR 70.
- On April 20, 2023, scientists returned to Territory E to establish boundary limits for the territory. When calls were played at Station 35, two scrub-jays approached

from the north. Scientists confirmed an eastern boundary. They then traveled west, to Station 36, where three scrub-jays approached: one from the north, and two from the east. A swallow-tail kite was observed circling overhead, and scientists stopped surveying.

- On April 21, 2023, scientists returned to Station 36 to establish the western boundary of Territory E. Three scrub-jays approached from the north. The jays followed scientists until arriving at Station 37 (east of the Bear Road driveway), where another scrub-jay family (Territory D) approached from the northwest.
- On May 3, scientists played calls at Station 25 to establish the southern boundary limits of Territory E. No scrub-jays were present at Station 25. At Station 24, three scrub-jays approached scientists from the northeast, traveling south across SR 70. These jays followed scientists to the west in the citrus grove until just east of Station 23.
- Habitat types present at Stations 35-37 consist of residential areas and shrub and brushland habitat that abuts the existing ROW. Scattered sand live oak, myrtle oak, and Brazilian pepper with cleared disturbed groundcover were observed. A stand of eucalyptus trees (*Eucalyptus grandis*) is present at Station 36. The habitat at Station 24 consists of citrus grove.

Archbold Biological Station and Lake Wales Ridge Wildlife and Environmental Area Florida Scrub-Jay Family Group Results

Archbold Biological Station

The ABS April 2024 scrub-jay survey data identified a total of three scrub-jay groups (LP17W, A-BN, and NURS) within the project boundary. The territories LP17W and A-BN overlap the Lake Placid Scrub area scrub-jay group LP17 (discussed in the section below). ABS data documented 5 individuals in group LP17W, 2 individuals in group A-BN, and 6 individuals in group NURS.

ABS scrub-jay territory boundaries are presented in **Appendix E**. Scrub-jay Type I, II, and III habitats were subsequently mapped within the occupied habitat of the three ABS scrub-jay groups observed within the project boundary (**Table 4**).

TABLE 4
ARCHBOLD BIOLOGICAL STATION: FLORIDA SCRUB-JAY OCCUPIED TERRITORY WITHIN THE PROJECT BOUNDARY

Territory	Type I Habitat Acreage	Type II Habitat Acreage	Type III Habitat Acreage	Total Occupied Habitat
LP17W	5.94	-	-	5.94
A-BN	1.07	-	-	1.07
NURS	4.07	-	-	4.07
Total	11.08	-	-	11.08

Lake Wales Ridge Wildlife and Environmental Area

The LWRWEA is comprised of the Lake Placid Scrub (north of SR 70) and McJunkin Tract (south of SR 70) management areas.

The LWRWEA July 2023 survey data identified a total of nine scrub-jay groups within the Lake Placid Scrub management areas (LP4, LP5, LP7, LP8, LP12, LP13, LP14, LP16, and LP17) within the project boundary. These management areas represent burn units within the LWRWEA – Lake Placid Scrub. LWRWEA and FWC personnel do not delineate scrub-jay territories, but they do collect observation data and manage the scrub habitat. In July 2023, a total of 30 scrub-jay individuals were documented within these management areas. As noted above, ABS 2024 survey data identified two defined scrub-jay territories within burn unit LP17.

A total of 30 scrub-jay individuals were identified by LWRWEA and FWC personnel territories within the LWRWEA - Lake Placid Scrub management areas (LP4, LP5, LP7, LP8, LP12, LP13, LP14, LP16, and LP17) for the 2023 survey season.

Management unit boundaries and other observation data from LWRWEA are presented in **Appendix E**.

Scrub-jay Type I, II, and III habitats were subsequently mapped within the occupied habitat of the eight LWRWEA – Lake Placid Scrub management units observed within the project boundary (**Table 5**).

TABLE 5
LAKE WALES RIDGE WILDLIFE AND ENVIRONMENTAL AREA: FLORIDA SCRUB-JAY OCCUPIED TERRITORY
WITHIN THE PROJECT BOUNDARY

Territory	Type I Habitat Acreage	Type II Habitat Acreage	Type III Habitat Acreage	Total Occupied Habitat
LP4	2.42	-	-	2.42
LP5	5.16	-	1.82	6.98
LP7	4.58	-	3.05	7.63
LP8	2.52	-	0.81	3.33
LP12	1.40	-	1.31	2.71
LP13	4.05	-	-	4.05
LP14	1.81	-	-	1.81
LP16	3.69	-	-	3.69
Total	25.63	-	6.99	32.62

Summary of Results

The 2023-2024 scrub-jay surveys conducted by ABS, LWRWEA and FWC, and FDOT resulted in a total of 15 territories within the SR 70 corridor. Four family groups with 16

individuals were observed by FDOT. Three family groups with 13 individuals were observed by ABS. Eight management units with 30 scrub-jay individuals were documented by LWRWEA and FWC. Within the project boundary, there is 42.10 acres of Type I habitat and 32.12 acres of Type III habitat (**Table 6**). Occupied scrub-jay habitat within the project area totals 74.22 acres.

TABLE 6
TOTAL FLORIDA SCRUB-JAY OCCUPIED HABITAT WITHIN THE PROJECT BOUNDARY

Territory	Type I Habitat Acreage	Type II Habitat Acreage	Type III Habitat Acreage	Total Occupied Habitat
FDOT	5.39	-	25.13	30.52
ABS (LP17W, A-BN, NURS)	11.08	-	-	11.08
LWRWEA – Lake Placid Scrub Management Units (LP4, LP5, LP7, LP8, LP12, LP13, LP14, LP16)	25.63	-	6.99	32.62
Total	42.10	-	32.12	74.22

The potential impacts discussed in this technical memorandum were calculated using worst-case scenario estimates utilizing the latest available project concept at the time when the most recent survey was conducted. Due to this, the footprint shown in this memo differs slightly from the preferred alternative; however, the impacts presented are consistent with the impacts from the preferred alternative.

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Appendix A

SR 70 PD&E FLORIDA SCRUB-JAY SURVEY TECHNICAL MEMORANDUM (OCTOBER 2019)

SR 70 PD&E Florida Scrub-Jay Survey Technical Memorandum

**Florida Department of Transportation
District One**

**SR 70 Jefferson Avenue to CR 29
Project Development and Environment Study**

**From Jefferson Avenue to County Road 29
Roadway Improvement Project
Highlands County, Florida**

**Financial Project ID: 414506-1-22-01
Federal Aid Project No. TBD**

October 2019

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List of Attachments

Attachment A	Florida Scrub-jay FDOT Survey Stations and Results Maps
Attachment B	Florida Scrub-jay Station Photographs
Attachment C	Florida Scrub-jay Survey Datasheets
Attachment D	Florida Scrub-jay Archbold 2018 Survey Results Maps

1.0 INTRODUCTION

The proposed SR 70 from Jefferson Avenue to County Road 29 (CR 29) roadway improvement project falls within the U.S. Fish and Wildlife Service (USFWS) Consultation Area for the Florida scrub-jay (*Aphelocoma coerulescens*) (see **Figure 1-1 Project Location Map**). The Florida Natural Area Inventory (FNAI), the Florida Fish and Wildlife Conservation Commission (FWC), and Archbold Biological Station (Archbold) have documented the Florida scrub-jay within segments of the proposed project study area, and suitable scrub habitat exists throughout much of the project study area (see **Figure 1-2 Suitable Scrub-jay Habitat Map**).

In an effort to gather information needed to determine the potential effects the proposed project may have on the Florida scrub-jay, environmental scientists conducted Florida scrub-jay surveys throughout much of the central and eastern segments of the project study area in July, October, and November of 2018. For the purposes of this memorandum, the proposed right of way (ROW) for the Recommended Alternative (Alternative 2) was used for the project study area. The western segment of the project study area falls within the Lake Wales Ridge Wildlife and Environmental Area (LWRWEA) which is managed by the FWC. This segment of the project corridor has long been surveyed for scrub-jays on a yearly basis by Archbold as part of a joint research project with the FWC. Rather than resurvey these areas, environmental scientists utilized the survey data collected by Archbold for those areas located within the LWRWEA. All surveys were conducted in accordance with the USFWS Florida Scrub-jay Survey Guidelines (USFWS 2007).

2.0 METHODOLOGY

Prior to conducting surveys, a total of 66 playback stations were mapped within suitable habitat along both sides of SR 70. During the first survey event, six (6) of these stations (26, 27, 32, 33, 34 and 61) were determined to be unsuitable Florida scrub-jay habitat or were no longer within the vicinity of the project and were removed (see **Attachment A Florida Scrub-jay Survey and Results Map**). Existing land use and habitats within the project study area were classified using the Florida Land Use, Cover and Forms Classification System (FLUCFCS) (FDOT 1999). Habitat types surveyed included improved pastures (FLUCFCS 211), unimproved pastures (FLUCFCS 212), woodland pastures (FLUCFCS 213), citrus groves (FLUCFCS 221), shrub and brushland (FLUCFCS 320), pine flatwoods (FLUCFCS 411), xeric oak (FLUCFCS 421), oak-cabbage palm forest (FLUCFCS 427), and hardwood – conifer mixed (FLUCFCS 434).

Surveys conducted by FDOT environmental scientists began approximately 1.2 miles east of the SR 70/Placid View Drive intersection and extended to the project's eastern terminus. After coordinating with Archbold and the FWC, it was determined that Archbold 2018 survey data would represent the western segment of the SR 70 project study area. The Archbold boundary began approximately 1.2 miles east of the SR 70/Placid View Drive intersection and extended west beyond the SR 70 project study area.

To determine presence or absence of scrub-jays, environmental scientists familiar with native Florida fauna conducted playback surveys at each sampling station using recorded scrub-jay calls on seven (7) days in July, eight (8) days in October, and one (1) day in November, 2018.

Figure 1-1 Project Location Map

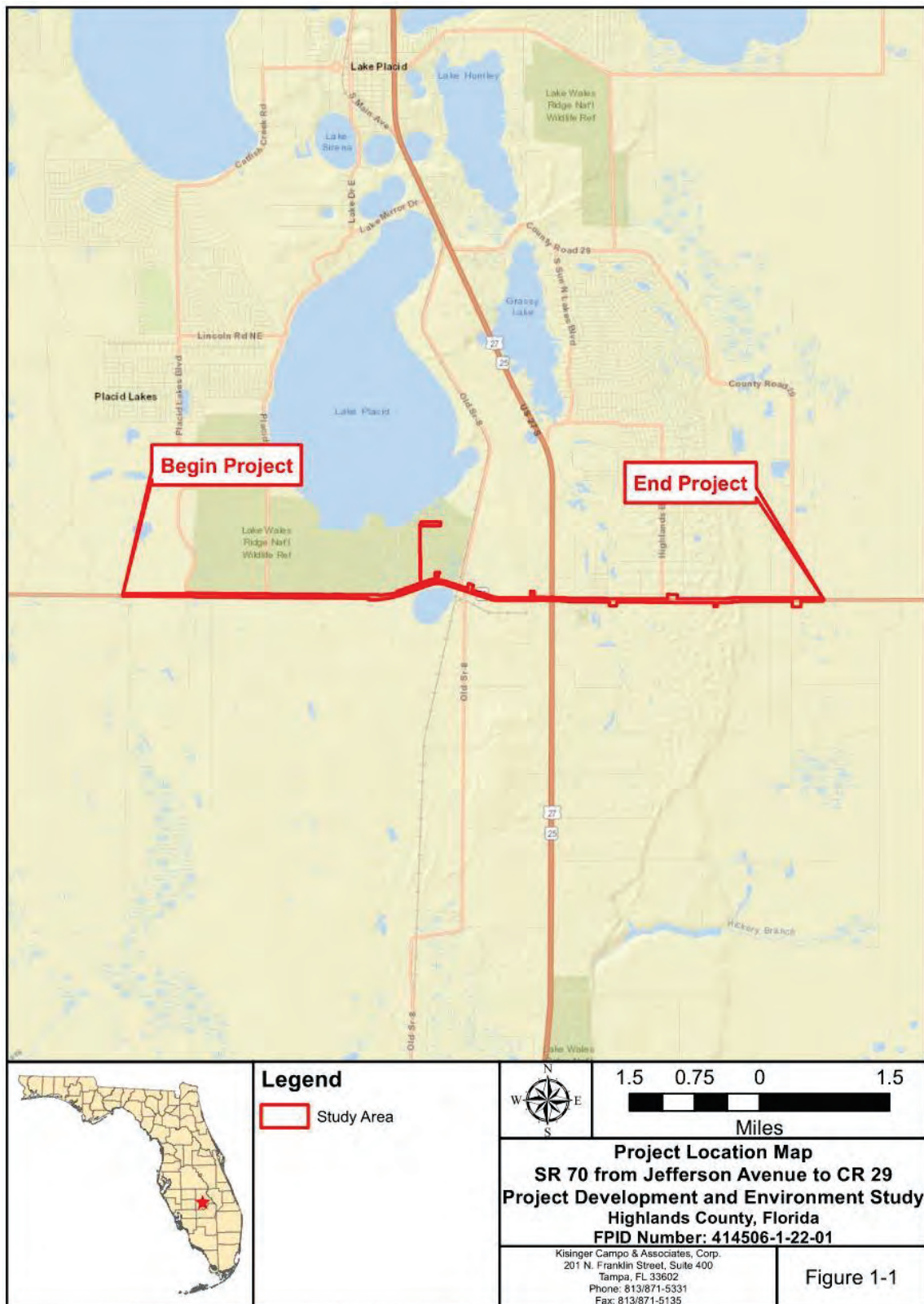
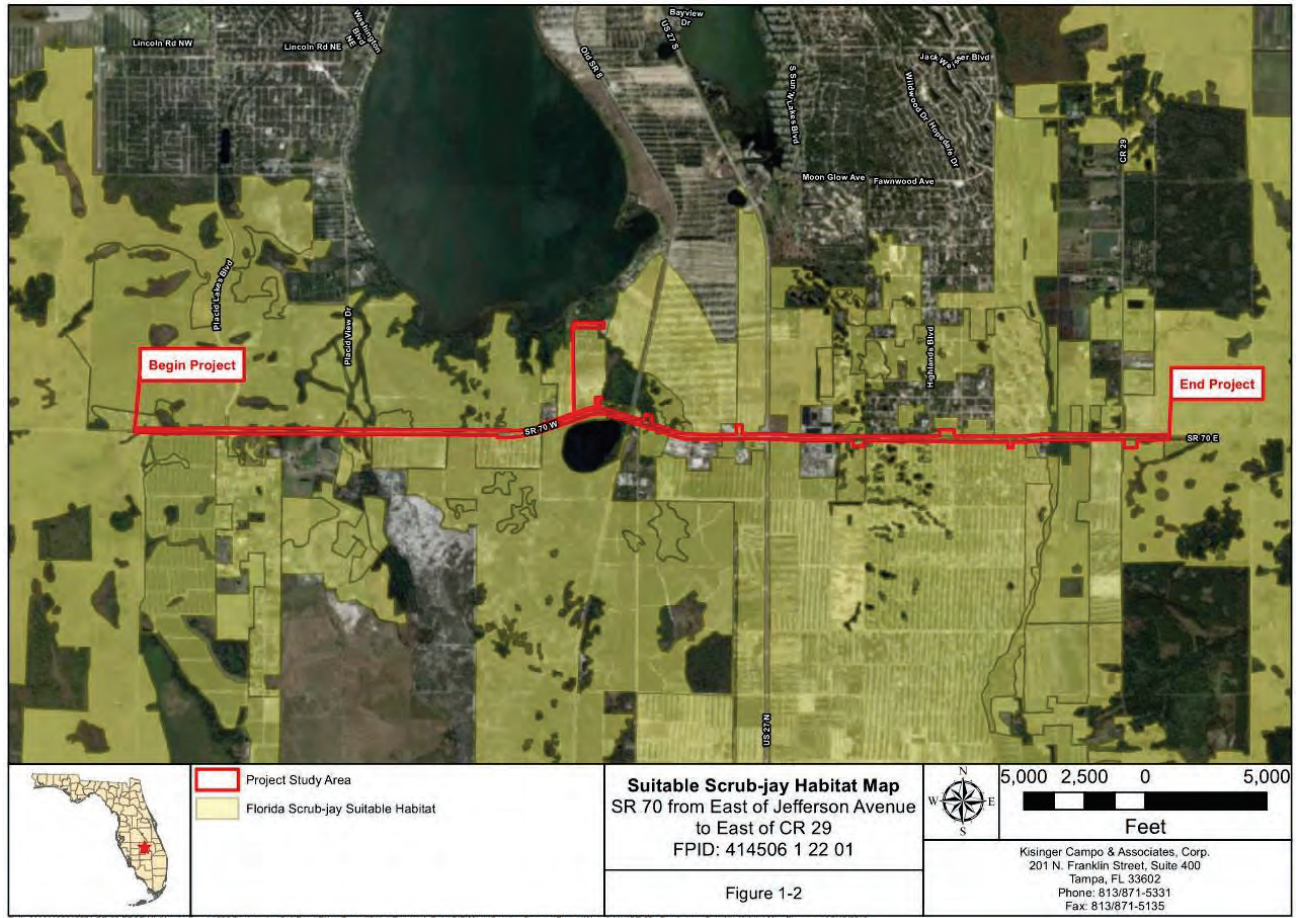


Figure 1-2 Suitable Scrub-jay Habitat Map



Recorded calls were played through a portable speaker once daily for five (5) non-consecutive days at each survey station. Calls were played for at least one (1) minute in all four (4) cardinal directions at each station, pausing for a minimum of thirty (30) seconds between calls. A photograph was taken in each cardinal direction at each station (See **Attachment B Florida Scrub-jay Station Photographs**).

Weather conditions, start times, end times, the number of scrub-jay observed, and general comments during each of the five (5) separate sampling events at each station using the ESRI Collector ArcGIS application (See **Attachment C Florida Scrub-jay Survey Datasheets**) (ESRI 2015). Per the USFWS Scrub-jay Guidelines (USFWS 2007), playback survey events were conducted on calm, clear days starting approximately one (1) hour after sunrise and terminating before midday heat. Surveys were not conducted if winds higher than 8 mph were encountered, in mist or fog, or during rain.

Archbold scrub-jay surveys were conducted in July and August 2018. Archbold field crews conducted surveys in the early morning hours in appropriate habitats. Survey locations relevant to the project study area include the Lake Placid Scrub and the McJunkin Tract. Standard protocols were followed including playback of recorded Florida scrub-jay calls and visually scanning for perched and flying birds. Playbacks were conducted at all sites where scrub-jays had been recorded within the last 3 years or where potentially suitable habitats existed. When birds were observed, groups were followed and Archbold environmental scientists recorded the total number of scrub-jays, the number of adults, the number of juveniles, and the number and identity of any banded individuals using the ESRI Collector ArcGIS application (ESRI 2015). The Archbold survey results for 2018 are provided in **Attachment D**.

3.0 RESULTS

Within the project study area there are 91.04 acres of suitable Florida scrub-jay habitat. The majority of suitable habitat consists of shrub and brushland and citrus groves; these habitat types make up more than 70 percent of the available suitable scrub-jay habitat within the project study area. **Table 3-1** summarizes the suitable Florida scrub-jay habitat types and acres within the project study area. A map of playback stations is provided in **Attachment A**.

Table 3-1 Florida Scrub-jay Suitable Habitat

FLUCFCS Code	Scrub-jay Habitat	Area Within Project Study Area
210	Cropland and Pastureland	0.65
211	Improved pastures	12.34
221	Citrus groves	18.51
320	Shrub and brushland	48.07
411	Pine flatwoods	6.63
421	Xeric oak	2.57
427	Oak - cabbage palm forests	0.01
434	Upland mixed coniferous/hardwood	2.26
Total		91.04

Of the stations that were surveyed by environmental scientists, 17 stations were documented with scrub-jay sightings on 38 separate occasions. A map showing the locations of each scrub-jay sighting is provided in **Attachment A**. **Table 3-2** provides the total number of scrub-jays observed at each survey station during each event they were present, by territory. The number of scrub-jays observed during all events totaled 93; however, because groups of scrub-jays frequently followed environmental scientists from station to station during playback events, it is estimated that there were approximately 56 individual scrub-jays (52 adults and four (4) juveniles) observed in total across all survey events. The total number of scrub-jays observed per survey event are summarized by territory in **Section 3.1** below, these results are more indicative of the total number of scrub-jays suspected to be associated with each territory.

In 2018, Archbold recorded a total of 137 individual scrub-jays at Lake Placid Scrub and the McJunkin Tract. Of these 137 sightings, none occurred within the SR 70 project study area. A map of the 2018 Archbold Biological Station sighting locations is provided in **Attachment D**.

3.1 FDOT FAMILY GROUPS RESULTS

Five separate scrub-jay groups were observed at 17 playback stations on the eastern segment of SR 70. Five scrub-jay territories (Territories A, B, C, D, and E) have been identified based on field observations (see **Attachment A Florida Scrub-jay Survey and Results Map**). Scrub-jay habitat Types I, II, and III were subsequently mapped within the occupied habitat of the five (5) territories within the SR 70 ROW. The extent of each territory and habitat type outside of the SR 70 ROW were not determined. **Table 3-2** summarizes the locations and dates of the scrub-jay observations by territory and identifies the total estimated number of scrub-jays associated with each territory. The number of individual scrub-jays, which were observed and counted at previously-visited stations during the same monitoring event, are also indicated in **Table 3-2**. **Table 3-3** summarizes occupied scrub-jay habitats within the proposed ROW for FDOT territories.

Scrub-jay observations in identified territory included:

- Territory A - five (5) scrub-jays were observed on July 27.
- Territory B - two (2) scrub-jays were observed on October 5; three (3) scrub-jays were observed on October 31.
- Territory C - two (2) scrub-jays were observed on July 14 and July 27; four (4) scrub-jays were observed on July 29.
- Territory D - two (2) scrub-jays were observed on July 13, July 14, July 26, and November 1; one (1) scrub-jay was observed on July 27, October 4 and October 23.
- Territory E - seven (7) scrub-jays were observed on July 14; four (4) scrub-jays were observed on July 26; three (3) scrub-jays were observed on October 3; two (2) scrub-jays were observed on October 4; five (5) scrub-jays were observed on October 22, and three (3) scrub-jays were observed on October 30 and October 31.

Further details on scrub-jay observations for each territory, including the total number of scrub-jays suspected to be associated with each territory are presented below.

Table 3-2 Scrub-jay Observations

Date	Playback Station	Number of Adults Observed	Number of Juveniles Observed ¹	Total Number of Scrub-jays Observed
<i>Territory A</i>				
7/27/2018	64	3	0	3
7/27/2018	63	5 (3*)	0	5 (3*)
Subtotal Territory A		8 (3*)	0	8 (3*)
Subtotal - Estimated Individuals Associated with Territory A²		5	0	5
<i>Territory B</i>				
10/5/2018	13	2	0	2
10/31/2018	13	3	0	3
10/31/2018	14	3*	0	3*
Subtotal Territory B		8 (3*)	0	8 (3*)
Subtotal - Estimated Individuals Associated with Territory B²		5	0	5
<i>Territory C</i>				
7/14/2018	40	1	1	2
7/27/2018	40	2	0	2
7/29/2018	20	0	1	1
7/29/2018	21	3	1*	4 (1*)
Subtotal Territory C		6	3 (1*)	9 (1*)
Subtotal - Estimated Individuals Associated with Territory C²		6	2	8
<i>Territory D</i>				
7/13/2018	22	2	0	2
7/14/2018	39	1	0	1
7/14/2018	38	1	0	1
7/14/2018	37	2*	0	2*
7/26/2018	37	2	0	2
7/26/2018	38	2*	0	2*
7/27/2018	39	1	0	1
10/4/2018	37	1	0	1
10/23/2018	39	1	0	1
11/1/2018	39	2	0	2
Subtotal Territory D		15 (4*)	0	15 (4*)
Subtotal - Estimated Individuals Associated with Territory D²		11	0	11
<i>Territory E</i>				
7/14/2018	24	2*	0	2*
7/14/2018	36	6	1	7

Date	Playback Station	Number of Adults Observed	Number of Juveniles Observed ¹	Total Number of Scrub-jays Observed
7/26/2018	35	3	1	4
7/26/2018	25	3*	1*	4*
7/26/2018	36	3*	1*	4*
7/26/2018	24	3*	1*	4*
10/3/2018 ³	28	1	0	1
10/3/2018	35	2	0	2
10/3/2018	25	1*	0	1*
10/4/2018	36	1	0	1
10/4/2018	24	2 (1*)	0	2 (1*)
10/22/2018	25	2	0	2
10/22/2018	35	2	0	2
10/22/2018	36	3 (2*)	0	3 (2*)
10/30/2018	25	3	0	3
10/30/2018	35	3*	0	3*
10/30/2018	36	3*	0	3*
10/31/2018	24	3	0	3
Subtotal Territory E		46 (21*)	5 (3*)	52 (24*)
Subtotal - Estimated Individuals Associated with Territory E²		25	2	29
Total Scrub-jay Observations		83 (31*)	8 (4*)	91 (35*)
Total Estimated Distinct Individual³		52	4	56

Note:

*Individuals counted at a previous station within territory during that survey event.

¹Juvenile plumage only noted in July.

²Subtotal Estimated Individuals Associated with Territory and Total Estimated Distinct Individuals includes total of distinct individuals observed across all events.

³10/3/2018 – Station 28: Though observation data is suspected to be associated with Territory E, Station 28 and its surrounding habitat was not included in the approximated territory boundary for Territory E due to it being a singular event observation (incidental), no suitable scrub-jay habitat within its vicinity, and lack of previous observations of scrub-jays during extensive field reviews, as well as scrub-jay surveys and crested caracara surveys, within this area.

Table 3-3 FDOT Scrub-jay Territory Occupied Habitat Within the Proposed ROW

Territory	Type I Habitat Acreage	Type II Habitat Acreage	Type III Habitat Acreage	Total Occupied Habitat
A	1.24	1.54	1.55	4.33
B	2.93	0.01	1.64	4.58
C	1.11	1.18	0.00	2.29
D	1.06	1.54	0.00	2.60
E	1.46	1.57	1.97	5.00
Total	7.80	5.84	5.16	18.80

3.1.1 Territory A

The boundaries of Territory A were delineated within the proposed ROW based on the results of field reviews. The limits of Territory A encompass Stations 63 and 64, just west of Worley Road and northwest of Lake Annie, on the north and south sides of SR70 (**Attachment A Florida Scrub-jay Survey and Results Map**). Based on field observations during one (1) survey event on July 27, 2018, there were suspected to be five (5) adult scrub-jays and no juveniles associated with Territory A during the 2018 nesting season (**Table 3-2**).

The proposed project may impact up to 1.24 acres of occupied Type I scrub-jay habitat, 1.54 acres of occupied Type II scrub-jay habitat, and 1.55 acres of occupied Type III scrub-jay habitat (4.33 acres total) within Territory A (**Table 3-3**). Field notes and observations within Territory A are summarized below and observation maps are provided in **Attachment A**

- On July 27, 2018, scrub-jays were called and observed at Stations 63 and 64. Stations 63 and 64 are located on the north side of SR 70 between Eppington Street and Worley Road. The three (3) scrub-jays observed at Station 64 flew from scrub habitat southwest of SR 70. The same three (3) scrub-jays flew east from Station 64 to Station 63 when calls were conducted at Station 63. Two additional scrub-jays were called and observed at Station 63. These two (2) additional scrub-jays flew from scrub habitat southeast of SR 70. Based on these observations, there were five (5) distinct adult scrub-jays associated with Territory A on this date.
- Habitat types present at Stations 63 and 64 consist of a combination of low-density residential development, shrub and brushland, and citrus groves that abut the ROW. Dominant vegetation includes citrus (*Citrus* sp.), mixed oaks (*Quercus* spp.), and saw palmetto (*Serenoa repens*).

3.1.2 Territory B

The boundaries of Territory B were delineated within the proposed ROW based on the results of field reviews. The limits of Territory B encompass Stations 13 and 14, at Ekhoﬀ Lane, on the north and south sides of SR 70 (**Attachment A Florida Scrub-jay Survey and Results Map**). Based on field observations for two (2) dates in October 2018, there were five (5) adult scrub-jays, with as many as three (3) observed at one time, and no juveniles suspected to be associated with Territory B during the 2018 nesting season (**Table 3-2**).

The proposed project may impact up to 2.93 acres of occupied Type I scrub-jay habitat, 0.01 acres of occupied Type II scrub-jay habitat, and 1.64 acres of occupied Type III scrub-jay habitat (4.58 acres total) within Territory B (**Table 3-3**). Field notes and observations within Territory B are summarized below and observation maps are provided in **Attachment A**.

- On October 5, 2018, two (2) scrub jays were called and observed at Station 13. The two (2) scrub-jays observed flew from scrub habitat south of SR 70. Station 13 is located on the south side of SR 70 directly across from Ekhoﬀ Lane. Based on these observations, there were two (2) distinct adult scrub-jays associated with Territory B on this date.

- On October 31, 2018, scrub-jays were called and observed at Stations 13 and 14. Station 14 is located on the south side of SR 70 approximately 100 meters west of Brevard Avenue. Three scrub-jays were observed at Station 13 flying in from scrub habitat south of SR 70. The three (3) scrub-jays then flew east from Station 13 to Station 14 when calls were conducted at Station 14. On this date there were three (3) distinct adults associated with Territory B.
- Habitat types present at Stations 13 and 14 consist predominantly of shrub and brushland habitat that encroaches into the proposed ROW. Dominant vegetation includes mixed oaks, sand pine (*Pinus clausa*), and saw palmetto.

3.1.3 Territory C

The boundaries of Territory C were delineated within the proposed ROW based on the results of field reviews. The limits of Territory C encompass Stations 20, 21 and 40 through 43, at Citrus Boulevard, on the north and south sides of SR 70 (**Attachment A Florida Scrub-jay Survey and Results Map**). Based on field observations on three (3) separate days within July 2018, there were six (6) adult scrub-jays, with as many as three (3) observed at one time, and two (2) juveniles, with one (1) juvenile observed each time, suspected to be associated with Territory C during the 2018 nesting season (**Table 3-2**).

The proposed project may impact up to 1.11 acres of occupied Type I scrub-jay habitat, 1.18 acres of occupied Type II scrub-jay habitat, and no acres of occupied Type III scrub-jay habitat (2.29 acres total) within Territory C (**Table 3-3**). Field notes and observations within Territory D are summarized below and observation maps are provided in **Attachment A**.

- On July 14, 2018, two (2) scrub-jays were called and observed at Station 40. Station 40 is located on the north side of SR 70 approximately 120 meters west of Dade Avenue. On this date, two (2) scrub-jays, one (1) adult and one (1) juvenile, flew in from scrub habitat north of SR 70 to Station 40. Based on these observations, there were two (2) distinct scrub-jays, including one (1) adult and one (1) juvenile, associated with Territory C on July 14, 2018.
- On July 27, 2018, two (2) adult scrub-jays were called and observed at Station 40 flying in from the south. Based on these observations, there were two (2) distinct adult scrub-jays associated with Territory C on this date.
- On July 29, 2018, scrub-jays were called and observed at Stations 20 and 21. Stations 20 and 21 are located on the south side of SR 70 between Highlands Boulevard and Dade Avenue. A juvenile scrub-jay flew from south of SR 70 to Station 20. This scrub-jay then flew east from Station 20 to Station 21 when calls were conducted at Station 21. Three additional scrub-jays were called and observed at Station 21. The three (3) additional scrub-jays observed at Station 21 flew in from south southeast of SR 70. On this date there were four (4) distinct scrub-jays, including three (3) adults and one (1) juvenile, associated with Territory C.
- Habitat types present around Station 40 and the north side of SR 70 consist predominantly of shrub and brushland habitat that abuts the existing ROW. Dominant vegetation includes

mixed oaks, sand pine, and saw palmetto. Habitat types present at Stations 20 and 21 consist predominantly of citrus groves and xeric oak that encroaches into the proposed ROW.

3.1.4 Territory D

The boundaries of Territory D were delineated within the proposed ROW based on the results of field reviews. The limits of Territory D encompass Stations 22, 23, 38 and 39, at Dade Avenue, on the north and south sides of SR 70 (**Attachment A Florida Scrub-jay Survey and Results Map**). Based on field observations during events on four (4) days in July 2018, two (2) days in October 2018, and one (1) day in November 2018, there were 11 adult scrub-jays, with as many as two (2) observed at one time, and no juveniles observed suspected to be associated with Territory D during the 2018 nesting season (**Table 3-2**). Though scrub-jay observations were made at Station 37, individuals did not encroach on Territory E (see **Section 3.1.5**), which includes Station 37 and all suitable habitat east of Bear Road.

The proposed project may impact up to 1.06 acres of occupied Type I scrub-jay habitat, 1.54 acres of occupied Type II scrub-jay habitat, and no occupied Type III scrub-jay habitat (2.60 acres total) within Territory D (**Table 3-3**). Field notes and observations within Territory D are summarized below and observation maps are provided in **Attachment A**.

- On July 13, 2018, two (2) adult scrub-jays were called and observed at Station 22. Station 22 is located on the south side of SR 70 approximately 10 meters west of Dade Avenue. The scrub-jays observed at Station 22 flew from scrub habitat north of SR 70 and then flew north away from the call station. Based on field observations, there were two (2) distinct adult scrub-jays associated with Territory D on this date.
- On July 14, 2018, scrub-jays were called and observed at Stations 37, 38, and 39. Station 37 is located on the north side of SR 70 just east of Bear Road. Station 38 is located on the north side of SR 70 approximately 60 meters east of Dade Avenue. Station 39 is located on the north side of SR 70 approximately 30 meters west of Dade Avenue. One scrub-jay was observed perching in a tree at Station 39 and one (1) scrub-jay was flew in from an undetermined location to Station 38. At Station 37, the same two (2) scrub-jays were observed flying from the northwest across the road to the southeast. On this date there were two (2) distinct adults associated with Territory D.
- On July 26, 2018, two (2) adult scrub-jays were called and observed at Stations 37 and 38. The pair of scrub-jays observed at Station 37 flew from scrub habitat west of Bear Road. The same pair then flew west from Station 37 to Station 38 when calls were conducted at Station 38. On this date there were two (2) distinct adults associated with Territory D.
- On July 27, 2018, an adult scrub-jay was called and observed flying to Station 39 from scrub habitat northwest of SR 70. Based on these observations, one (1) distinct adult scrub-jay was associated with Territory D on this date.
- On October 4, 2018, an adult scrub-jay was called and observed flying into Station 37 from scrub habitat north of SR 70. Based on these observations, one (1) distinct adult scrub-jay was associated with Territory D on this date.

- On October 23, 2018, an adult scrub-jay was called and observed flying into Station 39 from scrub habitat east of Dade Avenue. Based on these observations, one (1) distinct adult scrub-jay was associated with Territory D on this date.
- On November 1, 2018, an adult scrub-jay was called and observed flying into Station 39 from scrub habitat northwest of SR 70. A second scrub-jay was heard calling in the distance. Based on these observations, two (2) distinct adult scrub-jays were associated with Territory D on this date.
- Habitat types present at Stations 21 and 22 consist predominantly of xeric oak and citrus groves that encroach into the proposed ROW. Habitat types present at Stations 37, 38, and 39 consist predominantly of shrub and brushland dominated by mixed oaks, sand pine, and saw palmetto that abuts the existing ROW.

3.1.5 Territory E

The boundaries of Territory E were delineated within the proposed ROW based on the results of field reviews. The limits of Territory E encompass Stations 24, 25 and 35 through 37, east of Bear Road, on the north and south sides of SR 70 (**Attachment A Florida Scrub-jay Survey and Results Map**). Based on field observations on two (2) days in July 2018 and five (5) days in October 2018, there were 25 adult scrub-jays, with as many as six (6) observed at one time, and two (2) juveniles, with one (1) juvenile observed each time in July, suspected to be associated with Territory E during the 2018 nesting season (**Table 3-2**). Though scrub-jay observations were made at Station 37, individuals recorded were suspected to be associated with Territory D (see **Section 3.1.4**), which includes all suitable habitat west of Bear Road.

The proposed project may impact up to 1.46 acres of occupied Type I scrub-jay habitat, 1.57 acres of occupied Type II scrub-jay habitat, 1.97 acres of occupied Type III scrub-jay habitat (5.00 acres total) within Territory E (**Table 3-3**). Field notes and observations within Territory E are summarized below and observation maps are provided in **Attachment A**.

- On July 14, 2018, scrub-jays were called and observed at Stations 24 and 36. Stations 24 and 36 are located on SR 70 between Bear Road and Turner Road. Station 24 is on the south side of SR 70 while Station 36 is on the north side of SR 70. Two scrub-jays were observed at Station 24 flying in from the northwest across SR 70. Seven scrub-jays were observed at Station 36 flying in from scrub habitat north of SR 70 and consisted of six (6) adults and one (1) juvenile. Two of these six (6) adults were likely the same individuals observed at Station 24; therefore, on this date seven (7) distinct individuals, six (6) adults and one (1) juvenile, were associated with Territory E.
- On July 26, 2018, scrub-jays in Territory E were called and observed at Stations 24, 25, 35, and 36. Station 25 is located on the south side of SR 70 approximately 380 meters east of Bear Road. Station 35 is located on the north side of SR 70 approximately 600 meters west of Hall Road. Four scrub-jays were observed at Station 35 (three (3) adults and one (1) juveniles) flying in from the west. They then flew from Station 35 to Station 25, from Station 25 to Station 36, and from Station 36 to Station 24 when calls were conducted at each station. Based on these observations, on this date four (4) distinct individuals, three (3) adults and

one (1) juvenile, were associated with Territory E.

- On October 3, 2018, scrub-jays were called and observed at Stations 25, 28, and 35. Station 28 is located on the south side of SR 70 approximately 130 meters east of CR 29. One scrub-jay flew from the northwest of SR 70 to Station 28. Two scrub-jays were observed flying in from the northwest to Station 35. One of the scrub-jays observed at Station 35 was observed flying southwest from Station 35 to Station 25 when calls were conducted at Station 25. On this date there were three (3) distinct adults associated with Territory E.

Note – Station 28 Observation: Though observation data is suspected to be associated with Territory E, Station 28 and its surrounding habitat was not included in the approximated territory boundary for Territory E due to it being a singular event observation (incidental), no suitable scrub-jay habitat within its vicinity, and lack of previous observations of scrub-jays during extensive field reviews, as well as scrub-jay surveys and crested caracara surveys within this area.

- On October 4, 2018, scrub-jays were called and observed at Stations 24 and 36. One adult scrub-jay was observed at Station 36 flying in from scrub habitat northeast of SR 70. The same scrub-jay was then observed flying southwest from Station 36 to Station 24 when calls were conducted at Station 24. A second scrub-jay joined the first one at Station 24. Based on these observations, on this date there were that two (2) distinct adults associated with Territory E.
- On October 22, 2018, scrub-jays were observed at Stations 25, 35, and 36. Two adult scrub-jays at Station 25 were observed flying in from scrub habitat north of SR 70 and then flew back off to the north. Two separate scrub-jays were observed flying in and out from the north to Station 35 when calls were conducted at Station 35. Two scrub-jays flew in from the east to Station 36 when calls were conducted at Station 36, likely the same pair from one of the previous stations. An additional scrub-jay was observed flying from scrub habitat west of SR 70 at Station 36. Based on field observations, there were five (5) distinct adults associated with Territory E on this date.
- On October 30, 2018, scrub-jays were observed at Stations 25, 35, and 36. Three adult scrub-jays were observed at Station 25 flying in from scrub habitat north of SR 70. The same scrub-jays then flew northeast from Station 25 to Station 35 and then from Station 35 to Station 36 when calls were conducted at Station 35. On this date there were three (3) distinct adults associated with Territory E.
- On October 31, 2018, scrub-jays were observed at Station 24. Three scrub-jays were observed at Station 24 flying in from scrub habitat northeast of SR 70. They were then observed flying northeast away from the station. On this date there were three (3) distinct adults associated with Territory E.
- Habitat types present at Stations 24 and 25 consist predominantly of xeric oak and citrus groves that encroaches into the proposed ROW. Habitat types present at Stations 35 and 36 consists entirely of shrub and brushland habitat that abut the existing ROW. Vegetation at these stations is dominated by mixed oaks, sand pine, and saw palmetto. Habitat types

present at Station 28 consists entirely of improved pastures. The proposed ROW at this station is dominated by bahiagrass.

3.2 ARCHBOLD FAMILY GROUPS RESULTS

Eleven separate scrub-jay groups were observed on the SR 70 segment surveyed by Archbold (see **Attachment D Florida Scrub-jay Archbold 2018 Survey Results Maps**). Eleven scrub-jay territories (Territory LP4B, LP5, LP7, LP8, LP12, LP13, LP14, LP16, LP17, LP20, and MJ1) were identified by Archbold environmental scientists based on scrub-jay observations. In 2018, 100 scrub-jays were observed within Lake Placid Scrub and 37 scrub-jays were observed within the McJunkin Tract. However, it is important to note that none of the Archbold scrub-jay observations occurred within the existing or proposed ROW. Archbold scrub-jay observation locations are shown in **Attachment D**. Observation dates were not provided by Archbold environmental scientists. Scrub-jay Type I, II, and III habitats were subsequently mapped within the occupied habitat of the 11 territories observed by Archbold. **Table 3-4** summarizes occupied scrub-jay habitats within the proposed ROW for Archbold Biological Station territories.

Table 3-4 Archbold Scrub-jay Territory Occupied Habitat Within the Proposed ROW

Territory	Type I Habitat Acreage	Type II Habitat Acreage	Type III Habitat Acreage	Total Occupied Habitat
LP4B	1.73	0.00	0.08	1.81
LP5	5.52	0.02	2.54	8.08
LP7	6.97	0.00	3.72	10.69
LP8	4.96	0.00	1.34	6.30
LP12	4.02	0.00	0.43	4.45
LP13	5.77	0.00	0.00	5.77
LP14	2.53	0.00	0.00	2.53
LP16	3.80	0.00	1.72	5.52
LP17	4.82	0.00	0.17	4.99
LP20	1.48	0.00	0.01	1.49
MJ1	0.00	0.00	0.00	0.00
Total	41.60	0.02	10.01	51.63

3.3 SUMMARY

To summarize family groups results for 2018 Florida scrub-jay surveys, a total of 16 family groups and 16 territories were observed along the SR 70 corridor. Five family groups were observed by FDOT and 11 family groups were observed by Archbold. There was a total of 189 scrub-jay sightings; 52 of these were documented by FDOT and 137 were documented by Archbold. Within the project study area, there is 49.40 acres of Type I habitat, 5.86 acres of Type II habitat, and 15.17 acres of Type III habitat (**Table 3-5**). There is a total of 70.43 acres of occupied scrub-jay habitat within the proposed ROW.

Table 3-5 Total Scrub-jay Territory Occupied Habitat Within the Proposed ROW

Territory	Type I Habitat Acreage	Type II Habitat Acreage	Type III Habitat Acreage	Total Occupied Habitat
FDOT	7.80	5.84	5.16	18.80
Archbold	41.60	0.02	10.01	51.63
Total	49.40	5.86	15.17	70.43

4.0 EFFECT DETERMINATION

As a result of 2018 scrub-jay surveys, 16 territories were documented within and adjacent to the existing and proposed SR 70 ROW. These 16 territories are delineated within the ROW and are shown in **Attachment A**. Impacts to the occupied Type I, II, and III habitats within the existing and proposed ROW will be unavoidable.

To offset impacts to 70.43 acres of occupied scrub jay habitat within the project ROW, FDOT District 1 will commit to mitigation and minimization measures for the Florida scrub-jay following USFWS mitigation requirements (USFWS 2009). Documentation of mitigation and minimizations measures will be submitted to the USFWS. Based on this information, it has been determined that the proposed project “**may affect, but is not likely to adversely affect**” the Florida scrub-jay.

5.0 MITIGATION

In accordance with FWC guidelines (USFWS 2009), the FDOT may utilize credits from USFWS approved mitigation bank for mitigation to offset transportation project impacts to the Florida scrub-jay. The proposed SR 70 project study area is located within the service area of the Platt Branch Wildlife Mitigation Bank which is owned by the FDOT and maintained by the FWC. The Platt Branch Wildlife Mitigation Bank is located in Highlands County and is within the Fisheating Creek Drainage Basin. Additional mitigation banks with credits available to offset impacts to Florida scrub-jays include Tiger Creek Conservation Bank, Collany Conservation Bank and Backbone Conservation Bank. As set forth by USFWS guidelines (USFWS 2009), mitigation will be implemented at a ratio of 2:1 (2 acres of replacement habitat for each acre of affected occupied scrub-jay habitat). Coordinated efforts may consist of utilizing one or more of the following general mitigation strategies:

- Expand existing preserves and protect and manage occupied and unoccupied habitat that is contiguous with managed public or private lands where the extant population of scrub-jays is viable.
- Protect and manage occupied and unoccupied habitat within 2 miles of protected and managed occupied habitat where the extant population of scrub-jays is viable, proposed mitigation lands are sufficient to support at least one family of scrub-jays. Ensure that dispersal barriers (such as open water exceeding 200 yards, densely urbanized areas, heavily canopied pine forests or plantations, open pasture, or croplands) do not predominate the landscape between mitigation sites and occupied scrub-jay habitat. Composition of the

habitat proposed for mitigation should maximize continuity of habitat and minimize the edge effect of the suitable or restorable habitat. In this respect, a circular parcel of land with contiguous suitable or restorable habitat would be more beneficial, whereas a linear strip of land with interspersed patches of suitable and unsuitable habitat would be of low benefit.

- Protect and manage occupied and unoccupied habitat that is within five (5) miles of protected and managed occupied scrub-jay habitat where the extant population of scrub-jays is viable, provided proposed mitigation lands are sufficient to support at least one family of scrub-jays. Ensure that, in addition to the dispersal barriers identified above, other barriers (such as heavily canopied suburbs, unbroken citrus groves, treeless or nearly treeless suburbs, or pine flatwoods) do not predominate the landscape between mitigation sites and occupied habitat. The relative biological benefit of mitigation lands with respect to its composition should be assessed as described above.

During construction, the following minimization measures will be implemented:

- Educate on-site personnel on the presence of Florida scrub-jays.
- Instruct contractors to inspect all scrub oaks and other vegetation for scrub-jay nests prior to removal.

6.0 REFERENCES

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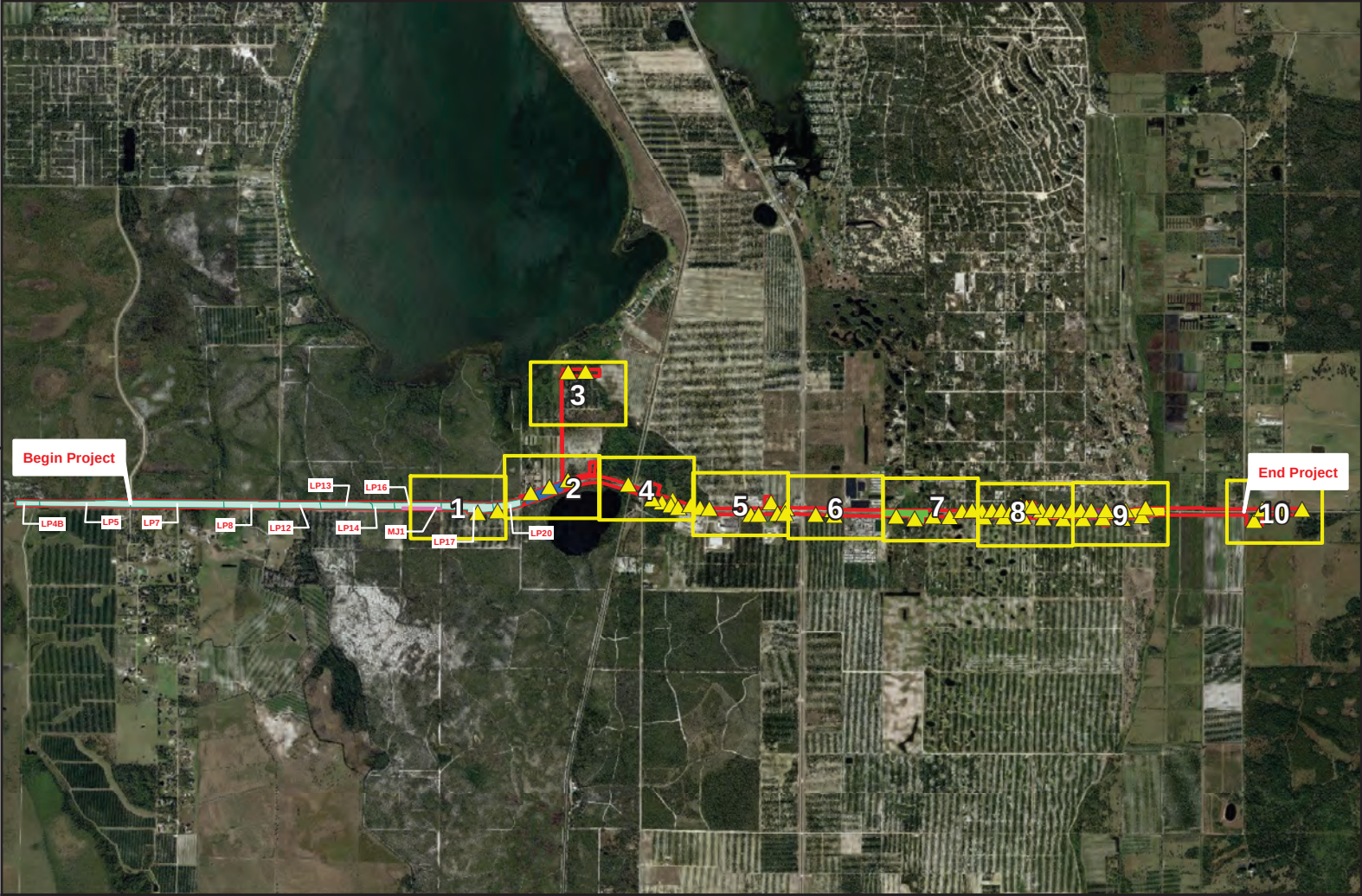
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Attachment A

Florida Scrub-jay FDOT Survey Stations and Results Maps



FDOT Territories Archbold Territories A B C D E	Lake Placid (LP) Scrub McJunkin (MJ) Tract	Project Study Area Scrub-jay Survey Station	Florida Scrub-jay Survey Stations and Results Map SR 70 from Jefferson Avenue to CR 29 FPID: 414506-1-22-01	 4,000 2,000 0 4,000 Feet
Attachment A Key Sheet				Kisinger Campo & Associates, Corp. 201 N. Franklin Street, Suite 400 Tampa, FL 33602 Phone: 813/871-5331 Fax: 813/871-5135

Path: \\h061906\41450612201 SR 70 PD&E Highlands County\200 Engineering\211 Pond Siting Report\211.1 Research Data\GIS\Maps\NRE\Species Maps\SR 70_Scrub Jay Surveys Results.mxd 10/28/2019

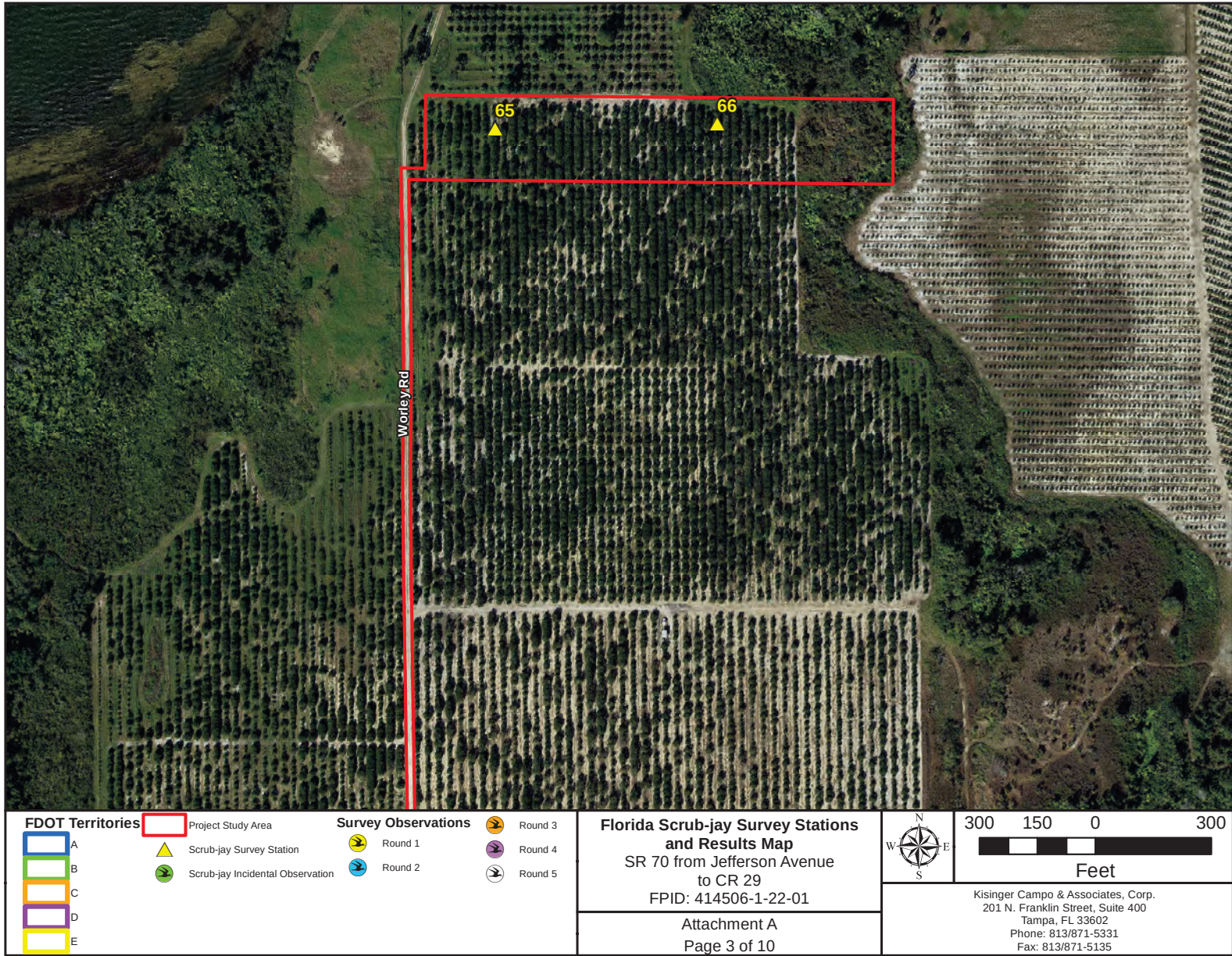


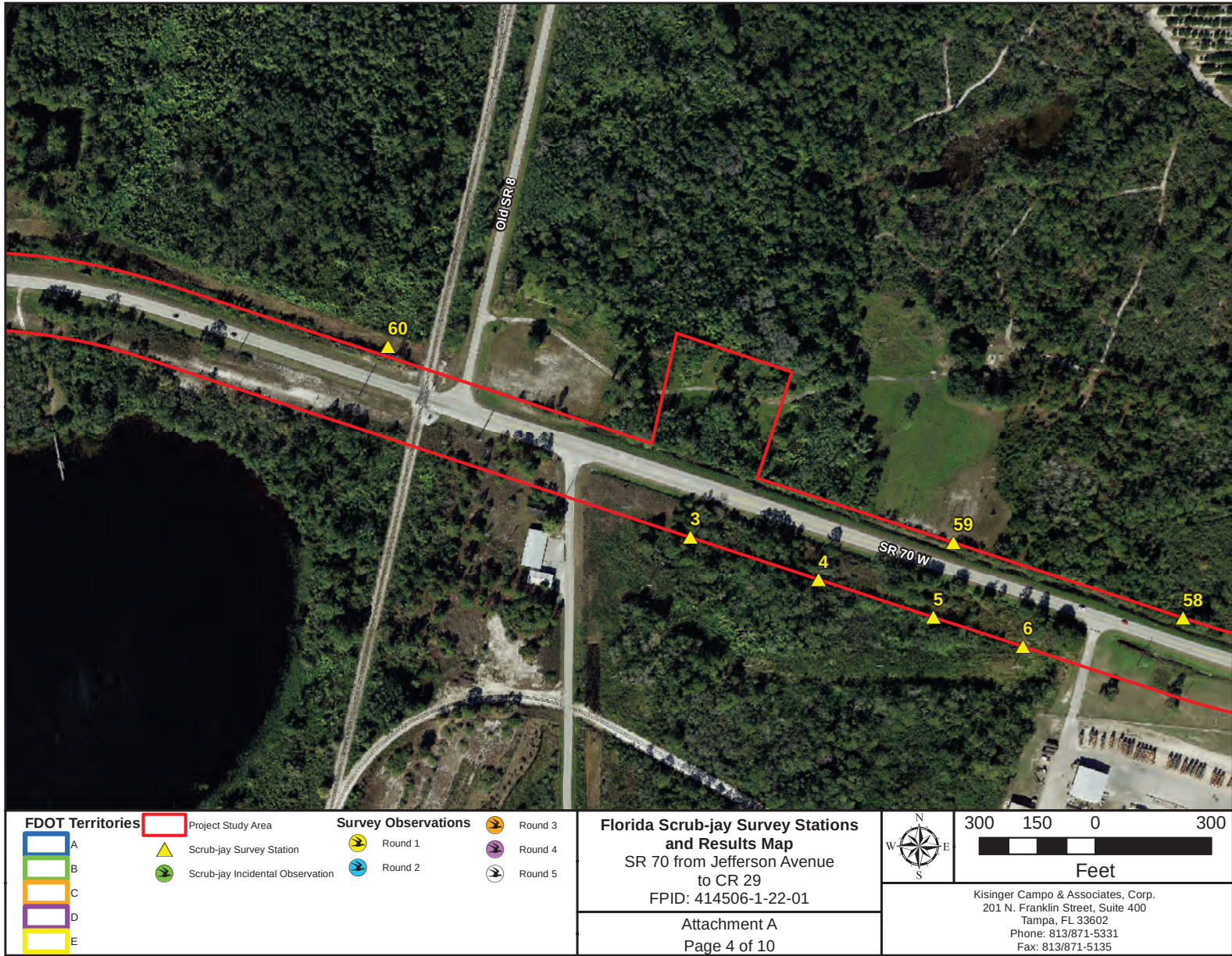
FDOT Territories A B C D E	Project Study Area Scrub-jay Survey Station Scrub-jay Incidental Observation	Survey Observations Round 1 Round 2 Round 3 Round 4 Round 5	Florida Scrub-jay Survey Stations and Results Map SR 70 from Jefferson Avenue to CR 29 FPID: 414506-1-22-01 Attachment A Page 1 of 10	 300 150 0 300 Feet Kisinger Campo & Associates, Corp. 201 N. Franklin Street, Suite 400 Tampa, FL 33602 Phone: 813/871-5331 Fax: 813/871-5135
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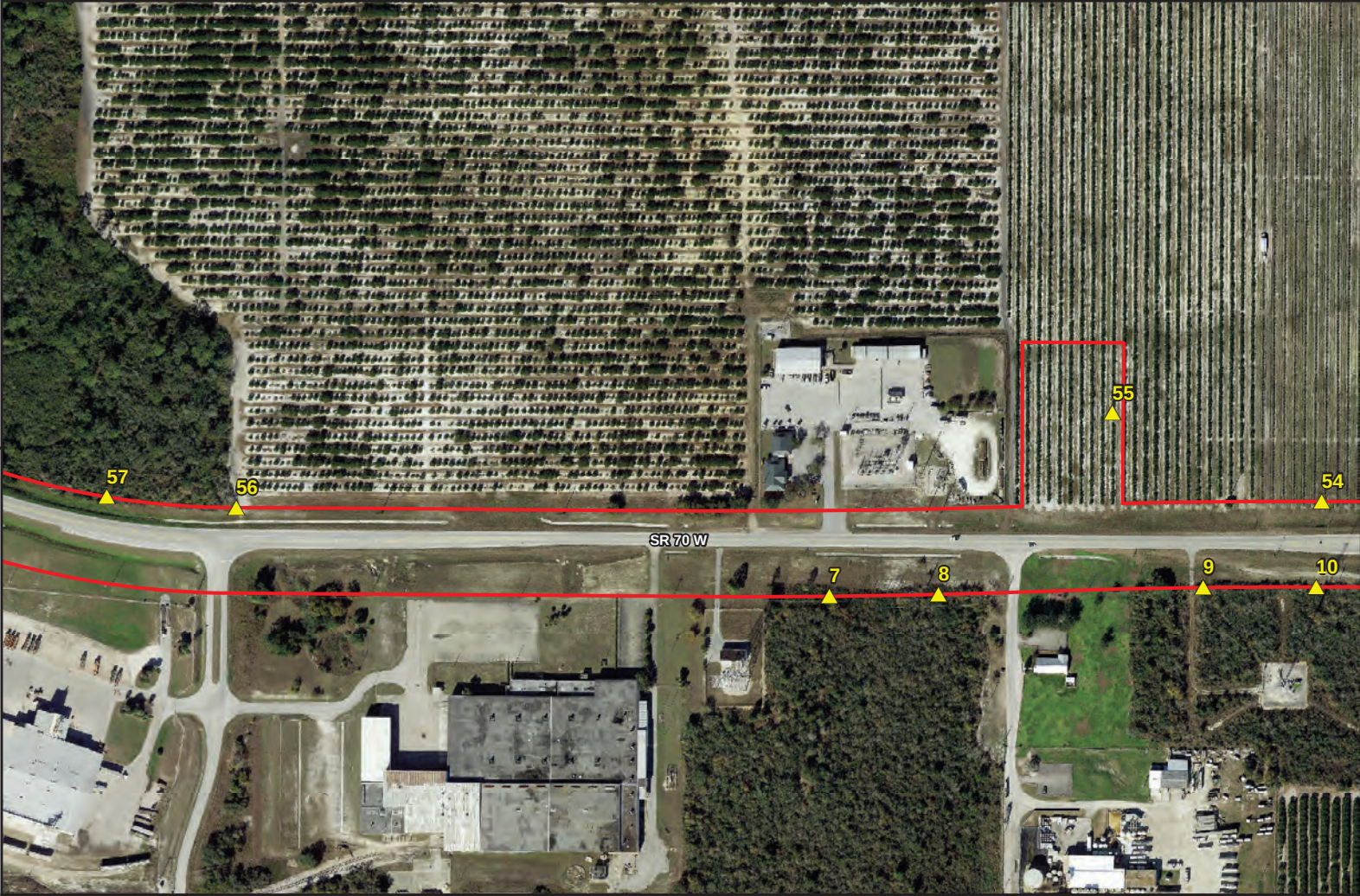
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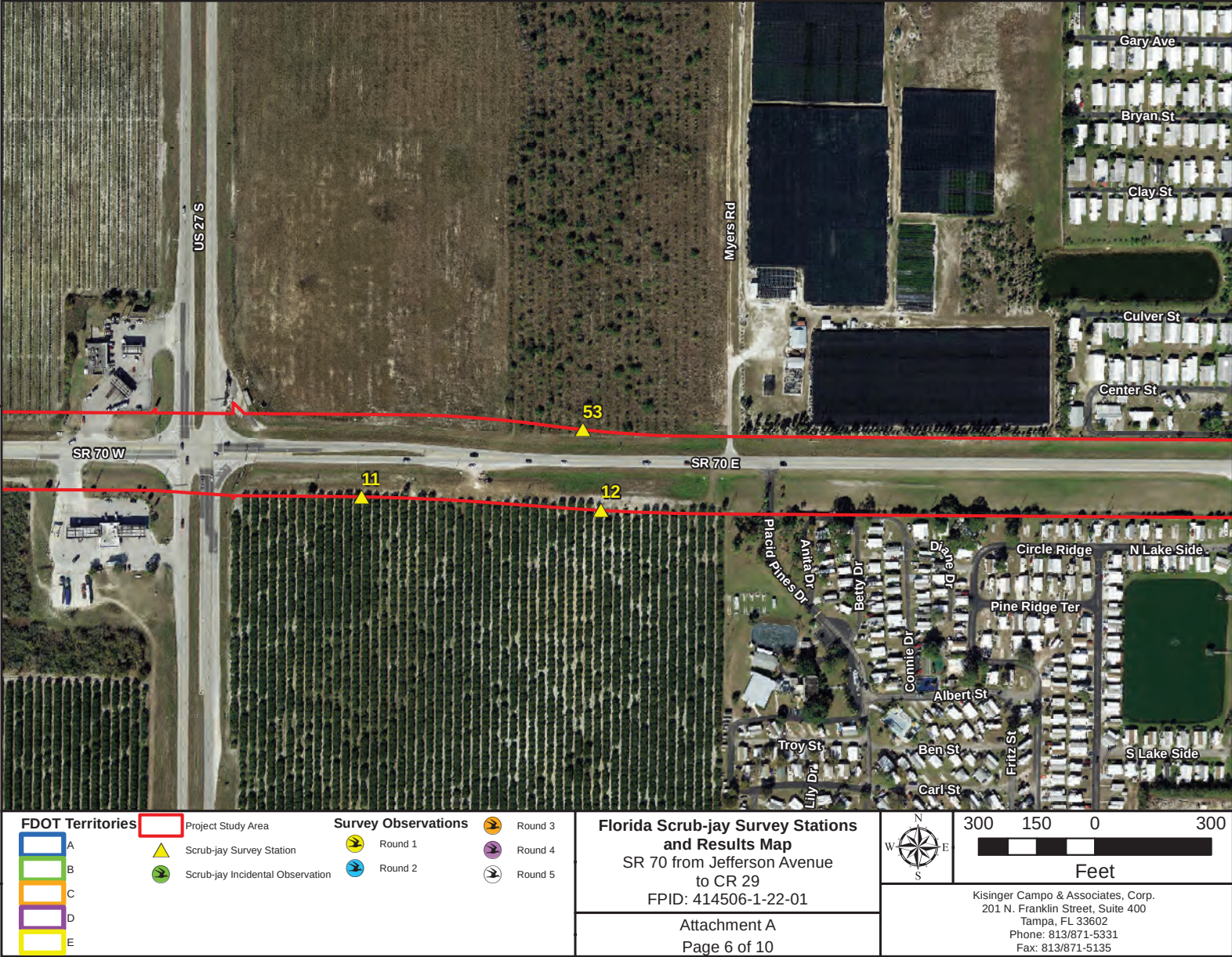
FDOT Territories A B C D E	Project Study Area Scrub-jay Survey Station Scrub-jay Incidental Observation	Survey Observations Round 1 Round 2 Round 3 Round 4 Round 5	Florida Scrub-jay Survey Stations and Results Map SR 70 from Jefferson Avenue to CR 29 FPID: 414506-1-22-01 Attachment A Page 2 of 10	 Feet Kisinger Campo & Associates, Corp. 201 N. Franklin Street, Suite 400 Tampa, FL 33602 Phone: 813/871-5331 Fax: 813/871-5135
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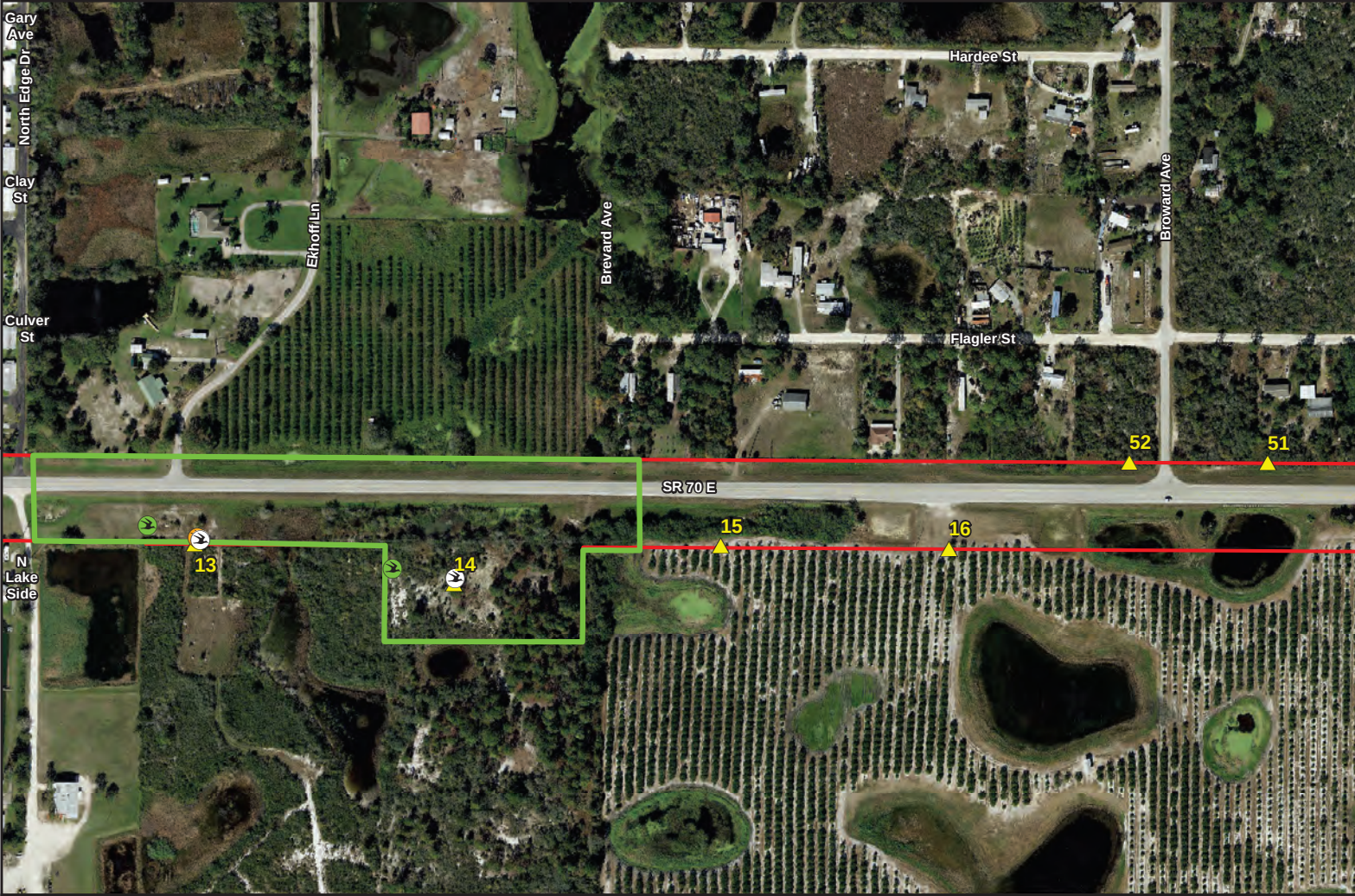




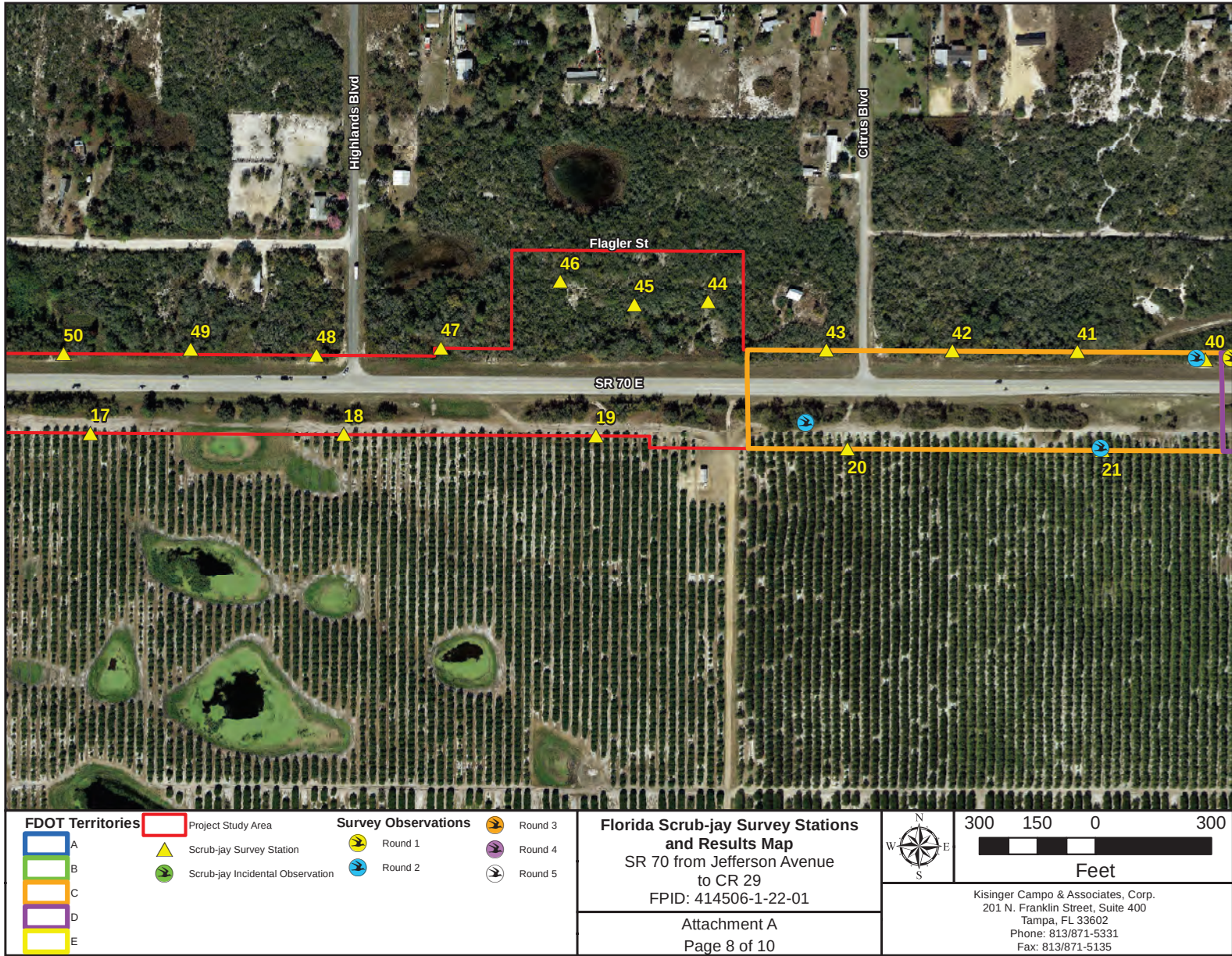


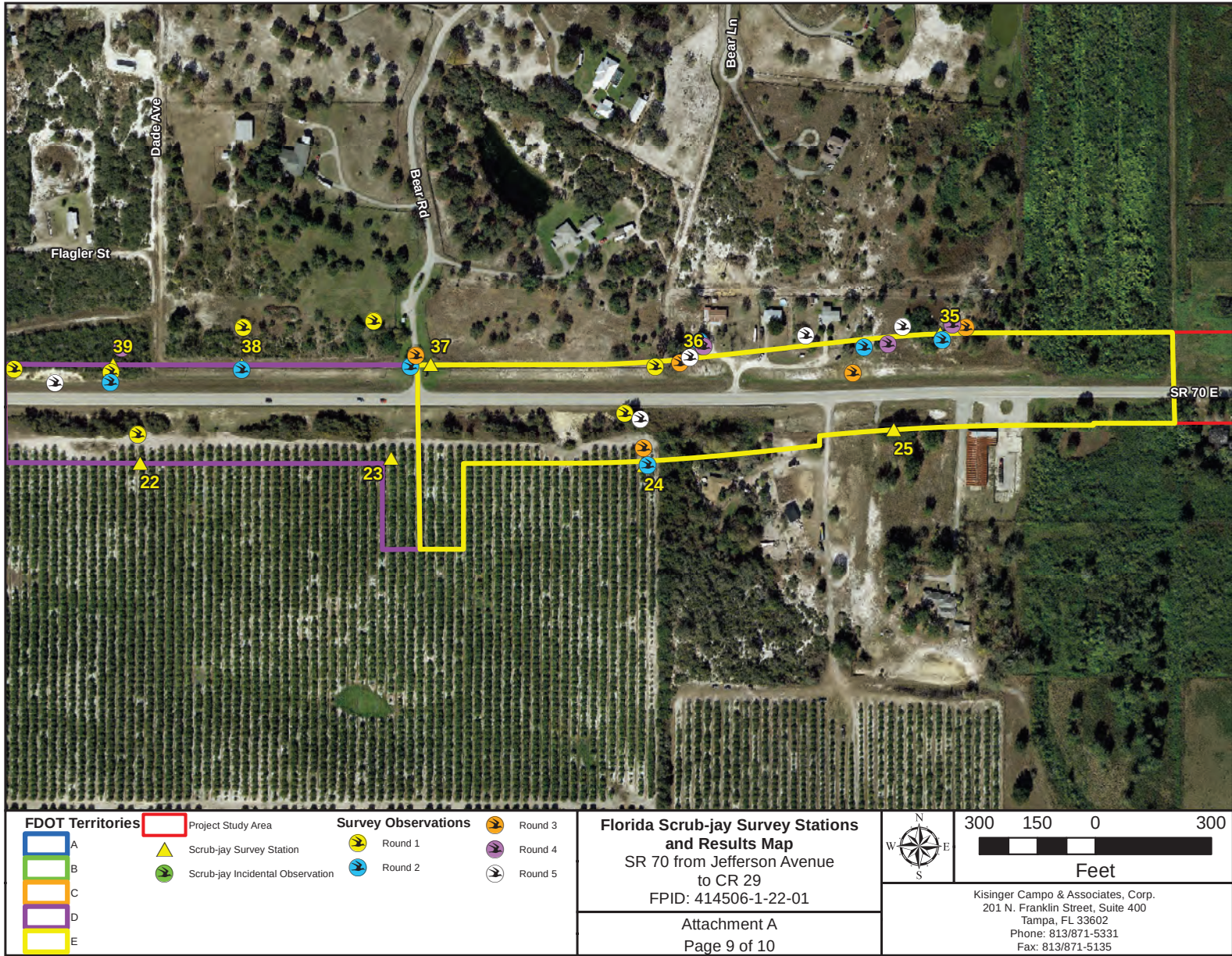
FDOT Territories A B C D E	Project Study Area Scrub-jay Survey Station Scrub-jay Incidental Observation	Survey Observations Round 1 Round 2 Round 3 Round 4 Round 5	Florida Scrub-jay Survey Stations and Results Map SR 70 from Jefferson Avenue to CR 29 FPID: 414506-1-22-01	Scale 300 150 0 300 Feet
Attachment A Page 5 of 10				Contact Information Kisinger Campo & Associates, Corp. 201 N. Franklin Street, Suite 400 Tampa, FL 33602 Phone: 813/871-5331 Fax: 813/871-5135



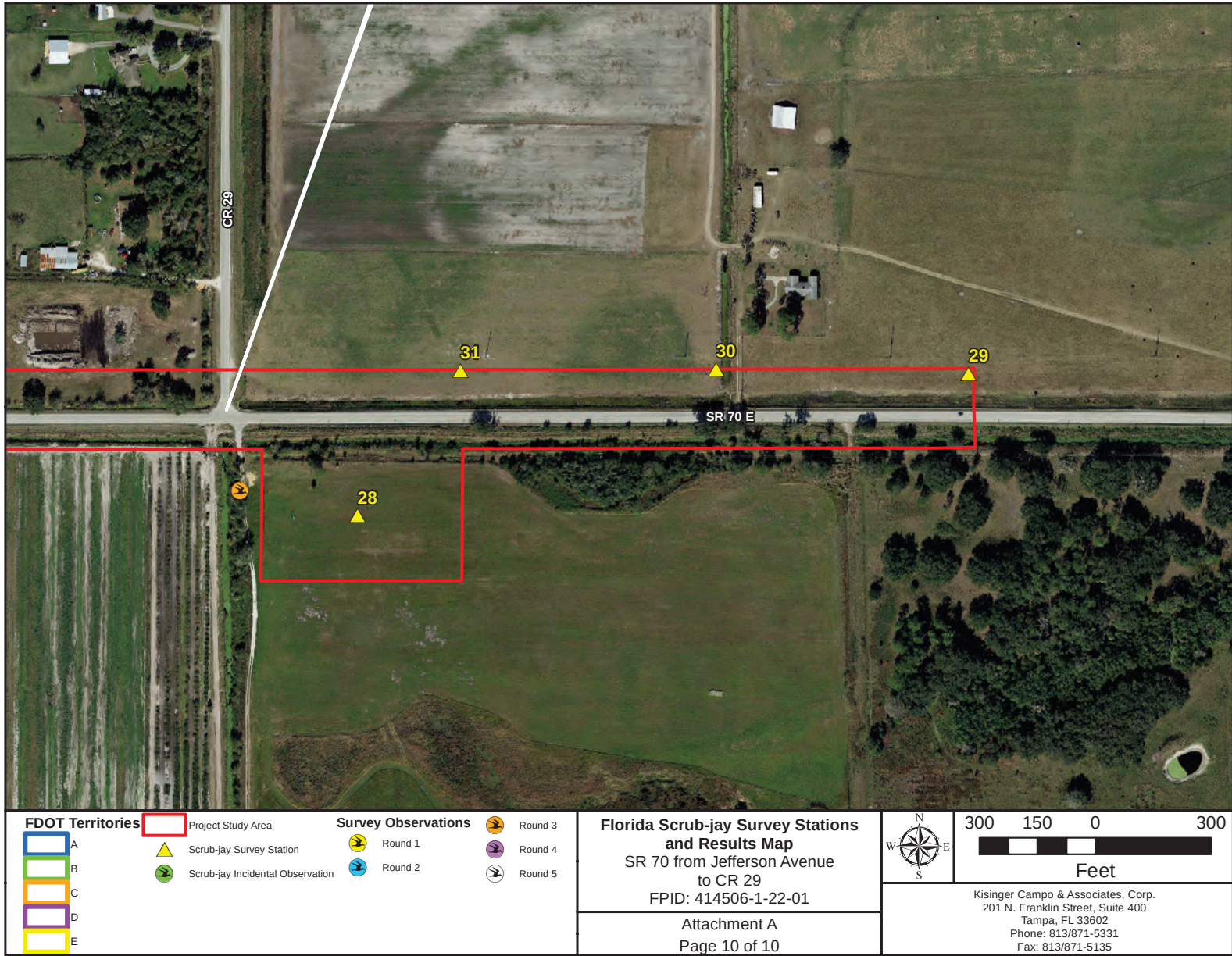


FDOT Territories A B C D E	Project Study Area Scrub-jay Survey Station Scrub-jay Incidental Observation	Survey Observations Round 1 Round 2 Round 3 Round 4 Round 5	Florida Scrub-jay Survey Stations and Results Map SR 70 from Jefferson Avenue to CR 29 FPID: 414506-1-22-01 Attachment A Page 7 of 10	 300 150 0 300 Feet Kisinger Campo & Associates, Corp. 201 N. Franklin Street, Suite 400 Tampa, FL 33602 Phone: 813/871-5331 Fax: 813/871-5135
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Path: \\h061906\41450612201 SR 70 PD&E Highlands County\200 Engineering\211 Pond Sting Report\211.1 Research Data\GIS\Maps\NRE\Species Maps\SR 70_Scrub Jay Surveys Results.mxd 10/28/2019



Attachment B

Florida Scrub-jay Station Photographs

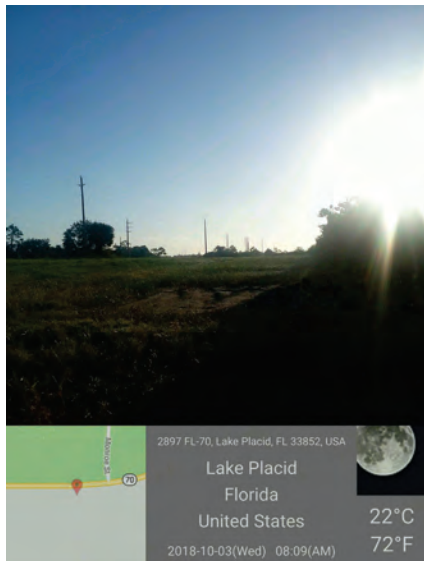
Station 1



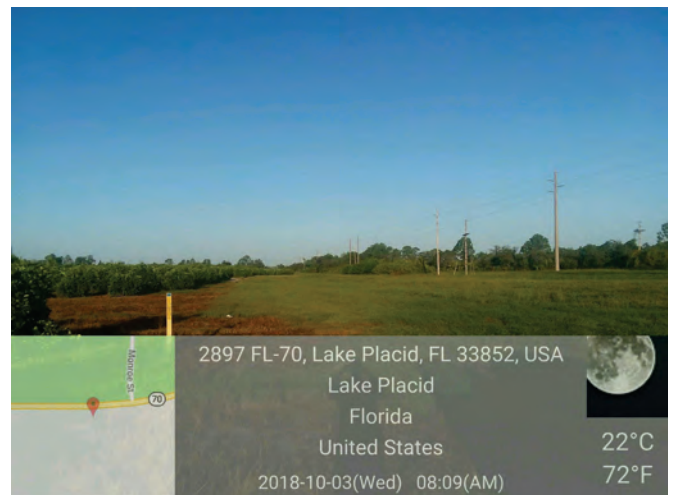
Station 1 Photo 1



Station 1 Photo 2



Station 1 Photo 3



Station 1 Photo 4

Station 2



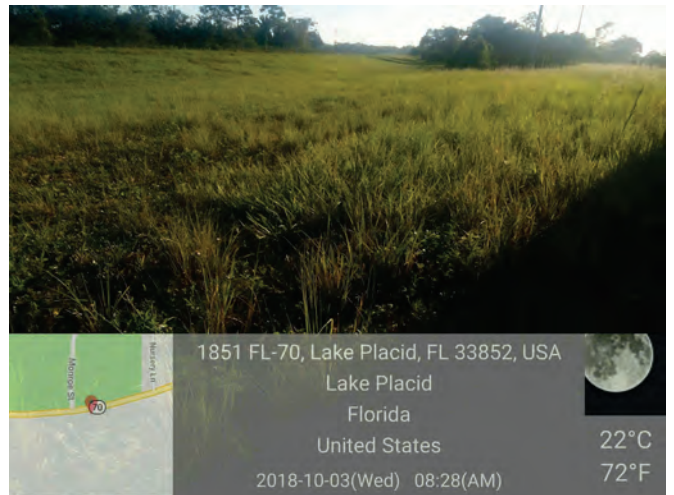
Station 2 Photo 1



Station 2 Photo 2



Station 2 Photo 3



Station 2 Photo 4

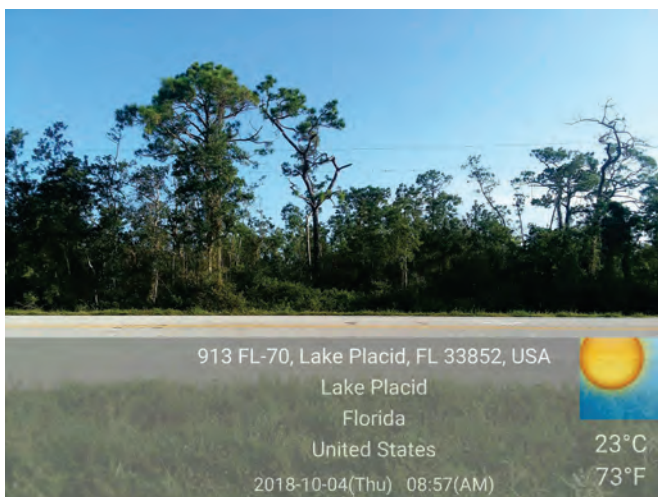
Station 3



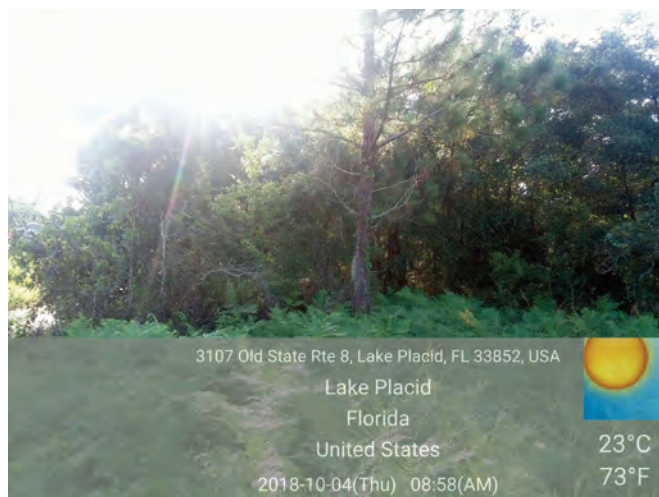
Station 3 Photo 1



Station 3 Photo 2



Station 3 Photo 3



Station 3 Photo 4

Station 4



Station 4 Photo 1



Station 4 Photo 2



Station 4 Photo 3



Station 4 Photo 4

Station 5



Station 5 Photo 1



Station 5 Photo 2



Station 5 Photo 3



Station 5 Photo 4

Station 6



Station 6 Photo 1



Station 6 Photo 2



Station 6 Photo 3



Station 6 Photo 4

Station 7



Station 7 Photo 1



Station 7 Photo 2



Station 7 Photo 3



Station 7 Photo 4

Station 8



Station 8 Photo 1



Station 8 Photo 2



Station 8 Photo 3



Station 8 Photo 4

Station 9



Station 9 Photo 1



Station 9 Photo 2



Station 9 Photo 3



Station 9 Photo 4

Station 10



Station 10 Photo 1



Station 10 Photo 2



Station 10 Photo 3



Station 10 Photo 4

Station 11



Station 11 Photo 1



Station 11 Photo 2



Station 11 Photo 3



Station 11 Photo 4

Station 12



Station 12 Photo 1



Station 12 Photo 2



Station 12 Photo 3



Station 12 Photo 4

Station 13



Station 13 Photo 1



Station 13 Photo 2



Station 13 Photo 3



Station 13 Photo 4

Station 14



Station 14 Photo 1



Station 14 Photo 2



Station 14 Photo 3



Station 14 Photo 4

Station 15



Station 15 Photo 1



Station 15 Photo 2



Station 15 Photo 3



Station 15 Photo 4

Station 16



Station 16 Photo 1



Station 16 Photo 2



Station 16 Photo 3



Station 16 Photo 4

Station 17



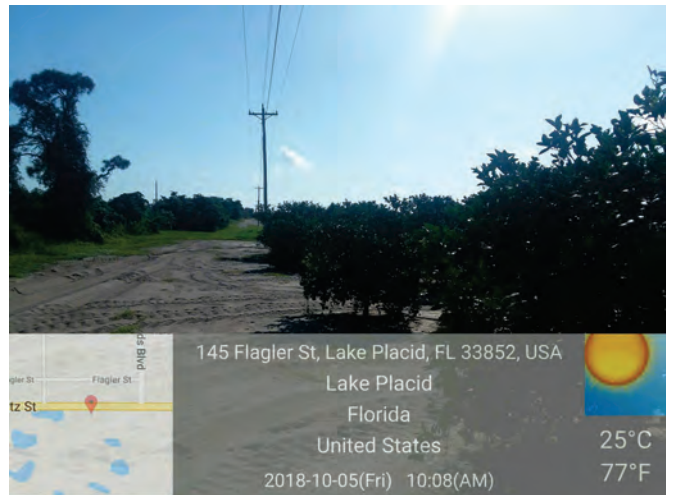
Station 17 Photo 1



Station 17 Photo 2



Station 17 Photo 3



Station 17 Photo 4

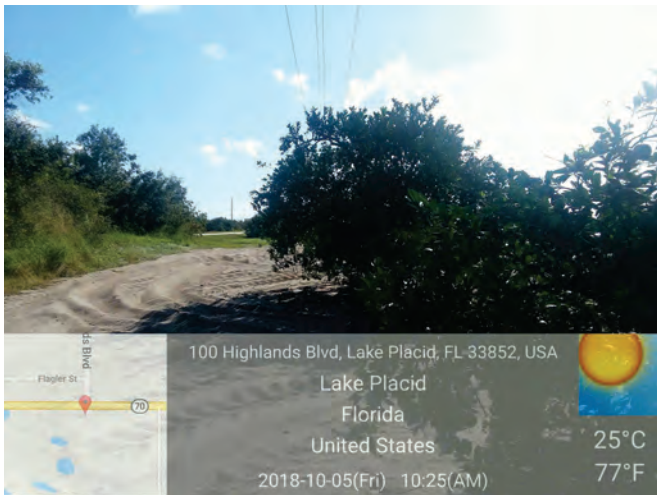
Station 18



Station 18 Photo 1



Station 18 Photo 2



Station 18 Photo 3



Station 18 Photo 4

Station 19



Station 19 Photo 1



Station 19 Photo 2



Station 19 Photo 3



Station 19 Photo 4

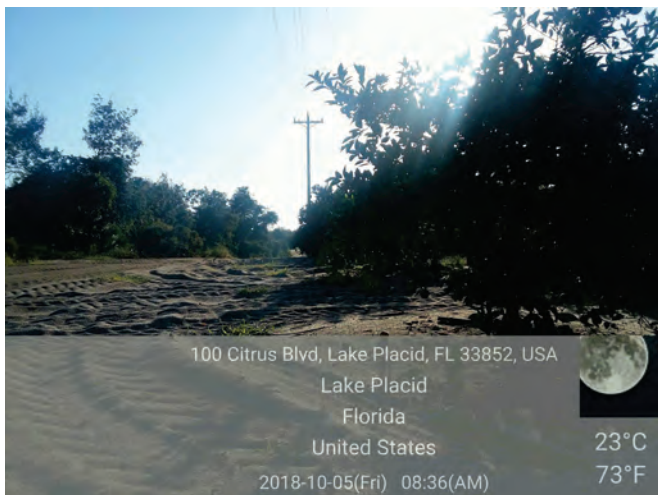
Station 20



Station 20 Photo 1



Station 20 Photo 2



Station 20 Photo 3



Station 20 Photo 4

Station 21



Station 21 Photo 1



Station 21 Photo 2

Station 22



Station 22 Photo 1



Station 22 Photo 2



Station 22 Photo 3



Station 22 Photo 4

Station 23



Station 23 Photo 1



Station 23 Photo 2



Station 23 Photo 3



Station 23 Photo 4

Station 24



Station 24 Photo 1



Station 24 Photo 2



Station 24 Photo 3



Station 24 Photo 4

Station 25



Station 25 Photo 1



Station 25 Photo 2



Station 25 Photo 3



Station 25 Photo 4

Station 28



Station 28 Photo 1



Station 28 Photo 2



Station 28 Photo 3



Station 28 Photo 4

Station 29



Station 29 Photo 1



Station 29 Photo 2



Station 29 Photo 3



Station 29 Photo 4

Station 30



Station 30 Photo 1



Station 30 Photo 2



Station 30 Photo 3



Station 30 Photo 4

Station 31



Station 31 Photo 1



Station 31 Photo 2



Station 31 Photo 3



Station 31 Photo 4

Station 35



Station 35 Photo 1



Station 35 Photo 2



Station 35 Photo 3



Station 35 Photo 4

Station 36



Station 36 Photo 1



Station 36 Photo 2



Station 36 Photo 3



Station 36 Photo 4

Station 37



Station 37 Photo 1



Station 37 Photo 2



Station 37 Photo 3



Station 37 Photo 4

Station 38



Station 38 Photo 1



Station 38 Photo 2



Station 38 Photo 3



Station 38 Photo 4

Station 39



Station 39 Photo 1



Station 39 Photo 2



Station 39 Photo 3



Station 39 Photo 4

Station 40



Station 40 Photo 1



Station 40 Photo 2



Station 40 Photo 3



Station 40 Photo 4

Station 41



Station 41 Photo 1



Station 41 Photo 2



Station 41 Photo 3



Station 41 Photo 4

Station 42



Station 42 Photo 1



Station 42 Photo 2



Station 42 Photo 3



Station 42 Photo 4

Station 43



Station 43 Photo 1



Station 43 Photo 2



Station 43 Photo 3



Station 43 Photo 4

Station 44



Station 44 Photo 1



Station 44 Photo 2



Station 44 Photo 3



Station 44 Photo 4

Station 45



Station 45 Photo 1



Station 45 Photo 2



Station 45 Photo 3



Station 45 Photo 4

Station 46



Station 46 Photo 1



Station 46 Photo 2



Station 46 Photo 3



Station 46 Photo 4

Station 47



Station 47 Photo 1



Station 47 Photo 2



Station 47 Photo 3



Station 47 Photo 4

Station 48



Station 48 Photo 1



Station 48 Photo 2



Station 48 Photo 3



Station 48 Photo 4

Station 49



Station 49 Photo 1



Station 49 Photo 2



Station 49 Photo 3



Station 49 Photo 4

Station 50



Station 50 Photo 1



Station 50 Photo 2



Station 50 Photo 3



Station 50 Photo 4

Station 51



Station 51 Photo 1



Station 51 Photo 2



Station 51 Photo 3



Station 51 Photo 4

Station 52



Station 52 Photo 1



Station 52 Photo 2



Station 52 Photo 3



Station 52 Photo 4

Station 53



Station 53 Photo 1



Station 53 Photo 2



Station 53 Photo 3



Station 53 Photo 4

Station 54



Station 54 Photo 1



Station 54 Photo 2



Station 54 Photo 3



Station 54 Photo 4

Station 55



Station 55 Photo 1



Station 55 Photo 2



Station 55 Photo 3



Station 55 Photo 4

Station 56



Station 56 Photo 1



Station 56 Photo 2



Station 56 Photo 3



Station 56 Photo 4

Station 57



Station 57 Photo 1



Station 57 Photo 2



Station 57 Photo 3



Station 57 Photo 4

Station 58



Station 58 Photo 1



Station 58 Photo 2



Station 58 Photo 3



Station 58 Photo 4

Station 59



Station 59 Photo 1



Station 59 Photo 2



Station 59 Photo 3



Station 59 Photo 4

Station 60



Station 60 Photo 1



Station 60 Photo 2



Station 60 Photo 3



Station 60 Photo 4

Station 62



Station 62 Photo 1



Station 62 Photo 2



Station 62 Photo 3



Station 62 Photo 4

Station 63



Station 63 Photo 1



Station 63 Photo 2



Station 63 Photo 3



Station 63 Photo 4

Station 64



Station 64 Photo 1



Station 64 Photo 2



Station 64 Photo 3



Station 64 Photo 4

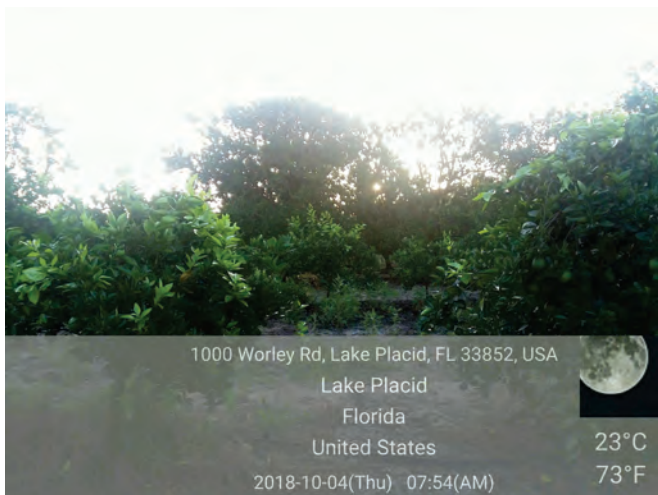
Station 65



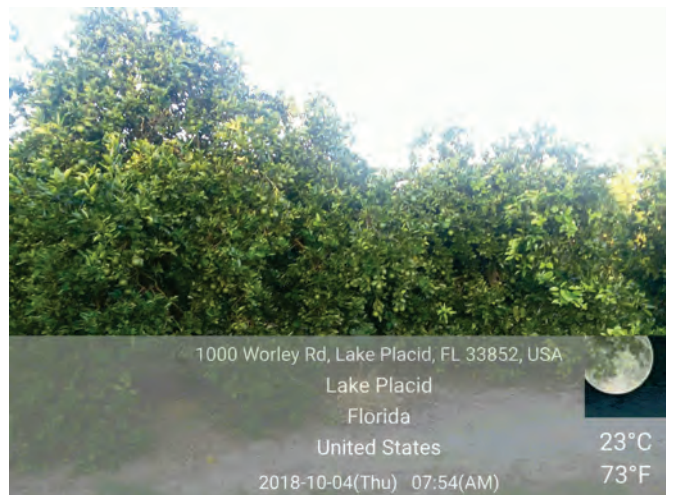
Station 65 Photo 1



Station 65 Photo 2



Station 65 Photo 3



Station 65 Photo 4

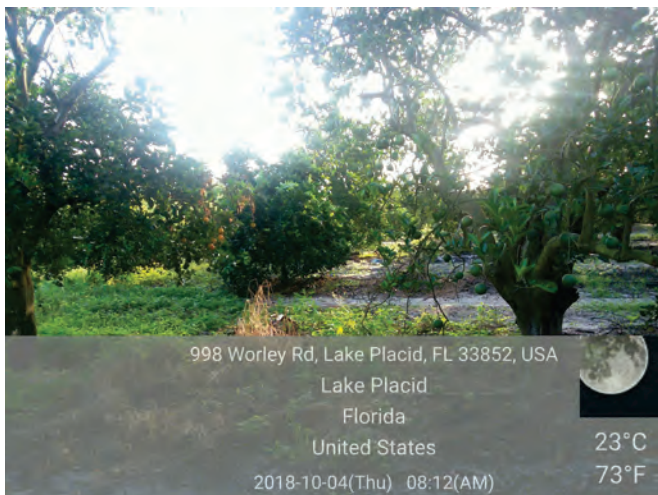
Station 66



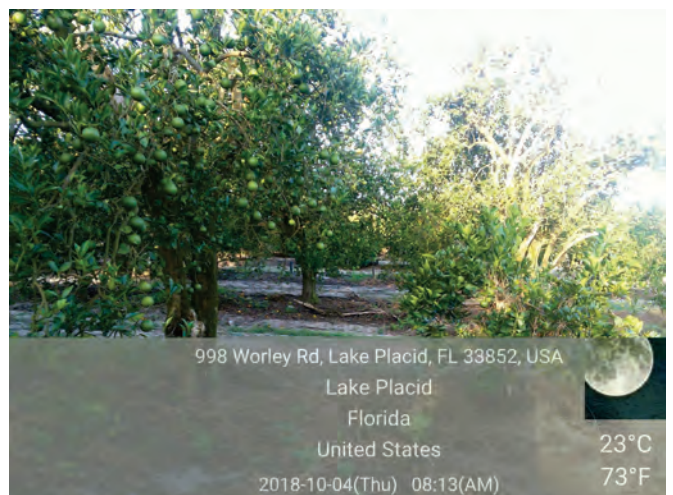
Station 66 Photo 1



Station 66 Photo 2



Station 66 Photo 3



Station 66 Photo 4

Attachment C

Florida Scrub-jay Survey Datasheets

Survey Date 7/12/2018 (Round 1)

Survey	Time	Temp	Wind (mph/direction)	Visibility	Precipitation
Start	7:38 AM	73	0	Clear	None
Stop	11:03 AM	85	S 2 mph	clear	none

FSJ Station	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
1	7:38 AM	7:51 AM	No			1	
2	7:56 AM	7:56 AM	No			2	
64	8:14 AM	8:25 AM	No			58	Blue jay called
3	8:21 AM	8:32 AM	No			3	434 possibly remove? hardwood conifer mix, very thick
63	8:27 AM	8:38 AM	No			57	Blue jay called
4	8:35 AM	8:43 AM	No			4	
62	8:39 AM	8:49 AM	No			56	Mockingbird
5	8:47 AM	8:55 AM	No			5	
60	8:54 AM	9:02 AM	No			55	Blue jay called
6	8:58 AM	9:09 AM	No			6	
59	9:06 AM	9:14 AM	No			54	Blue jay called
7	9:14 AM	9:26 AM	No			7	blue jay in area
58	9:18 AM	9:27 AM	No			53	Blue jay called
8	9:30 AM	9:43 AM	No			8	
56	9:30 AM	9:39 AM	No			51	Mockingbird; blue jay called
57	9:43 AM	9:53 AM	No			52	Blue jay obs; mockingbird
9	9:49 AM	10:01 AM	No			9	
10	10:04 AM	10:15 AM	No			10	
12	10:20 AM	10:32 AM	No			12	
65	10:22 AM	10:31 AM	No			59	Blue jay obs; mockingbird
11	10:35 AM	10:46 AM	No			11	
66	10:35 AM	10:46 AM	No			60	Mockingbird
13	10:49 AM	11:03 AM	No			13	

Survey Date 7/13/2018 (Round 1)

Survey	Time	Temp	Wind (mph/direction)	Visibility	Precipitation
Start	7:32 AM	76	1mph nw	Clear	None
Stop	11:01 AM	88	3mph nw	Clear	None

FSJ Station	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
55	7:32 AM	7:43 AM	No			50	Mockingbird
14	7:42 AM	7:55 AM	No			14	
54	7:49 AM	7:58 AM	No			49	Mockingbird
15	8:01 AM	8:10 AM	No			15	
53	8:02 AM	8:14 AM	No			48	
16	8:13 AM	8:27 AM				16	
52	8:20 AM	8:31 AM	No			47	Blue jay called; mockingbird
17	8:33 AM	8:44 AM	No			17	
44	8:37 AM	8:48 AM	No			39	Towhee; bluejay
18	8:51 AM	9:03 AM	No			18	
45	8:53 AM	9:04 AM	No			40	
19	9:08 AM	9:20 AM	No			19	
46	9:10 AM	9:21 AM	No			41	
47	9:36 AM	9:47 AM	No			42	
48	9:51 AM	10:00 AM	No			43	Blue jay
20	9:54 AM	10:06 AM	No			20	
49	10:04 AM	10:15 AM	No			44	Blue jay
21	10:11 AM	10:21 AM	No			21	
50	10:19 AM	10:30 AM	No			45	Blue jay; towhee
22	10:26 AM	10:46 AM	Yes	2	0	22	Came from north and flew back to the north
51	10:35 AM	10:46 AM	No			46	
28	10:50 AM	11:00 AM	No			26	
43	10:51 AM	11:01 AM	No			38	

Survey Date 7/14/2018 (Round 1)

Survey	Time	Temp	Wind (mph/direction)	Visibility	Precipitation
Start	7:19 AM	73	0	Clear	None
Stop	11:02 AM	87	3mph ne	Clear	None

FSJ Station	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
42	7:19 AM	7:29 AM	No			37	Blue jay
41	7:33 AM	7:43 AM	No			36	Towhee
40	7:48 AM	7:57 AM	Yes	1	1	35	North
39	8:01 AM	8:13 AM	Yes	1	0	34	Remained in tree
38	8:16 AM	8:21 AM	Yes	1	0	33	Undetermined; flew down in tree out of sight
37	8:26 AM	8:37 AM	Yes	2	0	32	From NW across road to SE; Same 2 as at previous stations
36	8:41 AM	8:50 AM	Yes	6	1	31	From north and flew to survey station; Some flew out of tree at survey station and flew east
35	8:55 AM	9:04 AM	No			30	Mockingbird
30	9:11 AM	9:19 AM	No			28	Mockingbird
31	9:22 AM	9:28 AM	No			29	
29	9:35 AM	9:42 AM	No			27	
23	9:57 AM	10:07 AM	No			23	
24	10:16 AM	10:26 AM	Yes	2	0	24	From SW to location then to survey station; Same 2 from previous
25	10:54 AM	11:02 AM	No			25	

Survey Date 7/26/2018 (Round 2)

Survey	Time	Temp	Wind (mph/direction)	Visibility	Precipitation
Start	7:31 AM	76	SE 2 mph	clear	none
Stop	10:19 AM	87	SSW 10	clear	none

FSJ Station	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
28	7:31 AM	7:45 AM	No			26	
35	7:50 AM	8:02 AM	Yes	3	1	30	Flew in from west
25	8:07 AM	8:14 AM	Yes	3	1	25	Flew from NW
36	8:18 AM	8:26 AM	Yes	3	1	31	Flew in from NE
24	8:29 AM	8:37 AM	Yes	3	1	24	Came from north, from station 35
37	8:41 AM	8:53 AM	Yes	2	0	32	Flew in from W, different group from 4 birds to east
38	8:56 AM		Yes	2	0	33	Flew from E; Same 2 bird group from station 37
23	9:10 AM	9:18 AM	No			23	
3	9:28 AM	9:45 AM	No			3	
4	9:53 AM	10:04 AM	No			4	
5	10:05 AM	10:11 AM	No			5	the combo of a blue jay and a mockingbird almost tricked me. but both were present, no scrubjay
6	10:14 AM	10:19 AM	No			6	

Survey Date 7/27/2018 (Round 2)

Survey	Time	Temp	Wind (mph/direction)	Visibility	Precipitation
Start	7:28 AM	74	0	clear	none
Stop	10:56 AM	88	Sw 3 mph	Clear	None

FSJ Station	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
1	7:28 AM	7:42 AM	No			1	
53	7:39 AM	7:47 AM	No			48	Mockingbird
2	7:43 AM	7:55 AM	No			2	
52	7:52 AM	7:59 AM	No			47	Blue jay
64	7:58 AM	8:14 AM	Yes	3	0	58	Flew in from and left to SW
51	8:03 AM	8:11 AM	No			46	Blue jay
50	8:16 AM	8:24 AM	No			45	Blue jay
63	8:19 AM		Yes	5	0	57	One group flew in and back out from W (station 2), a separate group flew in from SE
49	8:29 AM	8:40 AM	No			44	
62	8:51 AM	8:59 AM	No			56	
48	8:52 AM	9:01 AM	No			43	Rooster
47	9:04 AM	9:11 AM	No			42	Blue jay, rooster
43	9:17 AM	9:25 AM	No			38	
60	9:21 AM	9:29 AM	No			55	
42	9:28 AM	9:37 AM	No			37	
59	9:39 AM	9:49 AM	No			54	
41	9:44 AM	9:53 AM	No			36	Towhee; bluejay
58	9:50 AM	9:59 AM	No			53	
40	9:59 AM	10:05 AM	Yes	2	0	35	Flew in from south
57	10:00 AM	10:08 AM	No			52	
56	10:09 AM	10:14 AM	No			51	
39	10:09 AM	10:17 AM	Yes	1	0	34	From NW into tree then out of sight
7	10:20 AM	10:27 AM	No			7	
8	10:28 AM	10:40 AM	No			8	
31	10:29 AM	10:35 AM	No			29	
30	10:39 AM	10:44 AM	No			28	
9	10:44 AM	10:54 AM	No			9	
29	10:49 AM	10:56 AM	No			27	

Survey Date 7/28/2018 (Round 2)

Survey	Time	Temp	Wind (mph/direction)	Visibility	Precipitation
Start	7:41 AM	73	0	Clear	None
Stop	10:41 AM	86	Sw 1 mph	Clear	None

FSJ Station	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
44	7:41 AM	7:51 AM	No			39	Towhee
45	7:58 AM	8:05 AM	No			40	
46	8:09 AM	8:20 AM	No			41	Blue jay
11	8:38 AM	8:48 AM	No			11	
12	8:51 AM	9:02 AM	No			12	
13	9:06 AM	9:14 AM	No			13	Blue jay
14	9:24 AM	9:33 AM	No			14	
15	9:42 AM	9:51 AM	No			15	
16	9:56 AM	10:05 AM	No			16	
17	10:17 AM	10:27 AM	No			17	Blue jay
18	10:33 AM	10:41 AM	No			18	

Survey Date 7/29/2018 (Round 2)

Survey	Time	Temp	Wind (mph/direction)	Visibility	Precipitation
Start	7:42 AM	75	E 1 mph	Clear	None
Stop	10:35 AM	86	Se 4 mph	Clear	None

FSJ Station	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
10	7:42 AM	7:52 AM	No			10	Blue jay
19	8:06 AM	8:17 AM	No			19	Blue jay
20	8:27 AM	8:38 AM	Yes	0	1	20	Flew from south to tree at road then out of sight in unknown direction
21	8:46 AM	8:56 AM	Yes	3	1	21	Flew in from SSE in orange grove and were very agitated; flew off into orange grove to east
22	9:06 AM	9:19 AM	No			22	Towhee
54	9:36 AM	9:45 AM	No			49	Mockingbird and blue jay
55	9:50 AM	9:59 AM	No			50	Blue jay
65	10:10 AM	10:20 AM	No			59	
66	10:25 AM	10:35 AM	No			60	Blue jay

Survey Date 10/3/2018 (Round 3)

Survey	Time	Temp	Wind (mph/direction)	Visibility	Precipitation
Start	8:00 AM	72	4	Good	0
Stop	9:44 AM	78	NE 7 mph	Clear	None

FSJ Station	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
1	8:00 AM	8:05 AM	No			1	Lots of traffic.
2	8:18 AM	8:26 AM	No			2	Sun in eyes from east.
29	8:22 AM	8:33 AM	No			27	
30	8:43 AM	8:52 AM	No			28	
64	8:56 AM	9:03 AM	No			58	
31	8:59 AM	9:08 AM	No			29	
63	9:08 AM		No			57	
28	9:15 AM	9:28 AM	Yes	3	0	26	Flew in from W/NW
35	9:33 AM	9:44 AM	Yes	2	0	30	Flew in from NW
25	9:46 AM		Yes	1	0	25	Same individual as station 35; Flew in from W
62	9:48 AM		No			56	Stopped survey. Wind speed above 8mph.

Survey Date 10/4/2018 (Round 3)

Survey	Time	Temp	Wind (mph/direction)	Visibility	Precipitation
Start	7:52 AM	73	5	Good	0
Stop	10:51 AM	84	NE 8 mph	clear	none

FSJ Station	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
65	7:52 AM	8:08 AM	No			59	Paused for citrus sprayer to go by.
66	8:14 AM	8:24 AM	No			60	
36	8:24 AM	8:29 AM	Yes	1	0	31	Flew in from NE; Likely same bird from station 35 & 25
60	8:30 AM	8:40 AM	No			55	
24	8:33 AM	8:40 AM	Yes	2	0	24	Likely same bird from station 36. Flew in from NNE. Flew back across road straight N
37	8:41 AM	8:47 AM	Yes	1	0	32	Flew in from N; Different group from station 24
3	8:44 AM	8:54 AM	No			3	traffic noise.
38	8:50 AM	8:57 AM	No			33	
4	9:02 AM	9:10 AM	No			4	
23	9:03 AM	9:12 AM	No			23	
5	9:16 AM	9:24 AM	No			5	
22	9:17 AM	9:22 AM	No			22	Immature male blue jay
6	9:27 AM	9:34 AM	No			6	
39	9:28 AM	9:36 AM	No			34	
59	9:41 AM	9:49 AM	No			54	
44	9:44 AM	9:53 AM	No			39	Blue jays present
58	9:54 AM	10:00 AM	No			53	
56	10:04 AM	10:13 AM	No			51	
46	10:09 AM	10:22 AM	No			41	
57	10:17 AM	10:25 AM	No			52	
7	10:29 AM	10:35 AM	No			7	
19	10:32 AM	10:40 AM	No			19	Juvenile bald eagle present. 2 blue jays present
8	10:38 AM	10:45 AM	No			8	occasional wind gusts.
47	10:43 AM	10:51 AM	No			42	2 blue Jay's present
45	10:59 AM	10:07 AM	No			40	

Survey Date 10/5/2018 (Round 3)

Survey	Time	Temp	Wind (mph/direction)	Visibility	Precipitation
Start	7:45 AM	71	2	good	0
Stop	10:47 AM	80	8	Good	0

FSJ Station	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
40	7:45 AM	7:53 AM	No			35	
41	7:56 AM	8:07 AM	No			36	Stopped calls on 4th round. Hawk heard in distance to the north.
42	8:11 AM	8:20 AM	No			37	
43	8:23 AM	8:32 AM	No			38	
55	8:24 AM	8:32 AM	No			50	
9	8:34 AM	8:42 AM	No			9	
20	8:37 AM	8:47 AM	No			20	
10	8:43 AM	8:52 AM	No			10	
48	8:50 AM	9:03 AM	No			43	Hawk heard in distance to the west. Not observed directly.
54	8:55 AM	9:03 AM	No			49	
11	9:05 AM	9:14 AM	No			11	
12	9:16 AM	9:25 AM	No			12	
50	9:16 AM	9:30 AM	No			45	Hawk calling to the east on last round. Not observed directly.
53	9:26 AM	9:34 AM	No			48	
51	9:33 AM	9:41 AM	No			46	
13	9:39 AM	9:44 AM	Yes	2	0	13	Flew in from S
52	9:43 AM	9:52 AM	No			47	
14	9:52 AM	10:00 AM	No			14	American kestrel flew by at the very end of the survey
16	9:55 AM	10:03 AM	No			16	
17	10:09 AM	10:19 AM	No			17	Hawk observed on telephone wire to the east.
15	10:16 AM	10:26 AM	No			15	1 blue jay flew in
18	10:25 AM	10:35 AM	No			18	
49	10:39 AM	10:47 AM	No			44	

Survey Date 10/22/2018 (Round 4)

Survey	Time	Temp	Wind (mph/direction)	Visibility	Precipitation
Start	7:56 AM	65	5	Good	0
Stop	10:25 AM	77	ENE 8 mph	clear	none

FSJ Station	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
30	7:56 AM	8:03 AM	No			28	
29	8:09 AM	8:16 AM	No			27	
31	8:25 AM	8:32 AM	No			29	
1	8:41 AM	8:53 AM	No			1	
28	8:55 AM	9:03 AM	No			26	
2	8:57 AM	9:06 AM	No			2	
64	9:09 AM	9:18 AM	No			58	
25	9:14 AM	9:19 AM	Yes	2	0	25	Flew in from the north across SR70; Flew back to north close to house on north side
3	9:23 AM	9:34 AM	No			3	
35	9:32 AM	9:41 AM	Yes	2	0	30	Flew in from north; Flew off in north
4	9:36 AM	9:47 AM	No			4	
36	9:46 AM	9:50 AM	Yes	3	0	31	2 flew in from east, likely same individuals from station 25; 1 flew in from west; All flew off to south
5	9:49 AM	9:59 AM	No			5	
24	9:56 AM	10:06 AM	No			24	2 blue jays flew in from east
6	10:00 AM	10:10 AM	No			6	
59	10:16 AM	10:25 AM	No			54	

Survey Date 10/23/2018 (Round 4)

Survey	Time	Temp	Wind (mph/direction)	Visibility	Precipitation
Start	8:29 AM	64	NNW 2 mph	clear	none
Stop	11:22 AM	82	E 5 mph	Clear	None

FSJ Station	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
63	8:29 AM	8:39 AM	No			57	
37	8:30 AM	8:40 AM	No			32	
22	8:43 AM	8:51 AM	No			22	Hawk spotted flying over from west going east after first playback
23	8:55 AM	9:04 AM	No			23	1 blue jay across the street flew in from NE. Can hear multiple blue jays excited over something
66	8:59 AM		No			60	
65	9:04 AM	9:15 AM	No			59	
38	9:07 AM	9:15 AM	No			33	
39	9:18 AM	9:26 AM	Yes	1	0	34	Flew in from east; Flew off in unknown direction
62	9:21 AM	9:32 AM	No			56	
40	9:29 AM	9:37 AM	No			35	Blue jay on powerline when we got to point. It flew off in the S direction. Another blue jay flew in from S direction headed N as we finished
21	9:40 AM	9:49 AM	No			21	Osprey and hawk flew over from east headed west. 1 blue jay flew in over us from S and flew off to west
41	9:54 AM	10:02 AM	No			36	Blue jay flew in from S across street then headed NE
60	9:54 AM	10:05 AM	No			55	
42	10:04 AM	10:12 AM	No			37	
58	10:07 AM	10:17 AM	No			53	
43	10:14 AM	10:22 AM	No			38	Blue jay flew in from N heading S. Second blue jay spotted flying in and out of bushes to the N
57	10:19 AM	10:29 AM	No			52	
20	10:24 AM	10:32 AM	No			20	2 Blue jay flew in from west and flew off to the north
56	10:31 AM	10:41 AM	No			51	
11	10:46 AM	10:55 AM	No			11	
7	10:49 AM	10:59 AM	No			7	
12	10:56 AM	11:04 AM	No			12	
8	11:00 AM	11:08 AM	No			8	
53	11:05 AM	11:13 AM	No			48	
55	11:11 AM	11:22 AM	No			50	
13	11:14 AM	11:22 AM	No			13	

Survey Date 10/24/2018 (Round 4)

Survey	Time	Temp	Wind (mph/direction)	Visibility	Precipitation
Start	8:09 AM	70	5	Good	0
Stop	10:17 AM	85	NNE 7 mph	clear	none

FSJ Station	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
44	8:09 AM	8:22 AM	No			39	Blue jay flew in from west.
10	8:18 AM	8:30 AM	No			10	
45	8:28 AM	8:34 AM	No			40	4 blue jays flew overhead from south to north at beginning. 1 blue jay flew overhead midway thru survey from ne to sw.
9	8:32 AM	8:42 AM	No			9	
46	8:39 AM	8:49 AM	No			41	Flock of 5 blue jay flew by in the east going from south to north. Blue jay calls heard in vegetation to the north. Blue jay perches on tree about 100 yards west. Hawk observed in tree adjacent to perched blue jay. Hawk flew off to the west.
54	8:44 AM	8:55 AM	No			49	
19	8:58 AM	9:08 AM	No			19	Blue jays observed in tree about 100 yards out to the west. Blue jay flew by in the West from north to south. Blue jays in tree flew out to the north.
14	9:06 AM	9:16 AM	No			14	
47	9:13 AM	9:19 AM	No			42	Blue jay flew overhead from north to south. Another bluejay flew by from south to north from the west.
18	9:26 AM	9:35 AM	No			18	Hawk flew in from sw and landed on cable wire about 200 yards out to the west. Hawk flew off to the north. Blue jay flew from south and landed on tree adjacent to point in ne.
15	9:31 AM	9:39 AM	No			15	
48	9:40 AM	9:47 AM	No			43	Blue jay flew overhead from north to south.
16	9:41 AM	9:51 AM	No			16	
49	9:51 AM	10:00 AM	No			44	Hawk calls heard to the northeast. Blue jay calls heard in surrounding area (north and south). Blue jay observed in tree to ne.
52	9:53 AM	10:04 AM	No			47	
17	10:03 AM	10:11 AM	No			17	Blue jay flew in from south and landed in tree 10 yards north of point.
51	10:06 AM	10:17 AM	No			46	
50	10:16 AM		No			45	Blue jay call heard in tree to west. Blue jay observed in vegetation West adjacent.

Survey Date 10/30/2018 (Round 5)

Survey	Time	Temp	Wind (mph/direction)	Visibility	Precipitation
Start	8:31 AM	62	0	clear	none
Stop	11:31 AM	81	NNE 7 mph	Clear	None

FSJ Station	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
1	8:31 AM	8:41 AM	No			1	
2	8:33 AM	8:44 AM	No			2	
29	8:37 AM	8:48 AM	No			27	
30	8:50 AM	8:59 AM	No			28	
66	8:55 AM	9:05 AM	No			60	blue jay
31	9:00 AM	9:08 AM	No			29	
65	9:07 AM	9:17 AM	No			59	
28	9:18 AM	9:26 AM	No			26	
11	9:23 AM	9:32 AM	No			11	
12	9:34 AM	9:44 AM	No			12	
25	9:35 AM	9:45 AM	Yes	3	0	25	North to south, landed in tree at survey point; Later flew off back to the north across SR 70
53	9:46 AM	9:55 AM	No			48	
35	9:50 AM	9:53 AM	Yes	3	0	30	Flew in from west to east, landed in trees at survey point; Flew off to the west
3	9:58 AM	10:08 AM	No			3	
36	10:00 AM	10:03 AM	Yes	3	0	31	Flew in from E and flew off back in NE direction; Same individuals from stations 25 and 35
37	10:06 AM	10:14 AM	No			32	2 blue jays in tree next to us and another heard in the distance. The 2 next to us flew off to the north
4	10:09 AM	10:20 AM	No			4	
38	10:17 AM	10:25 AM	No			33	Heard from NW but were not seen. Blue jay flew over us from the north going south
5	10:21 AM	10:31 AM	No			5	
6	10:33 AM	10:43 AM	No			6	
40	10:37 AM	10:46 AM	No			35	
59	10:45 AM	10:55 AM	No			54	
41	10:48 AM	10:56 AM	No			36	
58	10:58 AM	11:08 AM	No			53	
21	11:01 AM	11:09 AM	No			21	
57	11:12 AM	11:22 AM	No			52	
22	11:13 AM	11:21 AM	No			22	
23	11:23 AM	11:31 AM	No			23	

Survey Date 10/31/2018 (Round 5)

Survey	Time	Temp	Wind (mph/direction)	Visibility	Precipitation
Start	8:05 AM	59	1	Good	0
Stop	11:01 AM	79	7	Good	0

FSJ Station	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
24	8:05 AM	8:12 AM	Yes	3	0	24	Observed north of SR 70; Flew in from the NE and flew out to the NE
42	8:18 AM	8:27 AM	No			37	Blue jay flew in from north and landed in tree east adjacent to survey point.
43	8:30 AM	8:37 AM	No			38	
13	8:31 AM	8:33 AM	Yes	3	0	13	Flew in from the south
14	8:41 AM	8:49 AM	Yes	3	0	14	Flew in from the west
44	8:46 AM	8:57 AM	No			39	2 Blue jays flew in from the south and landed in tree 50 yards from survey point. 2 additional blue jays flew in from the south and landed in tree to the southwest of survey point. Blue jays flew out of area back to the south.
54	8:58 AM	9:06 AM	No			49	
45	9:00 AM	9:07 AM	No			40	Blue jay flew in from the north and landed in tree to the east.
55	9:07 AM	9:14 AM	No			50	
46	9:13 AM	9:22 AM	No			41	Blue jay flew in from the south and landed in tree to the west. Bird then flew off to the south.
9	9:15 AM	9:23 AM	No			9	
10	9:26 AM	9:34 AM	No			10	
47	9:32 AM	9:41 AM	No			42	Blue jay flew in and landed 50 yards north in a tree. Hawk flew in from the west and landed in pine tree to the west.
7	9:36 AM	9:42 AM	No			7	
8	9:43 AM	9:51 AM	No			8	
48	9:47 AM	9:54 AM	No			43	
56	9:54 AM	10:04 AM	No			51	
49	9:58 AM	10:06 AM	No			44	Blue jay flew in from the north and landed in tree above. Blue jay then flew off to the south. Blue jay flew in from the east and landed in tree just south of SR 70.
60	10:05 AM	10:13 AM	No			55	
50	10:09 AM	10:16 AM	No			45	
17	10:19 AM	10:26 AM	No			17	
62	10:26 AM	10:33 AM	No			56	
18	10:31 AM	10:37 AM	No			18	Blue jay flew in from the south and landed in tree just north.
63	10:35 AM	10:43 AM	No			57	
19	10:42 AM	10:49 AM	No			19	2 Blue jays flew in from south then flew off to the north.
64	10:45 AM	10:53 AM	No			58	
20	10:54 AM	11:01 AM	No			20	

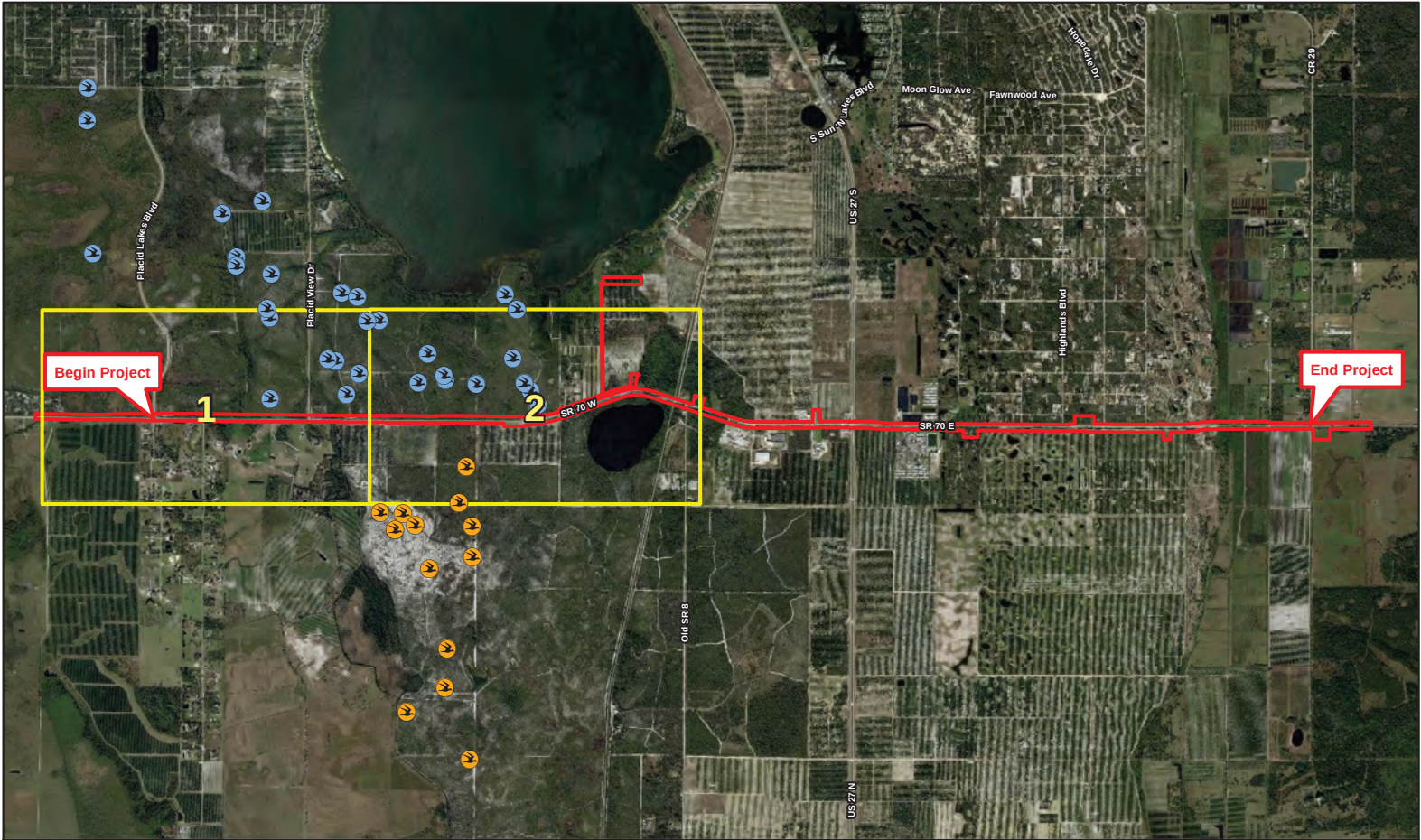
Survey Date 11/1/2018 (Round 5)

Survey	Time	Temp	Wind (mph/direction)	Visibility	Precipitation
Start	8:07 AM	61	1	Good	0
Stop	8:47 AM	63	2	Good	0

FSJ Station	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
16	8:07 AM	8:12 AM	No			16	
15	8:18 AM	8:24 AM	No			15	
52	8:30 AM	8:37 AM	No			47	
39	8:36 AM	8:46 AM	Yes	2	0	34	Flew in from the NW; One observed and one heard
51	8:40 AM	8:47 AM	No			46	

Attachment D

Florida Scrub-jay Archbold 2018 Survey Results Maps



Project Area



2018 McJunkin Tract Observation



2018 Lake Placid Scrub Observation

Florida Scrub-jay Archbold Survey Results

SR 70 from Jefferson Avenue

to CR 29

FPID: 414506 1 22 01

Attachment D

Key Sheet



4,000 2,000 0 4,000



Feet

Kisinger Campo & Associates, Corp.

201 N. Franklin Street, Suite 400

Tampa, FL 33602

Phone: 813/871-5331

Fax: 813/871-5135

Begin Project

SR 70 W

Placid Lakes Blvd

Placid View Dr

S Jefferson Ave

Johnson Dr

Park Lane Dr



Project Area



2018 McJunkin Tract Observation



2018 Lake Placid Scrub Observation

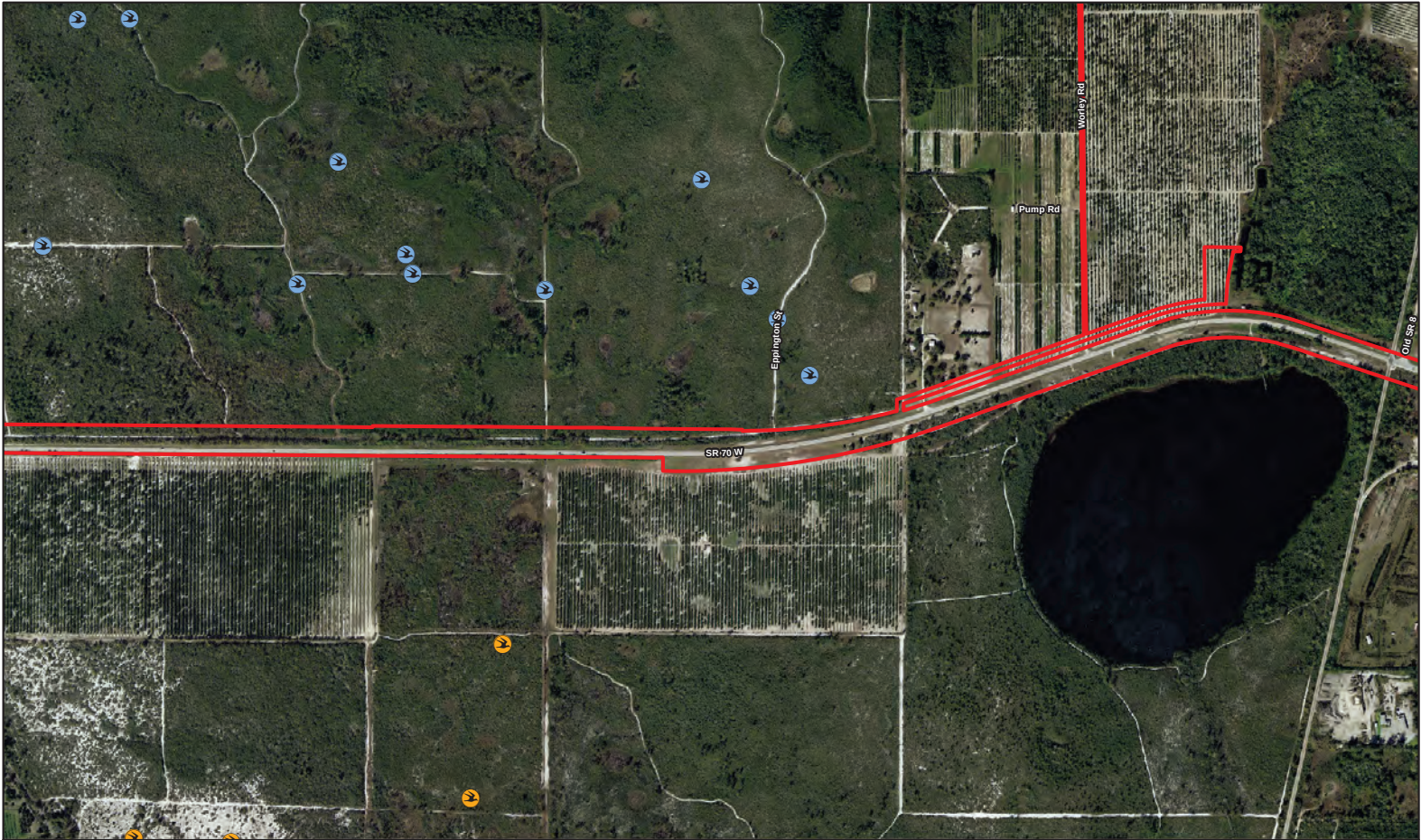
Florida Scrub-jay Archbold Survey Results
SR 70 from Jefferson Avenue
to CR 29
FPID: 414506 1 22 01

Attachment D
Page 1 of 2



1,000 500 0 1,000
Feet

Kisinger Campo & Associates, Corp.
201 N. Franklin Street, Suite 400
Tampa, FL 33602
Phone: 813/871-5331
Fax: 813/871-5135



Project Area



2018 McJunkin Tract Observation



2018 Lake Placid Scrub Observation

Florida Scrub-jay Archbold Survey Results

SR 70 from Jefferson Avenue
to CR 29

FPID: 414506 1 22 01

Attachment D

Page 2 of 2



1,000 500 0 1,000



Feet

Kisinger Campo & Associates, Corp.
201 N. Franklin Street, Suite 400
Tampa, FL 33602
Phone: 813/871-5331
Fax: 813/871-5135

Appendix B

FLORIDA SCRUB-JAY FDOT SURVEY RESULTS

Project Boundary

Lake Wales Ridge Wildlife
Environmental Area Management
Units

Survey Stations

Territory A

Territory B

Territory C

Territory D

Territory E

FSJ Survey Observations (ESA, 2023)

Round 1

Round 2

Round 3

Round 4

Round 5

Territory Establishment

Incidental Observations

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Page 1 of 9

Appendix B - Florida Scrub-Jay Survey Results

FPID #: 414506-1-22-01
Sheet 1 of 9
SR 70 PD&E Study, from Jefferson Avenue to CR 29
Highlands County, Florida

Feet

0

400

800

Data Source: ESA, ESRI, FWC



NORTH

Project Boundary

Lake Wales Ridge Wildlife
Environmental Area Management
Units

Survey Stations

Territory A

Territory B

Territory C

Territory D

Territory E

FSJ Survey Observations (ESA, 2023)

Round 1

Round 2

Round 3

Round 4

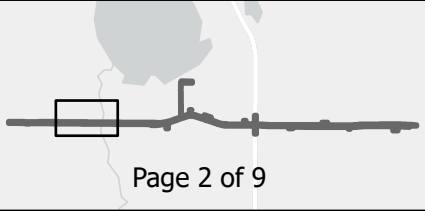
Round 5

Territory Establishment

Incidental Observations



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Page 2 of 9

Appendix B - Florida Scrub-Jay Survey Results

FPID #: 414506-1-22-01
Sheet 2 of 9
SR 70 PD&E Study, from Jefferson Avenue to CR 29
Highlands County, Florida

Feet

0

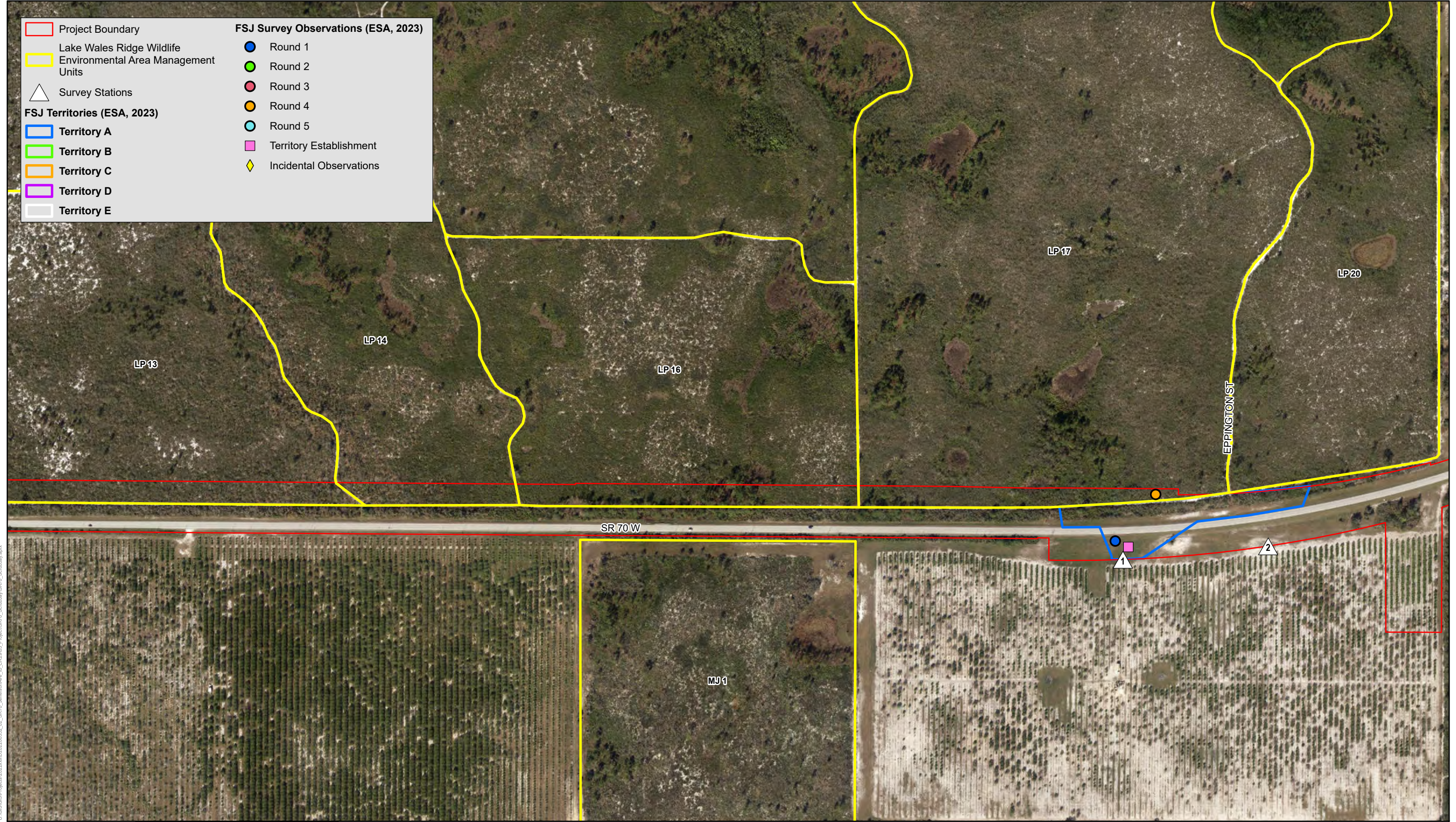
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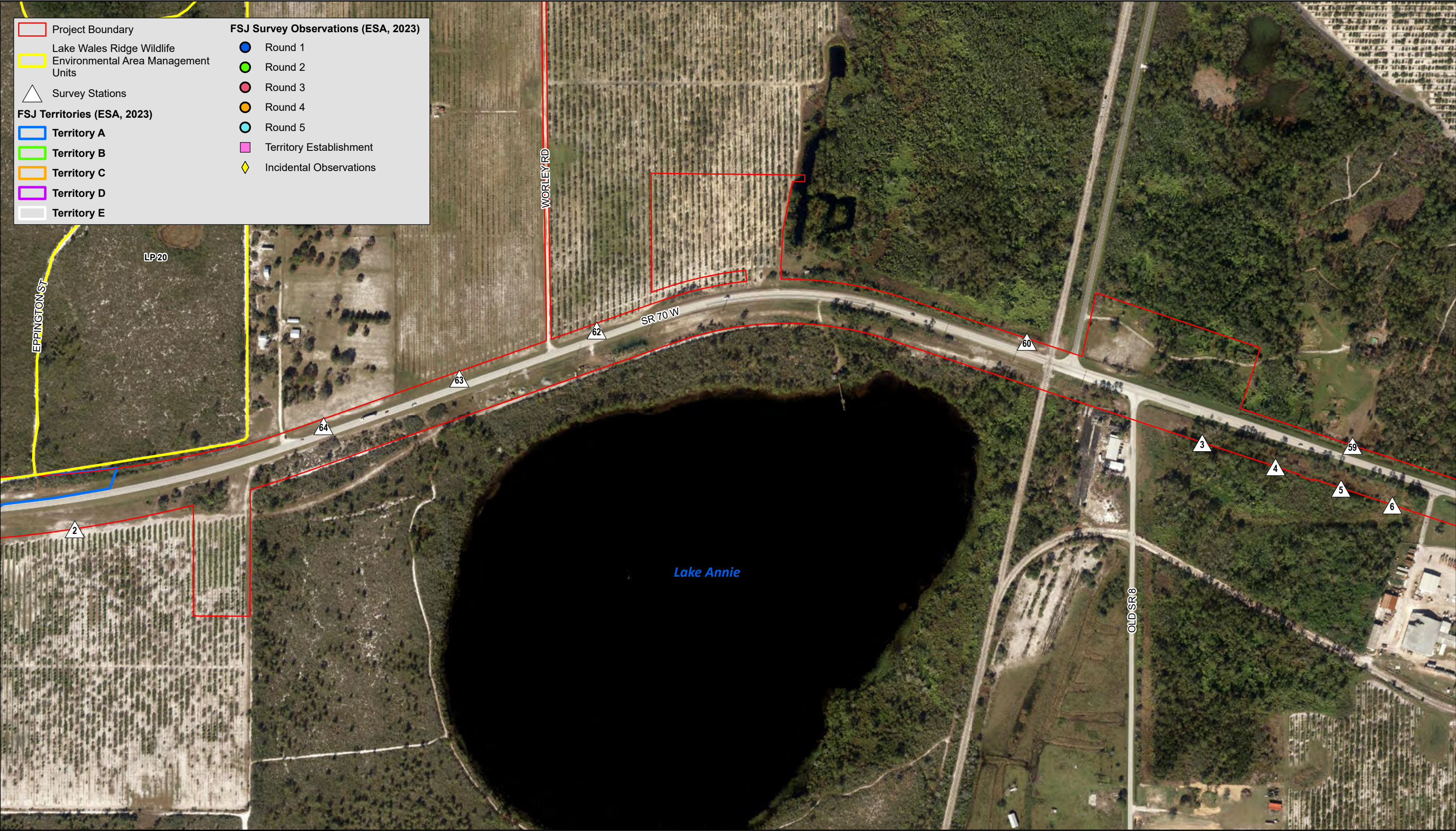
Data Source: ESA, ESRI, FWC



NORTH



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Project Boundary

Lake Wales Ridge Wildlife Environmental Area Management Units

Survey Stations

FSJ Territories (ESA, 2023)

Territory A

Territory B

Territory C

Territory D

Territory E

FSJ Survey Observations (ESA, 2023)

Round 1

Round 2

Round 3

Round 4

Round 5

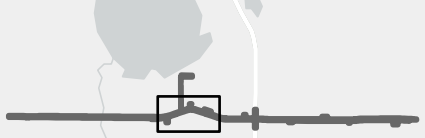
Territory Establishment

Incidental Observations

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Appendix B - Florida Scrub-Jay Survey Results

FPID #: 414506-1-22-01
Sheet 4 of 9
SR 70 PD&E Study, from Jefferson Avenue to CR 29
Highlands County, Florida

Feet

0

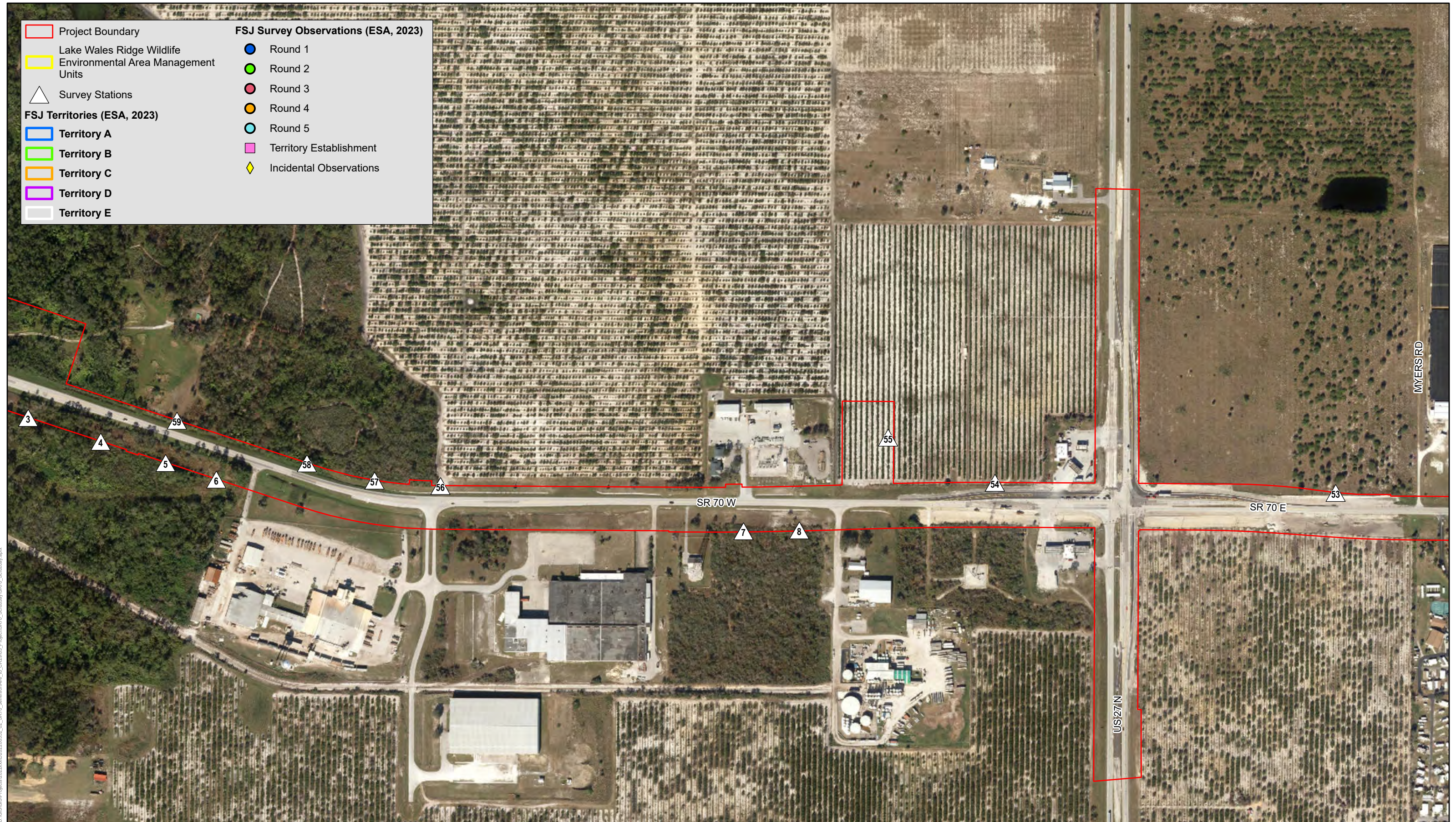
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800

Data Source: ESA, ESRI, FWC



NORTH



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Project Boundary

Lake Wales Ridge Wildlife Environmental Area Management Units

Survey Stations

FSJ Territories (ESA, 2023)

Territory A

Territory B

Territory C

Territory D

Territory E

FSJ Survey Observations (ESA, 2023)

Round 1

Round 2

Round 3

Round 4

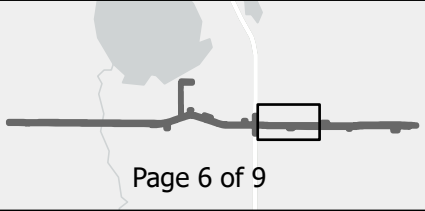
Round 5

Territory Establishment

Incidental Observations



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Appendix B - Florida Scrub-Jay Survey Results

FPID #: 414506-1-22-01
Sheet 6 of 9
SR 70 PD&E Study, from Jefferson Avenue to CR 29
Highlands County, Florida

Feet

0

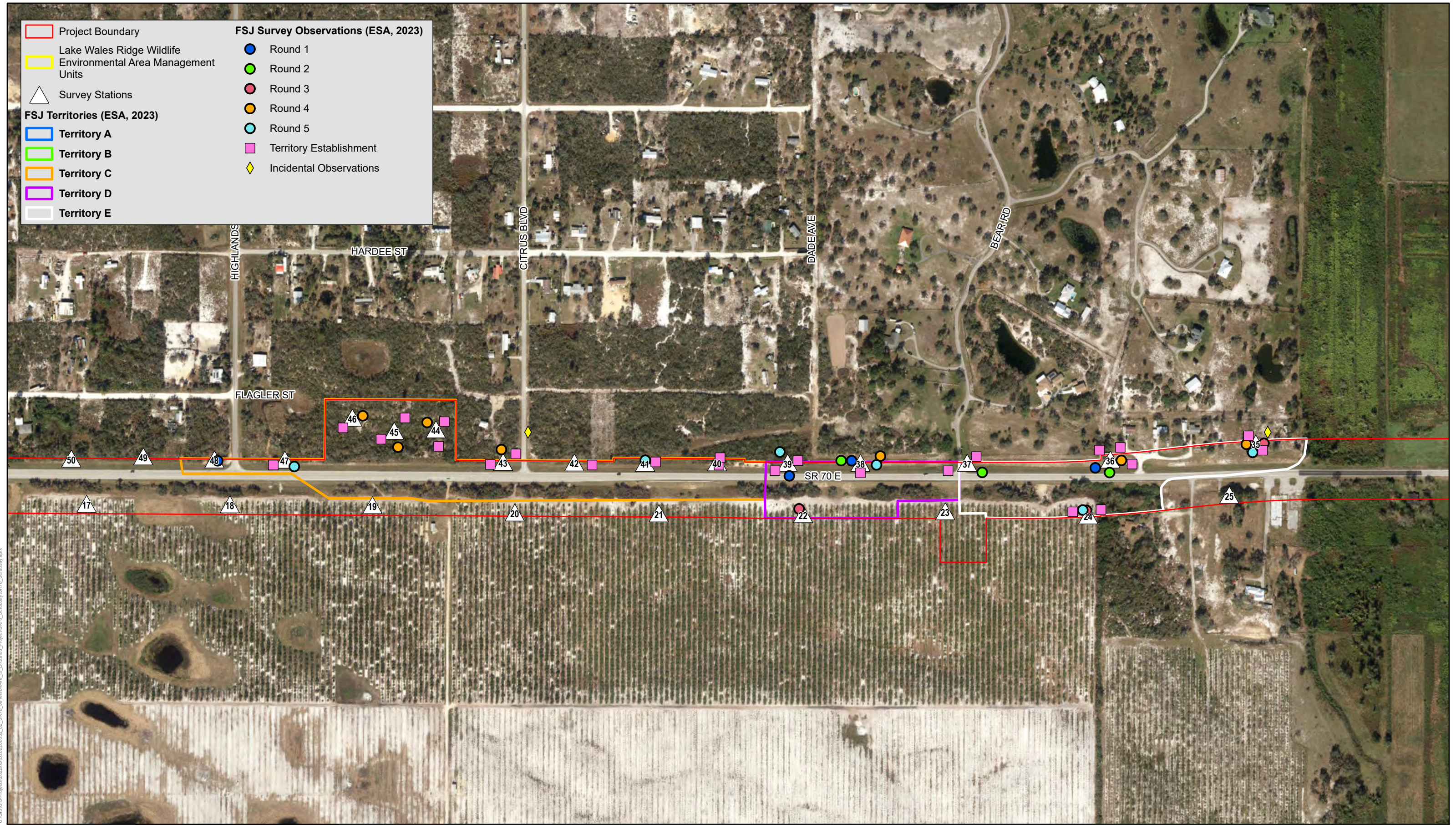
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800

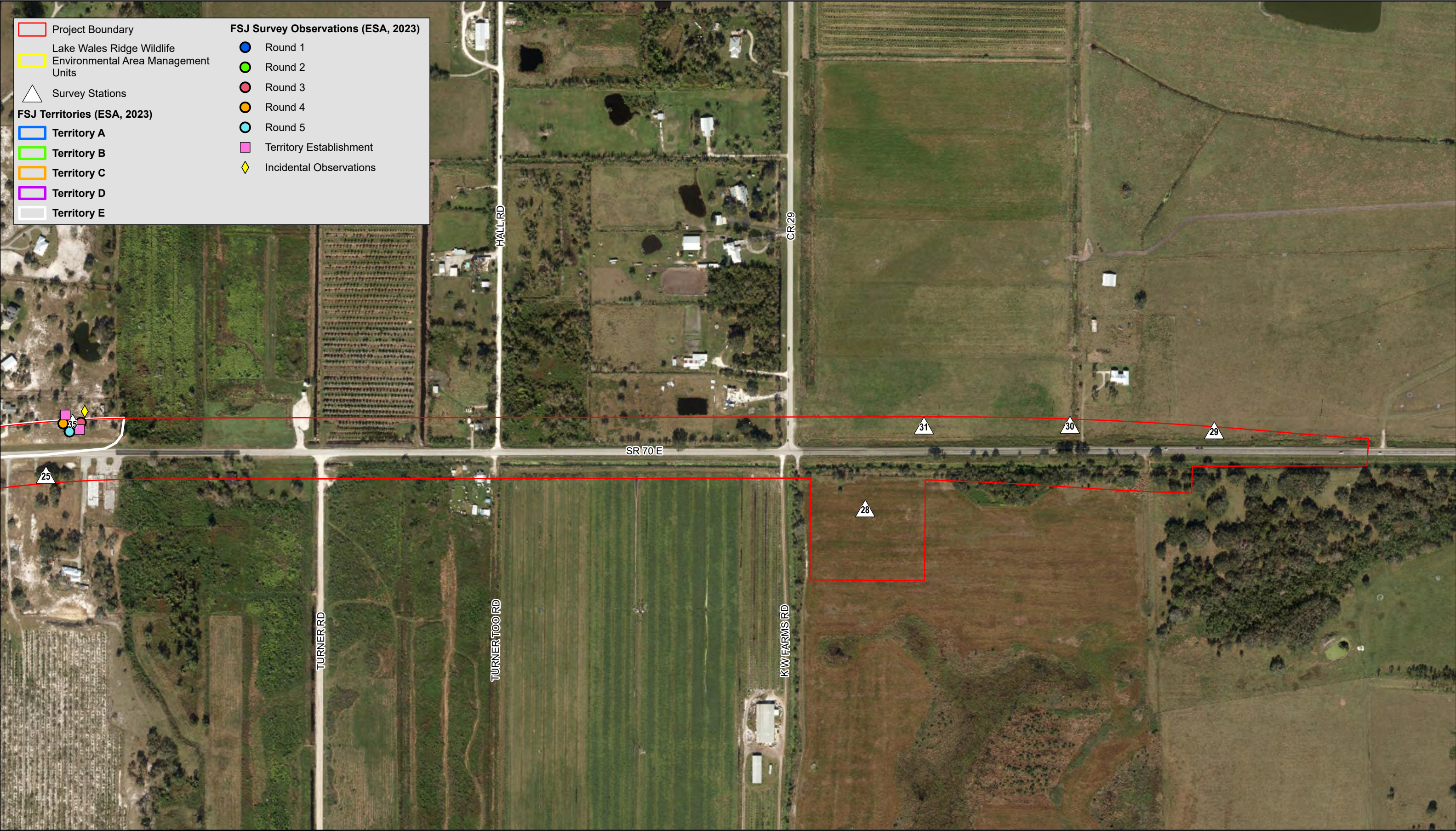
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NORTH



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Project Boundary

Lake Wales Ridge Wildlife Environmental Area Management Units

Survey Stations

Territory A

Territory B

Territory C

Territory D

Territory E

FSJ Territories (ESA, 2023)

Round 1

Round 2

Round 3

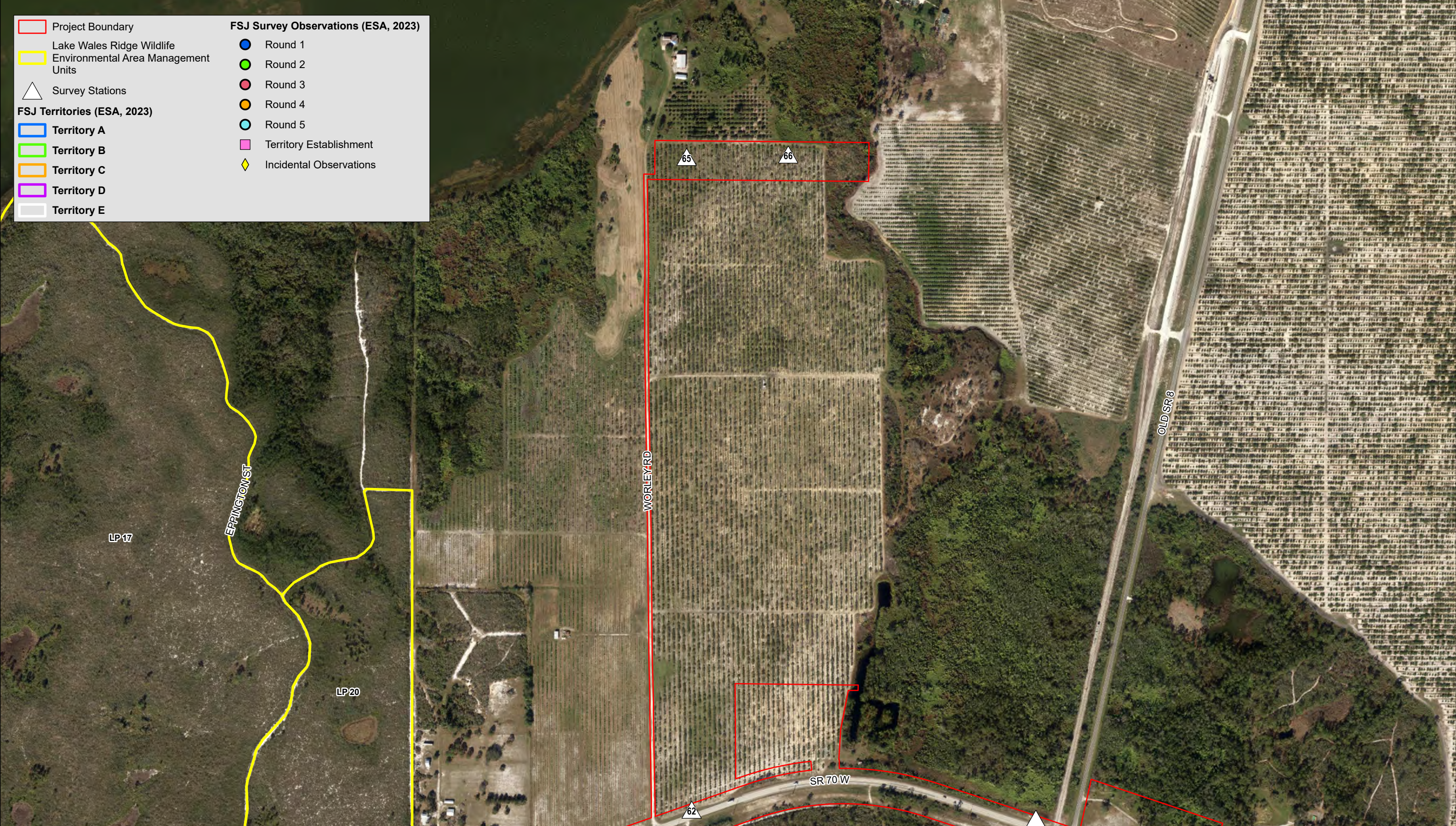
Round 4

Round 5

FSJ Survey Observations (ESA, 2023)

Territory Establishment

Incidental Observations



Appendix C

FLORIDA SCRUB-JAY STATION PHOTOGRAPHS



Survey Station No. 1 – Facing North



Survey Station No. 1 – Facing East



Survey Station No. 1 – Facing South



Survey Station No. 1 – Facing West



Survey Station No. 2 – Facing North



Survey Station No. 2 – Facing East



Survey Station No. 2 – Facing South



Survey Station No. 2 – Facing West



Survey Station No. 3 – Facing North



Survey Station No. 3 – Facing East



Survey Station No. 3 – Facing South



Survey Station No. 3 – Facing West



Survey Station No. 4 – Facing North



Survey Station No. 4 – Facing East



Survey Station No. 4 – Facing South



Survey Station No. 4 – Facing West



Survey Station No. 5 – Facing North



Survey Station No. 5 – Facing East



Survey Station No. 5 – Facing South



Survey Station No. 5 – Facing West



Survey Station No. 6 – Facing North



Survey Station No. 6 – Facing East



Survey Station No. 6 – Facing South



Survey Station No. 6 – Facing West



Survey Station No. 7 – Facing North



Survey Station No. 7 – Facing East



Survey Station No. 7 – Facing South



Survey Station No. 7 – Facing West



Survey Station No. 8 – Facing North



Survey Station No. 8 – Facing East



Survey Station No. 8 – Facing South



Survey Station No. 8 – Facing West



Survey Station No. 9 – Facing North



Survey Station No. 9 – Facing East



Survey Station No. 9 – Facing South



Survey Station No. 9 – Facing West



Survey Station No. 10 – Facing North



Survey Station No. 10 – Facing East



Survey Station No. 10 – Facing South



Survey Station No. 10 – Facing West



Survey Station No. 11 – Facing North



Survey Station No. 11 – Facing East



Survey Station No. 11 – Facing South



Survey Station No. 11 – Facing West



Survey Station No. 12 – Facing North



Survey Station No. 12 – Facing East



Survey Station No. 12 – Facing South



Survey Station No. 12 – Facing West



Survey Station No. 13 – Facing North



Survey Station No. 13 – Facing East



Survey Station No. 13 – Facing South



Survey Station No. 13 – Facing West



Survey Station No. 14 – Facing North



Survey Station No. 14 – Facing East



Survey Station No. 14 – Facing South



Survey Station No. 14 – Facing West



Survey Station No. 15 – Facing North



Survey Station No. 15 – Facing East



Survey Station No. 15 – Facing South



Survey Station No. 15 – Facing West



Survey Station No. 16 – Facing North



Survey Station No. 16 – Facing East



Survey Station No. 16 – Facing South



Survey Station No. 16 – Facing West



Survey Station No. 17 – Facing North



Survey Station No. 17 – Facing East



Survey Station No. 17 – Facing South



Survey Station No. 17 – Facing West



Survey Station No. 18 – Facing North



Survey Station No. 18 – Facing East



Survey Station No. 18 – Facing South



Survey Station No. 18 – Facing West



Survey Station No. 19 – Facing North



Survey Station No. 19 – Facing East



Survey Station No. 19 – Facing South



Survey Station No. 19 – Facing West



Survey Station No. 20 – Facing North



Survey Station No. 20 – Facing East



Survey Station No. 20 – Facing South



Survey Station No. 20 – Facing West



Survey Station No. 21 – Facing North



Survey Station No. 21 – Facing East



Survey Station No. 21 – Facing South



Survey Station No. 21 – Facing West



Survey Station No. 22 – Facing North



Survey Station No. 22 – Facing East



Survey Station No. 22 – Facing South



Survey Station No. 22 – Facing West



Survey Station No. 23 – Facing North



Survey Station No. 23 – Facing East



Survey Station No. 23 – Facing South



Survey Station No. 23 – Facing West

SR 70 PD&E Study - Florida Scrub-Jay
Survey Technical Memorandum
FPID: 414506-1-22-01

Appendix C
Florida Scrub-Jay Station Photographs



Survey Station No. 24 – Facing North



Survey Station No. 24 – Facing East



Survey Station No. 24 – Facing South



Survey Station No. 24 – Facing West



Survey Station No. 25 – Facing North



Survey Station No. 25 – Facing East



Survey Station No. 25 – Facing South



Survey Station No. 25 – Facing West



Survey Station No. 28 – Facing North



Survey Station No. 28 – Facing East



Survey Station No. 28 – Facing South



Survey Station No. 28 – Facing West



Survey Station No. 29 – Facing North



Survey Station No. 29 – Facing East



Survey Station No. 29 – Facing South



Survey Station No. 29 – Facing West



Survey Station No. 30 – Facing North



Survey Station No. 30 – Facing East



Survey Station No. 30 – Facing South



Survey Station No. 30 – Facing West



Survey Station No. 31 – Facing North



Survey Station No. 31 – Facing East



Survey Station No. 31 – Facing South



Survey Station No. 31 – Facing West



Survey Station No. 35 – Facing North



Survey Station No. 35 – Facing East



Survey Station No. 35 – Facing South



Survey Station No. 35 – Facing West



Survey Station No. 36 – Facing North



Survey Station No. 36 – Facing East



Survey Station No. 36 – Facing South



Survey Station No. 36 – Facing West



Survey Station No. 37 – Facing North



Survey Station No. 37 – Facing East



Survey Station No. 37 – Facing South



Survey Station No. 37 – Facing West



Survey Station No. 38 – Facing North



Survey Station No. 38 – Facing East



Survey Station No. 38 – Facing South



Survey Station No. 38 – Facing West



Survey Station No. 39 – Facing North



Survey Station No. 39 – Facing East



Survey Station No. 39 – Facing South



Survey Station No. 39 – Facing West



Survey Station No. 40 – Facing North



Survey Station No. 40 – Facing East



Survey Station No. 40 – Facing South



Survey Station No. 40 – Facing West



Survey Station No. 41 – Facing North



Survey Station No. 41 – Facing East



Survey Station No. 41 – Facing South



Survey Station No. 41 – Facing West



Survey Station No. 42 – Facing North



Survey Station No. 42 – Facing East



Survey Station No. 42 – Facing South



Survey Station No. 42 – Facing West



Survey Station No. 43 – Facing North



Survey Station No. 43 – Facing East



Survey Station No. 43 – Facing South



Survey Station No. 43 – Facing West



Survey Station No. 44 – Facing North



Survey Station No. 44 – Facing East



Survey Station No. 44 – Facing South



Survey Station No. 44 – Facing West



Survey Station No. 45 – Facing North



Survey Station No. 45 – Facing East



Survey Station No. 45 – Facing South



Survey Station No. 45 – Facing West

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Appendix C
Florida Scrub-Jay Station Photographs



Survey Station No. 46 – Facing North



Survey Station No. 46 – Facing East



Survey Station No. 46 – Facing South



Survey Station No. 46 – Facing West



Survey Station No. 47 – Facing North



Survey Station No. 47 – Facing East



Survey Station No. 47 – Facing South



Survey Station No. 47 – Facing West



Survey Station No. 48 – Facing North



Survey Station No. 48 – Facing East



Survey Station No. 48 – Facing South



Survey Station No. 48 – Facing West



Survey Station No. 49 – Facing North



Survey Station No. 49 – Facing East



Survey Station No. 49 – Facing South



Survey Station No. 49 – Facing West



Survey Station No. 50 – Facing North



Survey Station No. 50 – Facing East



Survey Station No. 50 – Facing South



Survey Station No. 50 – Facing West



Survey Station No. 51 – Facing North



Survey Station No. 51 – Facing East



Survey Station No. 51 – Facing South



Survey Station No. 51 – Facing West



Survey Station No. 52 – Facing North



Survey Station No. 52 – Facing East



Survey Station No. 52 – Facing South



Survey Station No. 52 – Facing West



Survey Station No. 53 – Facing North



Survey Station No. 53 – Facing East



Survey Station No. 53 – Facing South



Survey Station No. 53 – Facing West



Survey Station No. 54 – Facing North



Survey Station No. 54 – Facing East



Survey Station No. 54 – Facing South



Survey Station No. 54 – Facing West



Survey Station No. 55 – Facing North



Survey Station No. 55 – Facing East



Survey Station No. 55 – Facing South



Survey Station No. 55 – Facing West



Survey Station No. 56 – Facing North



Survey Station No. 56 – Facing East



Survey Station No. 56 – Facing South



Survey Station No. 56 – Facing West



Survey Station No. 57 – Facing North



Survey Station No. 57 – Facing East



Survey Station No. 57 – Facing South



Survey Station No. 57 – Facing West



Survey Station No. 58 – Facing North



Survey Station No. 58 – Facing East



Survey Station No. 58 – Facing South



Survey Station No. 58 – Facing West



Survey Station No. 59 – Facing North



Survey Station No. 59 – Facing East



Survey Station No. 59 – Facing South



Survey Station No. 59 – Facing West



Survey Station No. 60 – Facing North



Survey Station No. 60 – Facing East



Survey Station No. 60 – Facing South



Survey Station No. 60 – Facing West



Survey Station No. 62 – Facing North



Survey Station No. 62 – Facing East



Survey Station No. 62 – Facing South



Survey Station No. 62 – Facing West



Survey Station No. 63 – Facing North



Survey Station No. 63 – Facing East



Survey Station No. 63 – Facing South



Survey Station No. 63 – Facing West

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Appendix C
Florida Scrub-Jay Station Photographs



Survey Station No. 64 – Facing North



Survey Station No. 64 – Facing East



Survey Station No. 64 – Facing South



Survey Station No. 64 – Facing West



Survey Station No. 65 – Facing North



Survey Station No. 65 – Facing East



Survey Station No. 65 – Facing South



Survey Station No. 65 – Facing West



Survey Station No. 66 – Facing North



Survey Station No. 66 – Facing East



Survey Station No. 66 – Facing South



Survey Station No. 66 – Facing West

Appendix D

FLORIDA SCRUB-JAY SURVEY DATASHEETS

Appendix D: Florida Scrub-Jay Survey Datasheets

Survey Date 3/22/2023

Survey	Time	Temp (°F)	Wind (mph/direction)	Visibility	Precipitation
Start	8:32 AM	60	Calm	Clear	None
Stop	11:07 AM	75	7-10 / ESE	Clear	None

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
29	1	8:32 AM	8:38 AM	N	-	-	-	Pasture, ditch to south. Incidental wildlife: Cattle egret, Eastern meadowlark, Florida sandhill crane, Northern mockingbird
30	1	8:46 AM	8:52 AM	N	-	-	-	Residence, pasture with scattered longleaf pine. No scrub oaks. Large live oak to south across SR 70. Incidental wildlife: Northern mockingbird, Florida sandhill crane, blue jay, Eastern meadowlark, American crow, cattle egret
35	1	9:10 AM	9:18 AM	N	-	-	-	Scattered sand live oak and myrtle oak with cleared disturbed groundcover. Incidental wildlife: Red-bellied woodpecker, killdeer, blue jay, mourning dove
36	1	9:24 AM	9:33 AM	Y	3	-	31	Three adult FSJs approached from ENE. Aggressively watching, flying by, and stopping approximately 20 ft W of station in Brazilian pepper/eucalyptus tree. Scattered Brazilian-pepper, sand live oak and myrtle oak with ruderal groundcover. Stand of eucalyptus trees to west.
37	1	9:43 AM	9:51 AM	N	-	-	-	Bear Hollow sub-division, open, cleared groundcover with scattered scrub oaks to north and northeast. Small linear patch of scrub to the west with Brazilian pepper.
38	1	9:58 AM	10:02 AM	Y	3	-	33	One adult FSJ approached from the N, alighted on an oak tree approximately 100 ft ENE of station, looked back WNW, calls from the W, two FSJs approached from the W in vicinity of sand pines. Open along ROW with

Appendix D: Florida Scrub-Jay Survey Datasheets

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
								patches of scrub oaks/scrub vegetation to north, northeast, and west.
39	1	10:08 AM	10:12 AM	Y	3	-	34	Low visibility oak scrub, 4-12 ft high. Calls from ENE, three adult FSJs approached from ENE, landed approximately 30 ft NW of station, flew over station, and landed approximately 20 ft E of station.
40	1	10:19 AM	10:27 AM	N	-	-	-	Sand live oak scrub approximately 6-12' high. Additional vegetation included scrub hickory and saw palmetto. Orange groves to the south across SR 70. Incidental wildlife: swallow-tailed kite
41	1	10:30 AM	10:38 AM	N	-	-	-	Tall (approximately 20') overgrown oak scrub with sand pine.
42	1	10:41 AM	10:49 AM	N	-	-	-	Tall 15-20' sand live oak canopy with oak scrub sub-canopy.
43	1	10:52 AM	11:00 AM	N	-	-	-	Oak scrub.
44	1	11:03 AM	11:07 AM	N	-	-	-	Oak scrub 5-15' high with scattered open patches dominated by <i>Selaginella</i> sp.

Appendix D: Florida Scrub-Jay Survey Datasheets

Survey Date 3/23/2023

Survey	Time	Temp (°F)	Wind (mph/direction)	Visibility	Precipitation
Start	8:06 AM	59	Calm	Clear	None
Stop	11:13 AM	76	5-10 / ESE	Clear	None

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
1	1	8:38 AM	8:48 AM	Y	3	-	1	Three adult FSJs in citrus groves, flew N across SR 70.
2	1	8:50 AM	8:55 AM	N	-	-	-	
3	1	8:57 AM	9:03 AM	N	-	-	-	
4	1	9:04 AM	9:09 AM	N	-	-	-	
5	1	9:11 AM	9:16 AM	N	-	-	-	
6	1	9:17 AM	9:22 AM	N	-	-	-	
7	1	9:23 AM	9:28 AM	N	-	-	-	
8	1	9:30 AM	9:35 AM	N	-	-	-	
13	1	9:57 AM	10:02 AM	N	-	-	-	
14	1	10:08 AM	10:13 AM	N	-	-	-	
15	1	10:25 AM	10:30 AM	N	-	-	-	
16	1	10:33 AM	10:38 AM	N	-	-	-	
17	1	10:42 AM	10:47 AM	N	-	-	-	
18	1	10:51 AM	10:56 AM	N	-	-	-	
19	1	10:58 AM	11:03 AM	N	-	-	-	
20	1	11:07 AM	11:13 AM	N	-	-	-	
31	1	8:55 AM	9:02 AM	N	-	-	-	Pasture with low areas, beneath high tension powerlines. Large live oak south, across SR 70. Incidental wildlife: Grey catbird, blue-grey gnatcatcher, American crow
39	2	8:34 AM	8:42 AM	N	-	-	-	
45	1	8:06 AM	8:11 AM	N	-	-	-	Oak scrub 5-15' high with scattered open patches dominated by <i>Selaginella</i> sp.

Appendix D: Florida Scrub-Jay Survey Datasheets

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
								Incidental wildlife: Downy woodpecker, blue jay
46	1	8:18 AM	8:26 AM	N	-	-	-	Xeric hammock canopy approximately 20' high with saw palmetto and scrub oak understory surrounded by oak scrub 5-15' high with scattered open patches dominated by <i>Selaginella sp.</i> Incidental wildlife: Eastern towhee, American crow, blue jay
47	1	8:50 AM	8:58 AM	N	-	-	-	Brazilian-pepper thicket at edge of oak scrub/xeric hammock. Incidental wildlife: Northern mockingbird, Eastern towhee, blue jay, pileated woodpecker, Northern cardinal
48	1	9:02 AM	9:10 AM	Y	1	-	43	One adult FSJ flew in from WNW, alighted on and oak tree approximately 50 ft N of station and flew N. Oak scrub 6-20' high with open areas dominated by gopher-apple groundcover.
49	1	9:18 AM	9:27 AM	N	-	-	-	Oak scrub/xeric hammock with dense saw palmetto adjacent to maintained ROW. Incidental wildlife: White-eyed vireo, blue jay, pileated woodpecker, Northern cardinal, grey catbird, Eastern towhee
50	1	9:31 AM	9:39 AM	N	-	-	-	Oak scrub transitioning to scrubby flatwoods, 6-10' high vegetation with scattered canopy of longleaf pine and slash pine. Gopher apple abundant in open areas. Incidental wildlife: Eastern towhee, boat-tailed grackle, mourning dove, downy woodpecker, Northern cardinal
51	1	9:42 AM	9:51 AM	N	-	-	-	Disturbed xeric hammock and ROW interface. Incidental wildlife: Mourning dove, boat-tailed grackle, grey catbird, killdeer, Eastern towhee, turkey vulture, great egret
52	1	9:55 AM	10:03 AM	N	-	-	-	Brazilian-pepper thicket with scattered sand live oak canopy at ROW interface.

Appendix D: Florida Scrub-Jay Survey Datasheets

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
								Incidental wildlife: Northern cardinal, Northern mockingbird, Eastern phoebe, boat-tailed grackle, great egret, white ibis (in wetland across SR 70 to the south)
53	1	10:10 AM	10:18 AM	N	-	-	-	Ruderal field with scattered Brazilian-pepper, cabbage palm, laurel oak and myrtle oak, near the edge of the SR 70/US 27 intersection widening. Incidental wildlife: Eastern phoebe, Northern mockingbird, Eastern towhee, boat-tailed grackle, killdeer
54	1	10:23 AM	10:31 AM	N	-	-	-	Citrus grove/ROW interface. Incidental wildlife: Black vulture, osprey
55	1	10:35 AM	10:44 AM	N	-	-	-	Citrus grove. Incidental wildlife: Yellow-rumped warbler, grey catbird
56	1	10:48 AM	10:56 AM	N	-	-	-	Edge of oak scrub (8-20' high), citrus grove and maintained ROW. Incidental wildlife: Northern mockingbird, grey catbird, Eastern towhee, mourning dove
57	1	10:58 AM	11:06 AM	N	-	-	-	Edge of oak scrub transitioning to scrubby flatwoods and maintained ROW. Oak scrub 8-20' high with scattered longleaf pine. Incidental wildlife: Northern mockingbird, Eastern towhee, Carolina wren

Appendix D: Florida Scrub-Jay Survey Datasheets

Survey Date 3/28/2023

Survey	Time	Temp (°F)	Wind (mph/direction)	Visibility	Precipitation
Start	8:56 AM	75	5 / NNW	Mostly Clear	NA
Stop	12:23 PM	78	7 / NNW	Mostly Clear	NA

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
1	2	8:56 AM	9:01 AM	N	-	-	-	Incidental wildlife: Grey catbird
2	2	9:08 AM	9:15 AM	N	-	-	-	Incidental wildlife: Grey catbird
3	2	9:19 AM	9:23 AM	N	-	-	-	Incidental wildlife: Northern mockingbird
4	2	9:24 AM	9:32 AM	N	-	-	-	Incidental wildlife: American crow
5	2	9:40 AM	9:45 AM	N	-	-	-	Incidental wildlife: Mourning dove, common grackle
6	2	9:48 AM	9:53 AM	N	-	-	-	Incidental wildlife: Mourning dove, black vulture
7	2	9:55 AM	9:59 AM	N	-	-	-	Incidental wildlife: Black vulture, mourning dove
8	2	10:05 AM	10:10 AM	N	-	-	-	Incidental wildlife: Northern mockingbird
13	2	10:18 AM	10:24 AM	N	-	-	-	Incidental wildlife: Black vulture
14	2	10:30 AM	10:35 AM	N	-	-	-	Incidental wildlife: Black vulture, American crow, grey catbird
15	2	10:39 AM	10:44 AM	N	-	-	-	Incidental wildlife: Black vulture, common grackle, grey catbird
16	2	10:46 AM	10:50 AM	N	-	-	-	Incidental wildlife: Mourning dove, blue jay
17	2	10:54 AM	10:58 AM	N	-	-	-	Incidental wildlife: Mourning dove, grey catbird
18	2	11:00 AM	11:05 AM	N	-	-	-	Incidental wildlife: Mourning dove, northern mockingbird, blue jay
19	2	11:08 AM	11:12 AM	N	-	-	-	Incidental wildlife: Northern mockingbird
20	2	11:14 AM	11:19 AM	N	-	-	-	Incidental wildlife: Northern mockingbird
21	1	9:10 AM	9:15 AM	N	-	-	-	
22	1	9:18 AM	9:24 AM	N	-	-	-	
23	1	9:27 AM	9:32 AM	N	-	-	-	
24	1	9:35 AM	9:40 AM	N	-	-	-	
25	1	9:43 AM	9:48 AM	N	-	-	-	

Appendix D: Florida Scrub-Jay Survey Datasheets

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
28	1	9:52 AM	9:57 AM	N	-	-	-	
29	2	10:00 AM	10:06 AM	N	-	-	-	
30	2	10:09 AM	10:14 AM	N	-	-	-	
31	2	10:17 AM	10:22 AM	N	-	-	-	
35	2	10:28 AM	10:33 AM	N	-	-	-	
36	2	10:35 AM	10:44 AM	Y	3	Unk	31	Three FSJs flying N and S across SR 70.
37	2	10:46 AM	10:59 AM	Y	3	Unk	32	Three FSJs flying N and S across SR 70.
38	2	11:19 AM	11:23 AM	Y	3	Unk	33	Three FSJs flying N and S across SR 70.
39	3	11:25 AM	11:29 AM	N	-	-	-	
40	2	11:30 AM	11:34 AM	N	-	-	-	
41	2	11:35 AM	11:39 AM	N	-	-	-	
42	2	11:40 AM	11:45 AM	N	-	-	-	
43	2	11:31 AM	11:36 AM	N	-	-	-	Incidental wildlife: Black vulture
44	2	11:38 AM	11:43 AM	N	-	-	-	Incidental wildlife: Black vulture
45	2	11:46 AM	11:50 AM	N	-	-	-	Incidental wildlife: Black vulture
46	2	11:55 AM	11:59 AM	N	-	-	-	Incidental wildlife: Northern mockingbird, blue jay, black vulture
47	2	12:01 PM	12:05 PM	N	-	-	-	Incidental wildlife: blue jay, black vulture
48	2	11:56 AM	12:00 PM	N	-	-	-	
49	2	12:03 PM	12:07 PM	N	-	-	-	
50	2	12:08 PM	12:12PM	N	-	-	-	
51	2	12:13 PM	12:19 PM	N	-	-	-	
52	2	12:18 PM	12:23 PM	N	-	-	-	
53	2	12:05 PM	12:15 PM	N	-	-	-	
54	2	11:48 AM	11:56 AM	N	-	-	-	
55	2	11:35 AM	11:42 AM	N	-	-	-	
56	2	11:19 AM	11:25 AM	N	-	-	-	
57	2	11:12 AM	11:17 AM	N	-	-	-	
58	1	9:00 AM	9:11 AM	N	-	-	-	
59	1	9:24 AM	9:30 AM	N	-	-	-	

Appendix D: Florida Scrub-Jay Survey Datasheets

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
60	1	9:36 AM	9:42 AM	N	-	-	-	
62	1	9:51 AM	9:58 AM	N	-	-	-	
63	1	10:05 AM	10:12 AM	N	-	-	-	
64	1	10:20 AM	10:26 AM	N	-	-	-	
65	1	10:43 AM	10:49 AM	N	-	-	-	
66	1	10:55 AM	11:08 AM	N	-	-	-	

Appendix D: Florida Scrub-Jay Survey Datasheets

Survey Date 3/29/2023

Survey	Time	Temp (°F)	Wind (mph/direction)	Visibility	Precipitation
Start	8:30 AM	69	5 / N	Partly Cloudy	NA
Stop	12:17 AM	82	7 / N	Partly Cloudy	NA

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
1	3	12:12 PM	12:17 PM	N	-	-	-	
2	3	12:02 AM	12:10 AM	N	-	-	-	
3	3	11:52 AM	11:57 AM	N	-	-	-	
4	3	11:44 AM	11:49 AM	N	-	-	-	
5	3	11:35 AM	11:42 AM	N	-	-	-	
6	3	11:24 AM	11:30 AM	N	-	-	-	
7	3	11:15 AM	11:22 AM	N	-	-	-	
8	3	10:55 AM	11:10 AM	N	-	-	-	
21	2	8:49 AM	8:54 AM	N	-	-	-	
22	2	8:57 AM	9:02 AM	N	-	-	-	
23	2	9:24 AM	9:29 AM	N	-	-	-	
24	2	9:38 AM	9:43 AM	N	-	-	-	
25	2	9:52 AM	9:57 AM	N	-	-	-	
28	2	10:00 AM	10:05 AM	N	-	-	-	
29	3	10:07 AM	10:12 AM	N	-	-	-	
30	3	10:19 AM	10:24 AM	N	-	-	-	
31	3	10:23 AM	10:28 AM	N	-	-	-	
35	3	10:38 AM	10:50 AM	Y	2	1	30	Two adults and one juvenile flew in from the N.
36	3	10:53 AM	11:00 AM	N	-	-	-	
37	3	11:03 AM	11:08 AM	N	-	-	-	
38	3	11:10 AM	11:15 AM	N	-	-	-	
39	4	11:16 AM	11:21 AM	N	-	-	-	
40	3	11:43 AM	11:48 AM	N	-	-	-	

Appendix D: Florida Scrub-Jay Survey Datasheets

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
41	3	11:49 AM	11:55 AM	N	-	-	-	
42	3	11:56 AM	12:03 AM	N	-	-	-	
53	3	8:30 AM	8:37 AM	N	-	-	-	
54	3	8:44 AM	8:52 AM	N	-	-	-	
55	3	8:54 AM	9:03 AM	N	-	-	-	
56	3	9:07 AM	9:13 AM	N	-	-	-	
57	3	9:20 AM	9:28 AM	N	-	-	-	
58	2	9:32 AM	9:37 AM	N	-	-	-	
59	2	9:40 AM	9:45 AM	N	-	-	-	
60	2	9:55 AM	10:01 AM	N	-	-	-	
62	2	10:09 AM	10:14 AM	N	-	-	-	
63	2	10:16 AM	10:21 AM	N	-	-	-	
64	2	10:24 AM	10:30 AM	N	-	-	-	
65	2	10:32 AM	10:37 AM	N	-	-	-	
66	2	10:41 AM	10:47 AM	N	-	-	-	

Appendix D: Florida Scrub-Jay Survey Datasheets

Survey Date 3/30/2023

Survey	Time	Temp (°F)	Wind (mph/direction)	Visibility	Precipitation
Start	8:05 AM	69	2 / NE	Partly Cloudy	N/A
Stop	10:59 AM	69	2 / NE	Partly Cloudy	N/A

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
13	3	8:05 AM	8:15 AM	N	-	-	-	
14	3	8:19 AM	8:25 AM	N	-	-	-	
15	3	8:27 AM	8:33 AM	N	-	-	-	
16	3	8:37 AM	8:43 AM	N	-	-	-	
17	3	8:55 AM	9:02 AM	N	-	-	-	
18	3	9:07 AM	9:15 AM	N	-	-	-	
19	3	9:20 AM	9:26 AM	N	-	-	-	
29	4	9:40 AM	9:44 AM	N	-	-	-	Incidental wildlife: Swallow-tailed kite
30	4	9:51 AM	9:56 AM	N	-	-	-	Incidental wildlife: Black vulture, mourning dove, white ibis, northern mockingbird
31	4	10:01 AM	10:06 AM	N	-	-	-	Incidental wildlife: Mourning dove, eastern meadowlark, black vulture
35	4	10:14 AM	10:19 AM	Y	3	-	30	Three adult FSJs flew in from NW.
36	4	10:21 AM	10:27 AM	Y	2	-	31	Two adult FSJs flew in from NE.
37	4	10:30 AM	10:34 AM	N	-	-	-	Incidental wildlife: Northern mockingbird, red-bellied woodpecker, swallow-tailed kite, northern parula
38	4	10:36 AM	10:39 AM	Y	3	-	33	Three adult FSJs flew in from N. Not banded.
39	5	10:47 AM	10:51 AM	Y	2	-	34	Two adult FSJs flew in from N.
40	4	10:53 AM	10:59 AM	N	-	-	-	Incidental wildlife: Mourning dove

Appendix D: Florida Scrub-Jay Survey Datasheets

Survey Date 4/4/2023

Survey	Time	Temp (°F)	Wind (mph/direction)	Visibility	Precipitation
Start	9:20 AM	76	1 / E	Clear	NA
Stop	12:01 PM	80	1 / E	Clear	NA

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comments/Incidental Wildlife
1	4	9:20 AM	9:25 AM	N	-	-	-	Incidental wildlife: Red-bellied woodpecker, Northern mockingbird Heard FSJs in NW direction.
2	4	9:30 AM	9:34 AM	Y	Unk	Unk	2	Incidental wildlife: Blue-grey gnatcatcher, grey catbird
13	4	9:50 AM	9:55 PM	Y	2	-	13	Two FSJs flew in from SSW. Established but not banded.
14	4	9:58 AM	10:02 AM	N	-	-	-	
20	3	10:22 AM	10:27 AM	N	-	-	-	Incidental wildlife: Mourning dove, Northern cardinal, Northern mockingbird
21	3	10:31 AM	10:35 AM	N	-	-	-	Incidental wildlife: Red-shouldered hawk
22	3	10:53 AM	10:59 AM	Y	3	-	22	Three FSJs (one female and two males). No bands.
23	3	11:09 AM	11:13 AM	N	-	-	-	
24	3	11:49 AM	11:53 AM	Y	2	-	24	Two FSJs flew in from SE (no bands).
25	3	11:56 AM	12:01 PM	N	-	-	-	

Appendix D: Florida Scrub-Jay Survey Datasheets

Survey Date 4/5/2023

Survey	Time	Temp (°F)	Wind (mph/direction)	Visibility	Precipitation
Start	10:20 AM	79	11 / ENE	Clear	NA
Stop	11:47 AM	81	11 / ENE	Clear	NA

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
14	5	10:30 AM	10:34 AM	N	-	-	-	
21	4	10:50 AM	10:54 AM	N	-	-	-	Incidental wildlife: Sharp-shinned hawk returned after survey period.
35	5	11:10 AM	11:12 AM	Y	Unk	Unk	30	FSJ called for two minutes, and then swallow-tailed kite started circling. Stopped survey. Incidental wildlife: Swallow-tailed kite
36	5	-	-	N	-	-	-	Swallow-tailed kite circling. Incidental wildlife: Swallow-tailed kite
37	5	11:23 AM	11:27 AM	N	-	-	-	
38	5	11:35 AM	11:39 AM	Y	2	-	33	One FSJ observed and one FSJ heard calling. Observed FSJ flew towards the FSJ heard.
		11:43 AM	11:47 AM	N	-	-	-	Played calls again, W of Station 38 at end of black fence. No FSJs.

Appendix D: Florida Scrub-Jay Survey Datasheets

Survey Date 4/6/2023

Survey	Time	Temp (°F)	Wind (mph/direction)	Visibility	Precipitation
Start	10:08 AM	81	12 / ESE	Clear	NA
Stop	11:29 AM	82	12 / ESE	Clear	NA

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
1	5	11:20 AM	11:24 AM	N	-	-	-	
2	5	11:25 AM	11:29 AM	N	-	-	-	
35	Territory Establishment	10:08 AM	10:12 AM	N	-	-	-	
36	Territory Establishment	10:30 AM	10:34 AM	Y	2	-	31	Heard two FSJs south across SR 70 (STA 24). Windy and swallow-tailed kite flew low in direction birds were heard. Incidental wildlife: Swallow-tailed kite
39	Territory Establishment	10:45 AM	10:49 AM	Y	2	-	34	Heard two FSJs due N, approximately 100 yds. FSJs did not come any closer. Windy conditions.
48	3	11:04 AM	11:08 AM	N	-	-	-	

Appendix D: Florida Scrub-Jay Survey Datasheets

Survey Date 4/18/2023

Survey	Time	Temp (°F)	Wind (mph/direction)	Visibility	Precipitation
Start	8:44 AM	63	8 / N	Clear	NA
Stop	11:05 AM	73	9 / N	Clear	NA

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
3	4	9:04 AM	9:09 AM	N	-	-	-	
4	4	8:57 AM	9:02 AM	N	-	-	-	
5	4	8:50 AM	8:55 AM	N	-	-	-	
6	4	8:44 AM	8:49 AM	N	-	-	-	
7	4	9:11 AM	9:16 AM	N	-	-	-	
8	4	9:23 AM	9:28 AM	N	-	-	-	
15	4	9:31 AM	9:36 AM	N	-	-	-	
16	4	9:37 AM	9:42 AM	N	-	-	-	
17	4	9:44 AM	9:49 AM	N	-	-	-	
18	4	9:51 AM	9:56 AM	N	-	-	-	
19	4	9:58 AM	10:03 AM	N	-	-	-	
20	4	10:05 AM	10:10 AM	N	-	-	-	
21	5	10:11 AM	10:16 AM	N	-	-	-	
22	4	10:19 AM	10:24 AM	N	-	-	-	
23	4	10:25 AM	10:29 AM	N	-	-	-	
24	4	10:31 AM	10:36 AM	N	-	-	-	
25	4	10:52 AM	10:57 AM	N	-	-	-	
28	3	11:00 AM	11:05 AM	N	-	-	-	
65	3	8:23 AM	8:28 AM	N	-	-	-	
66	3	8:30 AM	8:35 AM	N	-	-	-	

Appendix D: Florida Scrub-Jay Survey Datasheets

Survey Date 4/20/2023

Survey	Time	Temp (°F)	Wind (mph/direction)	Visibility	Precipitation
Start	9:05 AM	69	7 / SSW	Clear, sunny, 16 miles	NA
Stop	11:34 AM	78	7 / SSW	Clear, sunny, 16 miles	NA

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
28	4	9:42 AM	9:46 AM	N	-	-	-	Incidental wildlife: White ibis, black vulture, Eastern meadowlark, boat-tailed grackle.
29	5	9:05 AM	9:09 AM	N	-	-	-	Incidental wildlife: Cattle egret, Eastern meadowlark, boat-tailed grackle, American crow, black vulture, mourning dove.
30	5	9:27 AM	9:31 AM	N	-	-	-	Incidental wildlife: Florida sandhill crane, black vulture, cattle egret, mourning dove, Northern mockingbird, Eastern meadowlark, American crow, great egret.
31	5	9:34 AM	9:38 AM	N	-	-	-	Incidental wildlife: Florida sandhill crane, black vulture, cattle egret, mourning dove, Northern mockingbird, Eastern meadowlark, American crow, great egret, red-bellied woodpecker, ground dove, boat-tailed grackle.
35	Territory Establishment	10:07 AM	10:23 AM	Y	3	-	30	Establishing territory boundary on E side (FSJ family first observed at Station 36): @10:07 AM – Surveyors traveled E approximately 200 ft from Station 35 to delineate eastern boundary of territory, played call, no FSJ. @10:09 – Traveled W, approximately 150 ft from call station, played call, heard FSJs calling, FSJs did not approach observers. @10:14 AM – Traveled W, approximately 150 ft from last point, two FSJs present, confirmed eastern boundary of territory. @10:23 AM – Traveled W, two FSJs present. @10:27 AM – Traveled W, three FSJs present. @10:29 AM – Three swallow-tailed kites appeared in area, stopped survey.

Appendix D: Florida Scrub-Jay Survey Datasheets

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
								Incidental wildlife: Black vulture, swallow tailed-kite
36	Territory Establishment	10:02 AM	10:29 AM	Y	3	-	31	@10:04 AM – Three FSJs appeared from NW. Perched in oak tree. @10:05 AM –FSJs flew back to NW. Incidental wildlife: Black vulture
41	4	10:45 AM	10:49 AM	N	-	-	-	Incidental wildlife: Turkey vulture, blue-grey gnatcatcher, American crow, mourning dove
42	4	10:51 AM	10:55 AM	N	-	-	-	
43	3	10:59 AM	11:03 AM	N	-	-	-	
44	3	11:06 AM	11:10 AM	N	-	-	-	Incidental wildlife: Turkey vulture, black vulture, downy woodpecker, blue-grey gnatcatcher, warblers
45	3	11:19 AM	11:23 AM	N	-	-	-	Incidental wildlife: Black vulture, blue-grey gnatcatcher
46	3	11:30 AM	11:34 AM	N	-	-	-	Incidental wildlife: Black vulture

Appendix D: Florida Scrub-Jay Survey Datasheets

Survey Date 4/21/2023

Survey	Time	Temp (°F)	Wind (mph/direction)	Visibility	Precipitation
Start	8:00 AM	66	5 / SSW	Clear, sunny, 12 miles	NA
Stop	12:30 PM	83	6 / W	Partly cloudy, clear, 20 miles	NA

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
36	Territory Establishment	8:04 AM	11:05 AM	Y	3	-	31	*Establishing territories, notes continue from 4/20/2023. The eastern boundary was established, determining the western territory limits. Observers traveling E to W along north ROW of SR 70 (first round of survey to establish territory). @8:07 AM –Three FSJs observed, flew in from NE. Incidental wildlife: American crow, Northern mockingbird, blue jay, blue-grey gnatcatcher
37	Territory Establishment	8:04 AM	11:05 AM	Y	7	-	32	Observers traveling E to W along north ROW of SR 70 (first round of survey to establish territory). @8:11 AM – Three FSJs present. @8:14 AM – Calls played at Bear Hollow Road, one FSJ from E followed, then four FSJs appeared, flew in from NW. @8:20 AM – One FSJ from E group left, flew back to NE, four FSJs from NW continue to move back W slowly, one FSJ crossed SR 70 to the S, landed in natural vegetation in S ROW,22 and crossed SR 70 again to the N, joining other three FSJs. @8:30 – 8:34 AM – Four FSJs left, flew to NNW. Note: Bear Hollow Road appears to be a territory boundary between Territory D (4 FSJs) and E (3 FSJs). Observers traveling W to E along SR 70 (second round of surveys to establish

Appendix D: Florida Scrub-Jay Survey Datasheets

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
								territory). @10:47 – 10:51 AM – Played calls at Bear Hollow Road, no FSJs present. @10:56 – 11:05 AM – Played calls E of Station 37, three FSJs approached from E, one FSJ crossed SR 70 flying S (these are the family of three FSJs that territory boundary (east) was established on 4/20/2023 – Territory E). Established western territory boundary. Incidental wildlife: Great egret, red-bellied woodpecker, Northern mockingbird
38	Territory Establishment	8:04 AM	11:05 AM	Y	3	-	33	Observers traveling E to W along north ROW of SR 70 (first round of survey to establish territory). @8:40 AM – Heard and observed two FSJs fly west to east, 50 ft east of station and approximately 200 ft north of station, did not approach observers. Observers traveling W to E along SR 70 (second round of surveys to establish territory). @10:07 – 10:10 AM – Played calls in between Station 38 and 39, three FSJs appeared from NNW. @10:19 – 10:20 AM – Played calls just W of Station 38, one FSJ appeared from N, approached observer, two FSJs perched on tree NNW of station approximately 500 ft away. @10:23 AM – One FSJ that was close to observers flies NNW to meet other two FSJs in tree, jays do not approach. @10:32 – 10:39 AM – Played called just east of Station 38, two FSJs observed flew to a nearby power pole, did not come any further, one FSJ flew N, then flew to into scrub below.

Appendix D: Florida Scrub-Jay Survey Datasheets

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
								Incidental wildlife: Blue-grey gnatcatcher, black vulture, grey catbird
39	Territory Establishment	8:04 AM	11:05 AM	Y	3	-	34	Observers traveling E to W along north ROW of SR 70 (first round of survey to establish territory). @8:52 – 8:54 AM – One FSJ present flew in from NNE, a second FSJ appeared but kept distance. @9:00 – 9:05 AM – Moved W to determine territory boundary, same two FSJs present but left after two minutes. Observers traveled W, played call, same two FSJs reappeared with one additional FSJ (3 total). Observers traveling W to E along SR 70 (second round of surveys to establish territory). @9:50 – 10:05 AM – Played calls in between Station 39 and 40, one FSJ perched on guy wire, additional FSJ present but is approximately 500 ft to N of station on a power pole, keeps distance, both FSJs eventually fly into scrub below, out of sight, directly N of station.
40	Territory Establishment	8:04 AM	11:05 AM	Y	5	-	35	Observers traveling E to W along north ROW of SR 70 (first round of survey to establish territory). @9:16 – 9:19 AM – Five FSJs appeared from N (hard to see exactly where because of thick brush). There was a lot of dive bombing and aggressive movements occurring between four FSJs towards one lone FSJ. This may be the boundary between two territories. The one FSJ that was being harassed flew E approximately 20 ft, away from the other group, and then eventually flew away to the NE. The group of four FSJs eventually traveled N. @9:35 AM – Moved slightly W to establish western boundary territory, played call, no FSJ present.

Appendix D: Florida Scrub-Jay Survey Datasheets

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
								Discovered an open grass area/service road, north of scrub brush line in ROW, easier to observe FSJs and direction they approach from. Establishing territories for three potential FSJ families present between Stations 36 – 40 (observed during first round of survey). Observers traveling W to E along SR 70 (second round of surveys to establish territory). @9:41 – 9:48 AM –Five FSJs observed, four FSJs close together (flew in from N) and one FSJ (flew in from NNE). The lone FSJ perched on guy wire near power pole 500 ft NNE of station, keeping distance, the group of four FSJs flew off to NNW. Incidental wildlife: Black vulture
47	3	11:47 AM	11:51 AM	N	-	-	-	Incidental wildlife: Wood stork
48	3	11:55 AM	11:59 AM	N	-	-	-	Incidental wildlife: Florida sandhill crane
49	3	12:02 PM	12:06 PM	N	-	-	-	
50	3	12:08 PM	12:12 PM	N	-	-	-	
51	3	12:16 PM	12:20 PM	N	-	-	-	Incidental wildlife: Northern cardinal, blue-grey gnatcatcher
52	3	12:25 PM	12:29 PM	N	-	-	-	Incidental wildlife: Black vulture, Northern mockingbird

Appendix D: Florida Scrub-Jay Survey Datasheets

Survey Date 4/26/2023

Survey	Time	Temp (°F)	Wind (mph/direction)	Visibility	Precipitation
Start	8:05 AM	69	3 / W	Partly cloudy, clear, 10 miles	NA
Stop	12:00 PM	81	4 / W	Partly cloudy, clear, 16 miles	NA

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
1	Territory Establishment	9:15 AM	9:45 AM	Y	3	-	1	Mapped territory of three FSJs one with double silver band on left leg) using some of the grove and the scrub habitat on the N side of SR 70.
3	5	9:05 AM	9:09 AM	N	-	-	-	Incidental wildlife: Blue-grey gnatcatcher, great crested flycatcher
4	5	9:14 AM	9:18 AM	N	-	-	-	Incidental wildlife: Common grackle, American crow, red-bellied woodpecker, Northern cardinal
5	5	9:39 AM	9:43 AM	N	-	-	-	Incidental wildlife: Great crested flycatcher, blue jay, common grackle, mourning dove, red-bellied woodpecker
6	5	9:29 AM	9:33 AM	N	-	-	-	Incidental wildlife: Black vulture, common grackle, mourning dove, great crested flycatcher, blue jay, red-bellied woodpecker
7	5	10:26 AM	10:30 AM	N	-	-	-	Incidental wildlife: Black vulture, common grackle
8	5	10:34 AM	10:38 AM	N	-	-	-	Incidental wildlife: Northern mockingbird, downy woodpecker
47	4	11:25 AM	11:29 AM	N	-	-	-	Incidental wildlife: Little blue heron, mourning dove
48	4	11:31 AM	11:35 AM	N	-	-	-	
49	4	11:37 AM	11:41 AM	N	-	-	-	Incidental wildlife: Anhinga, blue jay, black vulture, great crested flycatcher, mourning dove
50	4	11:44 AM	11:48 AM	N	-	-	-	Incidental wildlife: Blue jay, great crested flycatcher, American crow
51	4	11:50 AM	11:54 AM	N	-	-	-	Incidental wildlife: American crow, turkey vulture
52	4	11:56 AM	12:00 PM	N	-	-	-	Incidental wildlife: Northern cardinal, great crested flycatcher
53	4	11:11 AM	11:15 AM	N	-	-	-	Incidental wildlife: Common grackle, house

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FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
								sparrow, Northern mockingbird
54	4	10:59 AM	11:03 AM	N	-	-	-	Incidental wildlife: American crow, common grackle, osprey
55	4	10:47 AM	10:51 AM	N	-	-	-	
56	4	10:13 AM	10:17 AM	N	-	-	-	Incidental wildlife: Northern mockingbird, red-bellied woodpecker, common grackle, black vulture, blue-grey gnatcatcher
57	4	10:07 AM	10:11 AM	N	-	-	-	Incidental wildlife: Red-bellied woodpecker, blue jay, common grackle, Northern mockingbird
58	3	9:59 AM	10:03 AM	N	-	-	-	Incidental wildlife: Common grackle, wood stork, black vulture, snowy egret, tricolored heron
59	3	9:51 AM	9:55 AM	N	-	-	-	Incidental wildlife: Wood stork, common grackle, red-bellied woodpecker, blue jay, snowy egret, tricolored heron
60	3	8:52 AM	8:56 AM	N	-	-	-	Incidental wildlife: Red-bellied woodpecker, mourning dove, black vulture, osprey (nest), Northern mockingbird, great crested flycatcher
62	3	8:30 AM	8:34 AM	N	-	-	-	Incidental wildlife: Northern mockingbird
63	3	8:18 AM	8:22 AM	N	-	-	-	Incidental wildlife: Blue jay, barn swallow, Northern mockingbird, red-bellied woodpecker, mourning dove, American crow
64	3	8:08 AM	8:12 AM	N	-	-	-	Incidental wildlife: Northern mockingbird, mourning dove

Appendix D: Florida Scrub-Jay Survey Datasheets

Survey Date 5/3/2023

Survey	Time	Temp (°F)	Wind (mph/direction)	Visibility	Precipitation
Start	8:36 AM	70	8 / E	Mostly cloudy, 12 miles.	NA
Stop	12:20 PM	82	10 / ESE	Partly cloudy, 19 miles	NA

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
13	5	8:46 AM	8:58 AM	Y	3	-	13	*Establishing territory boundary. @8:47 AM – Three FSJs approached, traveling from S. Observers continued E, three FSJs followed. @8:58 AM – Noted one hiccupping female FSJ, reached boundary of Station 13, continued E into Station 14. Incidental wildlife: Northern cardinal, white-eyed vireo, wood stork
14	Territory Establishment	8:59 AM	9:14 AM	Y	3	-	14	*Establishing territory boundary. @8:59 AM – Three FSJs followed from W. Hiccupping female present. Continued E. Two FSJs followed from W. @9:11 AM – Continued walking E. Arrived at area with pines (E of scrub area). @9:14 AM – FSJs did not follow. Determined eastern boundary of territory. Where scrub habitat ends/transitions to pine flatwoods. Incidental wildlife: Great crested flycatcher, Northern cardinal, great blue heron, American crow
15	5	9:35 AM	9:39 AM	N	-	-	-	Incidental wildlife: Common grackle, black vulture, white ibis
16	5	9:28 AM	9:32 AM	N	-	-	-	Incidental wildlife: Mourning dove, blue jay, American crow
17	5	9:46 AM	9:50 AM	N	-	-	-	Incidental wildlife: Mourning dove, common grackle, black vulture, blue-grey gnatcatcher, blue jay
18	5	9:54 AM	9:58 AM	N	-	-	-	Incidental wildlife: Great egret, Northern mockingbird

Appendix D: Florida Scrub-Jay Survey Datasheets

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
19	5	10:04 AM	10:08 AM	N	-	-	-	Incidental wildlife: Red-bellied woodpecker
20	5	10:21 AM	10:25 AM	N	-	-	-	Observers traveling from Station 20 to Station 21: @ 10:14 AM – Arrived near Station 20, while in south ROW observed/heard three FSJs, N of SR 70, just E of Citrus Blvd (in between Station 43 and Station 42). Played calls in south ROW area, FSJs did not cross SR 70 to the S. @10:26 AM – Completed Station 20 survey calls (no FSJ). Returned to truck in S ROW, where observed three FSJs in same location as first saw at 10:14 AM (N of SR 70) (STA 42/43). Incidental wildlife: Blue-grey gnatcatcher, blue jay, mourning dove, great crested flycatcher
21	Territory Establishment	10:40 AM	10:44 AM	N	-	-	-	@10:28 AM – Observers traveled to Station 21, driving in S ROW, just off shoulder of road, observed same three FSJs N of SR 70 (Station 41), FSJ followed E but stayed N of SR 70, did not cross SR 70 to the S. Incidental wildlife: Blue jay, mourning dove
22	5	10:55 AM	10:59 AM	N	-	-	-	
23	5	11:03 AM	11:07 AM	N	-	-	-	
24	5 / Territory Establishment	11:11 AM	11:40 AM	Y	3	-	24	@11:12 AM – Three FSJs approached from NE, crossed SR 70, one female hiccupping. These FSJs are part of the family unit observed at Station 36. Three FSJs stayed with observer for eight (8) minutes then crossed SR 70 traveling S to N. @11:21 – Continued W to establish territory limits, played call, three FSJs crossed SR 70, coming from NE, two FSJs returned N, one FSJ followed observer. @11:28 – Continued W, one FSJ approached from E. @11:32 – Continued W, three FSJs

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FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
								approached from NE and E, two FSJs traveled N across SR 70 again. @11:34 – Continued W, one FSJ followed from E. @11:37 – Continued W, played call at location just E of Station 23, no FSJs followed/approached, established western limits of territory. Incidental wildlife: Red-bellied woodpecker, Northern cardinal
25	5	11:50 AM	11:54 AM	N	-	-	-	Observed one FSJ in oak tree directly N of Station 25 (N of SR 70) (STA 35), the FSJ did not cross SR 70 to the S to approach observer. Incidental wildlife: Cattle egret
43	4 / Territory Establishment	12:00 PM	12:05 PM	Y	4	-	38	@ 12:03 PM – Four adult FSJs approached from E. Observers traveled W to establish western limits of territory. Incidental wildlife: Black vulture
44	4 / Territory Establishment	12:05 PM	12:10 PM	Y	4	-	39	Four adult FSJs present Note – calls played in the ROW.
45	4 / Territory Establishment	12:10 PM	12:15 PM	Y	4	-	40	Four adult FSJs present. FSJs crossed SR 70 to the S multiple times during survey, landing in natural vegetation in S ROW. Note – calls played in the ROW.
46	4 / Territory Establishment	12:15 PM	12:18 PM	Y	4	-	41	Four adult FSJs present. Note – calls played in the ROW.
47	5 / Territory Establishment	12:15 PM	12:18 PM	Y	4	-	42	@ 12:18 PM – Stopped survey, hawk circling overhead, established western limits of boundary, at power pole just east of Station 47. Before observed hawk FSJs were lagging behind and not all followed to last call location. Incidental wildlife: Hawk
54	5	11:33 AM	11:38 AM	N	-	-	-	
55	5	11:41 AM	11:46 AM	N	-	-	-	

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FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
56	5	11:50 AM	11:56 AM	N	-	-	-	
57	5	12:03 PM	12:08 PM	N	-	-	-	
58	4	12:11 PM	12:16 PM	N	-	-	-	
59	4	12:18 PM	12:25 PM	N	-	-	-	
60	4	12:27 PM	12:32 PM	N	-	-	-	
62	4	12:35 PM	12:40 PM	N	-	-	-	
63	4	12:42 PM	12:47 PM	N	-	-	-	
64	4	12:50 PM	12:55 PM	N	-	-	-	
65	4	12:59 PM	1:03 PM	N	-	-	-	
66	4	1:06 PM	1:11 PM	N	-	-	-	

Appendix D: Florida Scrub-Jay Survey Datasheets

Survey Date 5/4/2023

Survey	Time	Temp (°F)	Wind (mph/direction)	Visibility	Precipitation
Start	7:40 AM	68	5 / NNW	Clear	NA
Stop	11:17 AM	82	6 / NNW	Clear and sunny	NA

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
41	5	7:40 AM	7:42 AM	Y	3	-	36	Three FSJs flew in from the NE. One FSJ flew S across SR 70 and perched in an oak tree. When observer arrived at Station 41, another group of FSJs were heard in citrus grove S of SR 70 and the other group could be heard NE of Station 41.
42	5	7:51 AM	7:55 AM	N	-	-	-	
43	5	8:05 AM	8:09 AM	N	-	-	-	
44	5	8:21 AM	8:25 AM	N	-	-	-	
45	5	8:29 AM	8:33 AM	N	-	-	-	
46	5	8:38 AM	8:42 AM	N	-	-	-	
48	5	9:03 AM	9:07 AM	N	-	-	-	
49	5	9:08 AM	9:12 AM	N	-	-	-	
50	5	9:15 AM	9:19 AM	N	-	-	-	
51	5	9:21 AM	9:25 AM	N	-	-	-	
52	5	9:27 AM	9:31 AM	N	-	-	-	
53	5	9:35 AM	9:39 AM	N	-	-	-	
58	5	10:14 AM	10:18 AM	N	-	-	-	
59	5	10:23 AM	10:27 AM	N	-	-	-	
60	5	10:31 AM	10:35 AM	N	-	-	-	
62	5	10:38 AM	10:42 AM	N	-	-	-	
63	5	10:44 AM	10:48 AM	N	-	-	-	
64	5	10:55 AM	10:59 AM	N	-	-	-	
65	5	11:05 AM	11:09 AM	N	-	-	-	
66	5	11:13 AM	11:17 AM	N	-	-	-	

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Survey Date 5/23/2023

Survey	Time	Temp (°F)	Wind (mph/direction)	Visibility	Precipitation
Start	8:25 AM	74	3 / WSW	Clear, partly cloudy, 11 miles	NA
Stop	1:11 PM	80	2 / W	Clear, mostly cloudy, 13 miles	NA

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
28	5	1:07 PM	1:11 PM	N	-	-	-	Incidental wildlife: Black vulture, turkey vulture, Audubon's crested caracara. Note: Caracara and vultures were observed feeding on carrion in tall grass, just east of survey station.
40	Territory Establishment	8:32 AM	8:45 AM	Y	3	-	35	*Establishing territory Three FSJs flew in from NW. One female present, hiccupping. Observers traveled W. Played call in between Station 40 and 41. Same three FSJs followed. Incidental wildlife: Blue-grey gnatcatcher, snowy egret, white ibis
41	Territory Establishment	8:45 AM	9:06 AM	Y	5-6	-	36	*Establishing territory – continuing from Station 40 observations Same three FSJs followed. Two additional FSJs flew in from WNW. One potentially new FSJ observed NW of other two new FSJs (approximately 20 ft away), keeping distance. At one point five FSJs were perched close together in an oak tree, overgrown with muscadine vines. These FSJs appeared comfortable with each other. No signs of aggression observed. These five jays remained close together moving frequently to different branches on the same tree. At one point, a pair of FSJs were perched together closely. A second pair of FSJs exhibited similar behavior, perched close together on a different tree branch. Observers traveled W. Played call in between Station 41 and 42. Five FSJs

Appendix D: Florida Scrub-Jay Survey Datasheets

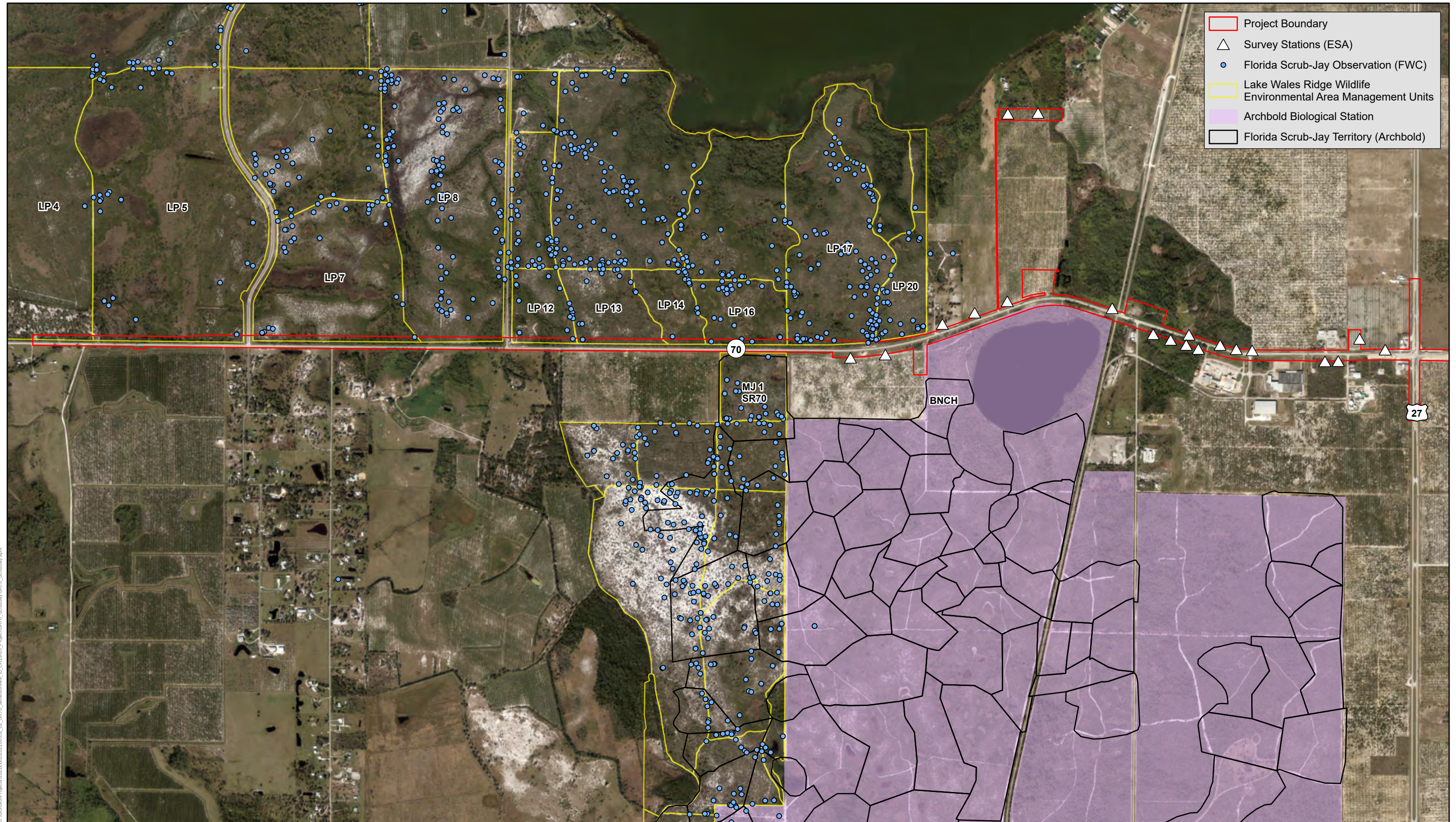
FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
								followed. Incidental wildlife: Northern mockingbird
42	Territory Establishment	9:06 AM	9:25 AM	Y	6	-	37	*Establishing territory – continuing from Station 41 observations Directly north of Station 42 is a non-forested scrubby area with saw palmetto groundcover and other low vegetation. Four FSJs appeared in an oak tree, bordering the east edge of the open scrub habitat, east of Station 42, where a forested habitat begins. The four FSJs flew in from the E. Two additional FSJs flew in from the E. One FSJ flew in from the SW, crossing SR 70 to the N. This lone jay might have been one of the six observed, or a new FSJ. Observers traveled W. Played call in between Station 42 and 43. Five FSJs followed. Two FSJs eventually traveled S across SR 70, landed in natural vegetation along ROW.
43	Territory Establishment	9:25 AM	9:39 AM	Y	5	-	38	*Establishing territory – continuing from Station 42 observations Five FSJs followed. Observers traveled W. Played call in between Station 43 and 44. One FSJ at sentinel post in tree directly north of call location. Eventually, two FSJs flew in from E. Three FSJs total. Incidental wildlife: Turkey vulture
44	Territory Establishment	9:39 AM	9:51 AM	Y	3	-	39	*Establishing territory – continuing from Station 43 observations Three FSJs followed from E. Incidental wildlife: Great egret, common grackle, white-eyed vireo, mourning dove
45	Territory Establishment	9:51 AM	10:01 AM	Y	2	-	40	*Establishing territory – continuing from Station 44 observations Two FSJs followed from E. Incidental wildlife: White-eyed vireo, downy

Appendix D: Florida Scrub-Jay Survey Datasheets

FSJ Station	Survey Round	Start Time	Stop Time	FSJ Observed (Y/N)	No. Adult	No. Imm.	Photo Page	Comment
								woodpecker
46	Territory Establishment	10:01 AM	10:27 AM	N	-	-	41	*Establishing territory – continuing from Station 45 observations No FSJs present. Note: Habitat at Station 46 is overgrown scrub, large oaks with canopy, saw palmetto dominates groundcover in some areas. Some areas with open sandy patches. @10:23 AM – Played call from the ROW. No FSJs present. Incidental wildlife: Turkey vulture, downy woodpecker, Northern mockingbird, American crow

Appendix E

FLORIDA SCRUB-JAY ARCHBOLD BIOLOGICAL STATION AND LAKE WALES RIDGE WILDLIFE ENVIRONMENTAL AREA SURVEY RESULTS



- Project Boundary
- Survey Stations (ESA)
- Florida Scrub-Jay Observation (FWC)
- Lake Wales Ridge Wildlife Environmental Area Management Units
- Archbold Biological Station
- Florida Scrub-Jay Territory (Archbold)

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