

# **Appendix 4.3.6-A**

## **Rare Species Surveys**



**DATE:** MAY 16, 2013  
**TO:** SHANNON MCMORROW  
**FROM:** JOHN MIKLOS  
**CC:** JAY BAKER, STEFFENIE WIDOWS  
**RE:** U.S. FISH AND WILDLIFE SERVICE MIGRATORY BIRDS MEETING  
**BTC NO:** 676-03.03

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Pursuant to the request of the U.S. Fish and Wildlife Service (USFWS) and in accordance with the Migratory Bird Treaty Act (1918) (MBTA) and the Bald and Golden Eagle Protection Act (1940) (BGEPA), Bio-Tech Consulting Inc (BTC) conducted aerial surveys along the entire length of the proposed All Aboard Florida commuter passenger rail project right-of-way (ROW), extending from Orlando International Airport to Downtown Miami, Florida. The purpose of the aerial surveys was to determine the approximate extent, if any, of the utilization on the subject site by federally protected migratory birds, in particular the Bald Eagle (*Haliaeetus leucocephalus*) and Audubon's Crested Caracara (*Polyborus plancus audubonii*).

**Bald Eagle**

Two (2) helicopter Bald Eagle nest surveys were conducted within the proposed All Aboard Florida commuter passenger rail project ROW. The first aerial survey was flown on December 3, 2012, beginning at Orlando International Airport and ending in Jupiter, Florida. The second aerial survey was flown on May 13, 2013, beginning at Orlando International Airport and ending in Downtown Miami, Florida. During both surveys, the helicopter maintained a flight path within 400-feet of the proposed project ROW. The weather conditions during the surveys were clear and sunny on both December 3<sup>rd</sup> and May 13<sup>th</sup>. The objectives of the survey were to determine if the proposed project ROW fell within the primary (330-foot) or secondary (660-foot) protection buffer of any documented or undocumented Bald Eagle nest. Four (4) Florida Fish and Wildlife Conservation Commission (FFWCC) documented nests were identified through the use of the FFWCC Bald Eagle Nest Locator (2012) for investigation during the survey. The identified nests included, OR-065, OR-002, OR-075, and PB-022 (Figures 1-3). Only three (3) of the nests were determined to be active during this past 2012-2013 nesting season. Nests OR-065, OR-075, and PB-022 all had at least one adult eagle observed perched at or near the nest tree at the time of the surveys. Nest OR-002 was not found during either aerial survey. According to the FFWCC's Bald Eagle Nest Locator, that nest has not been active since 1981. Regarding nest OR-065, both the primary and secondary protection buffer zones of the nest lie within one of the proposed development footprints of the All Aboard Florida

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**Key West Office**  
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**Aquatic & Land Mgmt. Operations**  
3825 Rouse Road  
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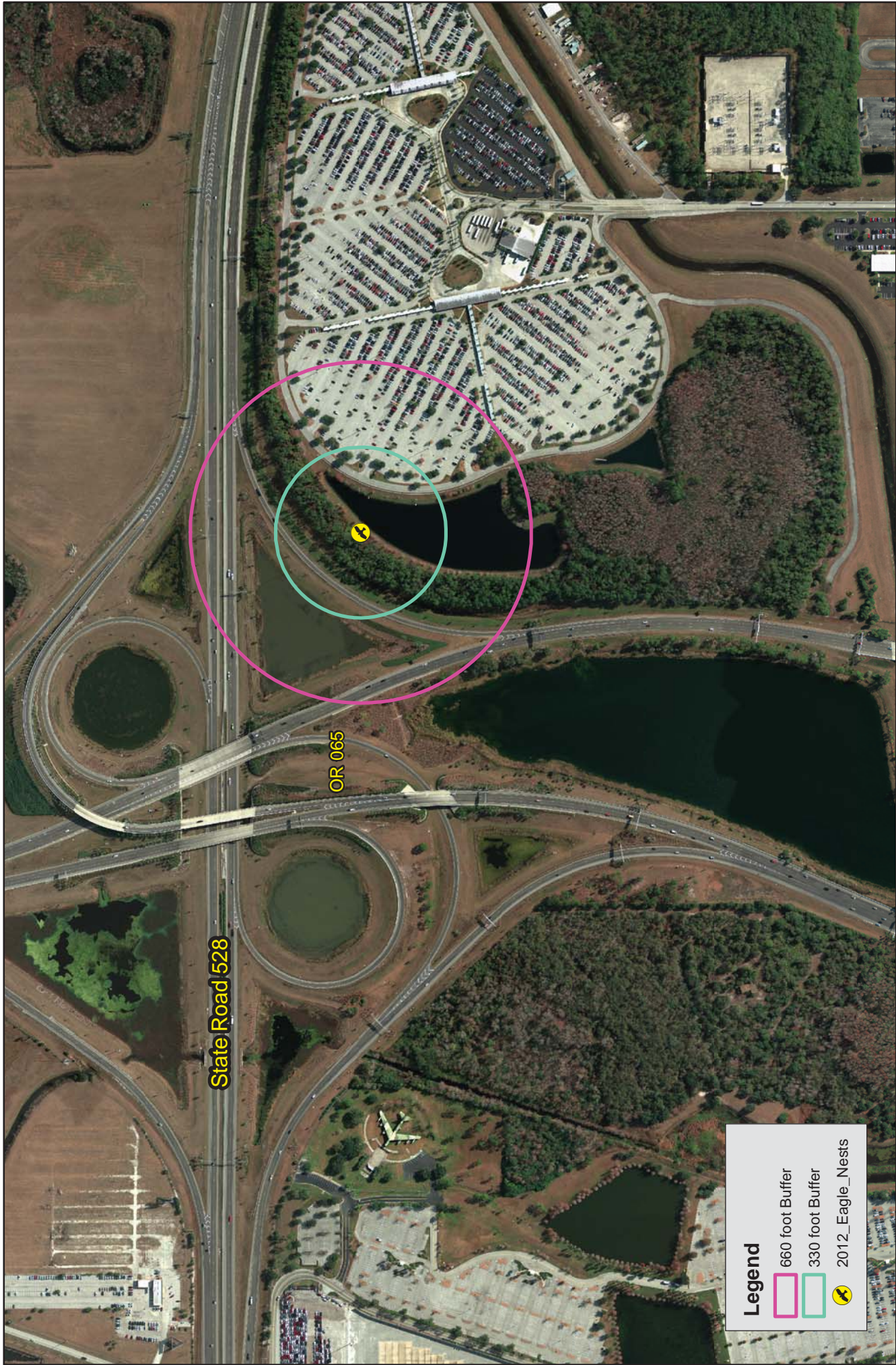
**Jacksonville Office**  
2036 Forbes Street  
Jacksonville, FL 32204

## BTC MEMO

commuter passenger rail. Neither nest OR-75 nor nest PB-022 nor their protection buffers lie within the proposed project limits.

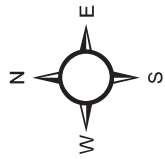
### Audubon's Crested Caracara

Pursuant to the U.S. Fish and Wildlife Service, a formal Audubon's Crested Caracara survey must be conducted for any site that is slated for development and is within 300m (1,000 feet) of a nest. Thus, a survey was conducted in order to determine the approximate extent, if any, of the Audubon's Crested Caracara utilization on the subject site. One (1) aerial survey and six (6) field surveys were conducted by BTC biologists during the Caracara breeding season. The aerial survey took place on April 17, 2013 and the field surveys took place on January 25th, February 8th, 21st, March 8th, 20th, and April 3rd of 2013. Two (2) field survey stations were established (Figure 4a). One station was located just south of State Road 528 ROW on east bank of the St. John's River. The second monitoring station was located just north of State Road 528 ROW, but still on the east bank of the St. John's River. A confirmed Caracara sighting was established from the north field survey station on February 21, 2013. The bird was observed flying in from the south and landed in the pasture area to the northeast of the north survey station. The bird spent approximately thirty (30) minutes foraging in the pasture then flew off-site to the northeast. Caracaras were also observed during the helicopter aerial survey on April 17, 2013. Four (4) adult birds were observed perched on the ground to the far northeast of the north field survey station (Figure 4b). However, no Caracara nest was determined to be located within 1000-feet north or south of the development footprint of the proposed All Aboard Florida commuter passenger rail project. The closest known Caracara nest is located approximately three (3) miles to the northeast of the proposed All Aboard Florida rail project development footprint within the St. John's National Wildlife Refuge (Figure 4b). The second closest known nest is located approximately five (5) miles to the southeast of the proposed All Aboard Florida rail project development footprint within Canaveral Marshes Conservation Area (Figure 4c). These nests were located by the USFWS. The St. John's River Water Management District (SJRWMD) manages the Canaveral Marshes Conservation Area and the USFWS manages the St. John's National Wildlife Refuge. According to the nest data from the SJRWMD as provided by the USFWS, both nests were determined active and fledged chick(s) as of the 2006/2007 nesting season.



**Legend**

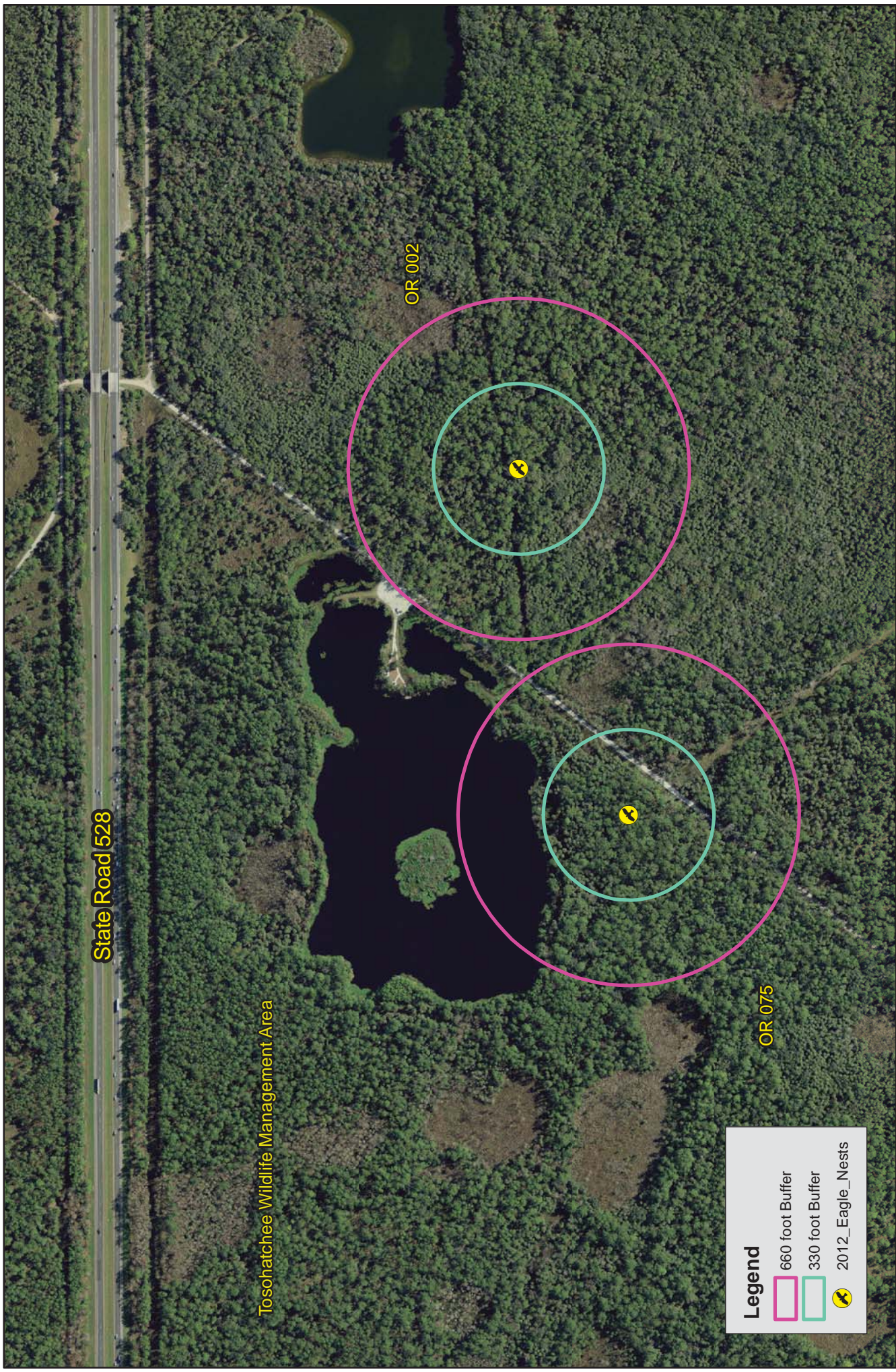
- 660 foot Buffer
- 330 foot Buffer
- ✈ 2012\_Eagle\_Nests



All Aboard Florida  
 Orange County, Florida  
 Figure 1  
 Bald Eagle Nest Map

Project #: 676-03  
 Produced by: SAW  
 Date: 15 May 2013

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State Road 528

Tosohatchee Wildlife Management Area

OR 002

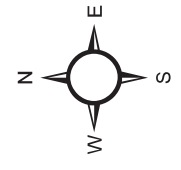
OR 075

**Legend**

- 660 foot Buffer
- 330 foot Buffer
- ⚡ 2012\_Eagle\_Nests

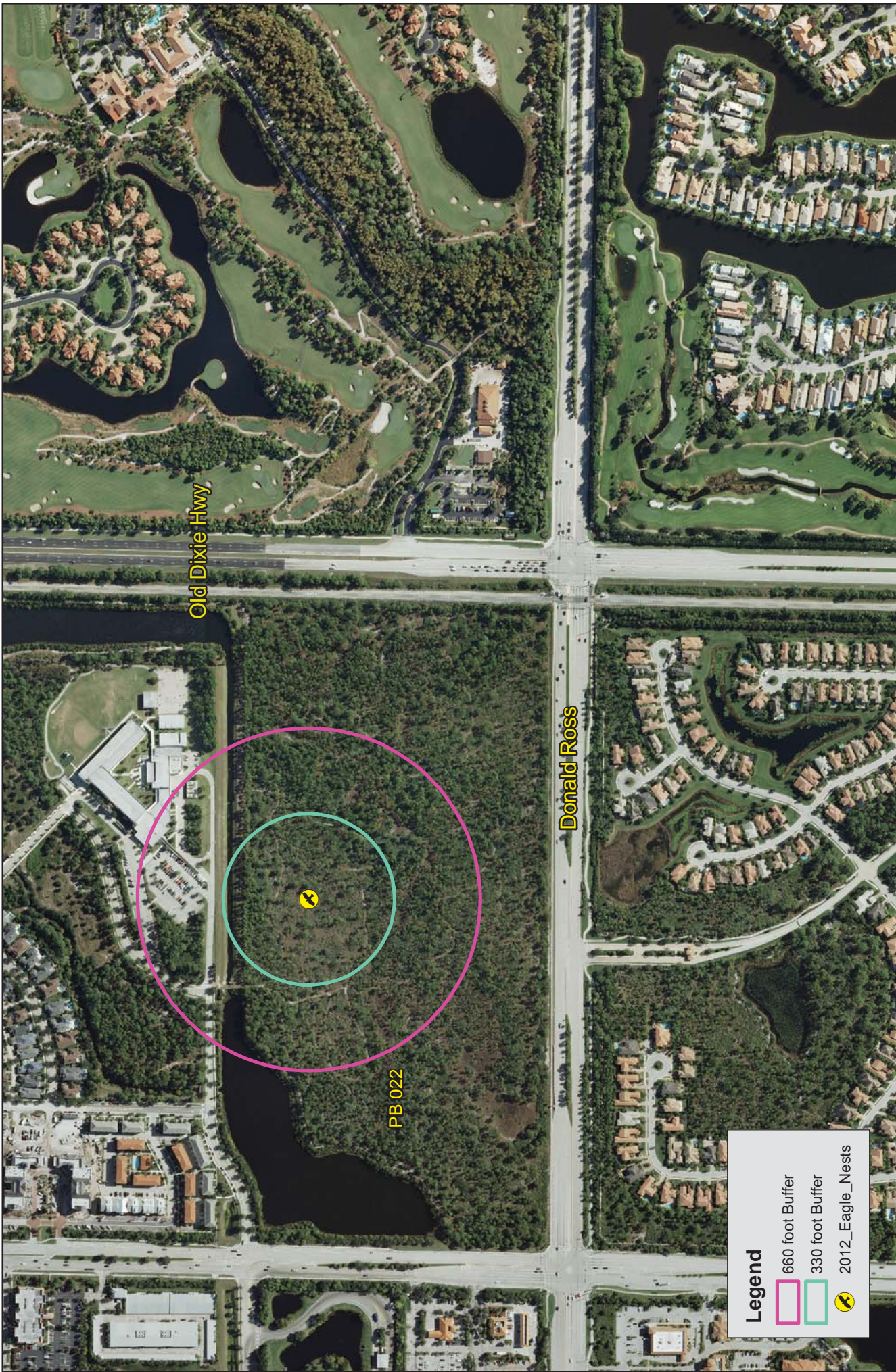
1,000 Feet

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All Aboard Florida  
 Orange County, Florida  
 Figure 2  
 Bald Eagle Nest Map

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Old Dixie Hwy

Donald Ross

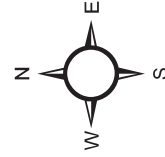
PB 022

**Legend**

- 660 foot Buffer
- 330 foot Buffer
- 2012\_Eagle\_Nests

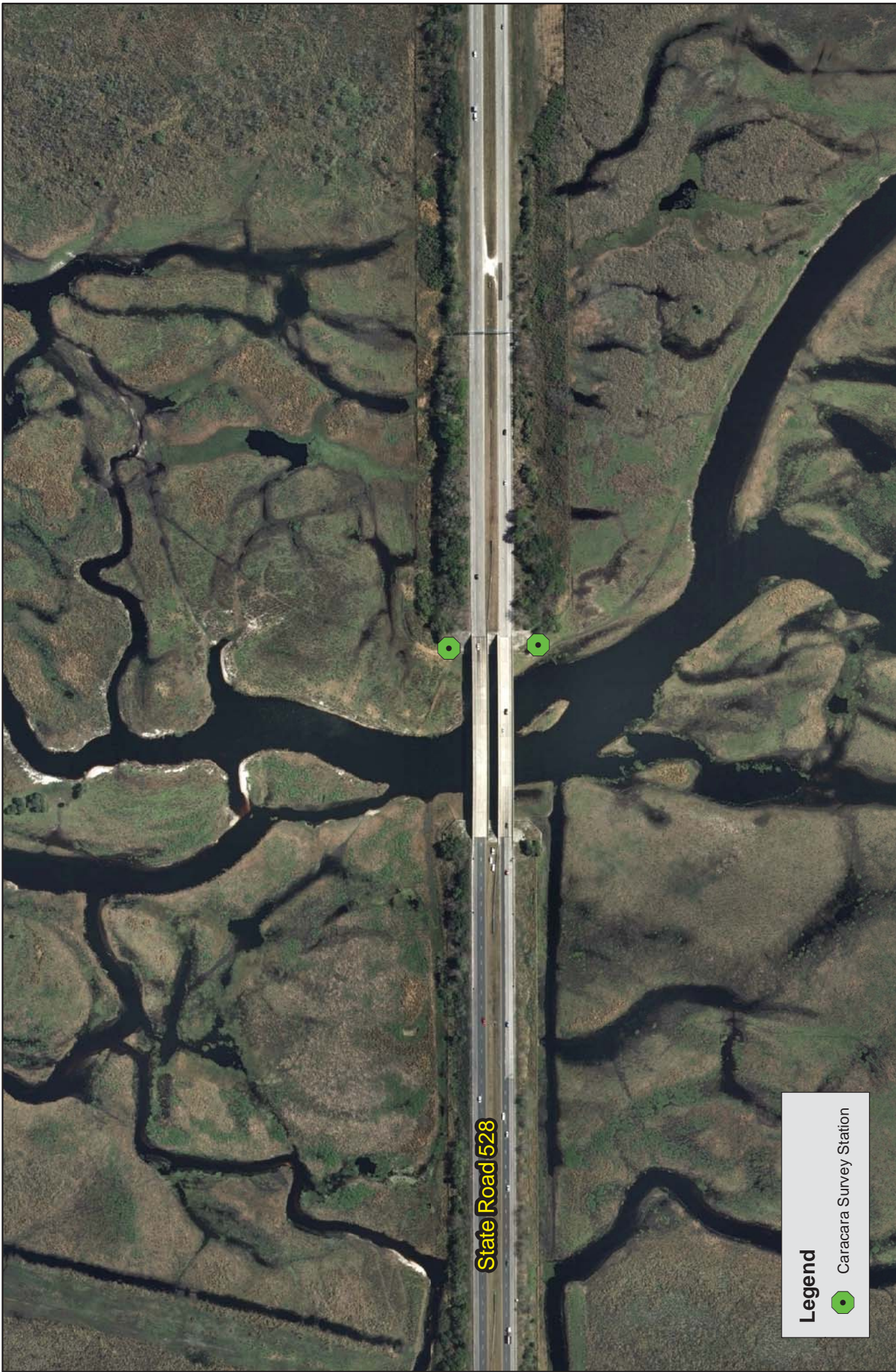
1,000

Feet




Project #: 676-03  
 Produced by: SAW  
 Date: 15 May 2013

All Aboard Florida  
 Palm Beach County, Florida  
 Figure 3  
 Bald Eagle Nest Map



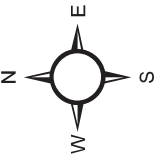
State Road 528

**Legend**  
 Caracara Survey Station

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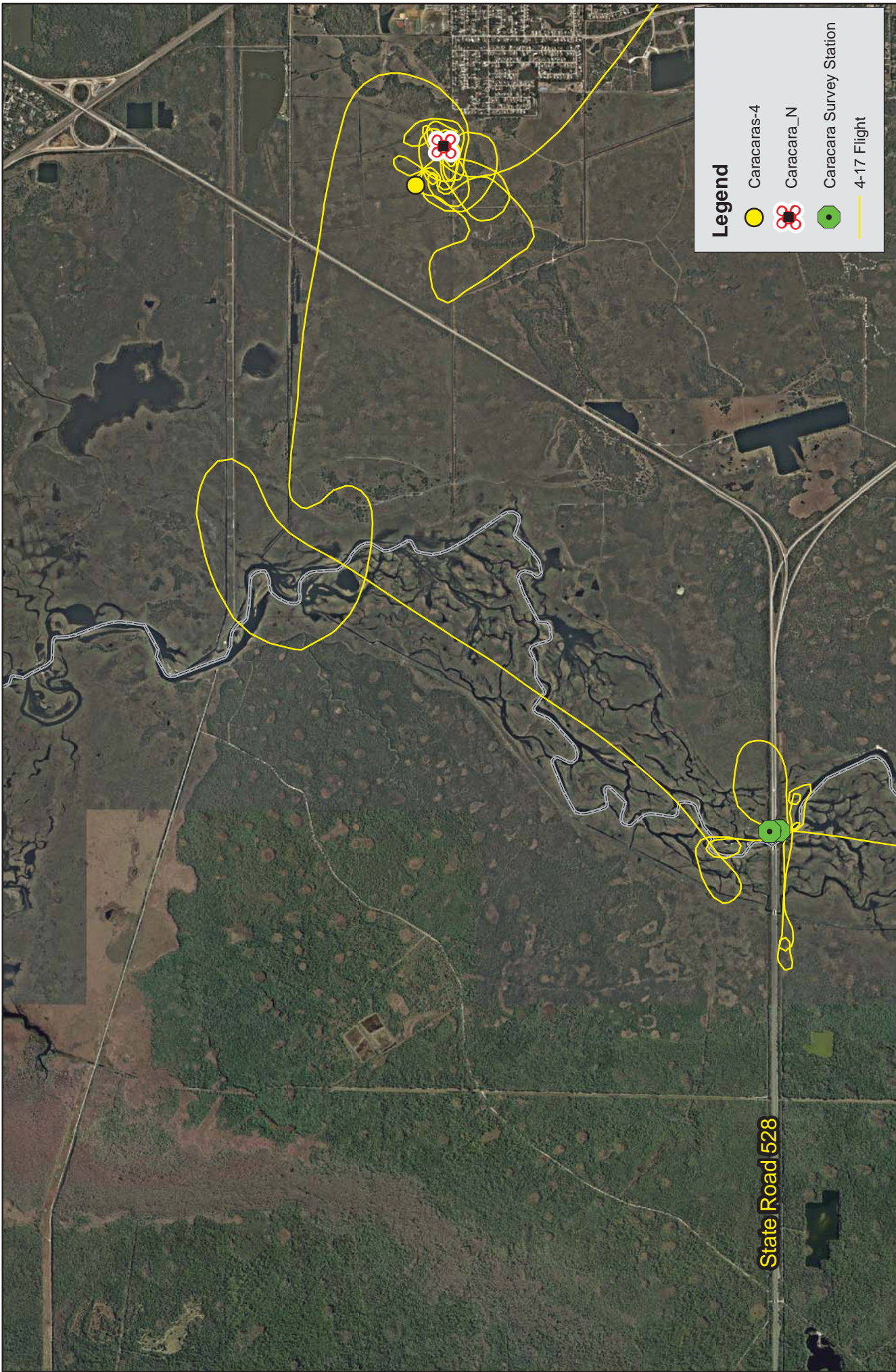
All Aboard Florida  
Orange & Brevard Counties, Florida  
Figure 4a  
Caracara Survey Map

500



Feet

Project #: 676-03  
Produced by: SAW  
Date: 15 May 2013

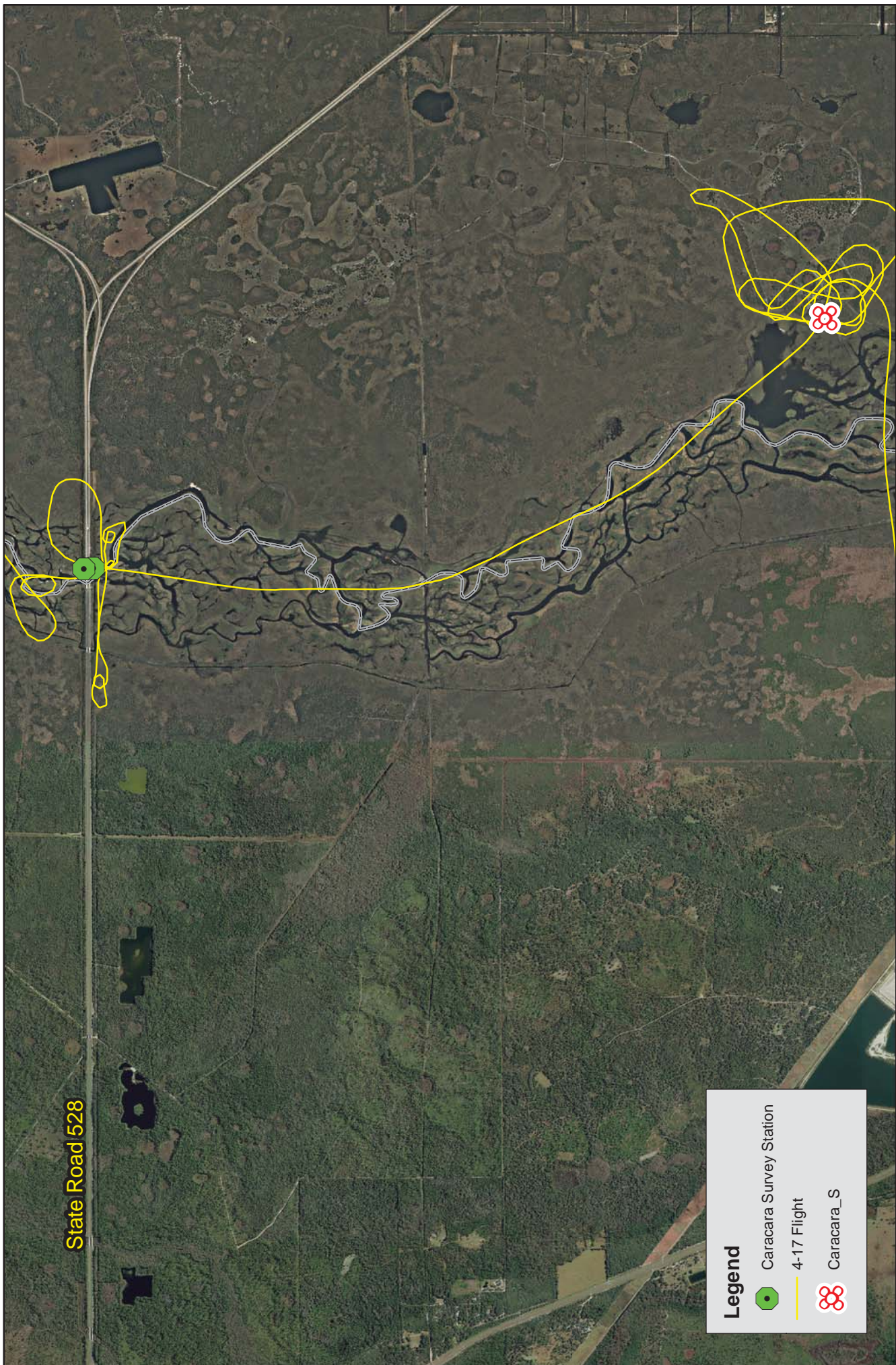


All Aboard Florida  
 Orange & Brevard Counties, Florida  
 Figure 4b  
 Caracara Survey Map




Project #: 676-03  
 Produced by: SAW  
 Date: 15 May 2013



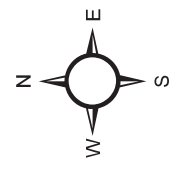
State Road 528



**Legend**

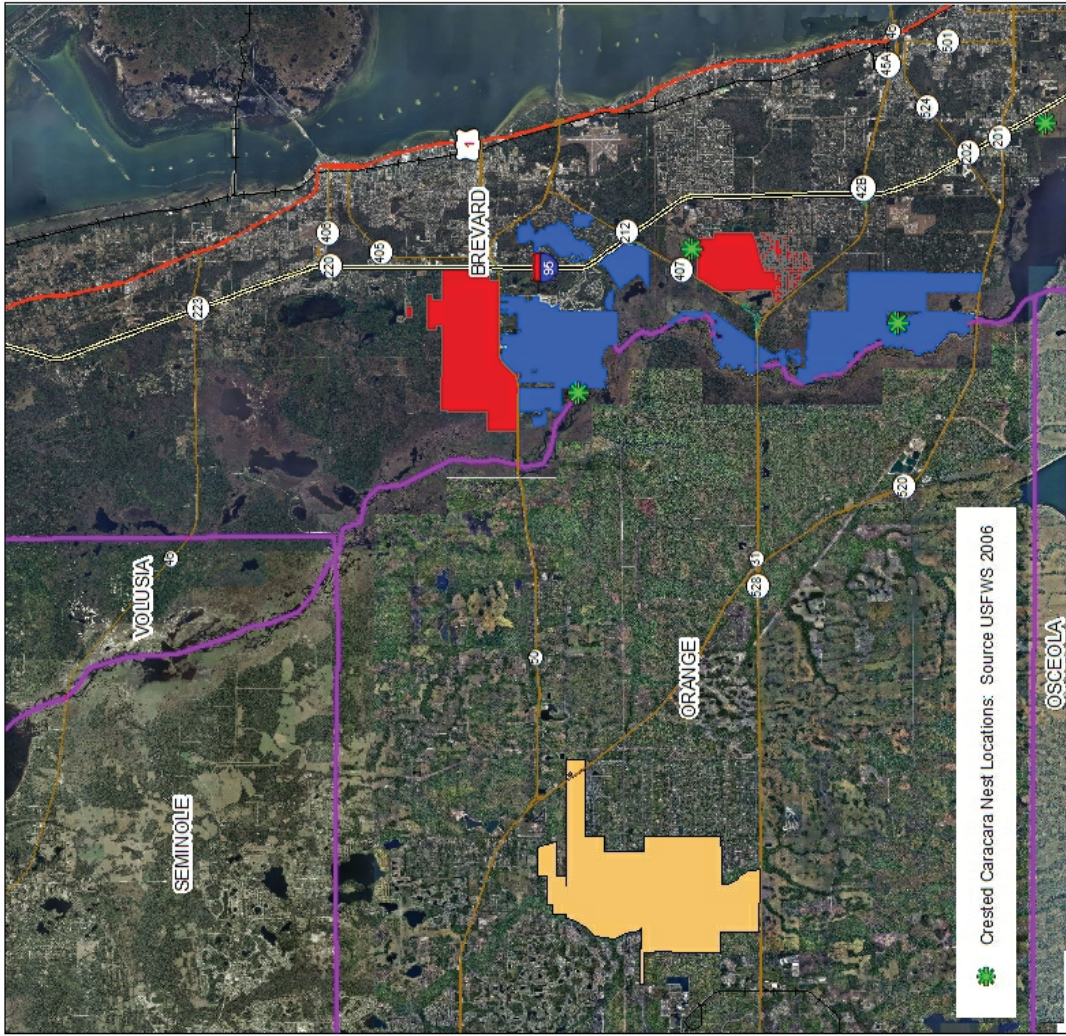
-  Caracara Survey Station
-  4-17 Flight
-  Caracara\_S

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All Aboard Florida  
Orange & Brevard Counties, Florida  
Figure 4c  
Caracara Survey Map

Project #: 676-03  
Produced by: SAW  
Date: 15 May 2013



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- Managed by USFWS**
- St. Johns National Wildlife Refuge
- Managed by SJRWMD**
- Canaveral Marshes Conservation Area
  - Hal Scott Regional Preserve and Park

**Crested Caracara Nest Locations**

June 4, 2013

Jose Gonzalez. Vice President  
**Flagler Development**  
2855 Le Jeune Rd.  
4<sup>th</sup> Floor  
Coral Gables, Florida 33134

**Proj: All Aboard Florida – Brevard County, Florida**  
**FEC Right-of-Way**  
**(BTC File #676-03)**  
**Re: Scrub-Jay Survey**

Dear Mr. Gonzalez,

In March of 2013, Bio-Tech Consulting Inc. (BTC) conducted a five day Scrub-jay Survey of the Florida East Coast Railway ROW from SR 528 to the south Brevard County Line. The environmental assessment included the following elements:

- **evaluation of land use types/vegetative communities present; and,**
- **surveys for use of the site by federally and state threatened Florida Scrub-jay.**

## **INTRODUCTION AND BACKGROUND**

The Florida Scrub-jay is a species currently listed by the U.S. Fish and Wildlife Service (Service) [50 CFR 17.11] and Florida Fish and Wildlife Conservation Commission (FWC) [Chapter 39-27.002 F.A.C.] as Threatened. As part of the All Aboard Florida Passenger Rail Project, a Scrub-jay survey was conducted along the Florida East Coast (FEC) Railway between S.R. 528 and the south Brevard County line in all suitable and marginal scrub habitat.

All Aboard Florida is a privately funded project to provide passenger rail

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service between Orlando and Miami. While new tracks will be constructed between Orlando and Cocoa adjacent to S.R. 528, the existing Florida East Coast Railway tracks will be utilized and upgraded between Cocoa and Miami. Upgrades will include adding a second set of tracks within the existing Right-Of-Way (ROW) and upgrading the existing tracks to accommodate higher speed trains. As the tracks currently pass through suitable habitat for the state and federally threatened Florida Scrub-jay (*Aphelocoma coerulescens*), the U.S. Fish and Wildlife Service asked that surveys for this species be conducted in areas of suitable habitat. It should be noted that the entire ROW has been impacted in the past and does not contain suitable habitat for Scrub-jays. No Scrub-jay habitat will be impacted by these plans.

## **ENVIRONMENTAL SETTING**

The current Florida East Coast Railway tracks pass through a variety of habitats and land uses including large urban and suburban areas, wetlands, and uplands. Not all of the habitats are suitable for Scrub-jays. Brevard County has a large number of Preserves and Sanctuaries for Scrub-jays and other wildlife. Extra attention was given to where these areas abut the tracks. A number of areas where Scrub-jays have been recorded in the past are now developed or are so altered that habitat for this species no longer exists. The entire ROW was evaluated from current aerial photographs and ground inspection prior to the Scrub-jay survey to insure that all suitable areas were covered.

### **FLORIDA SCRUB-JAY (*Aphelocoma coerulescens*) - Federally Listed Threatened June 3, 1987, FR20719; State Listed Threatened**

Florida Scrub-jays build their nests in dense shrubs, usually at low to mid-level heights. Usually the nest is located at the edge of a dense shrubby area, adjacent to bare ground or somewhat open areas. The nest is a bulky basket of twigs, usually taken from oak shrubs. The lining of the nest is a tightly woven cup of cabbage palm or saw palm fibers. The Scrub-jays never reuse the nest or the materials. Scrub-jays will not nest in the same exact location even if the nest is removed after use. The nesting season extends from March through June. The Florida Scrub-jay is strongly associated with several Florida scrub communities, and also will use adjacent non-scrub habitats of certain types. Please note, Scrub-jays exist only in areas where one or more species of scrub oaks occur, even if only vestigially represented. Before the intrusion of humans, nearly all natural scrub communities were maintained by frequent natural fires. Florida Scrub-jays are most abundant in open, oak dominated scrub communities of the interior and Atlantic coast sand

ridges of the Peninsula. Scrub-jay habitat is broken down into three types:

- TYPE I HABITAT. Any upland plant community in which percent cover of the substrate by scrub oak species is 15% or more.
- TYPE II HABITAT. Any plant community, not meeting the definition of Type I habitat, in which one or more scrub oak species is represented.
- TYPE III HABITAT. Any upland or seasonally dry wetland within ¼ mile of any designated as Type I or Type II habitat.

In most cases, the Type I habitat is recognized as xeric oak scrub, scrubby pine flatwoods, scrubby coastal strand, or sand pine scrub. Usual classification schemes are not as useful in identifying or predicting habitat type; the presence of scrub oaks is the key indicator. The third habitat type includes many different plant communities where scrub oak species are not represented, but that are nearby or adjacent to Type I or Type II habitat. The subject site does not have any scrub habitat. The citrus groves might be considered Type III habitat and surveys for Scrub-jays were conducted in these areas.

### **Florida Scrub-jay Survey Methodology**

Utilizing methodologies outlined in the Ecology and development-related habitat requirements of the Florida scrub-jay (*Aphelocoma coerulescens*) (J.W. Fitzpatrick, G.E. Woolfenden and M.T. Kopeny, 1991) and United States Fish & Wildlife's Scrub-jay Survey Guidelines (Updated 08/24/2007), BTC staff conducted a formal Scrub-jay Survey during March 25-29, 2013. Seventy Seven (77) survey stations were established along the Railroad Right-Of-Way in areas of suitable (Type I) and marginal (Types II and III) scrub habitat (Figures 1a to 1e). Distances between the stations varied but none were farther than 160 meters apart. Survey starting and finishing locations were varied each day to avoid calling in the same station at the same time each day. In many places, particularly in the area between Valkaria Road and Barefoot Boulevard, a thick wall of vegetation, primarily Brazilian Pepper, separated the ROW from the nearby scrub. In those areas, calling stations were located in gaps in the vegetation. In addition, Old Dixie Highway also separated the ROW from adjacent scrub habitat in many areas south of Valkaria Road. All Scrub-jays reacted aggressively to the recorded Scrub-jay calls and vocalizations.

## **SURVEY RESULTS**

The survey showed three areas where Scrub-jays occur adjacent to the FEC railway tracks (Figures 2-4). Results of each days surveys are shown in Exhibit 1:

### The Area South of Gus Hipp Boulevard in Rockledge:

This is a small, approximately 1,300 foot area (Figure 2), where part of the Helen and Allen Cruickshank Sanctuary abuts the western side of the tracks. Three stations were established along this area and scrub-jays were called to the southern two. At both of these locations Scrub-jays crossed the tracks searching for the source of the calls. Habitat on the east is limited and consists primarily of Brazilian pepper and large oaks. The Scrub-jays did not stay long on the east side of the tracks and the birds were only investigating the call.

### The Area Between Malabar Road and Valkaria Road:

This is an area of good scrub to the north and south of Harris Corporation (Figure 3). The northern area is part of the Jordan Scrub Preserve. Fourteen stations were located along this approximately 6,500 feet of ROW. Scrub-jays responded at 10 of these stations from the west and flew across the tracks on five occasions. While scrub habitat occurs east of the tracks, it occurs in a narrow strip between the tracks and US 1, and is much more overgrown than the area west of the tracks. Again, the birds were searching for the source of the calls and did not stay long east of the tracks.

### The Area South of Micco Road:

This is an approximately 5,000 foot area of scrub and scrubby flatwoods (Figure 4). Scrub-jays responded at five of the 10 stations along this stretch. Habitat to the east of the tracks is overgrown or developed. At the southernmost station, Scrub-jays crossed the tracks on one occasion but were just searching for the source of the call.

## **Summary**

A five day survey was conducted on the Florida East Coast railway Right-of-Way between SR 528 and the south Brevard County Line between March 25-29, 2013 for the presence of the

Florida Scrub-jay. Three areas of Scrub-jays were located; between Gus Hipp Blvd. and Barnes Road in Rockledge, between Malabar Road and Valkaria Road, and south of Micco Road.

The environmental limitations described in this document are based on observations and technical information available on the date of the on-site evaluation. This report is for general planning purposes only. The limits of any on-site wetlands/surface waters can only be determined and verified through field delineation and/or on-site review by the pertinent regulatory agencies. The wildlife surveys conducted within the subject property boundaries do not preclude the potential for any listed species, currently or in the future. Should you have any questions or require any additional information, please do not hesitate to contact our office at (407) 894-5969. Thank you.

Regards,

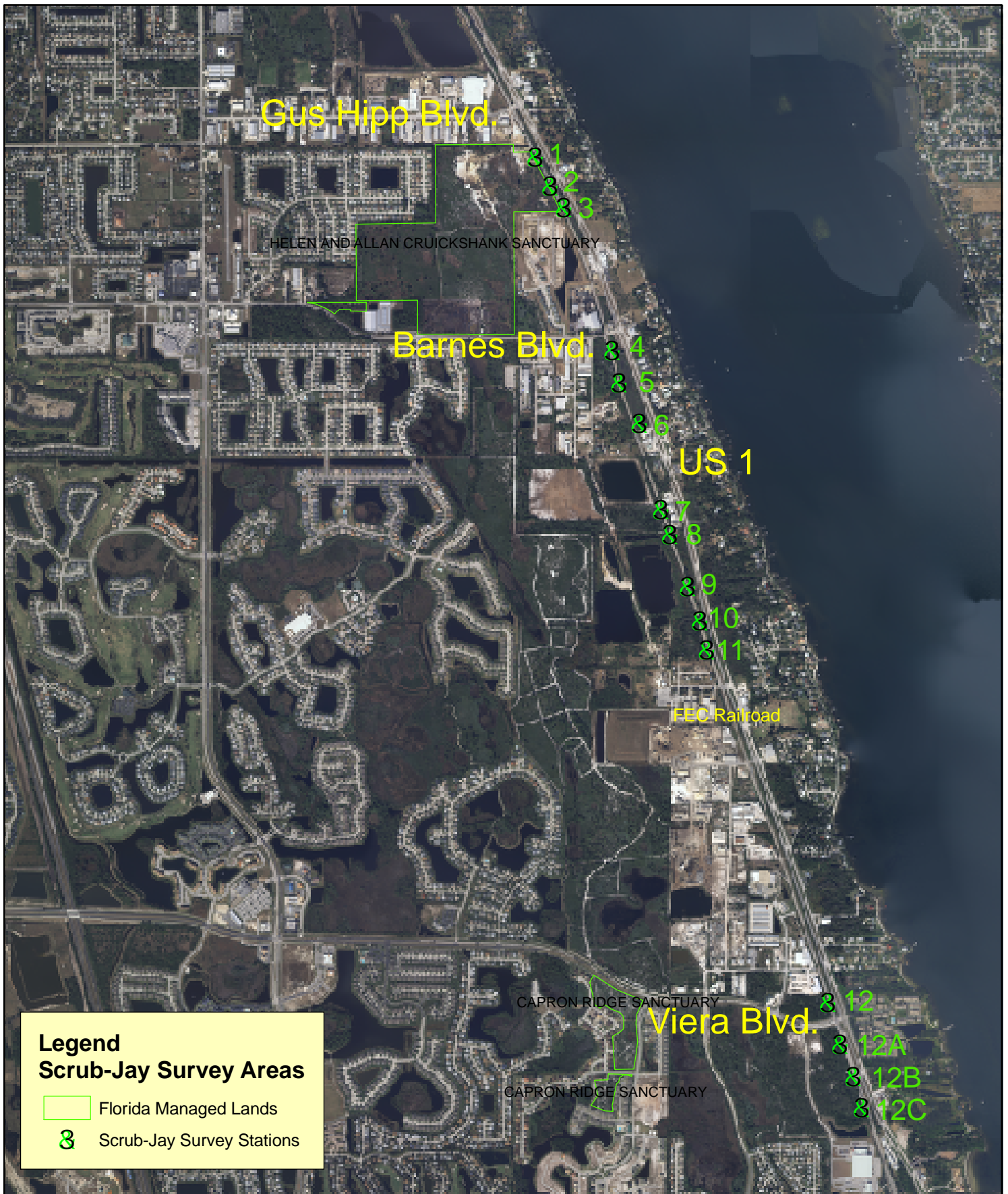


Steve Lau  
Field Biologist



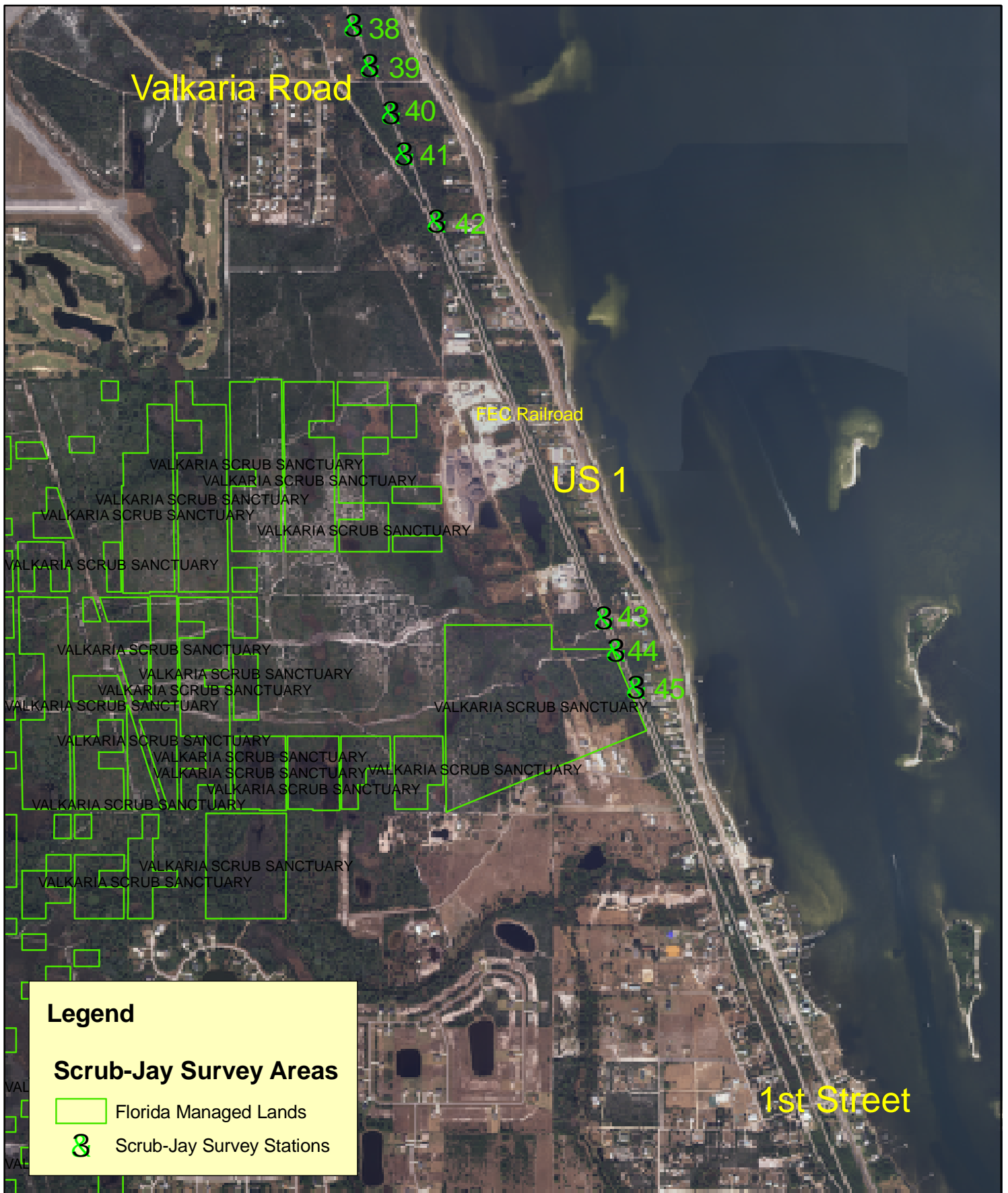
John Miklos  
President

attachments

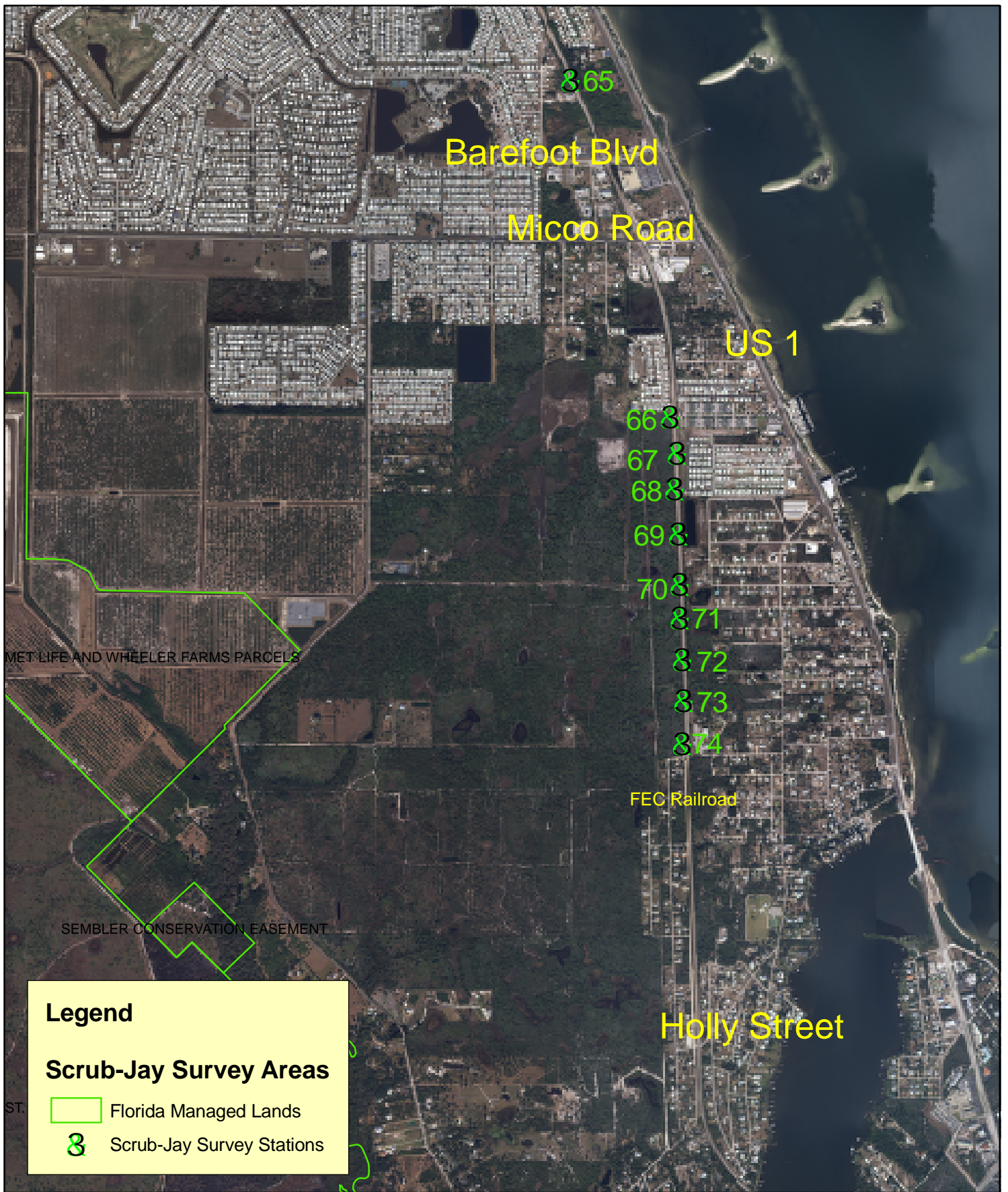












**Legend**

**Scrub-Jay Survey Areas**

- Florida Managed Lands
- S Scrub-Jay Survey Stations

**Bio-Tech Consulting Inc.**  
Environmental and Permitting Services

1717 Indian River Blvd, Suite 201  
Vero Beach, Florida 32960

All Aboard Florida  
Brevard County, Florida  
Figure 1e  
Scrub-Jay Survey Areas  
Barefoot Blvd. to Holly Street

**2**

0 1,500 3,000  
Feet

Project #: 676-03  
Produced By: SRL  
Date: 4/2/13



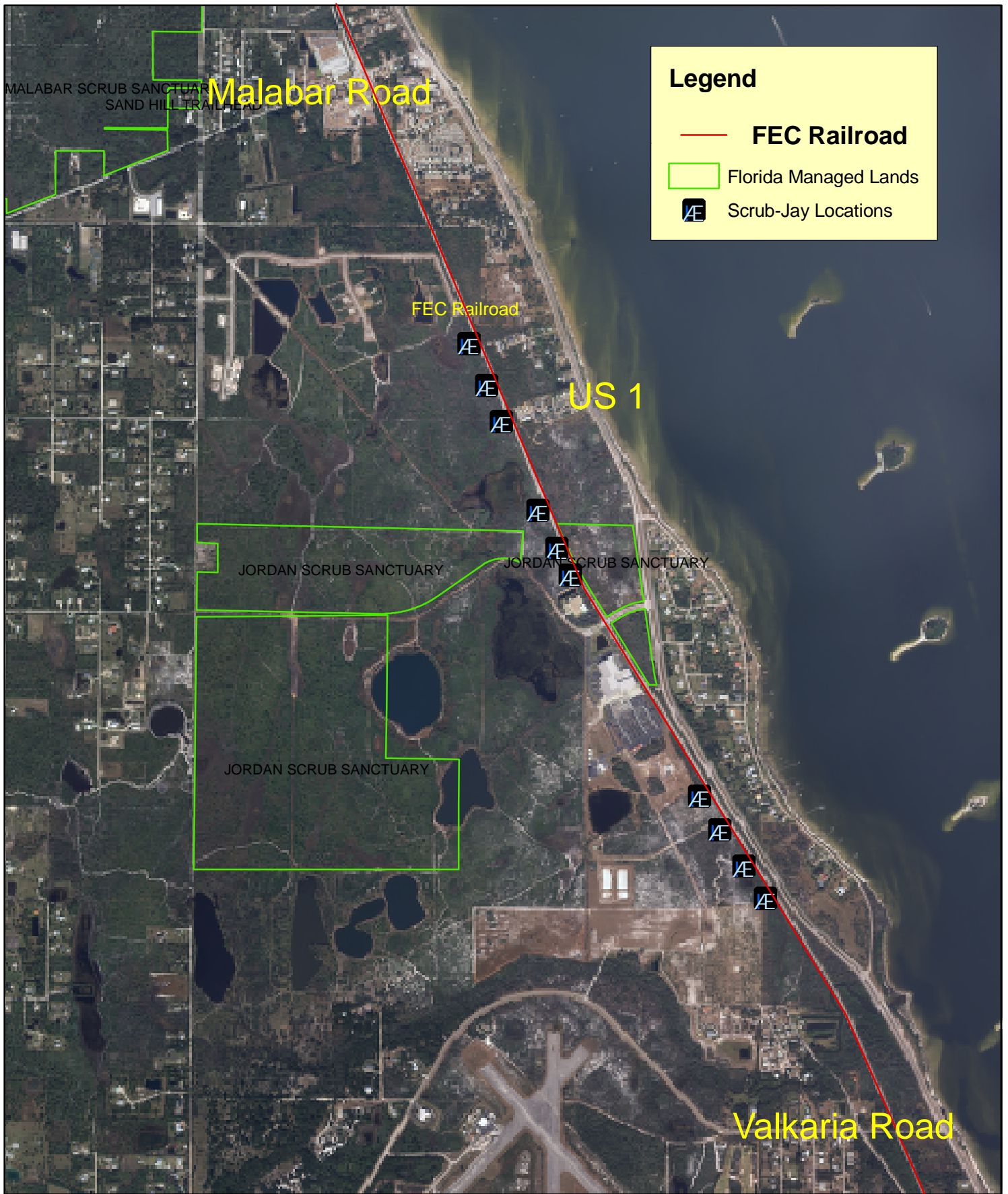
**Bio-Tech Consulting Inc.**  
 Environmental and Permitting Services  
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 Vero Beach, Florida 32960

All Aboard Florida  
 Brevard County, Florida  
 Figure 2  
 Scrub-Jay Locations  
 Rockledge Area

**2**

0 385 770 Feet

Project #: 676-03  
 Produced By: SRL  
 Date: 4/2/13



**Legend**

- FEC Railroad
- Florida Managed Lands
- Æ Scrub-Jay Locations



**Legend**

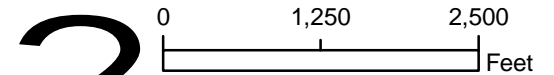
- FEC Railroad
- Æ Scrub-Jay Locations

ST. SEBASTIAN RIVER PRESERVE STATE PARK

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All Aboard Florida  
Brevard County, Florida  
Figure 4  
Scrub-Jay Locations  
South of Micco Road



Project #: 676-03  
Produced By: SRL  
Date: 4/2/13

EXHIBIT 1  
BREVARD COUNTY  
SCRUB-JAY SURVEY TABLES



<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Brevard County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	64°	75%	NW 5	8:00am		3/25/13
End	73°	5%	NW 10		3:25pm	
Station	Direction From	How Many	Direction Left	Observations		
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
12a						
12b						
12c						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24	NW	2		1 flew briefly across tracks		

<b>SCRUB-JAY RESPONSE</b>						
<b>Project:</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	64°	75%	NW 5	8:00am		3/25/13
End	73°	5%	NW 10		3:25pm	
Station	Direction From	How Many	Direction Left	Observations		
25	north	2		same birds a # 24		
26	west	1	west	different bird		
27						
28						
29	WSW	4	west			
30	north	1		1 bird from # 29 followed		
31						
32						
33						
34	west	1	stayed			
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project:</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	64°	75%	NW 5	8:00am		3/25/13
End	73°	5%	NW 10		3:25pm	
Station	Direction From	How Many	Direction Left	Observations		
53						
54						
55						
56						
57						
58						
59						
60						
61						
62						
63						
64						
65			NW			
66						
67	west	1				
68						
69						
70			stayed			
71						
72	west	1				
73						
74						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Brevard County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	52°	80%	NW 5	7:50am		3/26/13
End	61°	10%	NW 10		3:15pm	
Station	Direction From	How Many	Direction Left	Observations		
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
12a						
12b						
12c						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project:</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	52°	80%	NW 5	7:50am		3/26/13
End	61°	10%	NW 10		3:15pm	
Station	Direction From	How Many	Direction Left	Observations		
25						
26						
27						
28						
29	south	2	west	1 bird flew briefly across tracks		
30	west	1				
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project:</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	52°	80%	NW 5	7:50am		3/26/13
End	61°	10%	NW 10		3:15pm	
Station	Direction From	How Many	Direction Left	Observations		
53						
54						
55						
56						
57						
58						
59						
60						
61						
62						
63						
64						
65						
66						
67	west	2	west	took a while to respond		
68						
69						
70						
71						
72						
73						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Brevard County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	39°	0%	NW 5	7:55am		3/27/13
End	61°	0%	NE 10		3:15pm	
Station	Direction From	How Many	Direction Left	Observations		
1						
2	west	3	stayed	1 SJ crossed tracks 3 times looking for call		
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
12a						
12b						
12c						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project:</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	39°	0%	NW 5	7:55am		3/27/13
End	61°	0%	NE 10		3:15pm	
Station	Direction From	How Many	Direction Left	Observations		
25						
26						
27						
28						
29						
30						
31						
32						
33						
34	NW	1		wouldn't come close to call		
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						



<b>SCRUB-JAY RESPONSE</b>						
<b>Project:</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	39°	0%	NW 5	7:55am		3/27/13
End	61°	0%	NE 10		3:15pm	
Station	Direction From	How Many	Direction Left	Observations		
53						
54						
55						
56						
57						
58						
59						
60						
61						
62						
63						
64						
65						
66	south	2	north			
67	north	2		same 2 birds as Station # 66		
68						
69						
70		?		heard response from scrub but wouldn't show		
71						
72						
73						
74	south	2	south	1 bird crossed tracks twice searching for call		

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Brevard County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	41°	0%	calm	7:45am		3/28/13
End	66°	0%	N 10mph		3:25pm	
Station	Direction From	How Many	Direction Left	Observations		
1						
2	west	2	west	1 bird flew briefly across tracks		
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
12a						
12b						
12c						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Brevard County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	41°	0%	calm	7:45am		3/28/13
End	66°	0%	N 10mph		3:25pm	
Station	Direction From	How Many	Direction Left	Observations		
25						
26	west	2	west	took several minutes to respond		
27						
28						
29						
30						
31						
32						
33	south	2				
34	north	1	north			
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Brevard County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	41°	0%	calm	7:45am		3/28/13
End	66°	0%	N 10mph		3:25pm	
Station	Direction From	How Many	Direction Left	Observations		
53						
56						
57						
58						
59						
60						
61						
62						
63						
64						
65						
66	south	2	south			
67	north	2	south	same 2 as Station 66		
68	north	1		one bird from #67 followed ½ way to # 68		
69						
70	west	2	west			
71						
72						
73						
74	west	1	west			

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Brevard County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	47°	0%	calm	8:00 am		3/29/13
End	70°	0%	N 8mph		3:30 pm	
Station	Direction From	How Many	Direction Left	Observations		
1						
2	south	3	west	same birds as station #3		
3	NW	3				
4						
5						
6						
7						
8						
9						
10						
11						
12						
12a						
12b						
12c						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project:</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	47°	0%	calm	8:00 am	3:30 pm	3/29/13
End	70°	0%	N 8mph			
Station	Direction From	How Many	Direction Left	Observations		
24	west	3	west	flew briefly across tracks, searching for call		
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35	south	2	SW	same 2 as Station #36, flew across tracks		
36	NW	2		flew across tracks twice, searching for call		
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project:</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	47°	0%	calm	8:00 am	3:30 pm	3/29/13
End	70°	0%	N 8mph			
Station	Direction From	How Many	Direction Left	Observations		
53						
54						
55						
56						
57						
58						
59						
60						
61						
62						
63						
64						
65						
66	south	2		same birds as Station # 67		
67	south	2				
68						
69						
70						
71						
72						
73						
74	south	1	west	wouldn't get to close to call station		

June 4, 2013

Jose Gonzalez. Vice President  
**Flagler Development**  
2855 Le Jeune Rd.  
4<sup>th</sup> Floor  
Coral Gables, Florida 33134

**Proj: All Aboard Florida – Brevard County, Florida**  
**FEC Right-of-Way**  
**(BTC File #676-03)**  
**Re: Scrub-Jay Survey**

Dear Mr. Gonzalez,

In March of 2013, Bio-Tech Consulting Inc. (BTC) conducted a five day Scrub-jay Survey of the Florida East Coast Railway ROW from the north Indian River County Line to the south Martin County Line. The environmental assessment included the following elements:

- **evaluation of land use types/vegetative communities present; and,**
- **surveys for use of the site by federally and state threatened Florida Scrub-jay.**

## **INTRODUCTION AND BACKGROUND**

The Florida Scrub-jay is a species currently listed by the U.S. Fish and Wildlife Service (Service) [50 CFR 17.11] and Florida Fish and Wildlife Conservation Commission (FWC) [Chapter 39-27.002 F.A.C.] as Threatened. As part of the All Aboard Florida Passenger Rail Project, a Scrub-jay survey was conducted along the Florida East Coast (FEC) Railway between the north Indian River County line and the south Martin County line in all suitable and marginal scrub habitat.

All Aboard Florida is a privately funded project to provide passenger rail

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1717 Indian River Blvd  
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1107 Key Plaza  
Suite 259  
Key West FL 33040

Aquatic & Land  
Management Operations  
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407.894.5969  
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**Orlando**

**Vero Beach**

**Leesburg**

**Jacksonville**

**Tampa**

**Key West**



service between Orlando and Miami. While new tracks will be constructed between Orlando and Cocoa adjacent to S.R. 528, the existing Florida East Coast Railway tracks will be utilized and upgraded between Cocoa and Miami. Upgrades will include adding a second set of tracks within the existing Right-Of-Way (ROW) and upgrading the existing tracks to accommodate higher speed trains. As the tracks currently pass through suitable habitat for the state and federally threatened Florida Scrub-jay (*Aphelocoma coerulescens*), the U.S. Fish and Wildlife Service asked that surveys for this species be conducted in areas of suitable habitat. It should be noted that the entire ROW has been impacted in the past and does not contain suitable habitat for Scrub-jays. No Scrub-jay habitat will be impacted by these plans.

## **ENVIRONMENTAL SETTING**

The current Florida East Coast Railway tracks pass through a variety of habitats and land uses including large urban and suburban areas, wetlands, and uplands. Not all of the habitats are suitable for Scrub-jays. These three counties have a large number of Preserves and Sanctuaries for Scrub-jays and other wildlife. Extra attention was given to where these areas abut the tracks. A number of areas where Scrub-jays have been recorded in the past are now developed or are so altered that habitat for this species no longer exists. The entire ROW was evaluated from current aerial photographs and ground inspection prior to the Scrub-jay survey to insure that all suitable areas were covered. These areas were presented to, and approved, by the U.S. Fish and Wildlife Service before the surveys were conducted.

### **FLORIDA SCRUB-JAY (*Aphelocoma coerulescens*) - Federally Listed Threatened June 3, 1987, FR20719; State Listed Threatened**

Florida Scrub-jays build their nests in dense shrubs, usually at low to mid-level heights. Usually the nest is located at the edge of a dense shrubby area, adjacent to bare ground or somewhat open areas. The nest is a bulky basket of twigs, usually taken from oak shrubs. The lining of the nest is a tightly woven cup of cabbage palm or saw palm fibers. The Scrub-jays never reuse the nest or the materials. Scrub-jays will not nest in the same exact location even if the nest is removed after use. The nesting season extends from March through June. The Florida Scrub-jay is strongly associated with several Florida scrub communities, and also will use adjacent non-scrub habitats of certain types. Please note, Scrub-jays exist only in areas where one or more species of scrub oaks occur, even if only vestigially represented. Before the intrusion of humans, nearly all natural scrub communities were maintained by frequent natural fires. Florida Scrub-jays are most abundant in open, oak dominated scrub communities of the interior and Atlantic coast sand

ridges of the Peninsula. Scrub-jay habitat is broken down into three types:

- TYPE I HABITAT. Any upland plant community in which percent cover of the substrate by scrub oak species is 15% or more.
- TYPE II HABITAT. Any plant community, not meeting the definition of Type I habitat, in which one or more scrub oak species is represented.
- TYPE III HABITAT. Any upland or seasonally dry wetland within ¼ mile of any designated as Type I or Type II habitat.

In most cases, the Type I habitat is recognized as xeric oak scrub, scrubby pine flatwoods, scrubby coastal strand, or sand pine scrub. Usual classification schemes are not as useful in identifying or predicting habitat type; the presence of scrub oaks is the key indicator. The third habitat type includes many different plant communities where scrub oak species are not represented, but that are nearby or adjacent to Type I or Type II habitat. The subject site does not have any scrub habitat. The citrus groves might be considered Type III habitat and surveys for Scrub-jays were conducted in these areas.

### **Florida Scrub-jay Survey Methodology**

Utilizing methodologies outlined in the Ecology and development-related habitat requirements of the Florida scrub-jay (*Aphelocoma coerulescens*) (J.W. Fitzpatrick, G.E. Woolfenden and M.T. Kopeny, 1991) and United States Fish & Wildlife's Scrub-jay Survey Guidelines (Updated 08/24/2007), BTC staff conducted a formal Scrub-jay Survey during March 4-8, 2013 for Indian River and northern St. Lucie County; March 11-15, 2013 for southern St. Lucie County and northern Martin County; and March 18-22 for central and southern Martin County. Survey stations were established along the Railroad Right-Of-Way in areas of suitable (Type I) and marginal (Types II and III) scrub habitat. Twenty six Survey Stations were established in Indian River County (Figures 1 to 1c), 108 Survey Stations were established in St. Lucie County (Figures 2 to 2d), and 70 Survey Stations were established in Martin County (Figures 3 to 3c). Distances between the stations varied with habitat but none were farther than 160 meters apart. Survey starting and finishing locations were varied each day to avoid calling in the same station at the same time each day.

## **SURVEY RESULTS**

### **Indian River County**

Survey data for Indian River County is shown in Exhibit 1. Scrub-jays were only observed in the north end of the county on the eastern edge of the North Sebastian Conservation Area (Figure 4). There appears to be two families of Scrub-jays utilize this area, separated by a marsh. A Wal-Mart is located east with areas of disturbed scrub to the north and south. On one occasion a Scrub-jay crossed the tracks to the edge of the northern disturbed scrub but was searching for the source of the calls and did not stay long east of the tracks.

No other Scrub-jays were observed in Indian River County. Some marginal habitat was found between 65<sup>th</sup> and 69<sup>th</sup> Streets. A thick area of Brazilian pepper, cabbage palm, and oak occurs along the edge of the ROW. Extensive calling was conducted in small breaks along this area but no Scrub-jay response was observed. Habitat around the Vero Beach Airport is highly disturbed and no Scrub-jay response was observed.

### **St. Lucie County**

Survey Data for St. Lucie County is shown in Exhibit 2. This county was divided into two areas, the north county around the FAU/Harbor Branch Institute and the south county, primarily Savannas Preserve State Park. Scrub habitat in the northern area is very disturbed and no Scrub-jay response was observed. Scrub Jays were observed within the Savannas Preserve State Park, and a Florida Inland Navigation District (FIND) site at the northeast corner of County Line Road at the south county line (Figures 5 to 7). In addition, park staff identified areas where they have observed Scrub-jays. One is a broad area of good habitat that has been recently managed for Scrub-jays (Figure 5a). While BTC only recorded Scrub-jays in one location near the center of this area, it is expected that birds use this entire area. Another area reported by park staff is in the extreme south end of the park, adjacent to the FIND site. Habitat in this area is not as good and these may be the same birds BTC recorded from the FIND site.

### **Martin County**

Survey data for Martin County is shown in Exhibit 3. This county was divided into three areas, disturbed scrub habitat in the northern Jensen Beach area, central Martin County adjacent to Seabranche Preserve State Park, and the extreme southern end of the county consisting of a small

part of the Hobe Sound national Wildlife Refuge and bisecting Jonathan Dickinson State Park.

The remnant scrub areas in Jensen Beach have been impacted by surrounding activities. The northern area is predominately large sand pine and is covered with ATV trails. The southern area has a large stand of slash pine along the tracks. No Scrub-jays responded to calls in this area.

The Seabranh Preserve State Park is located east of the tracks and Dixie Highway. In the northern end of the park, the highway is between the tracks and the park but the highway crosses the tracks and in the southern end tracks are between the park and the highway. No Scrub-jay habitat occurs west of the park. Information from the park staff indicated the no Scrub-jays have been observed in the park since 2009. As expected, no Scrub-jays responded to calls in this area.

The southern end consists of the only area where Scrub-jays were observed (Figure 8). This area consists of small piece of the Hobe Sound National Wildlife Refuge north of the area where a U.S.1 bridge crosses the railroad tracks and then through Jonathan Dickinson State Park almost to the south county line. The majority of the railroad ROW, except for a small area around where an internal road crosses the tracks, is good scrub habitat. A number of Scrub-jays were recorded within the park, especially in the southern end. The northern end is excellent scrub habitat that has been recently managed. Only one family was regularly observed in this area but it can be expected that this entire area is, or will be, inhabited by Scrub-jays. Scrub-habitat occurs on both sides of the tracks in most of the state park but only once did a bird cross the tracks and it didn't stay long on the other side. Twice birds were responding to the calls and were close to the ROW when a train passed. On both occasions the bird disappeared into the scrub and did not reappear until several minutes after the train passed. It should be noted that the trains were blowing their horns as required when personnel are in the ROW.

### **Summary**

As part of the All Aboard Florida Passenger Rail Project, a Scrub-jay survey was conducted along the Florida East Coast (FEC) Railway between Roseland Road in Sebastian, Indian River County and the south Martin County line in all suitable and marginal scrub habitat. Scrub-jays were found in all three counties and were predominately located in natural area preserves. Although Scrub-jays did cross the railroad tracts on several occasions, it was in response to searching for the source of the calls and they never stayed long east of the tracks. On two occasions in Martin County, Scrub-jays were near the tracks responding to the calling when a

train approached. Both times the birds disappeared into the scrub until after the train had passed.

The environmental limitations described in this document are based on observations and technical information available on the date of the on-site evaluation. This report is for general planning purposes only. The limits of any on-site wetlands/surface waters can only be determined and verified through field delineation and/or on-site review by the pertinent regulatory agencies. The wildlife surveys conducted within the subject property boundaries do not preclude the potential for any listed species, currently or in the future. Should you have any questions or require any additional information, please do not hesitate to contact our office at (407) 894-5969. Thank you.

Regards,



Steve Lau  
Field Biologist



John Miklos  
President

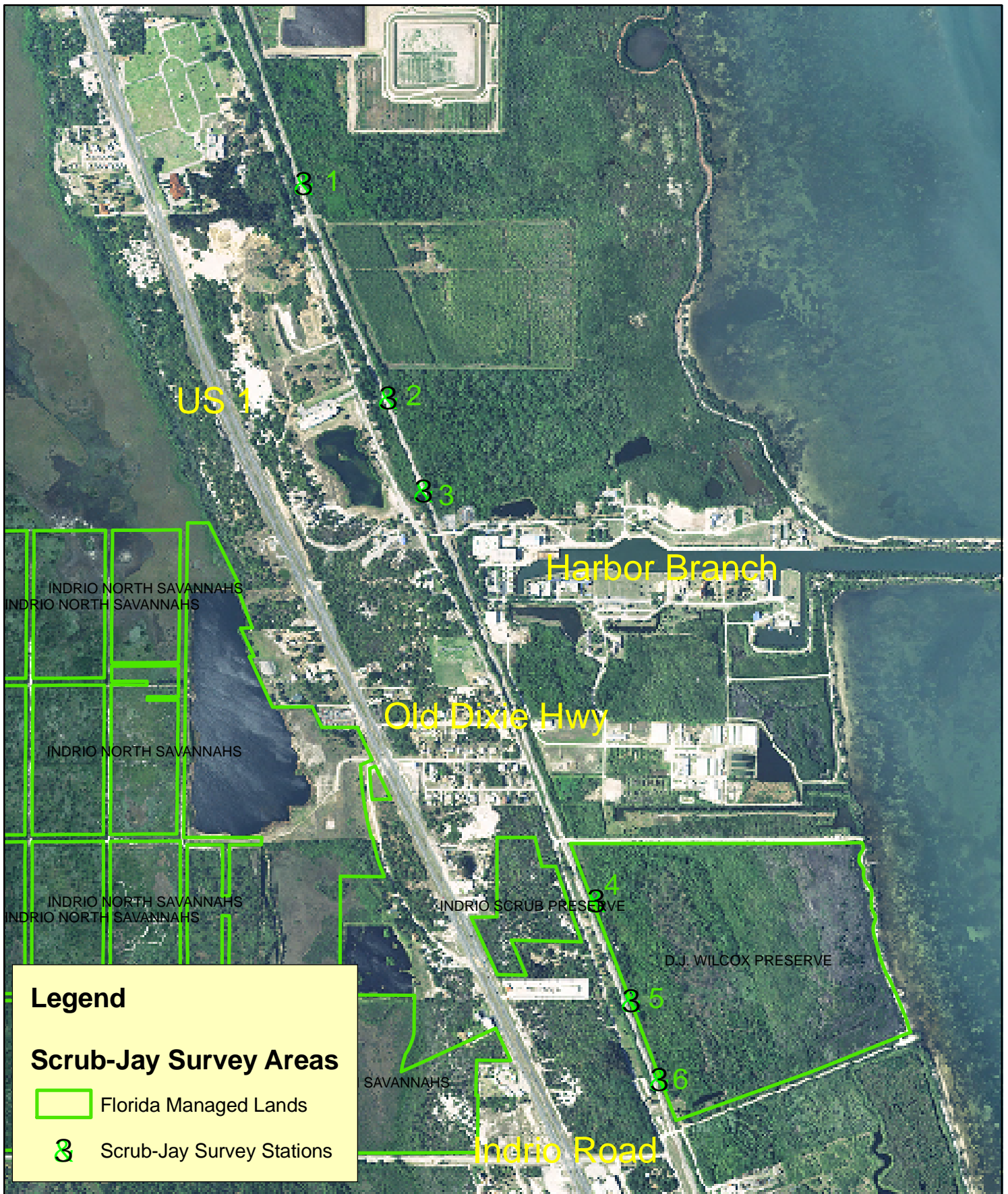
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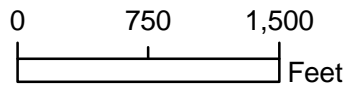


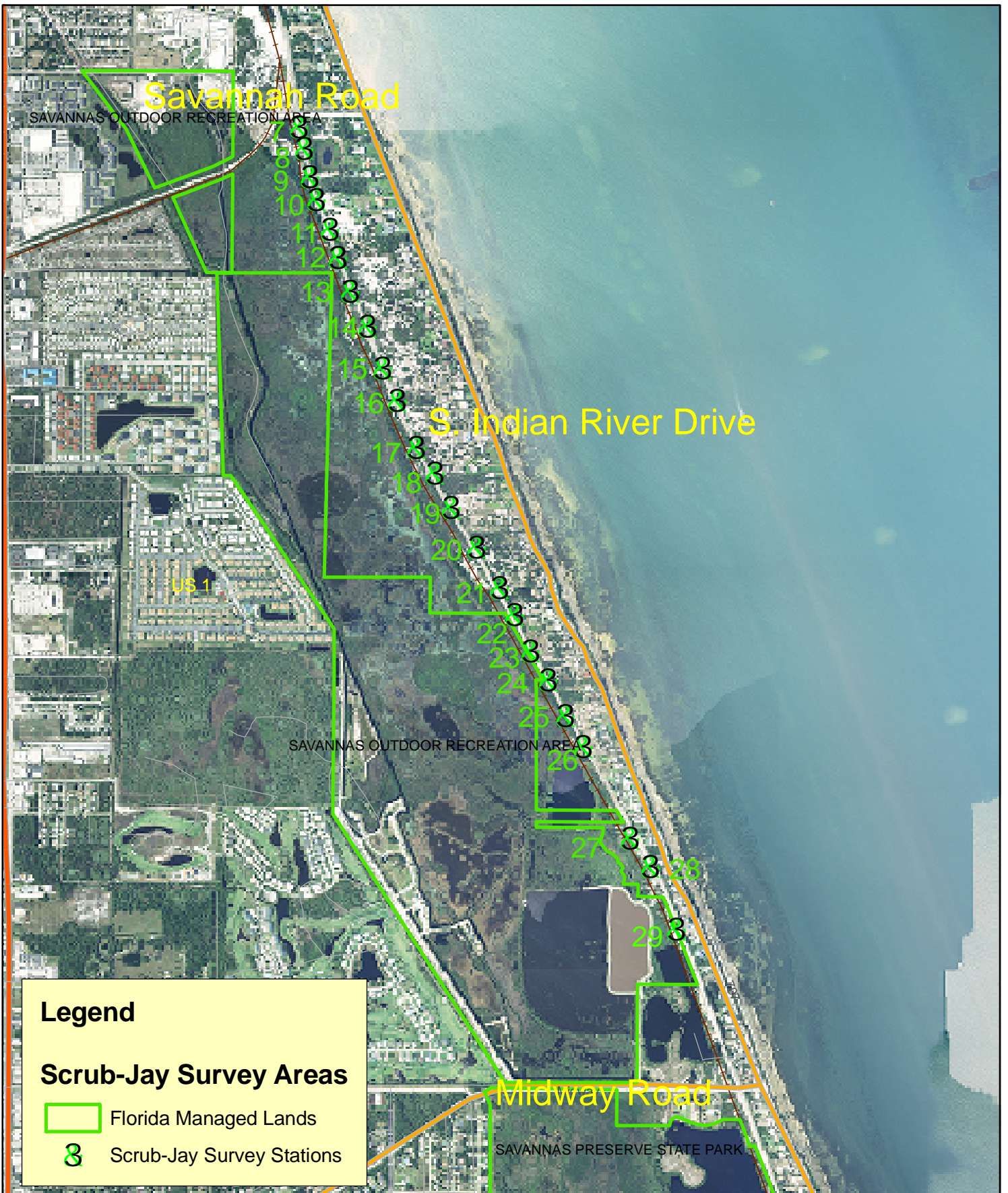




  
**Bio-Tech Consulting Inc.**  
 Environmental and Permitting Services  
 1717 Indian River Blvd, Suite 201  
 Vero Beach, Florida 32960

All Aboard Florida  
 St. Lucie County, Florida  
 Figure 2a  
 Scrub Jay Survey Areas  
 Harbor Branch Area

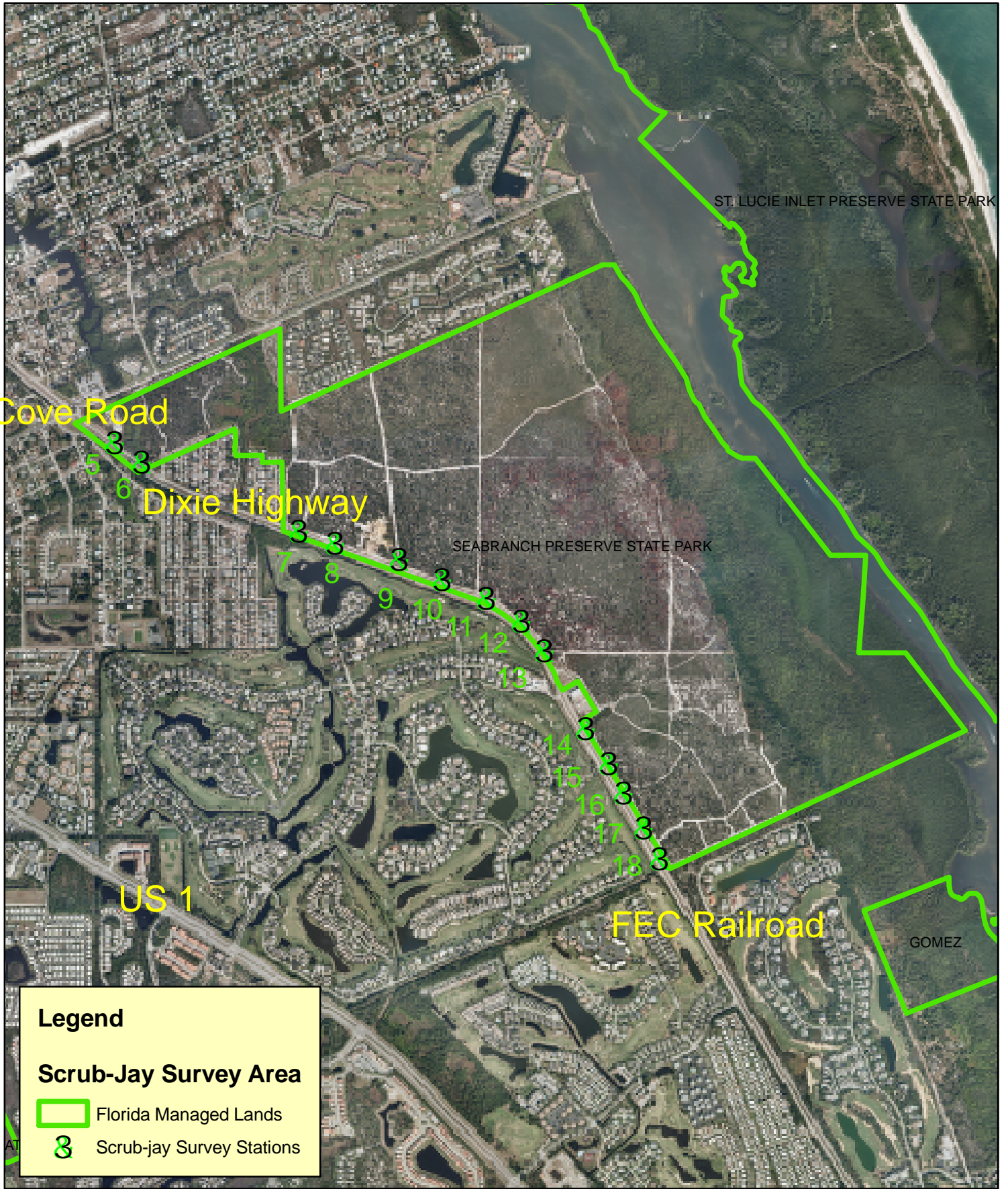
  
 0 750 1,500 Feet  
**2**  
 Project #: 673-03  
 Produced By: SRL  
 Date: 4/2/13











**Legend**

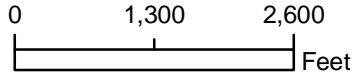
**Scrub-Jay Survey Area**

- Florida Managed Lands
- 3 Scrub-jay Survey Stations

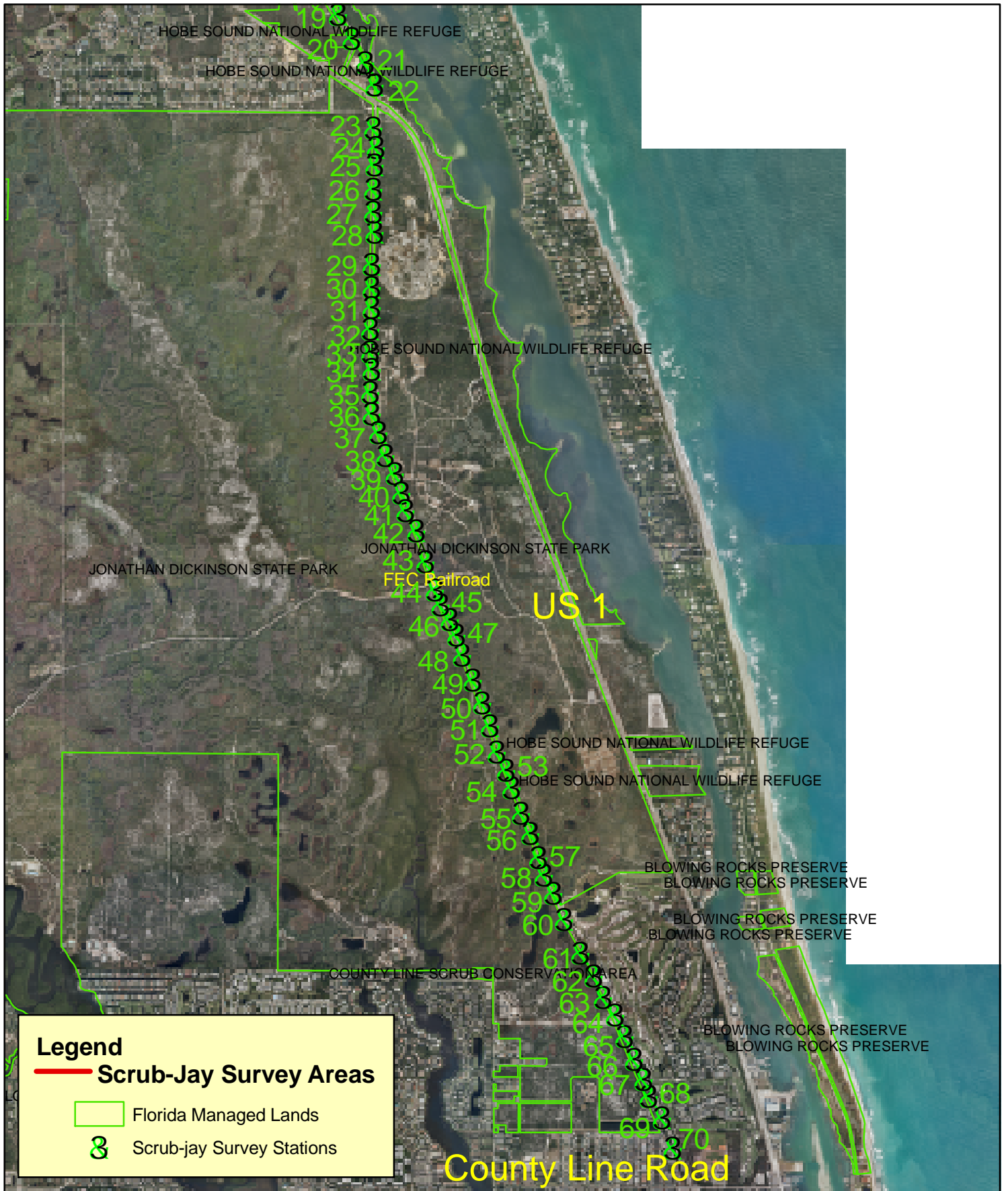
**Bio-Tech Consulting Inc.**  
 Environmental and Permitting Services  
 1717 Indian River Blvd, Suite 201  
 Vero Beach, Florida 32960

All Aboard Florida  
 Martin County, Florida  
 Fig. 3b  
 Scrub-Jay Survey Areas  
 Seabranh Preserve State Park

**2**



Project #: 673-03  
 Produced By: SRL  
 Date: 4/3/13



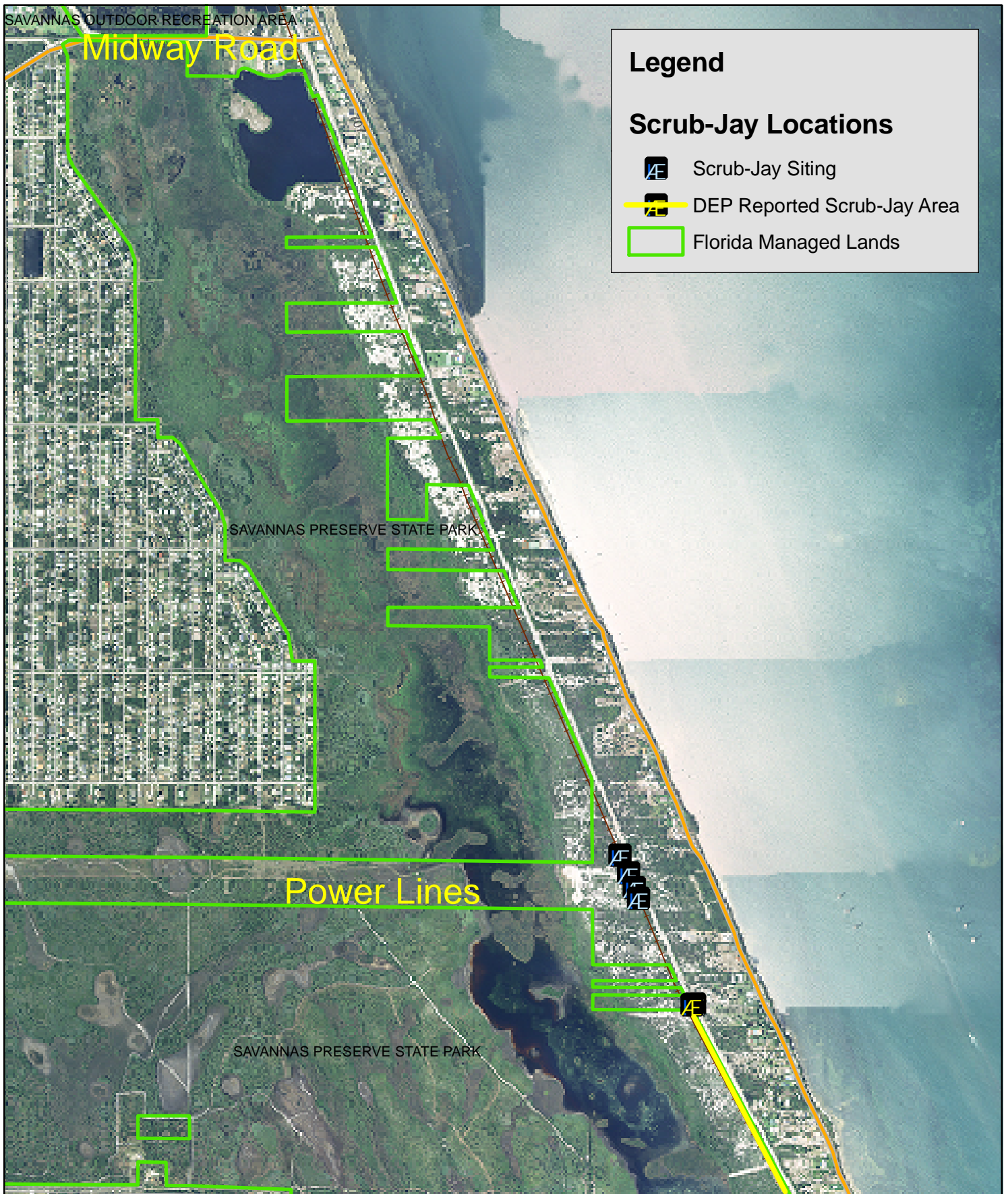


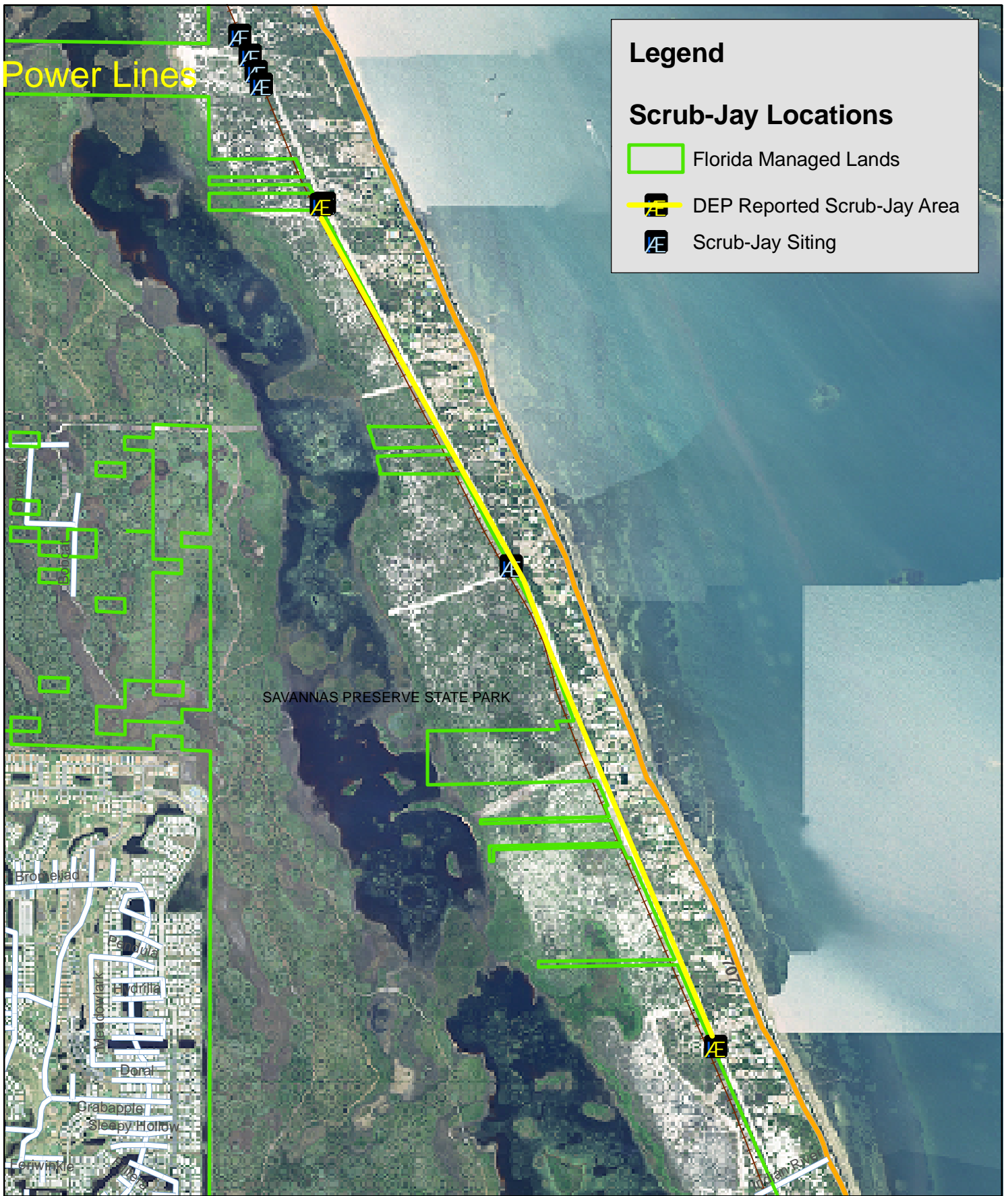
**Legend**

**Scrub Jay Locations**

- Florida Managed Lands
- Æ Scrub-Jay Sitings









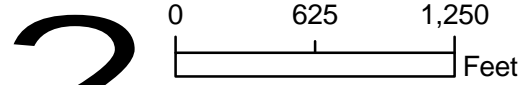
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**Scrub-Jay Locations**

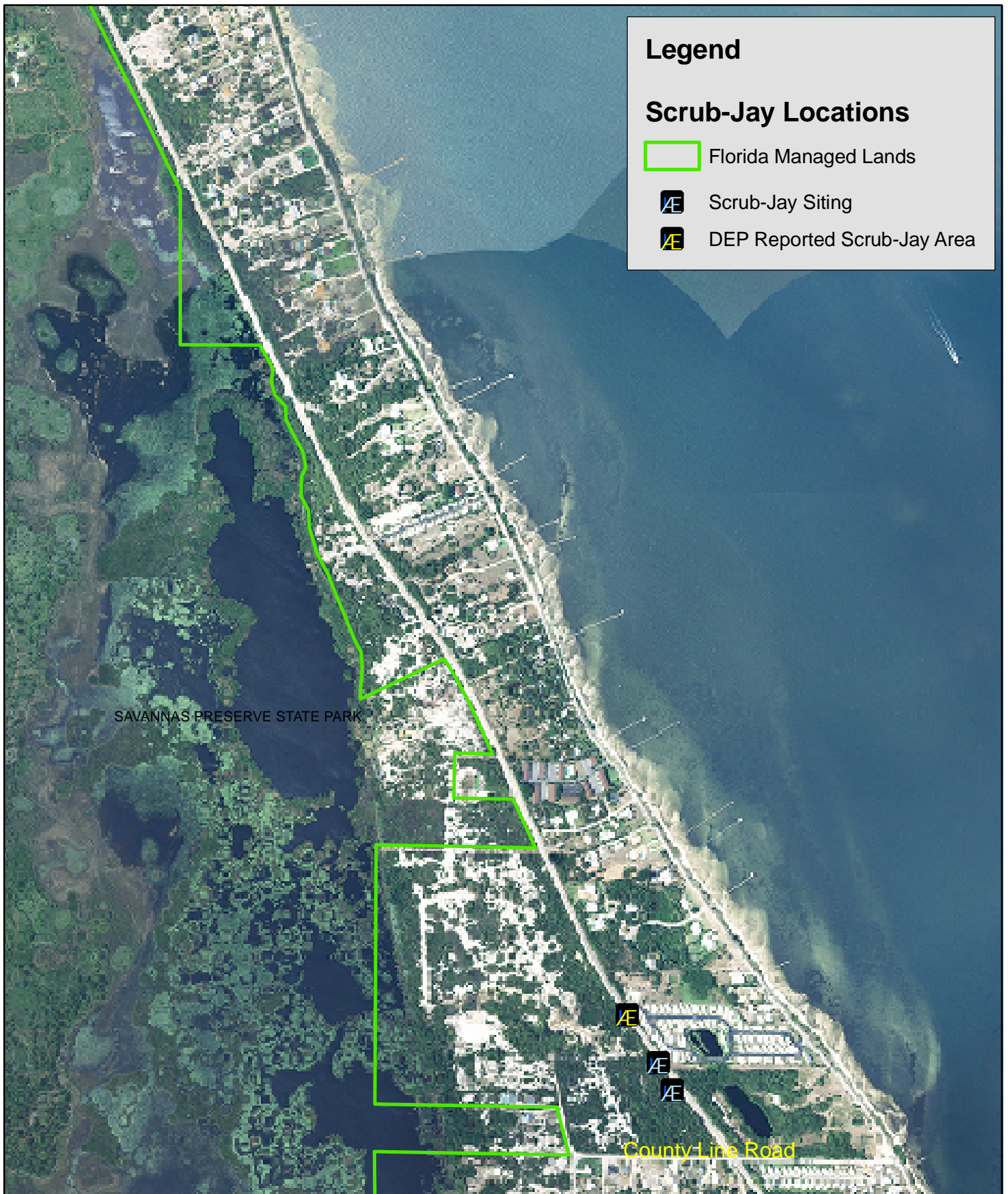
- Florida Managed Lands
- AE Scrub-Jay Siting

**Bio-Tech Consulting Inc.**  
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 Vero Beach, Florida 32960

All Aboard Florida  
 St. Lucie County, Florida  
 Figure 6  
 Scrub Jay Locations  
 Savannas Near Walton Road



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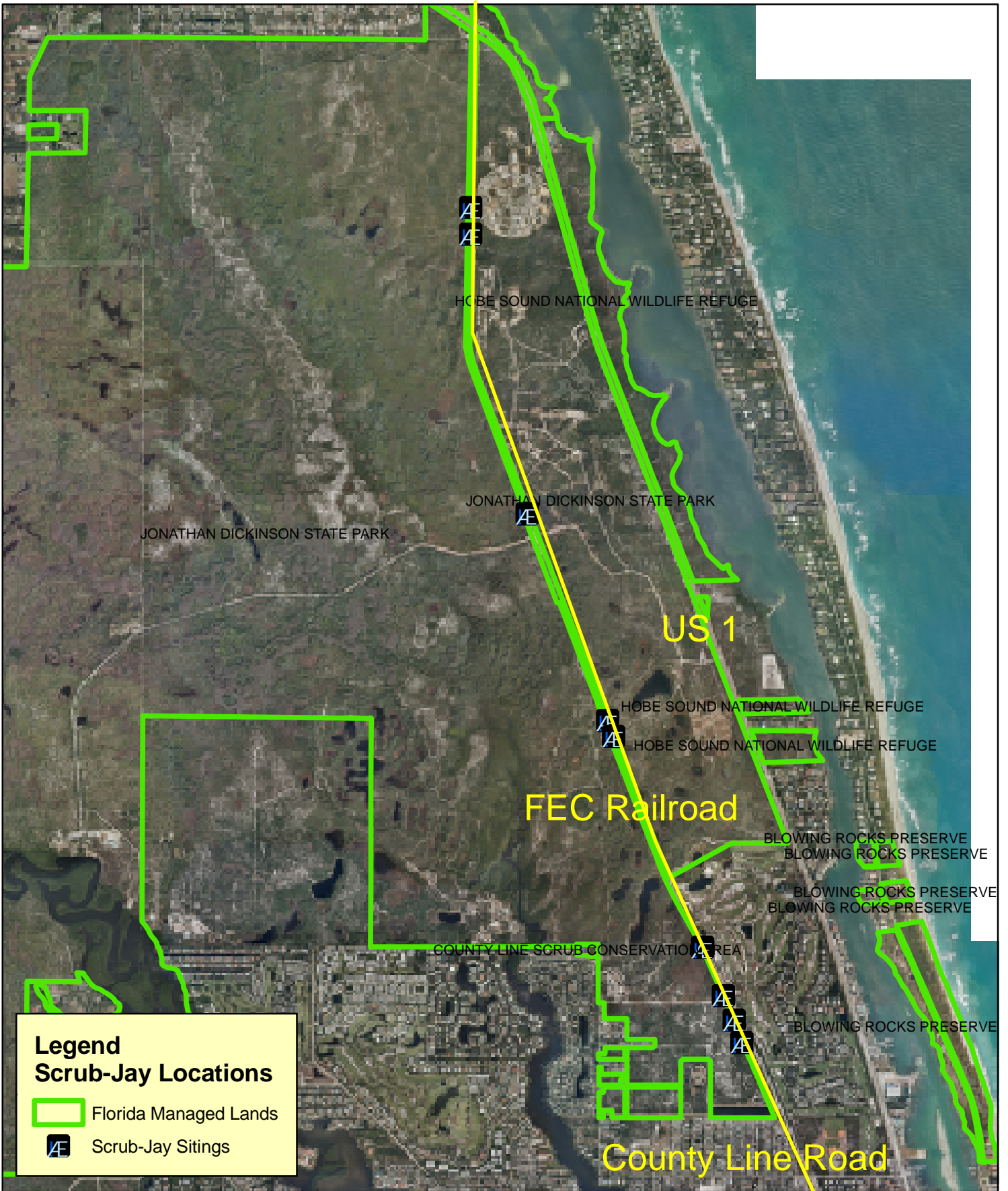
**Legend**

**Scrub-Jay Locations**

- Florida Managed Lands
- AE Scrub-Jay Siting
- AE DEP Reported Scrub-Jay Area

SAVANNAS PRESERVE STATE PARK

County Line Road



**Bio-Tech Consulting Inc.**  
 Environmental and Permitting Services  
 1717 Indian River Blvd, Suite 201  
 Vero Beach, Florida 32960

All Aboard Florida  
 Martin County, Florida  
 Figure 8  
 Scrub-Jay Locations  
 Jonathan Dickinson State Park

**2**

0 2,000 4,000 Feet

Project #: 673-03  
 Produced By: SRL  
 Date: 4/3/13

EXHIBIT 1  
INDIAN RIVER COUNTY  
SCRUB-JAY SURVEY TABLES

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Indian River County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	36°	0%	NE 7	8:15 am		3/4/13
End	53°	5%	NE 10		12:10 pm	
Station	Direction From	How Many	Direction Left	Observations		
1	south	3	south	1 bird briefly crossed tracks searching for call		
2	north	3	south	same 3 as # 1		
3	north	3	west	same 3 as # 2		
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
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16						
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23						
24						
25						
26						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Indian River County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	72°	0%	S 10	12:10pm	4:00 pm	3/5/13
End	71°	0%	S 5			
Station	Direction From	How Many	Direction Left	Observations		
1						
2						
3						
4						
5	south	1	SW	1 bird followed from Station # 6		
6	west	5		Very vocal		
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						



<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Indian River County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	61°	100%	SW 8	8:00 am		3/6/13
End	65°	10%	SW 10		11:25pm	
Station	Direction From	How Many	Direction Left	Observations		
1						
2	west	3	west			
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
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21						
22						
23						
24						
25						
26						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Indian River County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	64°	0%	NW 6	12:00 noon		3/7/13
End	66°	0%	NW 10		3:35 pm	
Station	Direction From	How Many	Direction Left	Observations		
1	SW	2	south			
2	north	2	south	same birds as #1		
3	north	2		same birds as #1		
4						
5						
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21						
22						
23						
24						
25						
26						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Indian River County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	59°	0%	NNE 8	12:15pm		3/8/13
End	60°	0%	NE 10		3:10pm	
Station	Direction From	How Many	Direction Left	Observations		
1						
2	north	1	south	didn't come close, 2 eagles in area		
3						
4	north	2	south	didn't get close, 2 eagles in area		
5						
6						
7						
8						
9						
10						
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25						
26						

EXHIBIT 2  
ST. LUCIE COUNTY  
SCRUB-JAY SURVEY TABLES

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF St. Lucie County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	53°	5%	NE 10	12:50 pm		3/4/13
End	54°	5%	NE 8		4:20 pm	
Station	Direction From	How Many	Direction Left	Observations		
1						
2						
3						
4						
5						
6						
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8						
9						
10						
11						
12						
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<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF St. Lucie County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	53°	5%	NE 10	12:50 pm		3/5/13
End	54°	5%	NE 8		4:20 pm	
Station	Direction From	How Many	Direction Left	Observations		
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
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<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF St. Lucie County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	53°	5%	NE 10	12:50 pm		3/6/13
End	54°	5%	NE 8		4:20 pm	
Station	Direction From	How Many	Direction Left	Observations		
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
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26						
27						
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<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF St. Lucie County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	53°	5%	NE 10	12:50 pm		3/7/13
End	54°	5%	NE 8		4:20 pm	
Station	Direction From	How Many	Direction Left	Observations		
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
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<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF St. Lucie County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	53°	5%	NE 10	12:50 pm		3/8/13
End	54°	5%	NE 8		4:20 pm	
Station	Direction From	How Many	Direction Left	Observations		
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
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26						
27						
28						



<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF St. Lucie County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	66°	10%	SE 2	8:55 am		3/11/13
End	73°	10%	S 5		4:10 pm	
Station	Direction From	How Many	Direction Left	Observations		
30						
31						
32						
33						
34						
35						
36						
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39						
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41						
42						
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<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF St. Lucie County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	66°	10%	SE 2	8:55 am		3/11/13
End	73°	10%	S 5			
Station	Direction From	How Many	Direction Left	Observations		
59						
60						
61						
62						
63						
64						
65						
66						
67						
68						
69						
70						
71						
72						
73						
74						
75						
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83						
84						
85						
86						



<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF St. Lucie County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	66°	10%	SE 2	8:55 am		3/11/13
End	73°	10%	S 5			
Station	Direction From	How Many	Direction Left	Observations		
87						
88						
89						
90						
91						
92						
93						
94						
95						
97						
98						
99						
100						
101						
102						
103						
104						
105						
106						
107						
108						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF St. Lucie County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	66°	80%	S 2	8:45 am		3/12/13
End	79°	75%	SE 10		3:55	
Station	Direction From	How Many	Direction Left	Observations		
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						
53						
54						
55						
56						
57						
58						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF St. Lucie County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	66°	80%	S 2	8:45 am		3/12/13
End	79°	75%	SE 10		3:55	
Station	Direction From	How Many	Direction Left	Observations		
59						
60						
61						
62						
63						
64						
65						
66						
67						
68						
69						
70						
71						
72						
73						
74						
75						
76						
77						
78						
79						
80						
81						
82						
83						
84						
85						
86	south	2	west	same 2 as #87		
87	south	2	north	same 2 as #88		

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF St. Lucie County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	66°	80%	S 2	8:45 am		3/12/13
End	79°	75%	SE 10		3:55	
Station	Direction From	How Many	Direction Left	Observations		
88	north	2	north			
89						
90						
91						
92						
93						
94						
95						
97						
98						
99						
100						
101						
102						
103						
104						
105	west	1	west			
106						
107						
108						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF St. Lucie County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	55°	30%	NW 5	8:00 am		3/13/13
End	66°	60%	NE 15		3:35	
Station	Direction From	How Many	Direction Left	Observations		
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48	south	1	south			
49	north	3	stayed			
50	south	1	stayed			
51						
52						
53						
54						
55						
56						
57						
58						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF St. Lucie County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	55°	30%	NW 5	8:00 am		3/13/13
End	66°	60%	NE 15		3:35	
Station	Direction From	How Many	Direction Left	Observations		
59						
60						
61	north	1	west	didn't come close to calling station		
62						
63						
64						
65						
66						
67						
68						
69						
70						
71						
72						
73						
74						
75						
76						
77						
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80						
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82						
83						
84						
85						
86						
87						



<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF St. Lucie County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	48°	20%	N 2	7:50 am		3/14/13
End	58°	10%	N10		3:25 pm	
Station	Direction From	How Many	Direction Left	Observations		
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49	north	1	stayed			
50						
51						
52						
53						
54						
55						
56						
57						
58						



<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF St. Lucie County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	48°	20%	N 2	7:50 am		3/14/13
End	58°	10%	N10		3:25 pm	
Station	Direction From	How Many	Direction Left	Observations		
59						
60						
61						
62						
63						
64						
65						
66						
67						
68						
69						
70						
71						
72						
73						
74						
75						
76						
77						
78						
79						
80	south	1	south	wouldn't get close to station		
81						
82						
83						
84						
85						
86	south	2	south			
87	north	2	south	same 2 as # 86		

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF St. Lucie County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	48°	20%	N 2	7:50 am		3/14/13
End	58°	10%	N10		3:25 pm	
Station	Direction From	How Many	Direction Left	Observations		
88	north	2	west	same 2 as #87		
89						
90						
91						
92						
93						
94						
95						
97						
98						
99						
100						
101						
102						
103						
104						
105						
106						
107	west	1	west			
108						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF St. Lucie County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	46°	20%	NNE 2	7:50 am		3/15/13
End	66°	10%	NNE 8		1:35 pm	
Station	Direction From	How Many	Direction Left	Observations		
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48	south	1	south			
49	north	2	stayed			
50						
51						
52						
53						
54						
55						
56						
57						
58						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF St. Lucie County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	46°	20%	NNE 2	7:50 am		3/15/13
End	66°	10%	NNE 8		1:35 pm	
Station	Direction From	How Many	Direction Left	Observations		
59						
60						
61						
62						
63						
64						
65						
66						
67						
68						
69						
70						
71						
72						
73						
74						
75						
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86						
87						



EXHIBIT 3  
MARTIN COUNTY  
SCRUB-JAY SURVEY TABLES













<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Martin County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	68°	50%	S 2	7:45 am		3/18/13
End	74°	50%	S 15		3:30 pm	
Station	Direction From	How Many	Direction Left	Observations		
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
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25						
26						
27						
28						
29						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Martin County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	68°	50%	S 2	7:45 am		3/18/13
End	74°	50%	S 15		3:30 pm	
Station	Direction From	How Many	Direction Left	Observations		
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						
53	east	3	south			
54	south	1	east	SJ disappeared when train went by		
55						
56						
57						
58						



<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Martin County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	65°	90%	S 2	7:55 am		3/19/13
End	72°	90%	SW 4		3:15 pm	
Station	Direction From	How Many	Direction Left	Observations		
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
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26						
27						
28						
29						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Martin County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	65°	90%	S 2	7:55 am		3/19/13
End	72°	90%	SW 4		3:15 pm	
Station	Direction From	How Many	Direction Left	Observations		
30	SW	2	stayed	disappeared when train went by, came back		
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42	west	1	north	didn't get close and didn't stay long		
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						
53	east	1	east			
54	SE	1	NE			
55						
56						
57						
58						





<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Martin County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	57°	70%	SE 2	7:55 am		3/20/13
End	77°	85%	SE 8		3:10 pm	
Station	Direction From	How Many	Direction Left	Observations		
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
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19						
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22						
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24						
25						
26						
27						
28						
29						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Martin County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	57°	70%	SE 2	7:55 am		3/20/13
End	77°	85%	SE 8		3:10 pm	
Station	Direction From	How Many	Direction Left	Observations		
30						
31	west	2	west			
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
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51						
52						
53						
54						
55						
56						
57						
58						



<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Martin County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	59°	0%	NW 10	7:50 am		3/21/13
End	68°	0%	NNW 15		3:10 pm	
Station	Direction From	How Many	Direction Left	Observations		
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
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16						
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24						
25						
26						
27						
28						
29						

<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Martin County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	59°	0%	NW 10	7:50 am		3/21/13
End	68°	0%	NNW 15		3:10 pm	
Station	Direction From	How Many	Direction Left	Observations		
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						
53	east	1	east	flew across tracks, E to W, and back		
54						
55						
56						
57						
58						



<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Martin County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	50°	5%	S 2	8:15 am		3/22/13
End	73°	70%	S 10		3:15 pm	
Station	Direction From	How Many	Direction Left	Observations		
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
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27						
28						
29						



<b>SCRUB-JAY RESPONSE</b>						
<b>Project: AAF Martin County</b>						
Weather	Temp	Cloud Cover	Wind	Time Start	Time End	Date
Start	50°	5%	S 2	8:15 am		3/22/13
End	73°	70%	S 10		3:15 pm	
Station	Direction From	How Many	Direction Left	Observations		
30						
31	west	2	west	would not get close		
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52	west	1	north	54would not get close		
53						
54						
55						
56						
57						
58						

