

APPENDIX I

Sand Skink Survey Technical Memorandum

memorandum

date June 1, 2026

to Zakia Williams, U.S. Fish and Wildlife Service

cc Matthew Dockins, PE, HNTB Corporation
James Fine, HNTB Corporation
Tori Kuba, Environmental Science Associates

from Shannon Freemon, Environmental Science Associates

subject Sand and Blue-tailed Mole Skink Survey Technical Memorandum
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

Introduction

The Florida Department of Transportation (FDOT) District One is conducting a Project Development and Environment (PD&E) Study, in accordance with the National Environmental Policy Act (NEPA), to evaluate various alternatives for the State Road (SR) 70 roadway improvement project from Jefferson Avenue to County Road (CR) 29 located within Highlands County, Florida (**Figure 1**). The sand skink (*Neoseps reynoldsi*) and blue-tailed mole skink (*Eumeces egregius lividus*) were federally designated as threatened species by the U.S. Fish and Wildlife Service (USFWS) in 1987 and are protected by the Endangered Species Act, as amended (16 U.S. Code [U.S.C.] 1531-1544, 87 Stat. 884). The project area is located within the USFWS Consultation Area (CA) for both skink species and is within mapped skink suitable habitat. The geography and elevations throughout the project area are above 80 feet and suitable skink soils (excessively drained, well-drained, and moderately well-drained sandy soils) are present.

In an effort to gather information needed to determine the potential effects the proposed project may have on the sand skink and blue-tailed mole skink, environmental scientists familiar with native Florida fauna conducted coverboard surveys in the spring of 2025 in accordance with the *USFWS Peninsular Florida Species Conservation and Consultation Guide – Sand Skink and Blue-tailed (Bluetail) Mole Skink* (USFWS 2023). For the purpose of this survey, the project limits include existing and proposed right-of-way for the Recommended Alternative and the proposed stormwater management facility and floodplain compensation site alternatives.

Notably, the FDOT completed prior skink surveys in 2023 and 2024 that overlap with portions of the project limits surveyed during the spring 2025 survey. The FDOT received approval from USFWS on September 24, 2024 that only the additional areas of right-of-way not surveyed during the 2023 and 2024 surveys would be required to be surveyed during 2025. A methodology memorandum documenting the proposed coverboard survey methodology, including this request and a concurrence email from USFWS, are provided in **Appendix A**. USFWS approved the survey methodology on March 20, 2025. However, after submitting the methodology memorandum and completion of the coverboard survey, changes occurred to the project area which resulted in areas of suitable habitat that were

not surveyed during the spring 2025 survey. As a result, skink presence will be assumed for these areas and will be indicated as such throughout the memorandum.

Methodology

Desktop Data Collection

The following available existing data related to the project site and its natural environmental features were collected and reviewed prior to the start of the survey:

- SR 70 PD&E from Jefferson Avenue to CR 29 Sand Skink Survey Technical Memorandum (February 2024);
- 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) Web Soil Survey of Highlands County – August 21, 2004;
- 2024 USFWS National Wetlands Inventory (NWI) data;
- FDOT, Florida Land Use, Cover and Forms Classification System (FLUCFCS), Third edition (1999);
- 2017-2019 South Florida Water Management District (SFWMD) Florida Land Use, Cover and Forms Classification System (FLUCFCS);
- 2020 Southwest Florida Water Management District (SWFWMD) FLUCFCS;
- Florida Natural Areas Inventory (FNAI) element occurrence records and protected resources data; and
- Florida Fish and Wildlife Conservation Commission (FWC) wildlife observation database and protected species occurrence records.

Based on the sand skink and blue-tailed mole skink *USFWS Species Conservation and Consultation Guide* (USFWS 2023), proposed actions are subject to a review of potential project effects on these species if the proposed action is within a county known to contain sand skinks/blue-tailed mole skinks or is within the sand skink/blue-tailed mole skink CA. The USFWS has noted research and incidental observations indicating blue-tailed mole skinks typically occur with sand skinks, and sand skink occurrence is used as an indicator for blue-tailed mole skinks where the species overlap in their range (USFWS 2023). Therefore, blue-tailed mole skink occurrence is linked to sand skink occurrence even though the species was not specifically surveyed.

If the proposed action is within the CA or otherwise might affect skinks, the USFWS further requires an assessment of potentially affected habitat. Potential skink habitat includes all areas with “skink soils” at or above 80 feet in elevation in Highlands, Lake, Marion, Orange, Osceola, Polk, and Putnam counties. The USFWS-defined skink soils include the following series: Apopka, Arredondo, Archbold, Astatula, Candler, Daytona, Duette, Florahome, Gainesville, Hague, Kendrick, Lake, Millhopper, Orsino, Paola, Pomello, Satellite, St. Lucie, Tavares, and Zuber.

The project meets these criteria; therefore, it was determined a formal survey for sand skinks/blue-tailed mole skinks should be conducted.

Project Area Characteristics and Suitable Habitat

The proposed project occurs in Highlands County and is within the USFWS sand skink/blue-tailed mole skink CA. Elevations throughout the project area range from approximately 40 feet to 150 feet North American Vertical Datum (NAVD). Skink suitable habitat is shown in **Figure 2**, which includes NRCS soils found within the project area, with skink suitable habitat highlighted as per the USFWS defined skink soils at or above 80 feet in elevation. Based on the USFWS suitable criteria, a total of 396.94 acres of potential skink habitat occurs within the project area. However, portions of the 396.94 acres of potential skink habitat were previously surveyed during the 2023 and 2024 survey seasons, and a total of 269.86 acres of potential skink habitat within the project area remains to be surveyed in 2025, as identified in **Table 1**.

The project area includes SR 70 from Jefferson Avenue to CR 29, a distance of approximately 7.1 miles. Existing land use and habitats within the project area were classified using FLUCFCS (FDOT 1999). Land uses and habitat types within the project area as mapped by the SWFWMD and SFWMD included urban and built-up (FLUCFCS 1100, 1300, 1400, 1500, and 1900), agriculture (FLUCFCS 2110, 2200, 2300, 2400, and 2600), rangeland (FLUCFCS 3200), upland forests (FLUCFCS 4100 and 4340), water (FLUCFCS 5300), wetlands (FLUCFCS 6150, 6400, 6410, 6430, 6440, and 6530), and transportation, communication, and utilities (FLUCFCS 8100, 8200, 8300). The project is located on the Lake Wales Ridge. It intersects conservation areas including the Lake Wales Ridge Wildlife and Environmental Area (LWRWEA) and Archbold Biological Station.

Survey Design

In accordance with USFWS Sand Skink Survey Guidelines (USFWS 2023), the survey design included the placement of coverboards in all areas containing USFWS defined skink soils within the project area and at or above 80 feet in elevation.

Table 1 summarizes the soils within the project area and highlights USFWS designated skink soils.

TABLE 1
SOILS WITHIN THE PROJECT AREA THAT HAD NOT BEEN SURVEYED PRIOR TO 2025

NRCS Soil Number	NRCS Soils Description	Area (acres)	% Total
1	Paola sand, 0 to 8 percent slopes	33.93	5.94
4	Duette Sand, 0 to 5 percent slopes	4.95	0.87
5	Daytona sand, 0 to 5 percent slopes	8.98	1.57
7	Placid fine sand, frequently ponded, 0 to 1 percent slopes	12.9	2.26
9	Astatula sand, 0 to 5 percent slopes	19.66	3.44
10	Myakka fine sand, 0 to 2 percent slopes	36.62	6.41
11	Orsino sand, 0 to 5 percent slopes	72.21	12.63
12	Basinger fine sand, 0 to 2 percent slopes	47.2	8.26
13	Felda fine sand, 0 to 2 percent slopes	24.18	4.23
14	Satellite sand, 0 to 2 percent slopes	113.93	19.93
20	Samsula muck, frequently ponded, 0 to 1 percent slopes	2.63	0.46
21	Hontoon muck, frequently ponded, 0 to 1 percent slopes	31.95	5.59

NRCS Soil Number	NRCS Soils Description	Area (acres)	% Total
26	Tequesta muck, frequently ponded, 0 to 1 percent slopes	18.49	3.23
28	Archbold sand, 0 to 5 percent slopes	14.42	2.52
35	Sanibel muck	0.82	0.14
45	Paola-Basinger sands, rolling	126.94	22.21
47	Astatula sand, 5 to 12 percent slopes	1.78	0.31
Total		571.59	100.00
Total USFWS Skink Soils		269.86	47.21

Note:

NRCS # = USFWS Skink soils

Biologists completed a reconnaissance trip to field-verify the suitability of the skink habitat (USFWS-identified skink soils and elevation greater than 80 feet). This effort and consideration of the factors above resulted in the exclusion of some skink habitat areas based on presence of wetlands and ditches with standing water, areas in the project limits which were within active construction zones, and areas used as staging for construction materials for adjacent projects.

The results of the above efforts are presented in **Figure 3**. In addition, the areas previously surveyed for skinks during the 2023 and 2024 survey season are shown and were excluded from the 2025 survey area per the approval received from USFWS on September 24, 2024 (**Appendix A**).

Taking into consideration areas that were excluded based on the criteria above, suitable skink habitat within the project area surveyed totals 166.23 acres. In addition to the 166.23 acres of suitable habitat that was surveyed, an additional 29.07 acres of suitable habitat occurs within the project area that was unable to be surveyed due to changes in the project area after completion of the coverboard survey. Skink presence will be assumed for these 29.07 acres, which are depicted in **Figure 3**. The resulting total acreage was used to calculate the number of coverboards required for the assessment area. Based on the USFWS Consultation Guidelines minimum requirement of 40 coverboards per acre, a minimum of 6,649 boards were required; however, a total of 6,789 coverboards were deployed to obtain adequate coverage.

A total of 43 survey blocks within the project area were established to complete skink surveys based on initial mapped suitable skink habitat, represented as Blocks 1 through 43. Project biologists created the survey blocks based on soil boundaries and naturally occurring or man-made features visible on aerials (such as wetland locations, cross streets, etc.). Each polygon was assigned a unique label. The first block is located at the westernmost limits of the project area and was labeled “Block 1” with subsequent numbers continuing eastward. Representative photos of all survey blocks are provided in **Appendix B**. Survey blocks and coverboard locations are shown on **Figure 4**. During field verification conducted prior to the start of the survey, both portions of, and entire blocks were eliminated due to field conditions not readily apparent on aerial imagery. Representative photos of unsuitable habitat are provided in **Appendix C**. General descriptions of habitat within the blocks are included below.

- Block 1 is located on the westernmost end of SR 70, at the southwest quadrant of the intersection with Jefferson Avenue. The habitat within this block consists of dry prairie vegetated with primarily herbaceous ruderal species.
- Blocks 2, 4, 6, 8, and 10 are located on the north side of SR 70 extending from Jefferson Avenue/Placid Lakes Boulevard east to just past Monroe Street. Habitat is comprised primarily of shrub habitat. Vegetation includes species such as sand live oak (*Quercus geminata*), Chapman's oak (*Q. chapmanii*), sand pine (*Pinus calusa*), wax myrtle (*Morella cerifera*), saw palmetto (*Serenoa repens*), fetterbush (*Lyonia lucida*), shiny blueberry (*Vaccinium myrsinites*), hog plum (*Prunus umbellata*), pricklypear (*Opuntia mesacantha*), and grapevine (*Vitis* spp.). Portions of Blocks 2 and 4 showed evidence of more recent burns, while the other blocks did not. A portion of Block 10 was eliminated from the survey area after field reviews indicated that the area provided unsuitable habitat for skinks and consisted of a wet depression dominated by slash pine (*P. elliotii*), groundsel tree (*Baccharis halimifolia*), swamp fern (*Telmatoblechnum serrulatum*), sweetscent (*Pluchea odorata*), and bushy bluestem (*Andropogon glomeratus*). These blocks are located within the LWRWEA.
- Block 3 is located at the southeast quadrant of the intersection of SR 70 with Jefferson Avenue. This block consists of pastureland grazed by cattle with an open grassland component and a xeric oak component. The open grassland consists primarily of herbaceous ruderal species and pricklypear, while the forested area consists mainly of live oak (*Q. virginiana*), sand live oak, saw palmetto, and similar ground cover to the open grassland.
- Block 5 is located on the south side of SR 70 and consists primarily of grassland and a xeric oak component. The open grassland consists primarily of herbaceous ruderal species, while the forested area consists mainly of live oak, saw palmetto, and similar ground cover to the open grassland. A portion of Block 5 was eliminated from the survey area after field reviews indicated that the area provided unsuitable habitat for skinks and consisted of a wetland containing Brazilian pepper (*Schinus terebinthifolia*), groundsel tree, Peruvian primrosewillow (*Ludwigia peruviana*), grapevine, and blackberry (*Rubus* spp.).
- Blocks 7 and 9 are located on the south side of SR 70. Both blocks were eliminated from the survey area after field reviews indicated that the areas provided unsuitable habitat for skinks and consisted of wet depression dominated bahiagrass (*Paspalum notatum*), caesarweed (*Urena lobata*), and beggarticks (*Bidens alba*).
- Block 11 is located on the south side of SR 70 and consists of fallow citrus groves. Vegetation between the rows of trees is dense and overgrown, comprised primarily of herbaceous ruderal species. This block is located adjacent to the LWRWEA.
- Blocks 12 and 13 are located on the south side of SR 70 and consist of active citrus groves. Portions of Block 12 were eliminated from the survey area after field reviews indicated that the areas provided unsuitable habitat for skinks and consisted of wet depressions dominated by herbaceous ruderal species and torpedo grass (*Panicum repens*). Block 13 is located adjacent to Archbold Biological Station, and the LWRWEA is located south of the citrus groves.

- Block 14 is located on the north side of SR 70. A majority of Block 14 was excluded from the survey area and considered unsuitable habitat due to the active use as a laydown yard for ongoing utility work along SR 70. The area of suitable habitat within Block 14 consisted of herbaceous ruderal species.
- Blocks 15, 16, and 17 are located on the north side of SR 70. Blocks 15 and 16 consist of fallow citrus groves. Vegetation between the rows of trees is dense and overgrown, comprised primarily of herbaceous ruderal species. A portion of Block 16 was eliminated from the survey area after field reviews indicated that the area provided unsuitable habitat for skinks and consisted of a wet depression that had been cleared for overhead utility work. This area consisted of Brazilian pepper and slash pine. Block 17 consisted of the eastern edge of the citrus groves and some open grassland. A portion of Block 17 was eliminated from the survey area after field reviews indicated that the area provided unsuitable habitat for skinks and consisted of an open water pond.
- Block 18 is located on the north side of SR 70 adjacent to the railroad tracks. The entirety of the block was eliminated from the survey area after field reviews indicated that the area provided unsuitable habitat for skinks and consisted of a wetland comprised primarily of swamp fern, maiden fern (*Thelypteris* spp.), and cogon grass (*Imperata cylindrica*).
- Block 19 is located on the north side of SR 70, east of Old SR 8. Suitable habitat within this block consists of grassland composed of herbaceous ruderal species. A large portion of the block was eliminated from the survey area after field reviews indicated that the area provided unsuitable habitat for skinks and consisted of a forested wetland with vegetation including red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), cypress (*Taxodium* spp.), Carolina willow (*Salix caroliniana*), elderberry (*Sambucus canadensis*), and Peruvian primrosewillow.
- Block 20 is located on the south side of SR 70. Suitable habitat within this block consists of grassland composed of herbaceous ruderal species. A large portion of the block was eliminated from the survey area after field reviews indicated that the area provided unsuitable habitat for skinks and consisted of a forested wetland with vegetation including red maple Brazilian pepper, Carolina willow, elderberry, and Virginia creeper (*Parthenocissus quinquefolia*).
- Block 21 is located on the south side of SR 70. The entirety of the block was eliminated from the survey area after field reviews indicated that the area provided unsuitable habitat for skinks and consisted of a forested wetland with vegetation including slash pine, cabbage palm (*Sabal palmetto*), elderberry, groundsel tree, Brazilian pepper, swamp fern, sword fern (*Nephrolepis* spp.), and Virginia creeper.
- Block 22 is located on the north side of SR 70. Vegetation within the forested area varied widely with some portions taking on more of a scrub composition while other areas were more upland hardwood mixed. A large portion of the block was eliminated from the survey area after field reviews indicated that the area provided unsuitable habitat for skinks and consisted of a forested wetland with vegetation including groundsel tree, elderberry, Brazilian pepper. Within some upland areas, soils were observed to be unsuitable in these areas with dense layers of roots underneath duff.
- Block 23 is located on the north side of SR 70 and consists of active citrus groves within the eastern portion of the block and various forested habitat within the western portion of the block. Vegetation within the forested area varied widely with some portions taking on more of a scrub composition while other areas

were more upland hardwood mixed. A large portion of the block was eliminated from the survey area after field reviews indicated that the area provided unsuitable habitat for skinks and consisted of a forested wetland with vegetation including slash pine, elderberry, Peruvian primrosewillow, swamp fern. Within some upland forested areas, soils were observed to be unsuitable in these areas with dense layers of roots underneath duff.

- Blocks 24 and 25 are located in the northwest quadrant of the intersection of SR 70 and US 27 and consist of active citrus groves. Part of the mapped suitable habitat within Block 25 included a Shell gas station, which was excluded from the survey block.
- Block 26 is located north of SR 70 on both the east and west sides of US 27. This block is within existing right-of-way that is comprised predominantly of bahiagrass and is regularly mowed and maintained. Portions of this block have been disturbed as part of ongoing intersection improvement projects and excluded from the survey area as a result.
- Block 27 is located south of SR 70 on both the east and west sides of US 27. This block is within existing right-of-way that is comprised predominantly of bahiagrass and is regularly mowed and maintained. Portions of this block have been disturbed as part of ongoing intersection improvement projects and excluded from the survey area as a result.
- Block 28 is located south of SR 70 on the west side of US 27 and consists of active citrus groves.
- Block 29 is located on the north side of SR 70 within an area of open land that is comprised predominantly of bahiagrass with some shrub cover by species including Brazilian pepper.
- Block 30 is located on the south side of SR 70 within existing right-of-way that is comprised predominantly of bahiagrass and is regularly mowed and maintained.
- Block 31 is located on the south side of SR 70 and consists of fallow citrus groves absent of citrus trees within the eastern portion of the block and a mix of shrub and brushland with some forested pine areas. Vegetation consists of slash pine, saw palmetto, shiny blueberry, hog plum, pricklypear, and grapevine. Portions of the block were eliminated from the survey area after field reviews indicated that the areas provided unsuitable habitat for skinks and consisted of herbaceous wetlands with vegetation including Carolina willow, Peruvian primrosewillow, soft rush (*Juncus effusus*), pickerelweed (*Pontederia cordata*), swamp fern, maidencane (*Panicum hemitomon*), bushy bluestem, and cogon grass.
- Block 32 is located on the north side of SR 70 and consists of fallow citrus groves. Vegetation between the rows of trees is dense and overgrown, comprised primarily of herbaceous ruderal species. Portions of the block were eliminated from the survey area after field reviews indicated that the area provided unsuitable habitat for skinks and consisted of herbaceous wetlands with vegetation including Brazilian pepper, Peruvian primrosewillow, cattails (*Typha* spp.), bushy bluestem, maidencane, cogon grass, and bahiagrass.
- Block 33 is located on the north side of SR 70 within existing right-of-way that is comprised predominantly of bahiagrass and is regularly mowed and maintained. A portion of the block was eliminated from the survey area after field reviews indicated that the area provided unsuitable habitat for skinks and consisted

of forested wetlands with vegetation including Brazilian pepper, Carolina willow, Peruvian primrosewillow, manyflower marshpennywort (*Hydrocotyle umbellata*), and cogon grass.

- Block 34 and 36 are located on the south side of SR 70 and consist of fallow citrus groves absent of citrus trees. Vegetation consists predominantly of herbaceous ruderal species. Portions of Block 34 were eliminated from the survey area after field reviews indicated that the areas provided unsuitable habitat for skinks and consisted of a wet depression dominated by limpoglass (*Hemarthria altissima*).
- Block 35 is located on the south side of SR 70 adjacent to fallow citrus groves and was eliminated from the survey area after field reviews indicated that the area provided unsuitable habitat for skinks and consisted of a wet depression dominated by limpoglass.
- Blocks 37 and 39 are located on the north side of SR 70 and consist of dense scrub habitat. Some areas of vegetation have been cleared throughout Block 39. Vegetation includes sand live oak, saw palmetto, hog plum, pricklypear, and grapevine.
- Block 38 is located on the south side of SR 70 and consists of part active citrus groves and part fallow citrus groves. Vegetation within the fallow portion of the block consists predominantly of herbaceous ruderal species.
- Blocks 40, 41, and 42 are located on the south side of SR 70 and consist of active citrus groves with predominantly mature citrus trees.
- Block 43 is located on the north and south side on SR 70 at the easternmost end of the project. Several habitats comprise this block. Located on the south side of SR 70, the block consists of active citrus groves and rural residential areas are located on the north side. A portion of the block was eliminated from the survey area after field reviews indicated that the area provided unsuitable habitat for skinks and consisted of crushed rock driveways, residential development, and upland forested areas where soils were observed to be unsuitable with dense layers of roots underneath duff.

The data in **Table 2** includes acreages of suitable habitat, acreages of excluded area, and number of coverboards for the survey blocks established for the 2025 skink survey.

TABLE 2
COVERBOARD DENSITY PER SURVEY BLOCK

Survey Block	Block Area (Acres)	Suitable Area (Acres)	Unsuitable Habitat (Acres)	Number of Coverboards
Block 1	0.91	0.91	0.00	36
Block 2	0.27	0.27	0.00	11
Block 3	2.30	2.30	0.00	92
Block 4	0.21	0.21	0.00	8
Block 5	3.49	3.02	0.47	123
Block 6	0.27	0.27	0.00	11
Block 7	0.17	0.00	0.17	0
Block 8	0.28	0.28	0.00	11

Survey Block	Block Area (Acres)	Suitable Area (Acres)	Unsuitable Habitat (Acres)	Number of Coverboards
Block 9	0.06	0.00	0.06	0
Block 10	2.92	2.82	0.10	112
Block 11	18.19	18.05	0.14	712
Block 12	22.98	21.75	1.23	867
Block 13	13.06	13.06	0.00	524
Block 14	4.12	0.43	3.69	22
Block 15	10.22	10.22	0.00	409
Block 16	9.18	9.14	0.04	363
Block 17	0.86	0.34	0.52	14
Block 18	0.51	0.00	0.51	0
Block 19	7.12	1.74	5.38	69
Block 20	1.05	0.14	0.91	7
Block 21	1.96	0.00	1.96	0
Block 22	3.26	1.14	2.12	46
Block 23	12.85	9.42	3.43	406
Block 24	2.56	0.00	2.56	102
Block 25	9.57	8.56	1.01	348
Block 26	0.73	0.45	0.28	15
Block 27	0.71	0.58	0.13	24
Block 28	8.82	8.82	0.00	353
Block 29	0.02	0.02	0.00	1
Block 30	0.14	0.14	0.00	5
Block 31	17.73	14.57	3.16	575
Block 32	10.34	7.19	3.15	288
Block 33	0.07	0.02	0.05	2
Block 34	3.78	2.66	1.12	113
Block 35	0.11	0.00	0.11	0
Block 36	1.62	1.62	0.00	65
Block 37	0.57	0.57	0.00	24
Block 38	8.12	8.12	0.00	325
Block 39	4.65	4.65	0.00	192
Block 40	2.90	2.90	0.00	116
Block 41	0.04	0.04	0.00	2
Block 42	1.19	1.19	0.00	46
Block 43	9.95	8.62	1.33	350
Total	199.86	166.23	33.63	6,789

*As previously indicated, 396.94 acres of USFWS defined skink soils at or above 80 feet in elevation occur within the project area; however, this mapped area includes areas previously surveyed during the 2023 and 2024 survey season, 29.07 acres of assumed presence resulting from project area changes after completion of the survey, and unsuitable habitat that would only be excluded based upon field verification.

Coverboard Deployment

Coverboard preparation and installation occurred from March 31 through April 17, 2025. In accordance with USFWS Sand Skink Survey Guidelines (USFWS 2023), coverboards were dispersed regularly across suitable soils at a density of minimum 40 boards per acre. Biologists selecting the coverboard locations were cognizant of listed plant species that occur within Highlands County and avoided any areas suspected of containing protected flora.

While the initial field reconnaissance trip noted obvious areas to be included or excluded in the survey, a secondary effort was undertaken on the days of deployment to further scrutinize microhabitats for inclusion or exclusion. As much as terrain permitted, the coverboard locations were generally evenly distributed throughout the polygon. Biologists generally concentrated more boards in areas with the highest quality habitat (e.g. swimmable soils). Where wetlands, swales, or other inappropriate skink habitat areas (e.g. areas lacking swimmable soils) were present, an adequate number of coverboards were placed elsewhere within the polygon in order to maintain the minimum density of 40 boards per acre for that survey polygon and areas of unsuitable habitat were delineated to be excluded from survey. These areas are described above and shown on **Figures 3 and 4**. Representative photos of unsuitable habitat are provided in **Appendix C**.

Each coverboard location (slightly larger than 2-foot by 2-foot) was cleared of vegetation and roots using a mini excavator, rakes, and hoes. The coverboards used were 2-foot by 2-foot by ½-inch engineered plywood or particle board and were deployed immediately following ground clearing. During deployment, the block number and a unique identification number were written on each coverboard. GPS coordinates were collected by project biologists using the ESRI Field Maps application and mobile phones as GPS receivers.

A total of 6,789 coverboards were installed in the survey area. Multiple signs reading “FDOT Wildlife Survey” were placed within each polygon to deter disturbance of the study area.

Monitoring

Coverboards were left in place for one (1) week minimum prior to monitoring in order to acclimatize to the natural environment.

Four (4) consecutive weekly coverboard monitoring events were conducted on the following dates:

- April 22-25, 2025
- April 28-30 and May 1-2, 2025
- May 6-9, 2025
- May 13-15, 2025

During the monitoring events, each coverboard was carefully lifted with a hoe facing away from the observing biologist (for protection in the event of venomous insects or reptiles) and the underlying soil was observed for the presence of sinusoidal skink tracks. The soil beneath the coverboard was smoothed in preparation for subsequent monitoring. Within each block, areas containing open loose sands were visually inspected for the presence of skink tracks during each monitoring event. Information was recorded including the survey start and stop time, weather conditions, and names of biologists conducting the survey. Weather conditions for each monitoring event are shown

in **Table 3**. Electronic datasheets are provided in **Appendix D**. If skink tracks or live individuals were found, the coverboard number and date were recorded, and a photo taken if possible.

TABLE 3
MONITORING EVENT WEATHER CONDITIONS

Survey Event	Date	Temperature (in Fahrenheit)		Maximum Wind (speed/direction)		Precipitation
		Survey Start	Survey End	Survey Start	Survey End	
Event 1	4/22/2025	84	87	NE 4	NE 12	No
	4/23/2025	70	88	NE 3	0	No
	4/24/2023	69	88	E 4	E 11	No
	4/25/2025	78	80	E 13	E 14	No
Event 2	4/28/2025	81	91	ESE 8	E 11	No
	4/29/2025	75	95	E 10	E 13	No
	4/30/2025	73	82	E 11	SE 12	No
	5/1/2025	79	82	ESE 10	SE 9	No
	5/2/2025	77	80	ESE 8	ESE 8	No
Event 3	5/6/2025	74	92	NNW 10	SE 4	No
	5/7/2025	72	85	ESE 4	SE 4	No
	5/8/2025	76	79	SSE 6	SSE 11	No
	5/9/2025	73	77	S 7	S 9	No
Event 4	5/13/2025	74	82	WSW 3	W 6	No
	5/14/2025	72	82	WSW 2	S 3	No
	5/15/2025	75	88	SSW 1	W 10	No

When live skinks or skink tracks were observed, monitoring within the occupied area continued in an effort to gather potentially valuable information such as skink activity changes and likelihood of detecting skink tracks solely by pedestrian surveys. These observations were also recorded using the ESRI Field Maps application and a mobile phone as the GPS receiver.

All coverboards and signs were removed from the project site during May 13 through 16, 21, and 22, 2025.

Results

Of the 6,789 coverboards deployed during the coverboard survey, skink tracks were observed under 172 coverboards. Additionally, there were 103 incidental observations made during coverboard deployment and monitoring events. Approximately 2.53 percent of the 6,789 deployed coverboards showed evidence of skink occurrence. The USFWS has made a range-wide determination for Florida that any skink on a given site is expected to occupy all suitable habitat within 80 feet of a track (USFWS 2023). Therefore, habitat within the 80-foot radius of a positive coverboard or incidental observation was determined to be occupied by skinks, with the exception of any unsuitable habitat excluded from the survey area. Based on this information, occupied skink habitat within the project area was estimated to be 44.87 acres. However, when including the area of assumed skink presence (29.07

acres), the occupied skink habitat within the project area increases to 73.94 acres. The locations of positive coverboards and incidental sand skink observations are included in **Figure 5**. A delineation of occupied sand skink habitat is shown in **Figure 6**. Photographs of representative tracks from positive coverboards are provided for each survey block in **Appendix E**.

It should be noted, when calculating occupied skink habitat acreage, the 80-foot radius around each positive coverboard or incidental observation was limited to within the footprint of the project and suitable skink habitat. Since the survey blocks for the 2025 survey did not encompass all of the suitable habitat within the project limits, there are instances where the skink habitat/occupied area exceeds the area of suitable habitat within each survey block due to the occupied area extending beyond the block within the project limits. **Table 4** summarizes the sand skink-occupied habitat by polygon for the 2025 survey. Please note that only the survey blocks that were identified as having occupied areas identified during the 2025 field survey are included within the following table.

TABLE 4
SKINK OCCUPIED HABITAT SUMMARY

Survey Block	Suitable Area (Acres)	Occupied Area (Acres)
Block 2	0.27	0.85*
Block 4	0.21	0.26*
Block 5	3.02	0.33
Block 6	0.27	1.77*
Block 8	0.28	1.42*
Block 10	2.82	3.89*
Block 11	18.05	5.10
Block 12	21.75	5.53
Block 13	13.06	5.93
Block 23	9.42	2.41
Block 28	8.82	1.03
Block 31	14.57	1.89
Block 32	7.19	0.38
Block 36	1.62	0.61
Block 38	8.12	2.09
Block 39	4.65	3.08
Block 40	2.90	2.19
Block 42	1.19	0.95
Block 43	8.62	5.16
Total	123.68	44.87

*Occupied Area exceeds Suitable Habitat due to extension of buffers beyond the survey block.

Summary

Based on the 2025 monitoring results, sand skinks were found at 275 locations (positive coverboards plus incidental skink observations) along the north and south sides of the SR 70 from Jefferson Avenue to CR 29 project limits.

The locations of positive coverboards are represented in **Figure 5**. Using guidance from the *USFWS Peninsular Florida Species Conservation and Consultation Guide – Sand Skink and Blue-tailed (Bluetail) Mole Skink* (USFWS 2023), it was determined that 73.94 acres of the project area is occupied by skinks based on the results of the 2025 survey (44.87 acres) and areas of assumed skink presence (29.07 acres) due to changes in project area after completion of the coverboard survey. 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.

References

Florida Department of Transportation (FDOT). 1999. Florida Land Use, Cover and Forms Classification System: Handbook (3rd edition). FDOT Surveying and Mapping Office, Geographic Mapping Section. Tallahassee, Florida: 91 pp.

United States Fish and Wildlife Service (USFWS). 2023. Peninsular Florida Species Conservation and Consultation Guide, Sand Skink and Blue-tailed (Blue-tail) Mole Skink, 2023.

Figures

Figure 1 Project Location

Figure 2 USFWS Suitable Habitat

Figure 3 Skink Survey Area

Figure 4 Survey Blocks and Coverboard Locations

Figure 5 Skink Track Observations

Figure 6 Occupied Skink Habitat

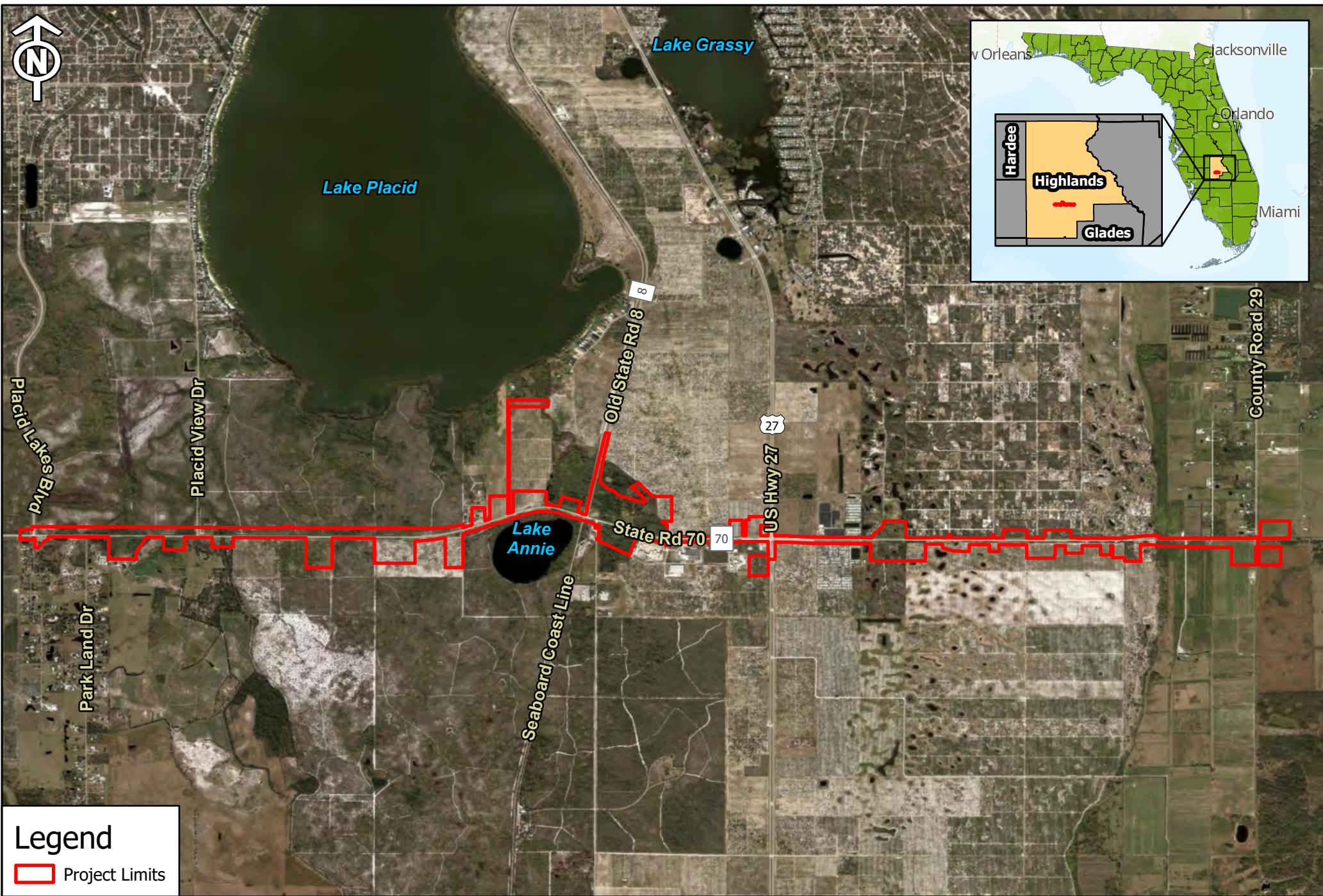
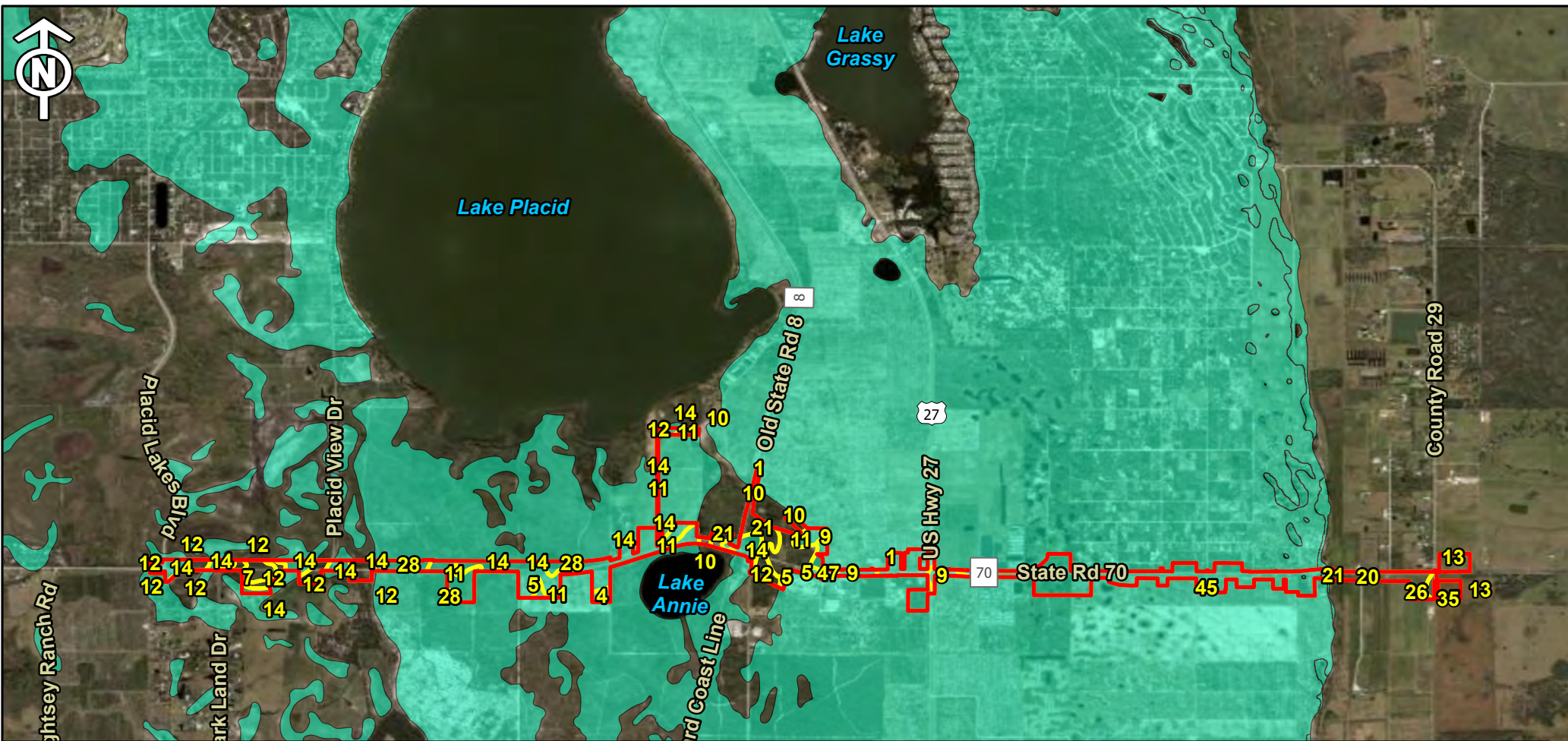


Figure 1 - Project Location
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 1 Miles



Legend

 Project Limits	7: Placid Fine Sand, Frequently Ponded, 0-1% Slopes	13: Felda Fine Sand, 0-2% Slopes	28: Archbold Sand, 0-5% Slopes
 Florida Sand Skink and Blue-Tailed Mole Skink Suitable Habitat (UF, 2024)	9: Astatula Sand, 0-5% Slopes	14: Satellite Sand, 0-2% Slopes	35: Sanibel Muck, Frequently Ponded, 0-1% Slopes
 NRCS Soils (USDA, 2023)	10: Myakka Fine Sand, 0-2% Slopes	20: Samsula Muck, Frequently Ponded, 0-1% Slopes	45: Paola-Basinger Sands, Rolling
1: Paola Sand, 0-8% Slopes	11: Orsino Sand, 0-5% Slopes	21: Hontoon Muck, Frequently Ponded, 0-1% Slopes	47: Astatula Sand, 5-12% Slopes
4: Duette Sand, 0-5% Slopes	12: Basinger Fine Sand, 0-2% Slopes	26: Tequesta Muck, Frequently Ponded, 0-1% Slopes	
5: Daytona Sand, 0-5% Slopes			



Figure 2 - 1 - USFWS Suitable Habitat

SR 70 from Jefferson Avenue to CR 29
 FPID 414506-1-22-01
 Highlands County, Florida

0 1.9 Miles

A scale bar is shown with a horizontal line and vertical tick marks at the 0 and 1.9 mile points.

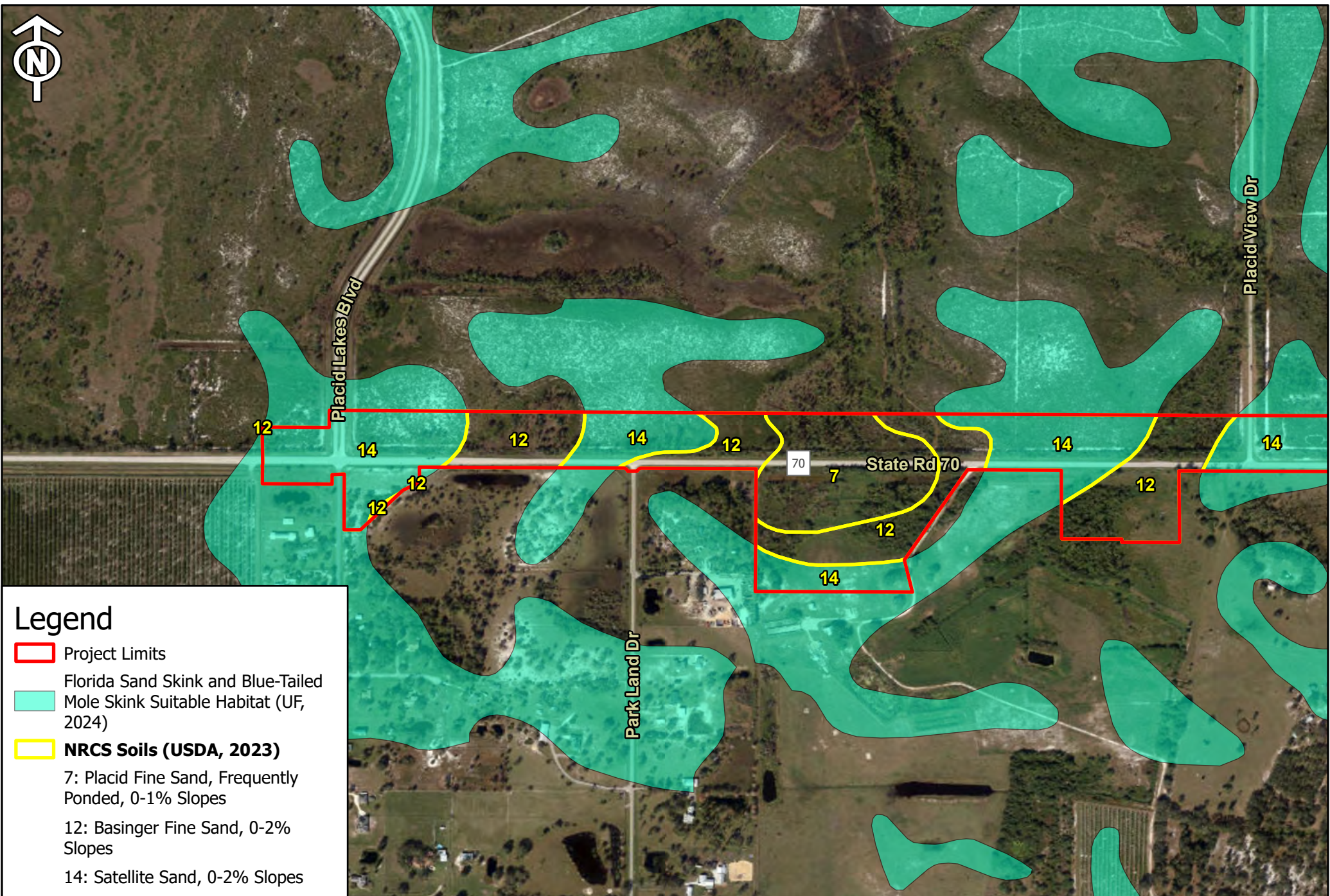


Figure 2 - 2 - USFWS Suitable Habitat
 SR 70 from Jefferson Avenue to CR 29
 FPID 414506-1-22-01
 Highlands County, Florida

0
0
0.3 Miles

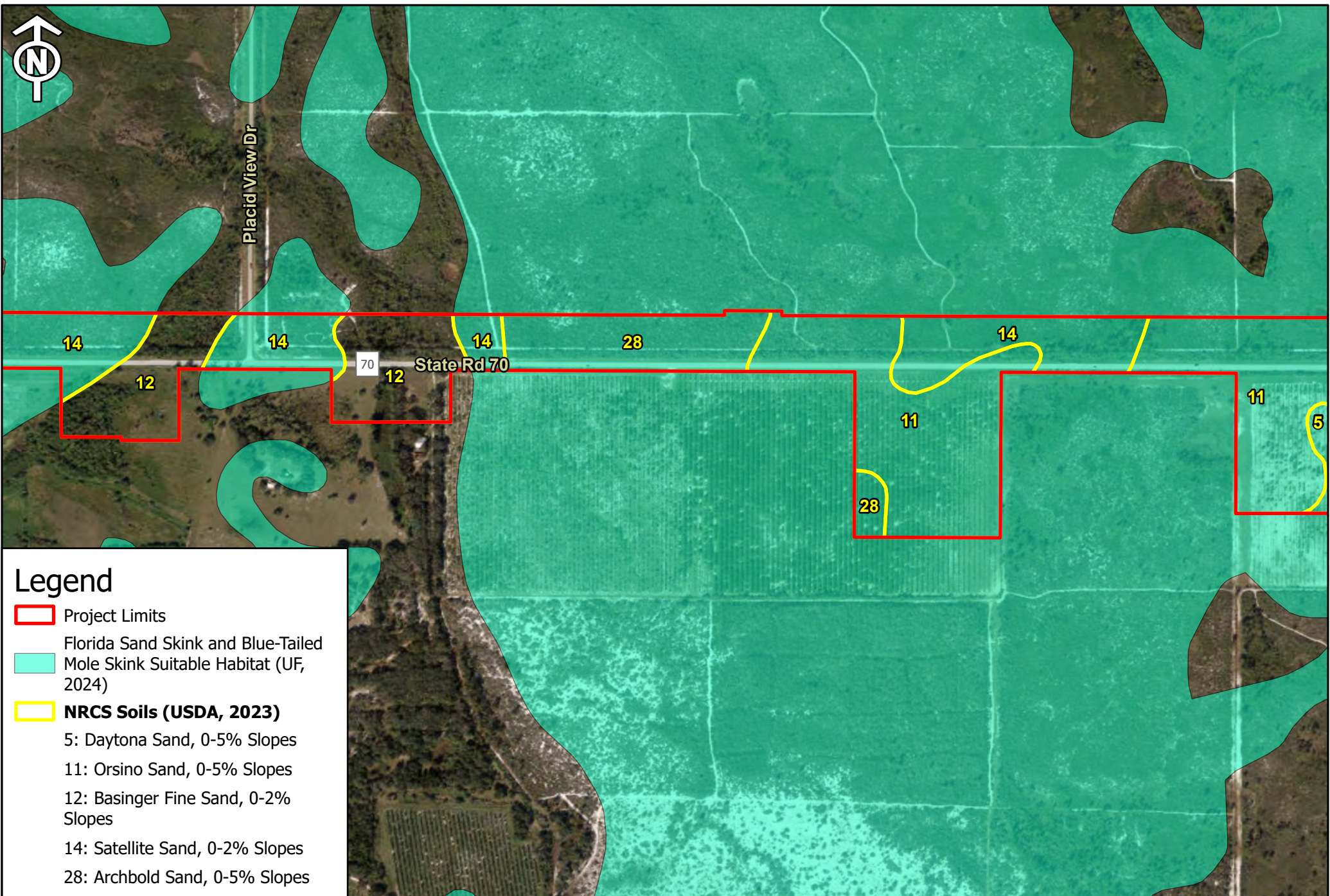


Figure 2 - 3 - USFWS Suitable Habitat
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.3 Miles



Legend

- Project Limits
- Florida Sand Skink and Blue-Tailed Mole Skink Suitable Habitat (UF, 2024)
- NRCS Soils (USDA, 2023)**
 - 4: Duette Sand, 0-5% Slopes
 - 5: Daytona Sand, 0-5% Slopes
 - 10: Myakka Fine Sand, 0-2% Slopes
 - 11: Orsino Sand, 0-5% Slopes
 - 12: Basinger Fine Sand, 0-2% Slopes
 - 14: Satellite Sand, 0-2% Slopes
 - 21: Hontoon Muck, Frequently Ponded, 0-1% Slopes
 - 28: Archbold Sand, 0-5% Slopes

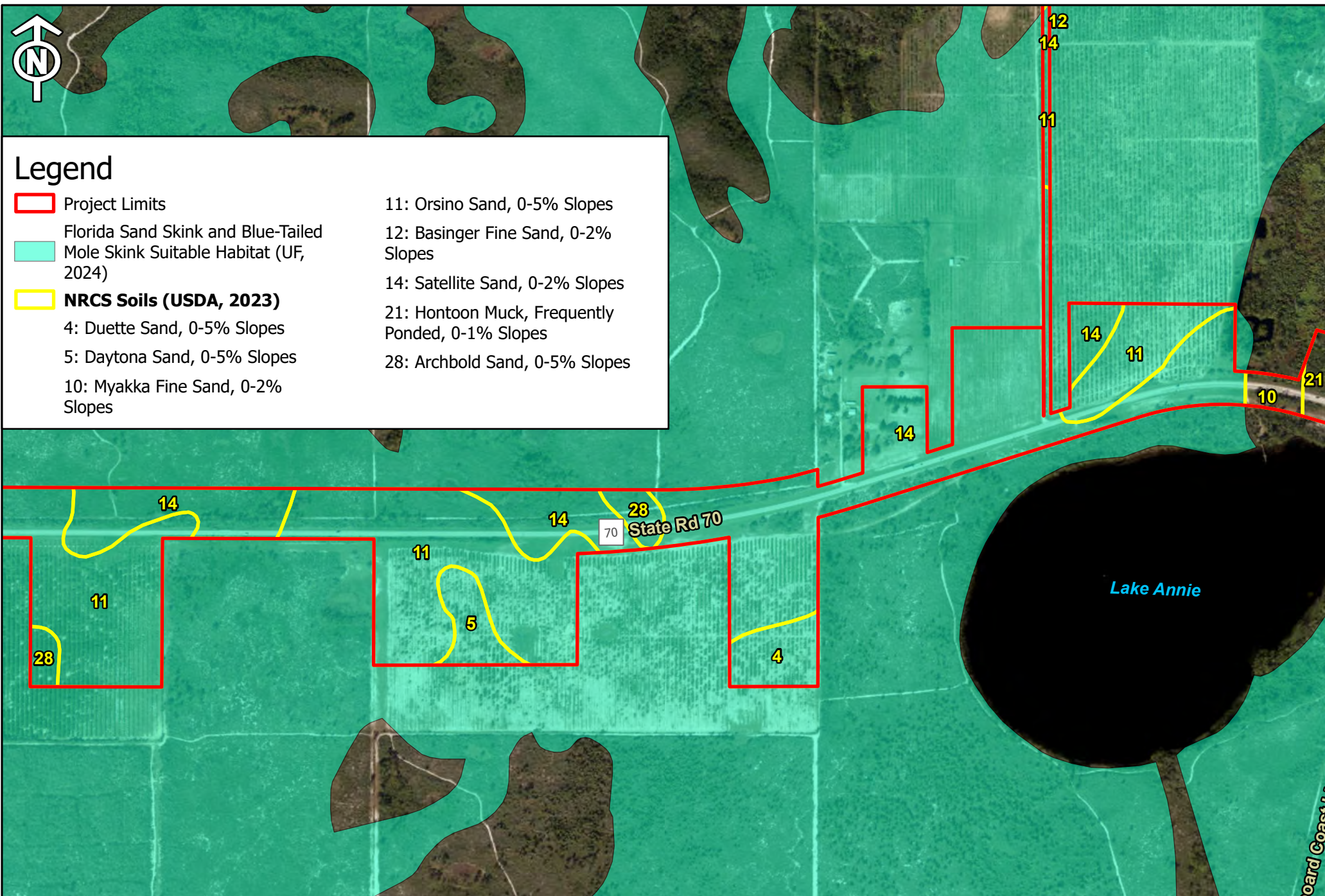


Figure 2 - 4 - USFWS Suitable Habitat
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.33 Miles



Legend

- Project Limits
- Florida Sand Skink and Blue-Tailed Mole Skink Suitable Habitat (UF, 2024)
- NRCS Soils (USDA, 2023)**
 - 1: Paola Sand, 0-8% Slopes
 - 4: Duette Sand, 0-5% Slopes
 - 5: Daytona Sand, 0-5% Slopes
 - 10: Myakka Fine Sand, 0-2% Slopes
 - 11: Orsino Sand, 0-5% Slopes
 - 12: Basinger Fine Sand, 0-2% Slopes
 - 14: Satellite Sand, 0-2% Slopes
 - 21: Hontoon Muck, Frequently Ponded, 0-1% Slopes
 - 28: Archbold Sand, 0-5% Slopes

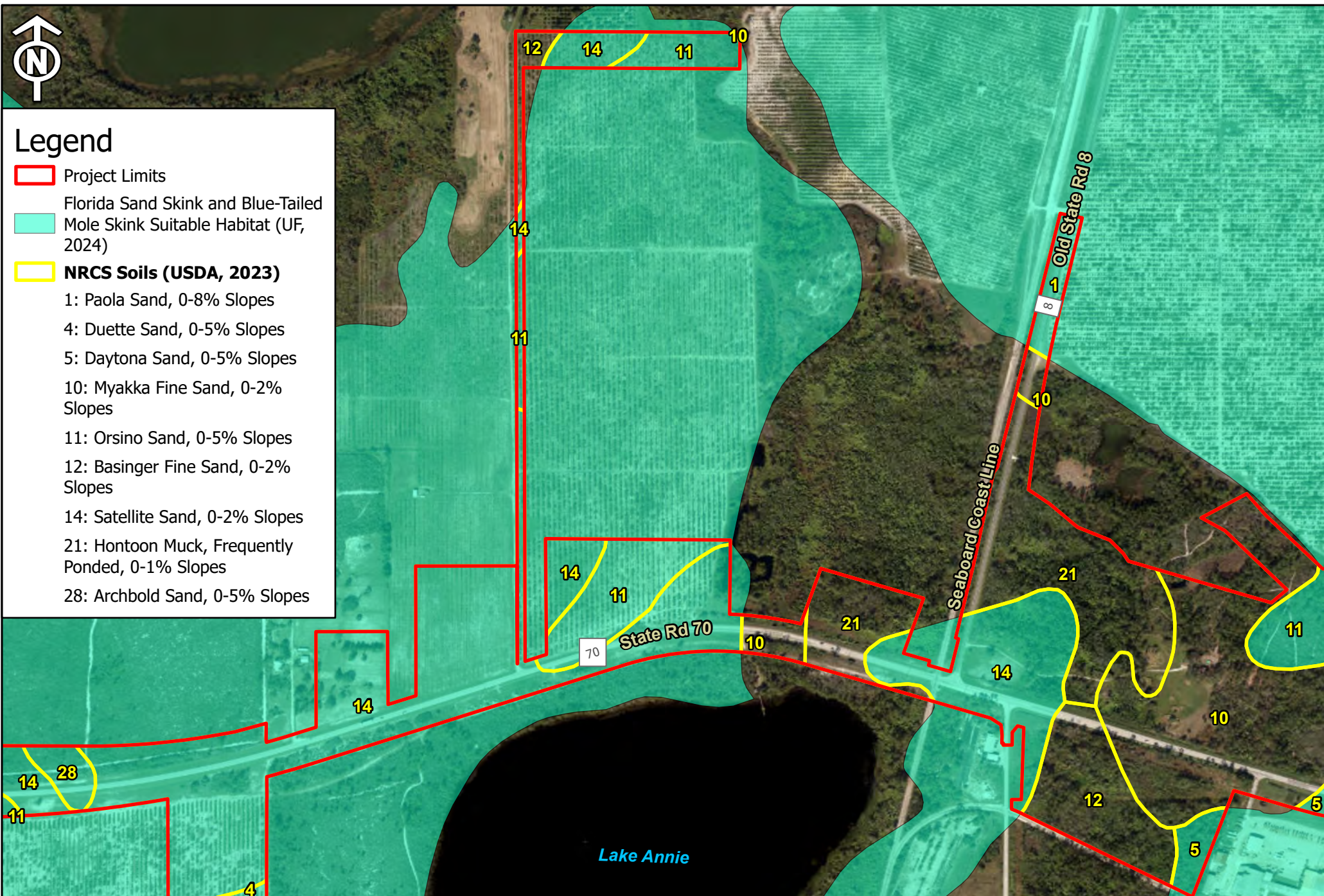
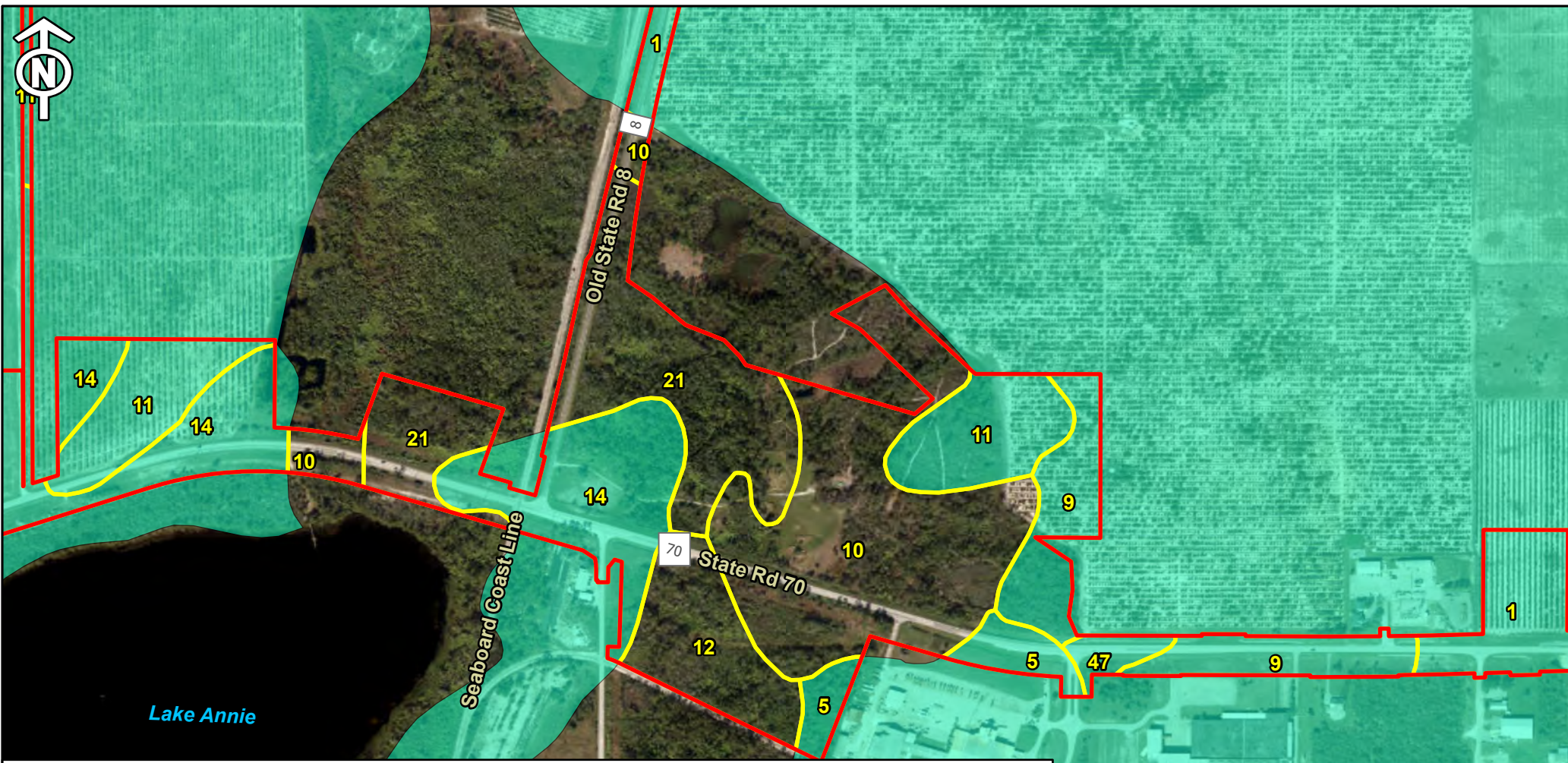


Figure 2 - 5 - USFWS Suitable Habitat
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.3 Miles



Legend



Project Limits



Florida Sand Skink and Blue-Tailed Mole Skink
Suitable Habitat (UF, 2024)



NRCS Soils (USDA, 2023)

1: Paola Sand, 0-8% Slopes

5: Daytona Sand, 0-5% Slopes

9: Astatula Sand, 0-5% Slopes

10: Myakka Fine Sand, 0-2% Slopes

11: Orsino Sand, 0-5% Slopes

12: Basinger Fine Sand, 0-2% Slopes

14: Satellite Sand, 0-2% Slopes

21: Hontoon Muck, Frequently Ponded, 0-1%
Slopes

47: Astatula Sand, 5-12% Slopes



Figure 2 - 6 - USFWS Suitable Habitat

SR 70 from Jefferson Avenue to CR 29

FPID 414506-1-22-01

Highlands County, Florida

0

0.3 Miles

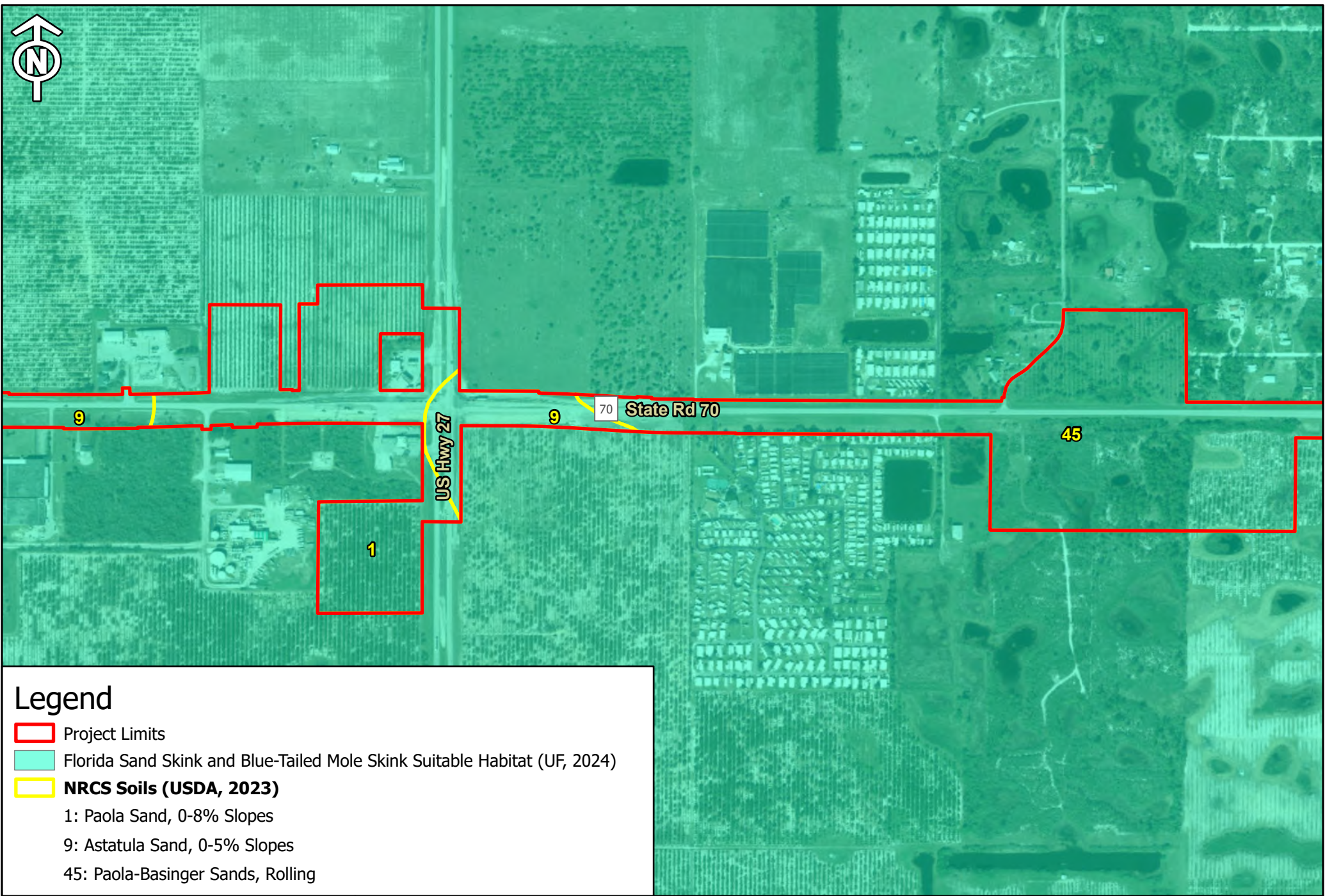


Figure 2 - 7 - USFWS Suitable Habitat
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.3 Miles

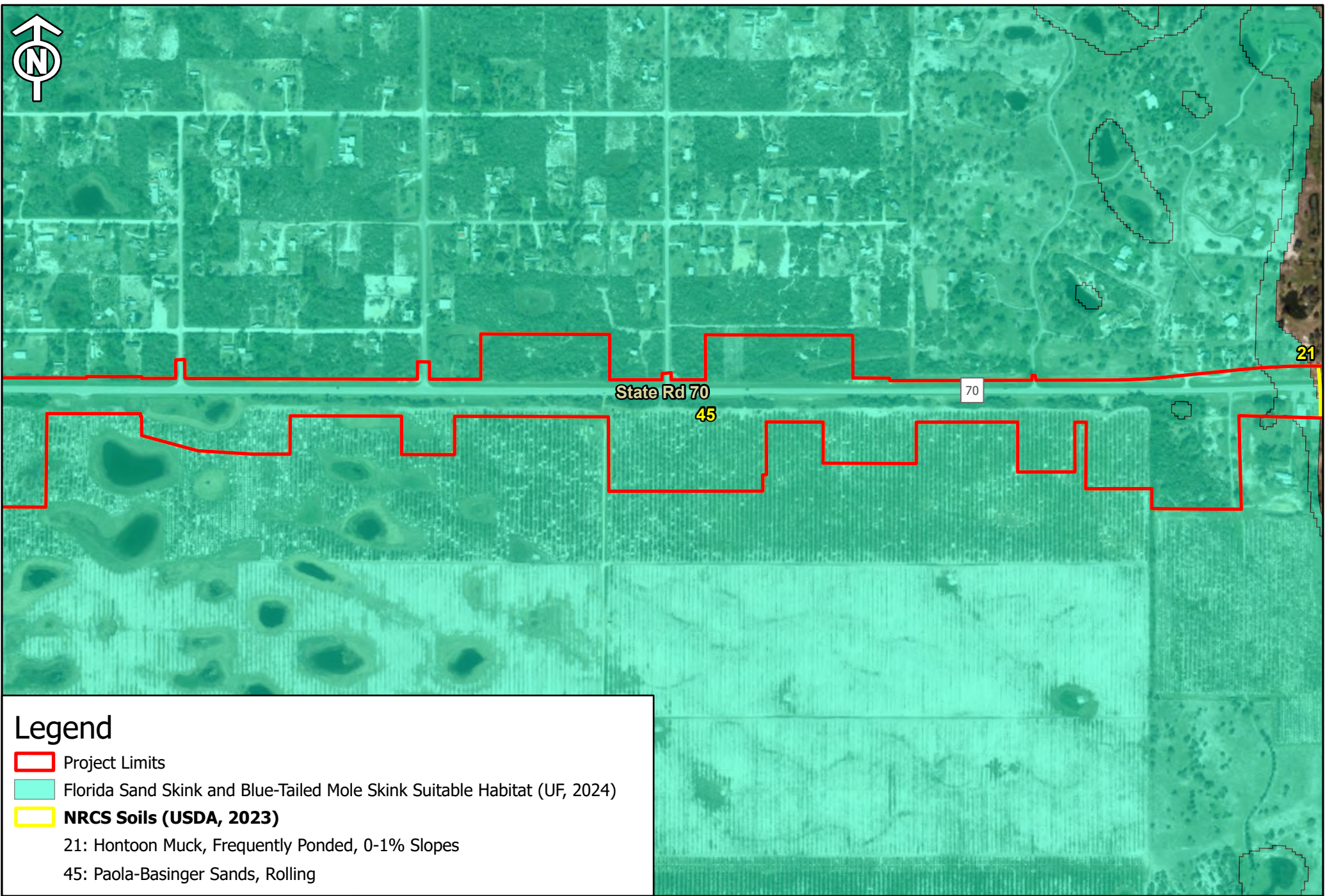


Figure 2 - 8 - USFWS Suitable Habitat
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.3 Miles

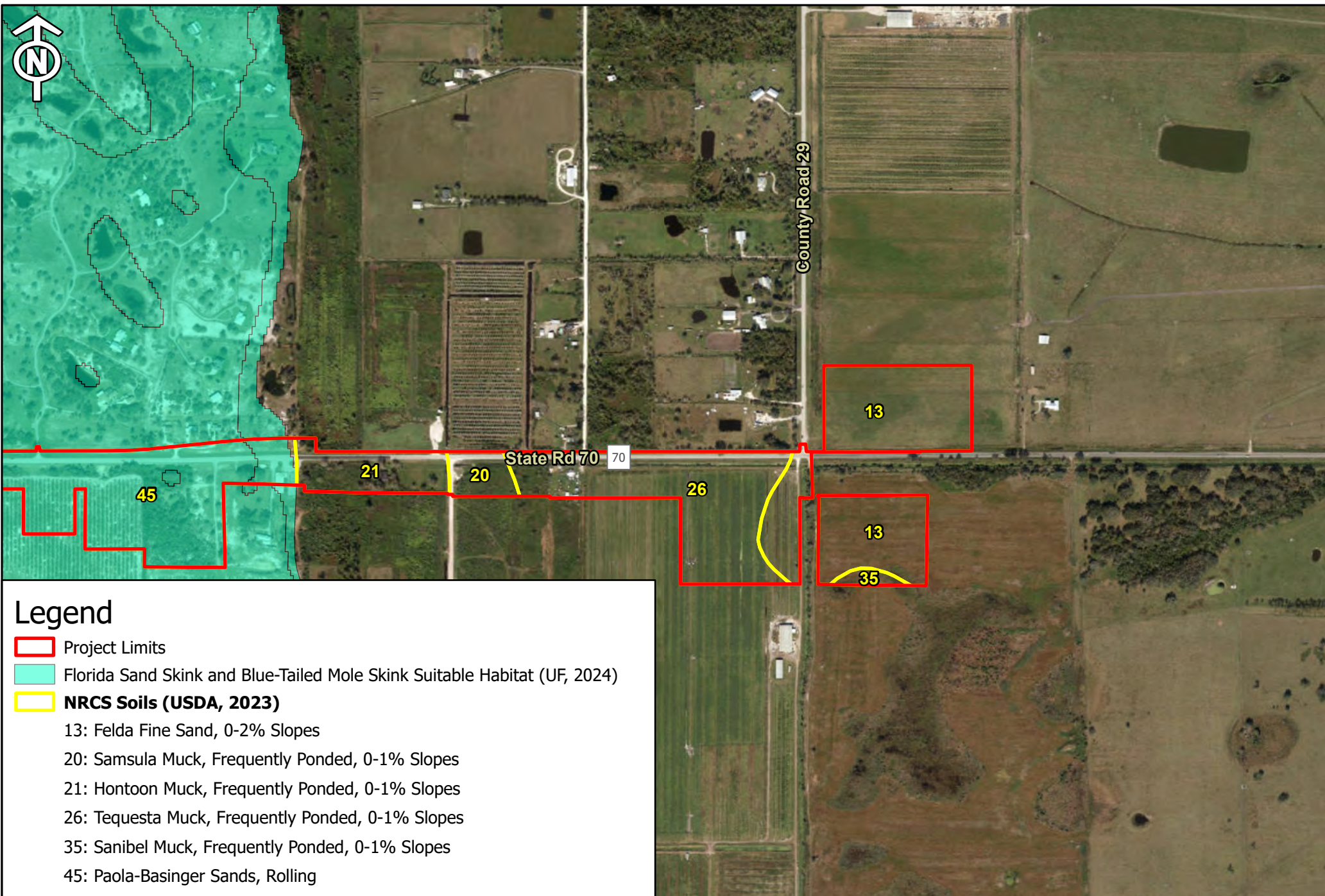


Figure 2 - 9 - USFWS Suitable Habitat
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.33 Miles

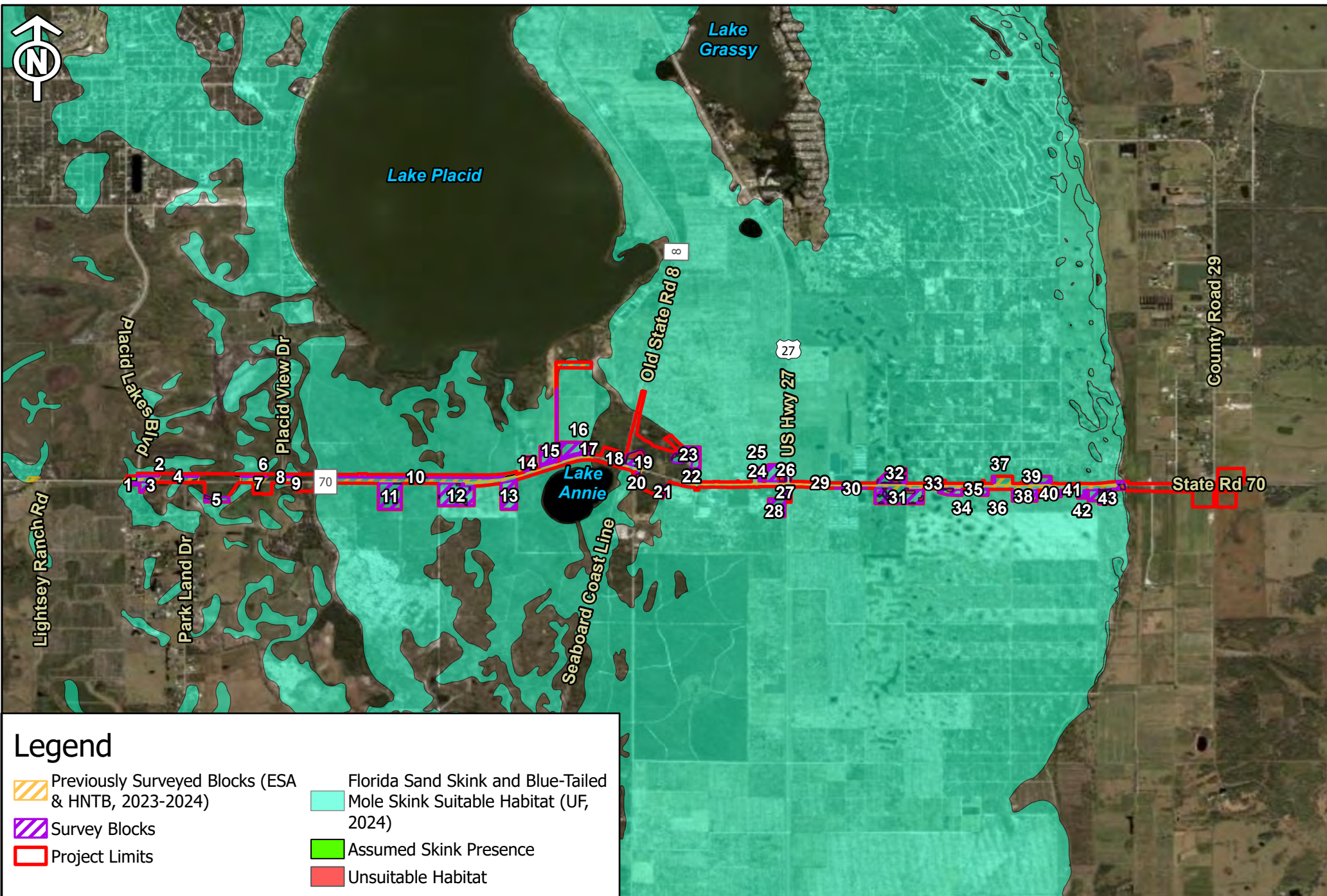
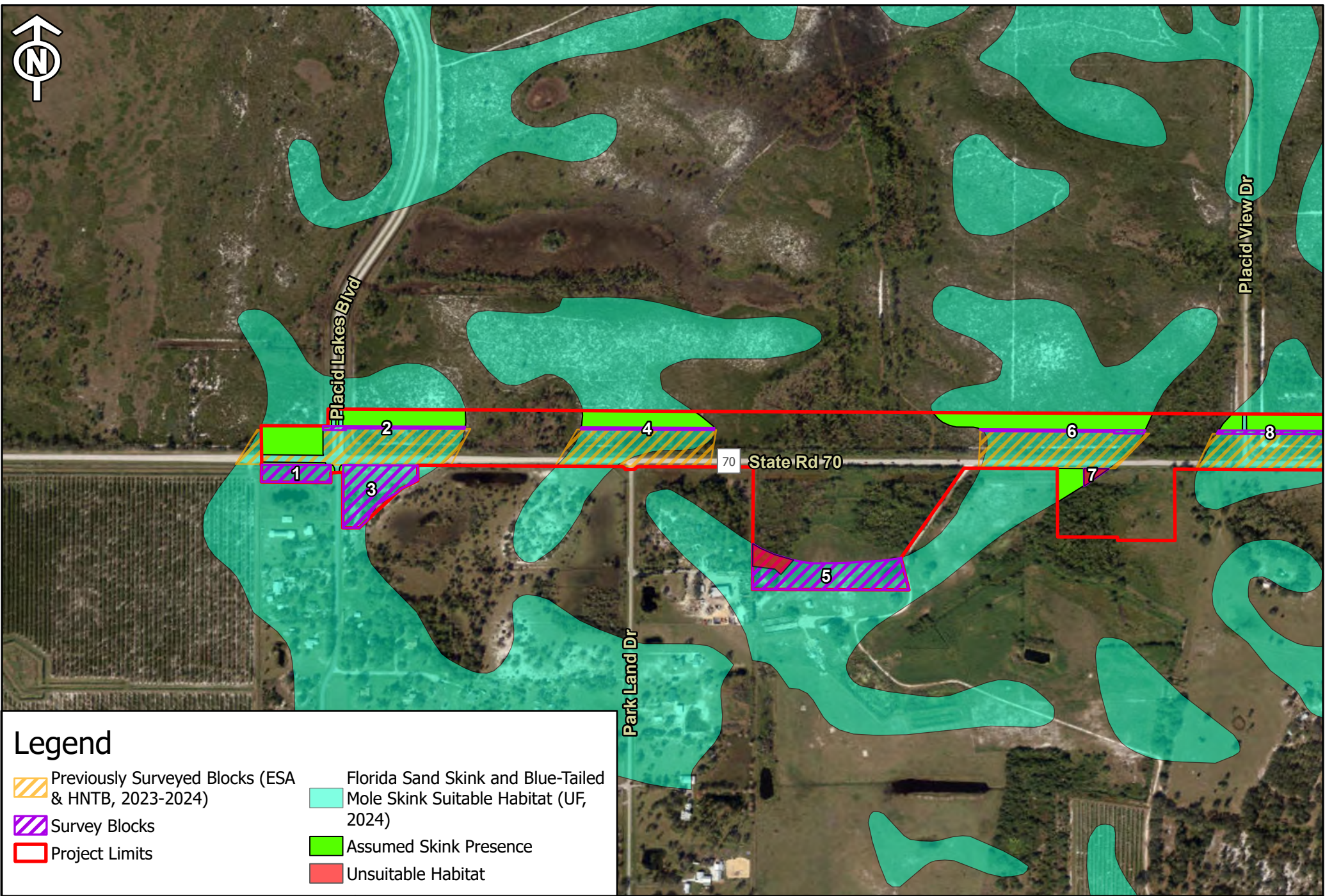


Figure 3 - 1 - Skink Survey Area
 SR 70 from Jefferson Avenue to CR 29
 FPID 414506-1-22-01
 Highlands County, Florida

0 1.9 Miles



Legend

 Previously Surveyed Blocks (ESA & HNTB, 2023-2024)

 Survey Blocks

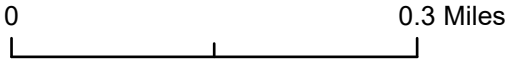
 Project Limits

 Florida Sand Skink and Blue-Tailed Mole Skink Suitable Habitat (UF, 2024)

 Assumed Skink Presence

 Unsuitable Habitat

Figure 3 - 2 - Skink Survey Area
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida



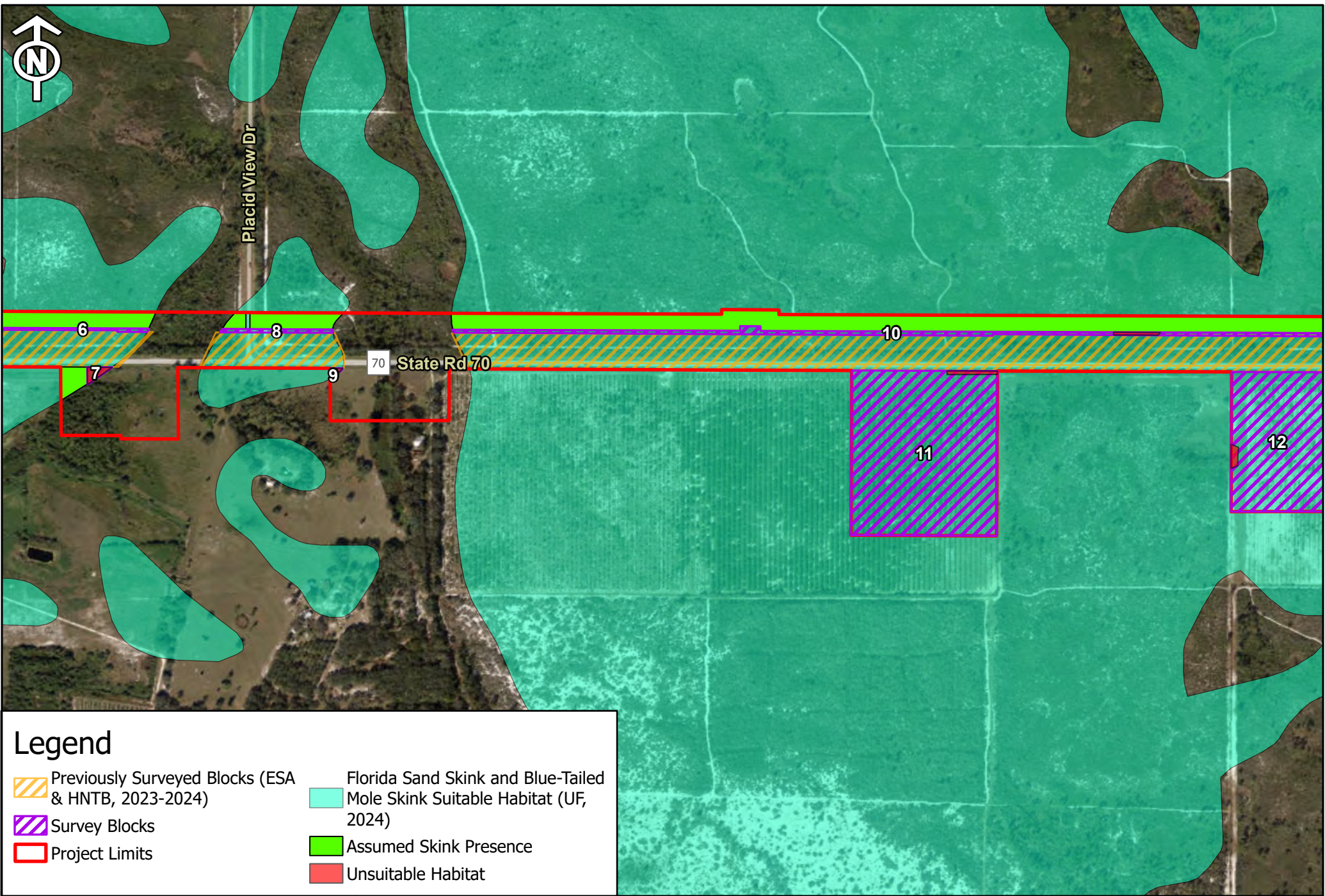


Figure 3 - 3 - Skink Survey Area
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida



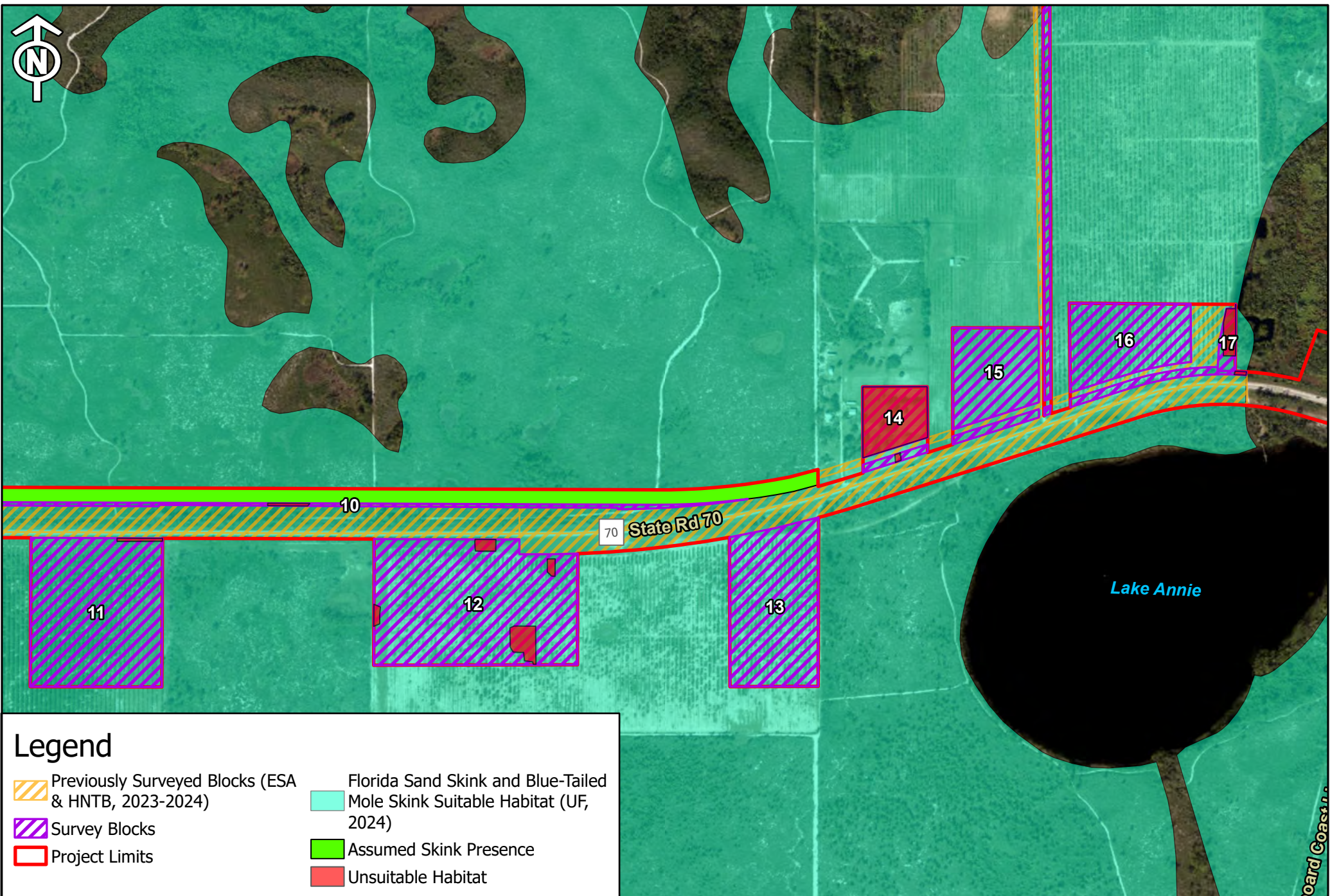
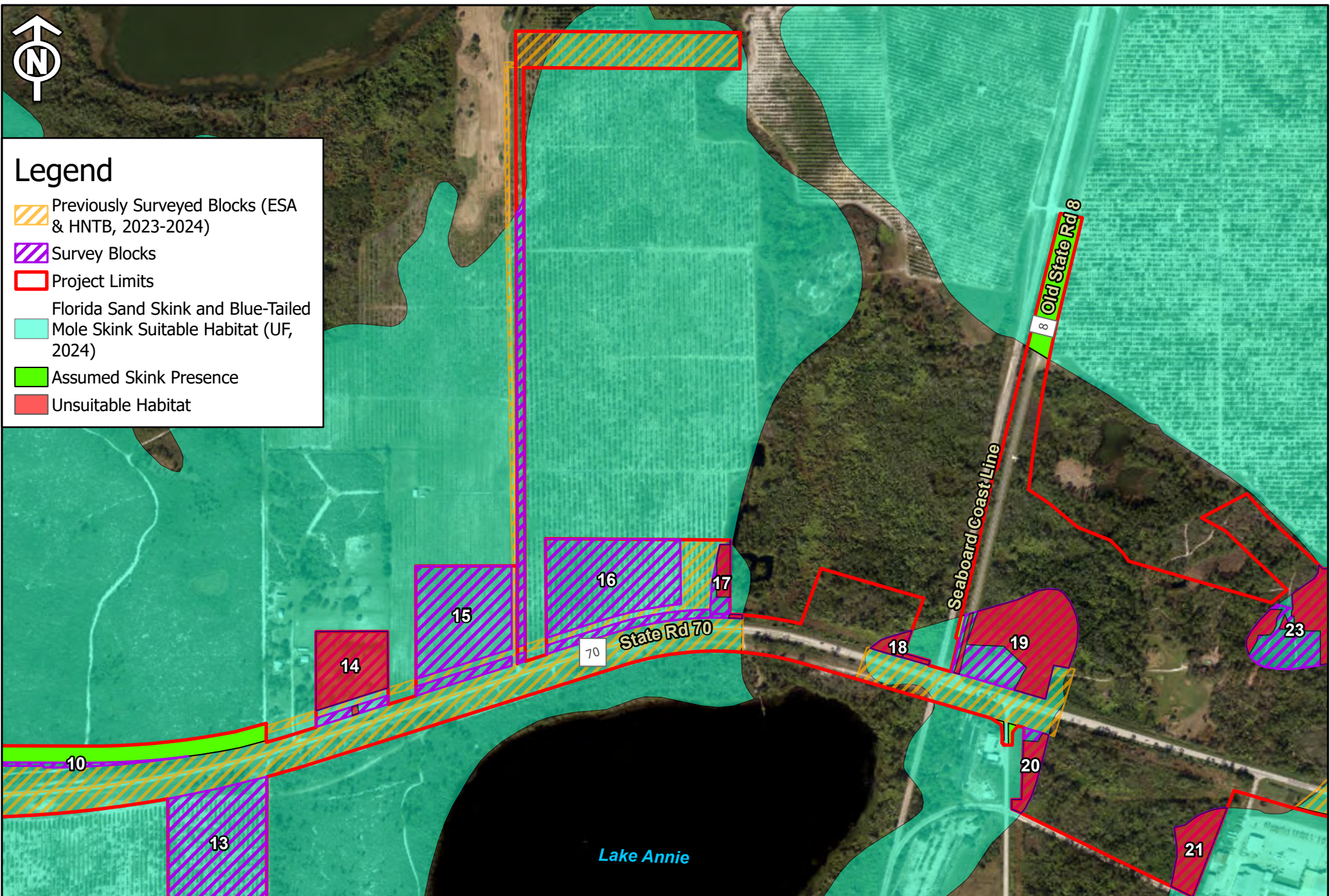


Figure 3 - 4 - Skink Survey Area
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.33 Miles



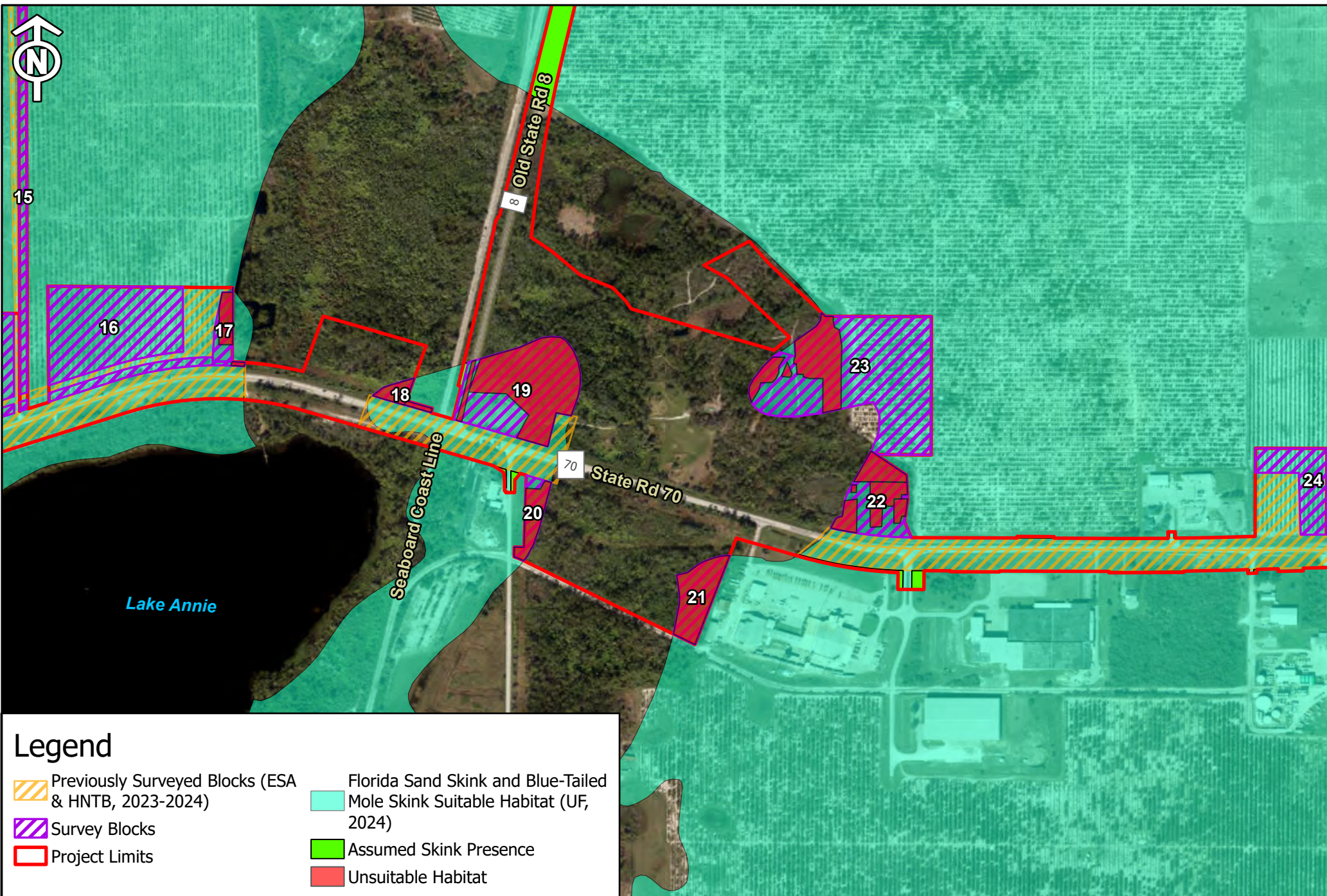


Figure 3 - 6 - Skink Survey Area
 SR 70 from Jefferson Avenue to CR 29
 FPID 414506-1-22-01
 Highlands County, Florida

0 0.3 Miles

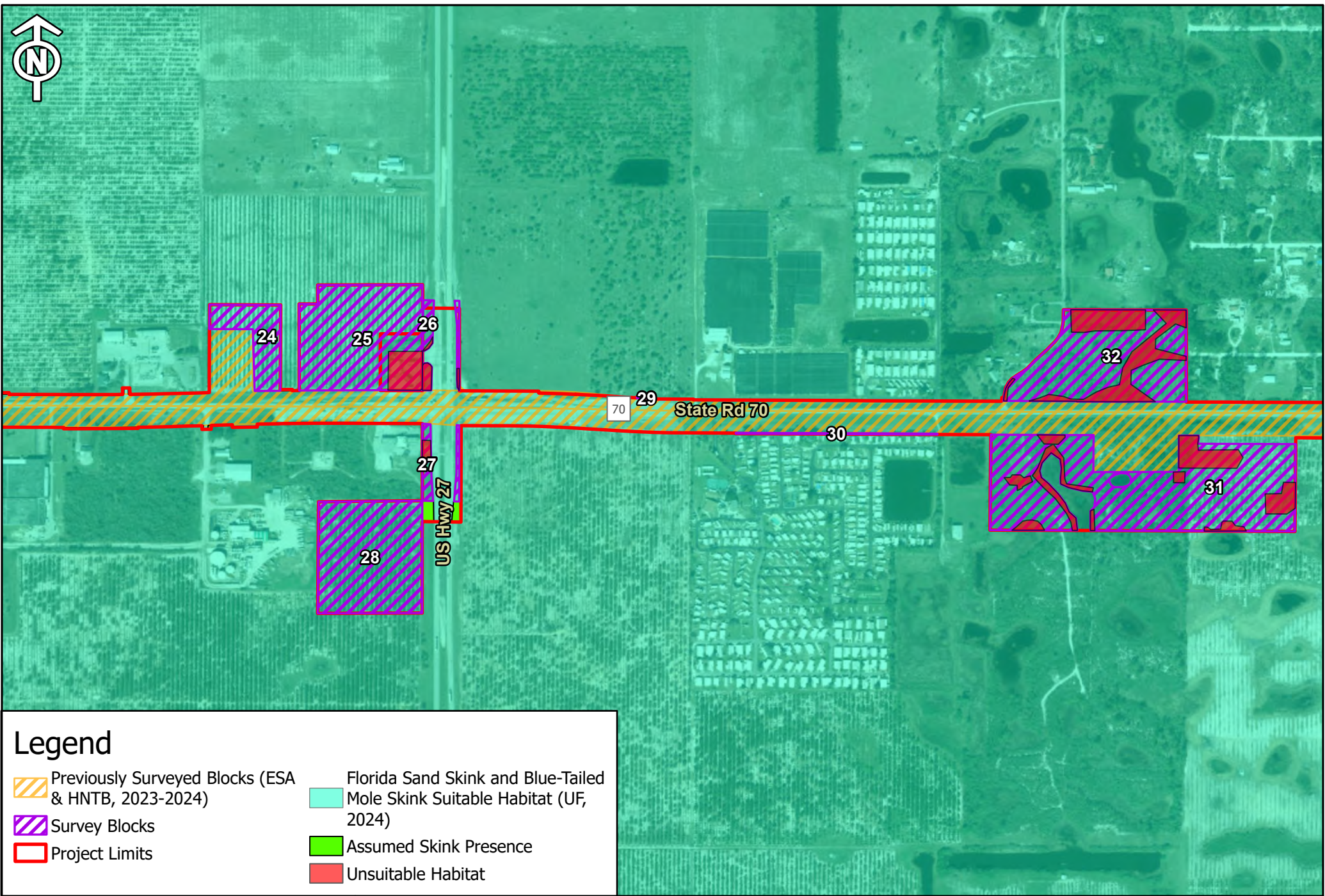


Figure 3 - 7 - Skink Survey Area
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.3 Miles

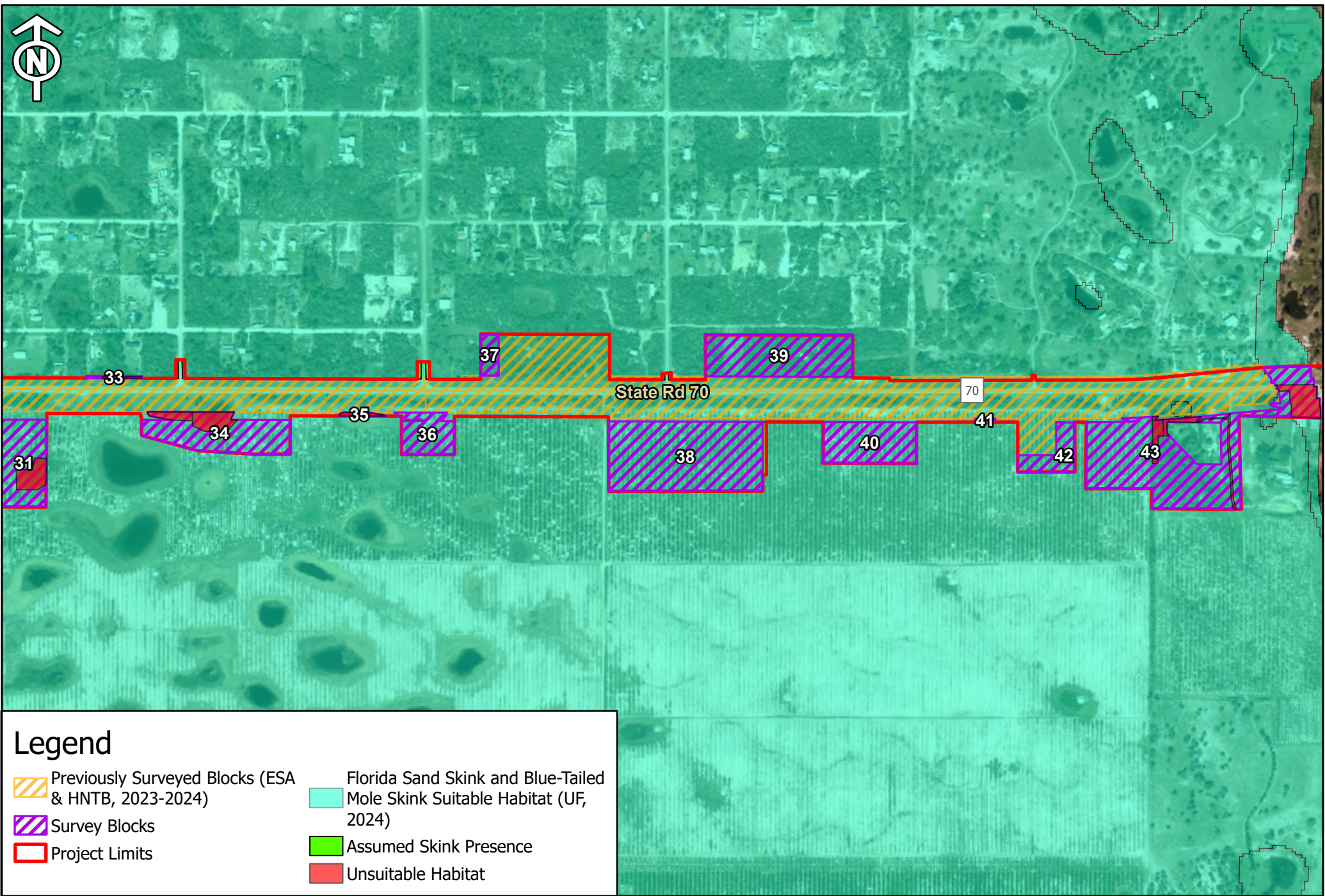


Figure 3 - 8 - Skink Survey Area
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.3 Miles

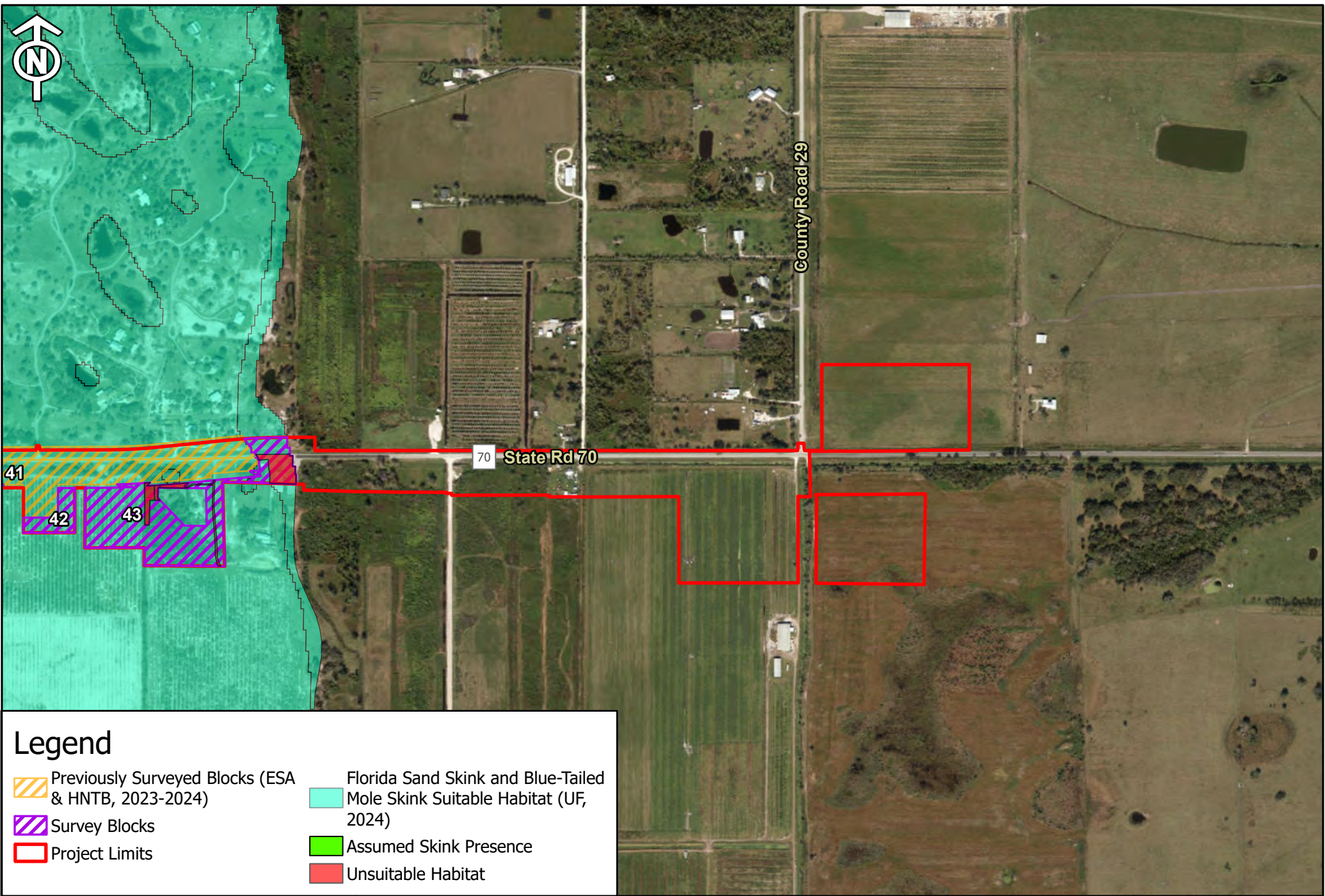


Figure 3 - 9 - Skink Survey Area
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.33 Miles

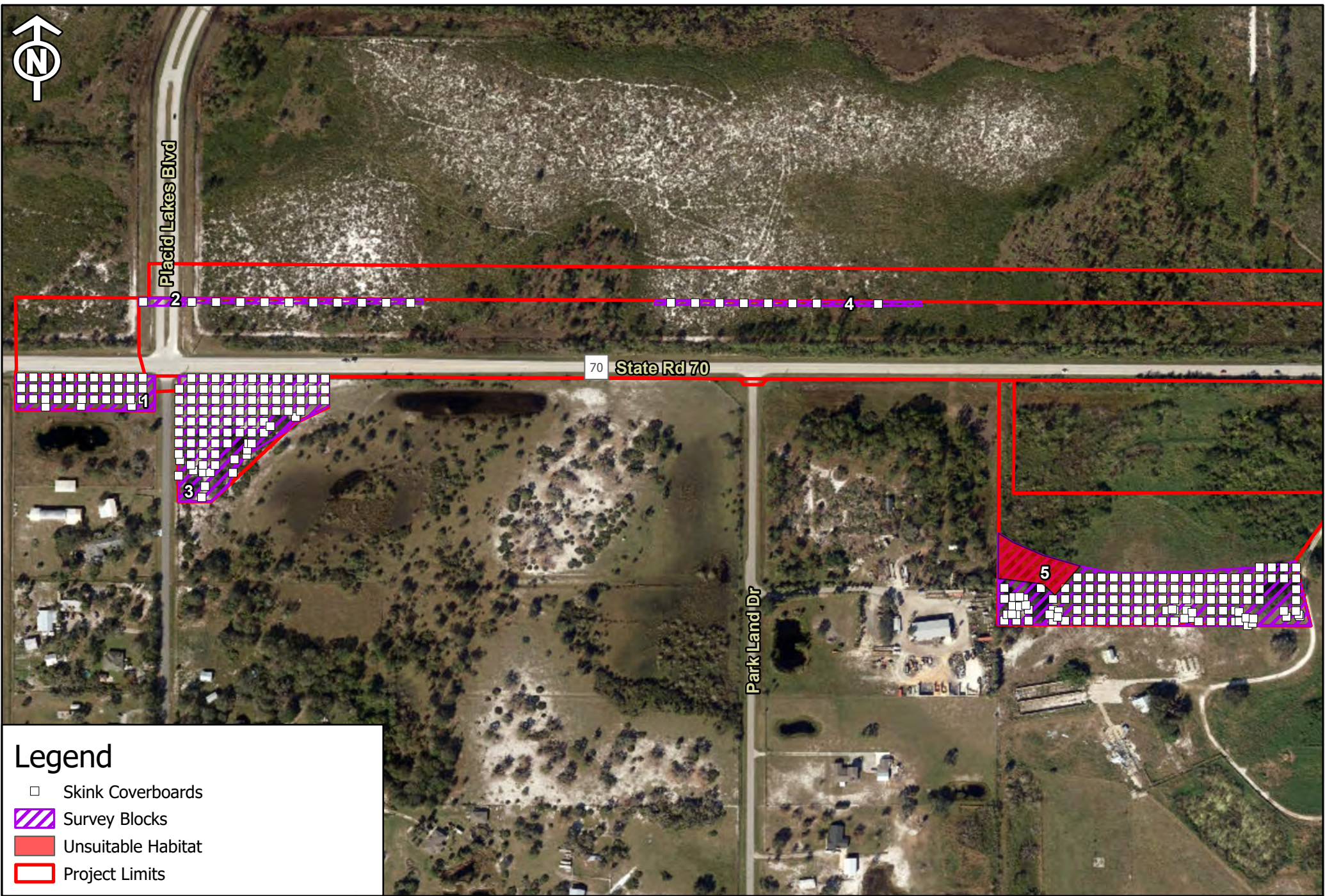


Figure 4 - 1 - Survey Blocks and Coverboard Locations
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.14 Miles

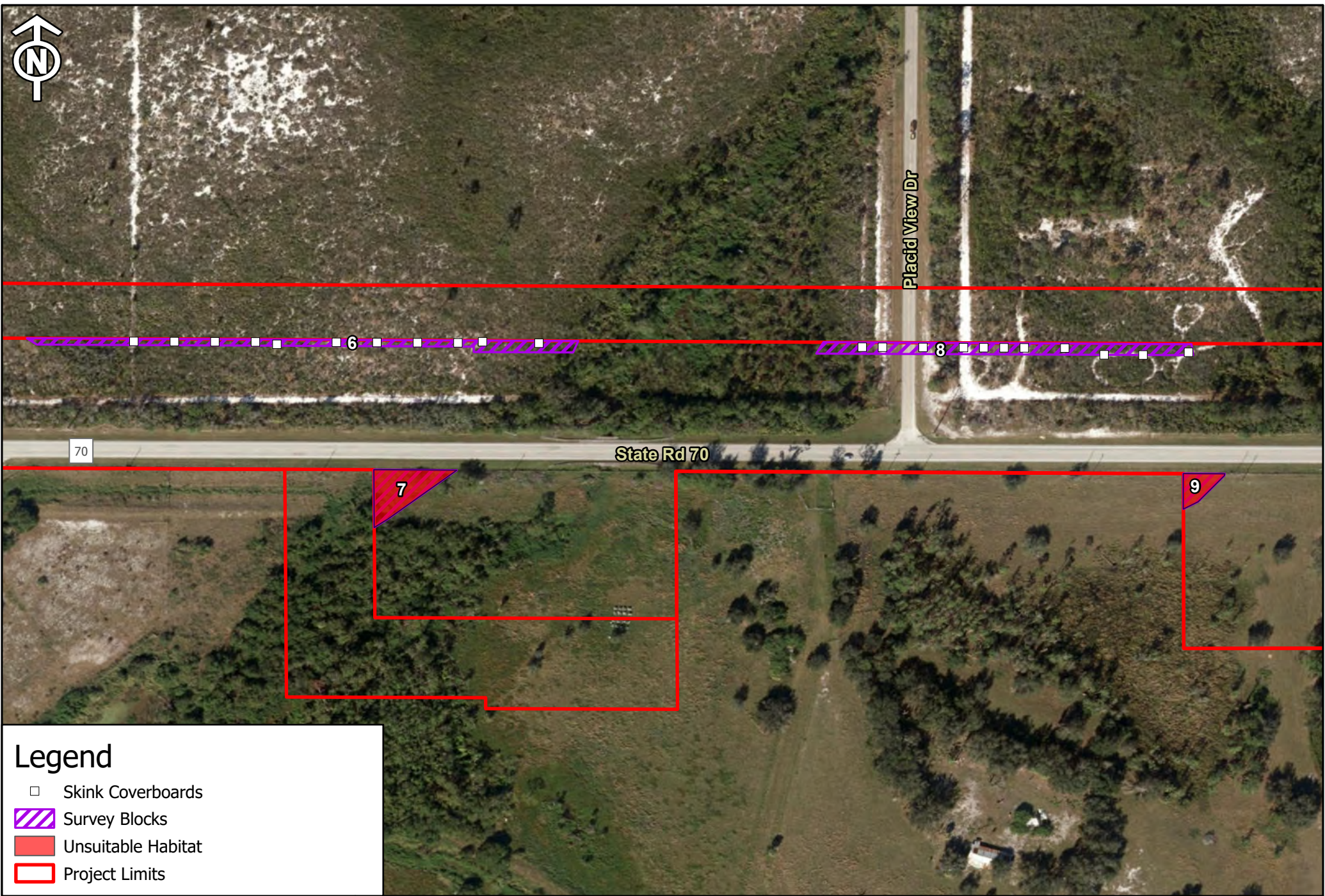


Figure 4 - 2 - Survey Blocks and Coverboard Locations
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.09 Miles

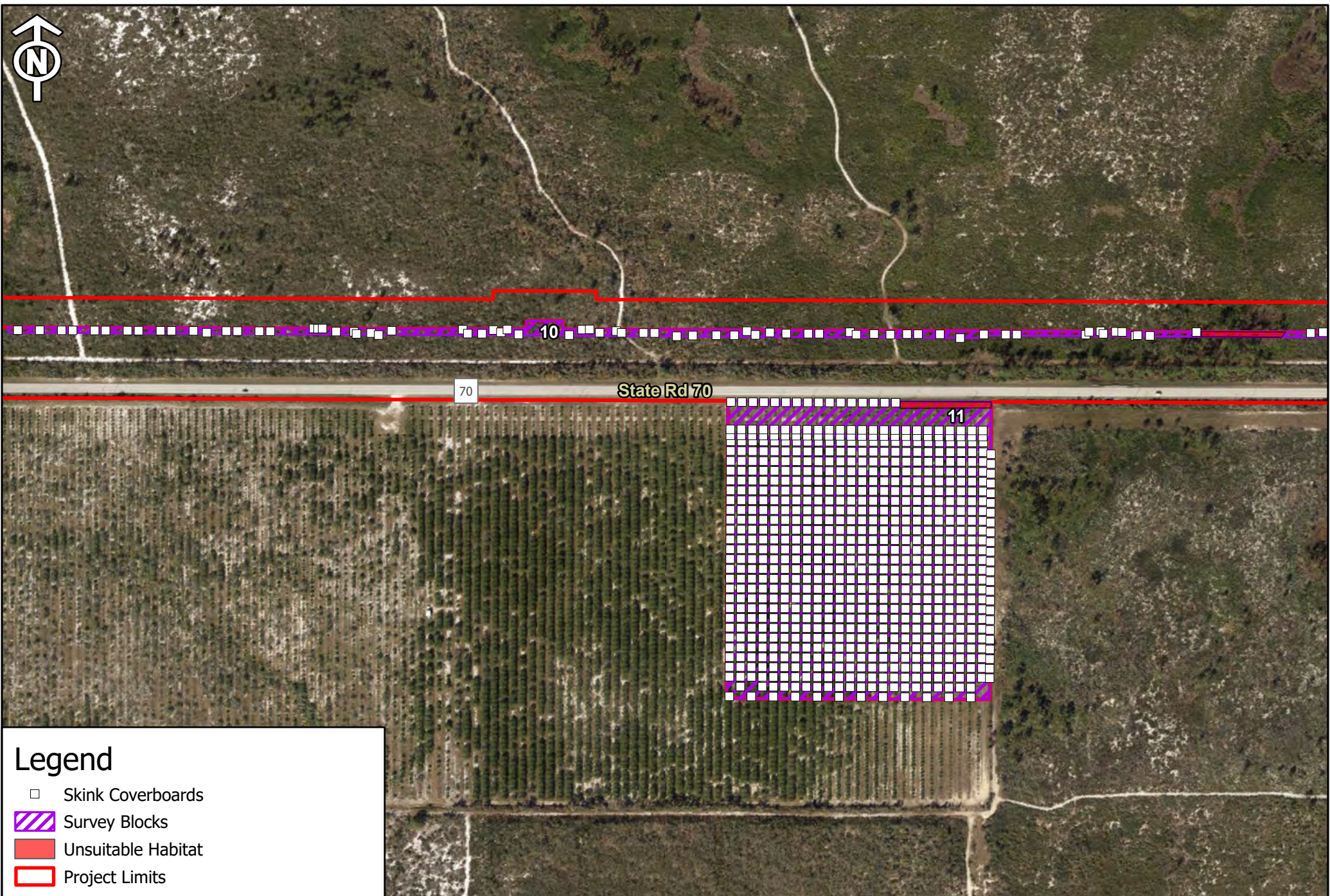
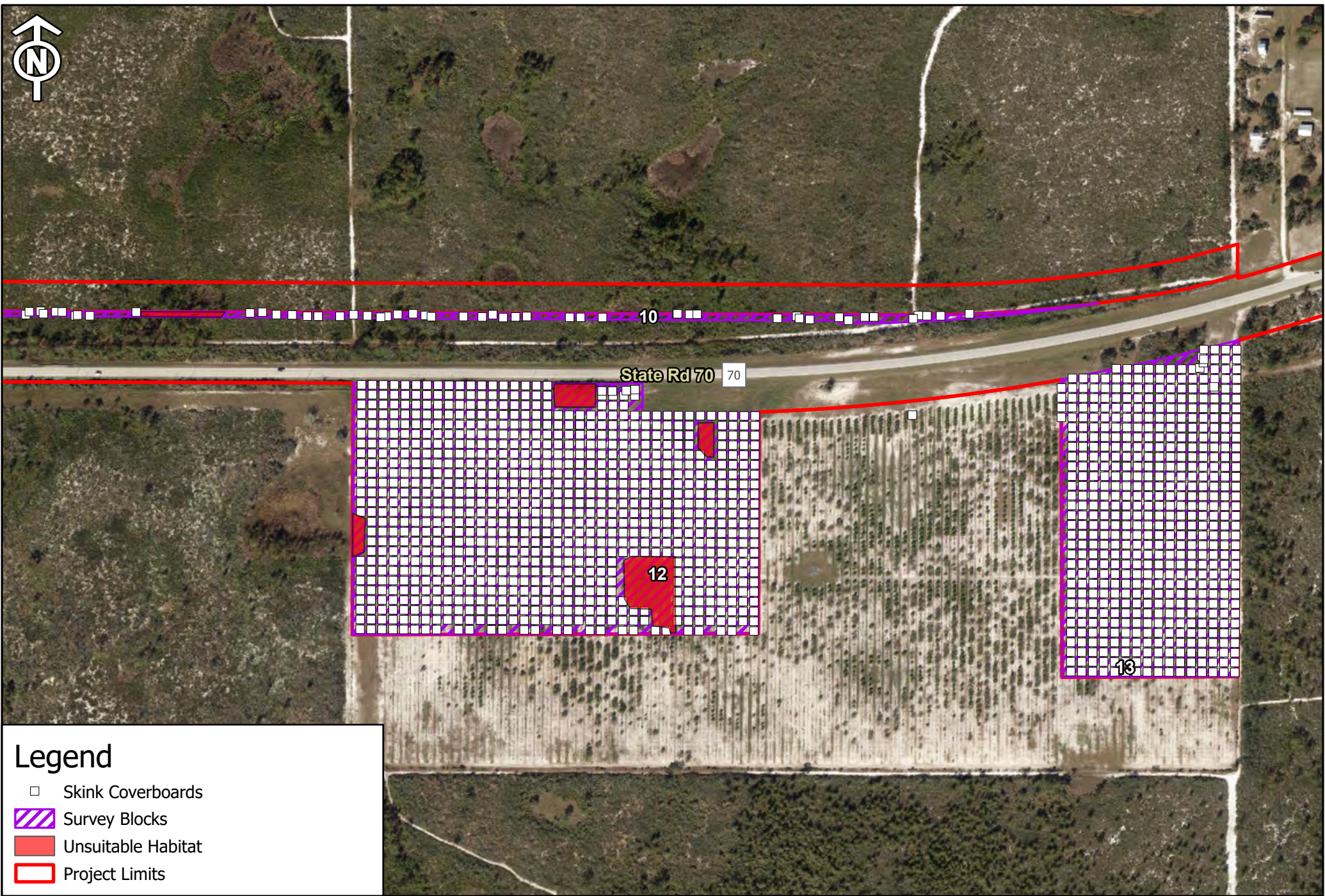


Figure 4 - 3 - Survey Blocks and Coverboard Locations
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.17 Miles



Legend

- Skink Coverboards
- ▨ Survey Blocks
- Unsuitable Habitat
- ▭ Project Limits



Figure 4 - 4 - Survey Blocks and Coverboard Locations
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.17 Miles

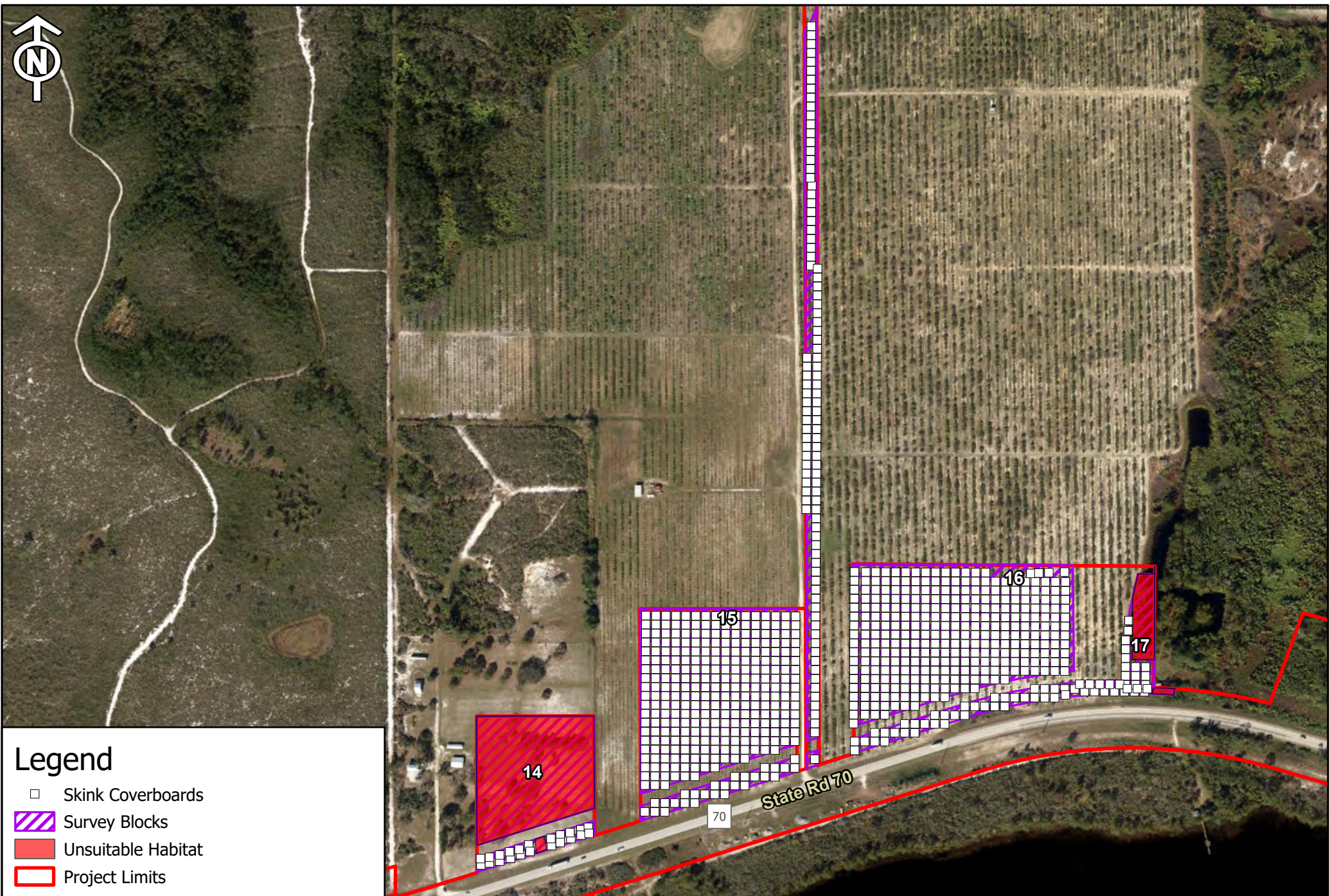


Figure 4 - 5 - Survey Blocks and Coverboard Locations
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.18 Miles

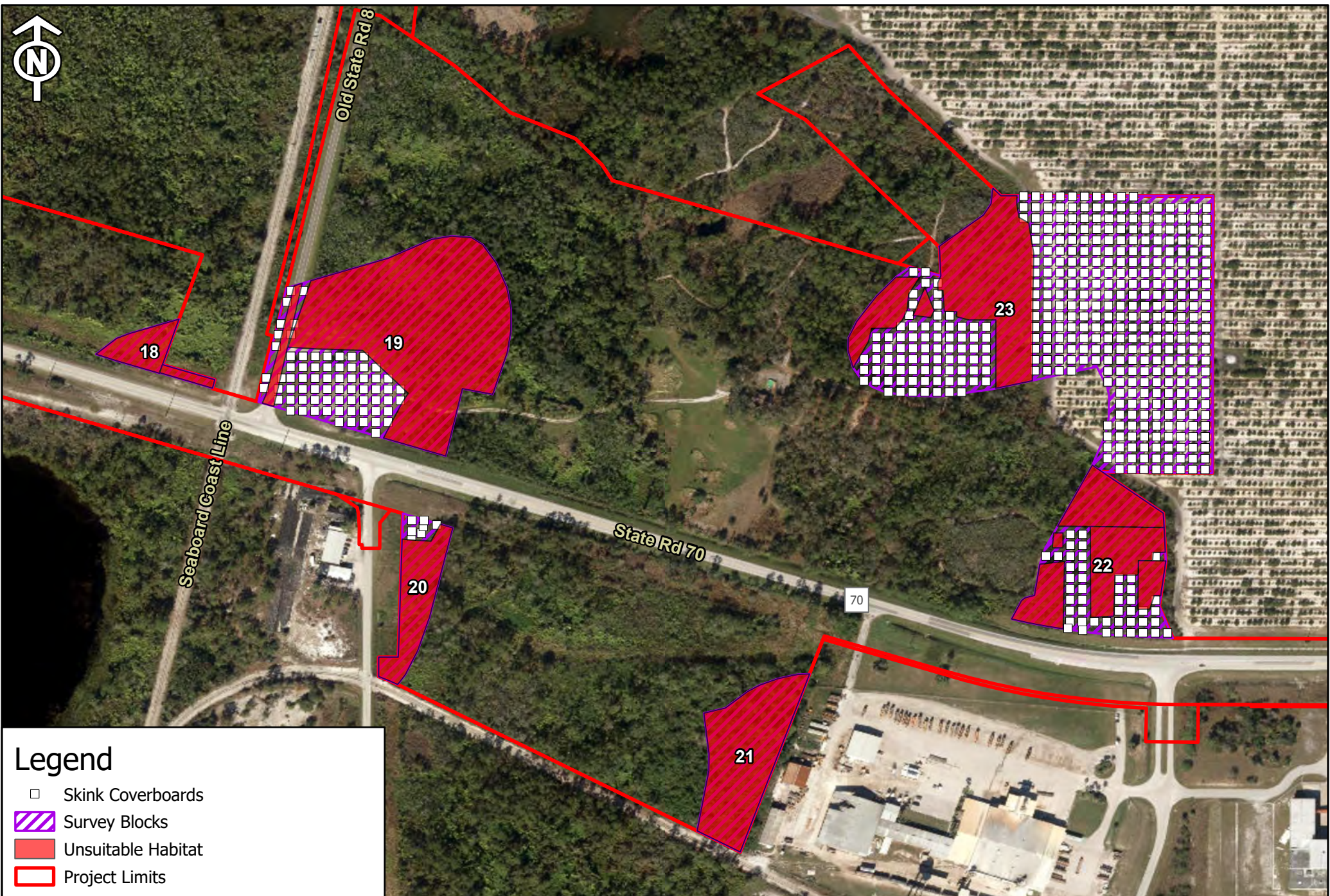
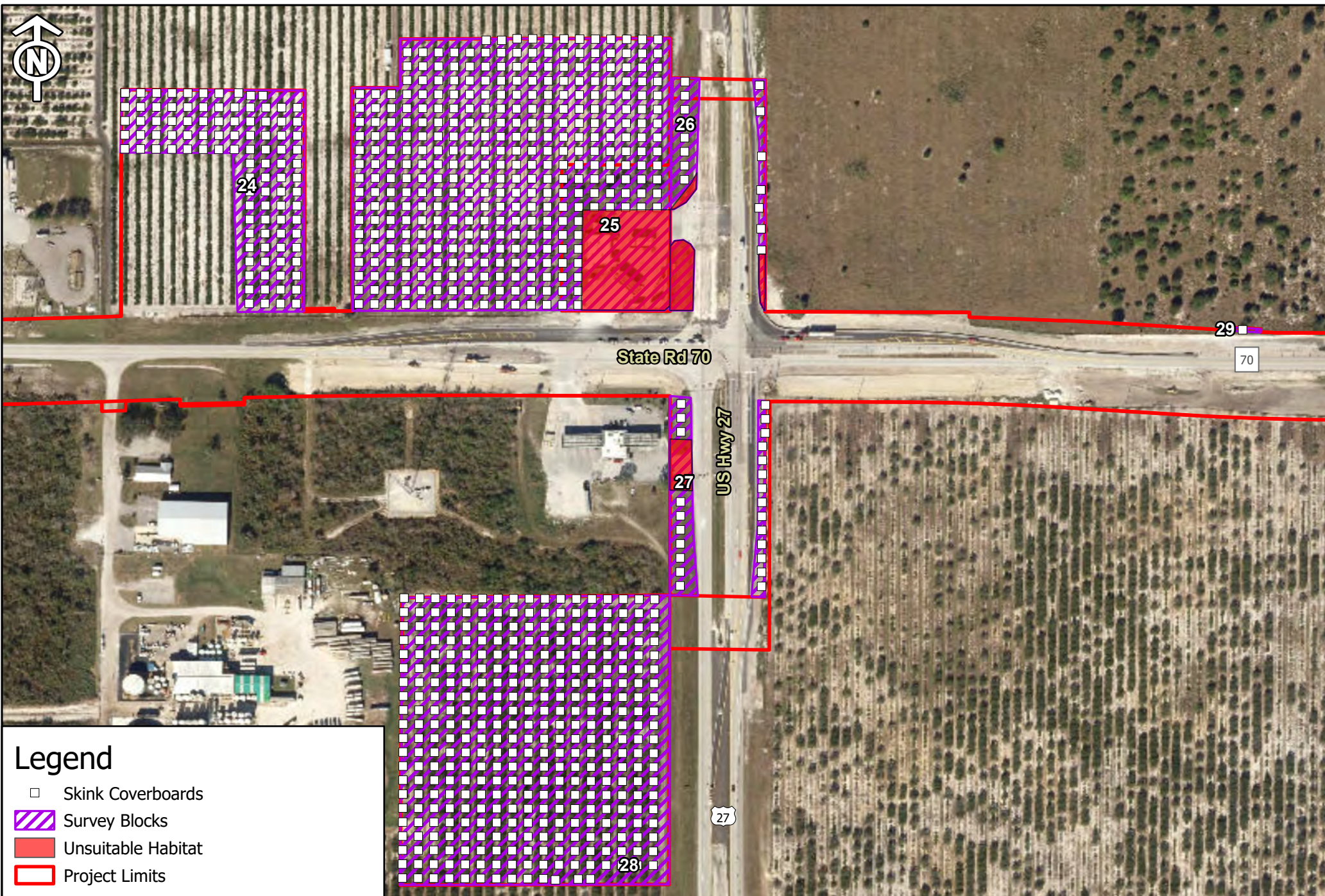
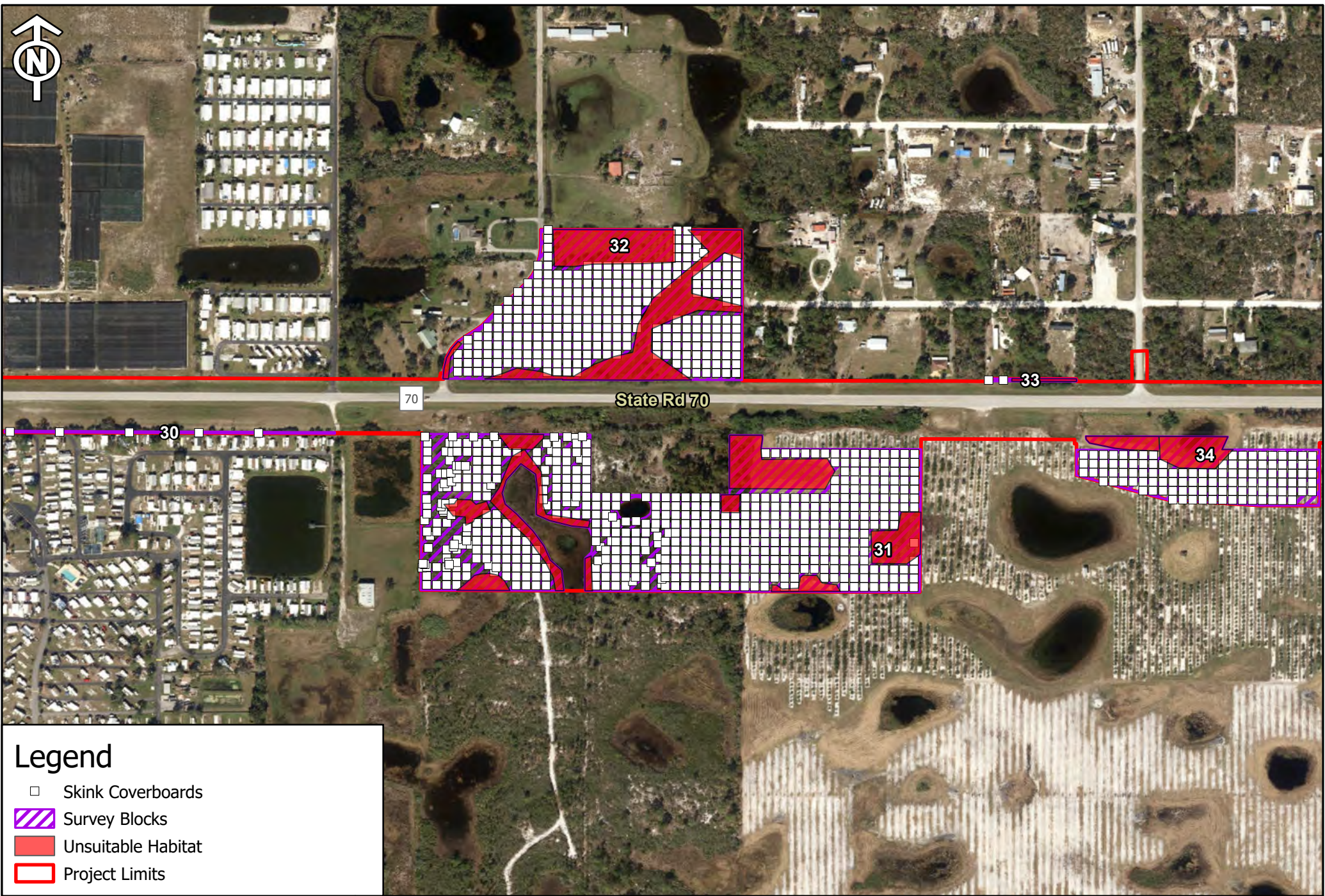
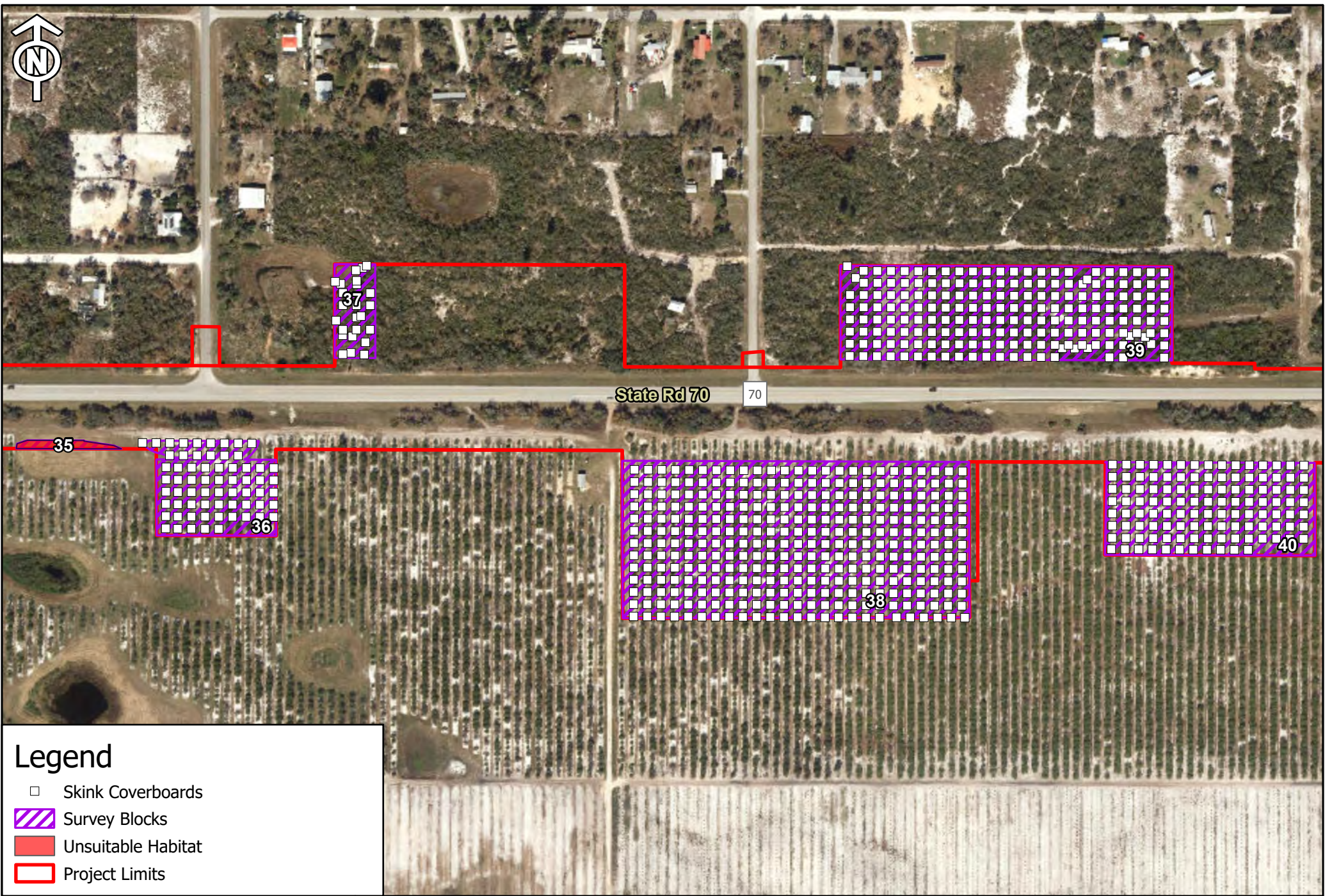


Figure 4 - 6 - Survey Blocks and Coverboard Locations
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.14 Miles







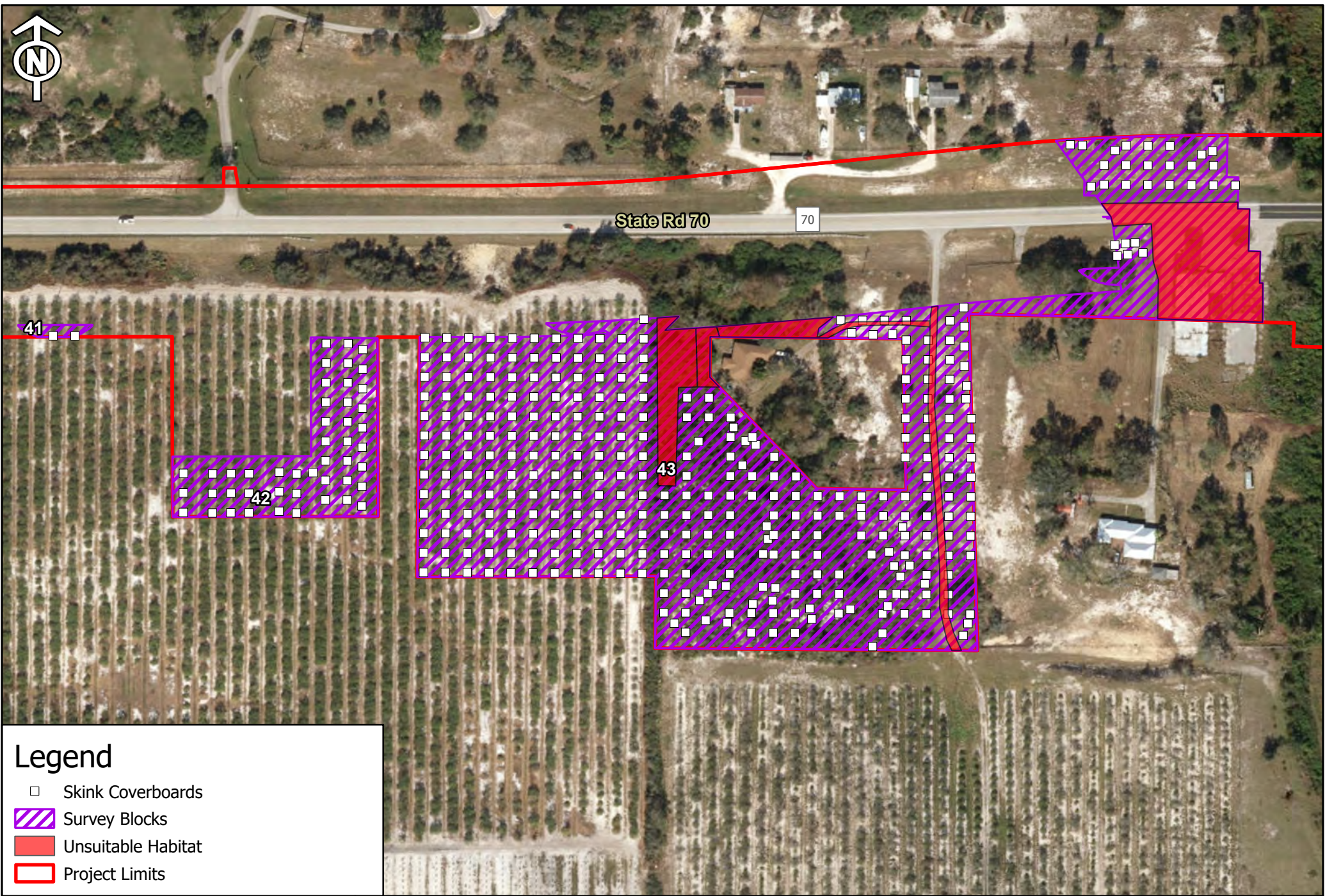
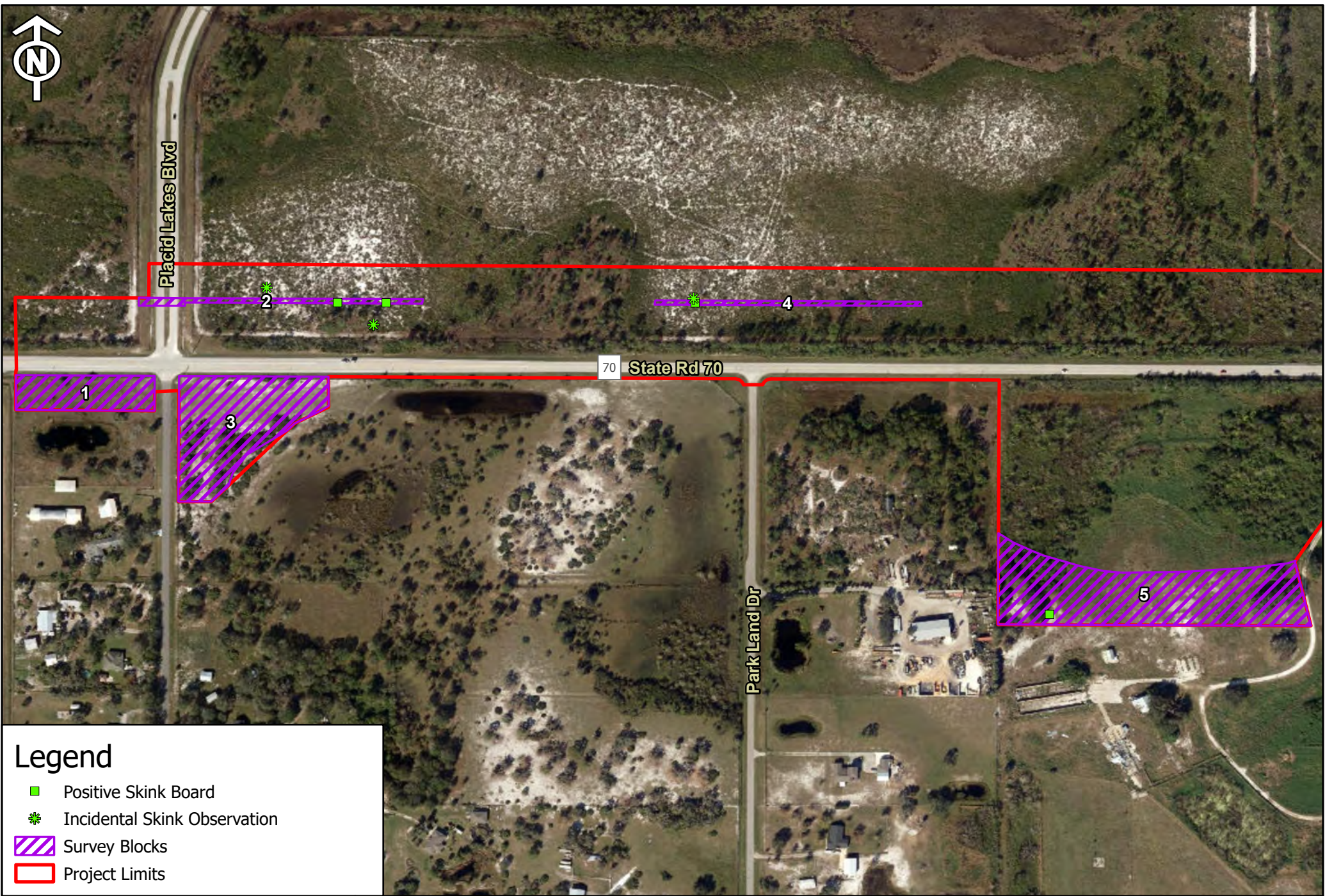


Figure 4 - 10 - Survey Blocks and Coverboard Locations
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.08 Miles





Legend

- Positive Skink Board
- ✱ Incidental Skink Observation
- ▨ Survey Blocks
- ▭ Project Limits



Figure 5 - 2 - Skink Track Observations
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.09 Miles

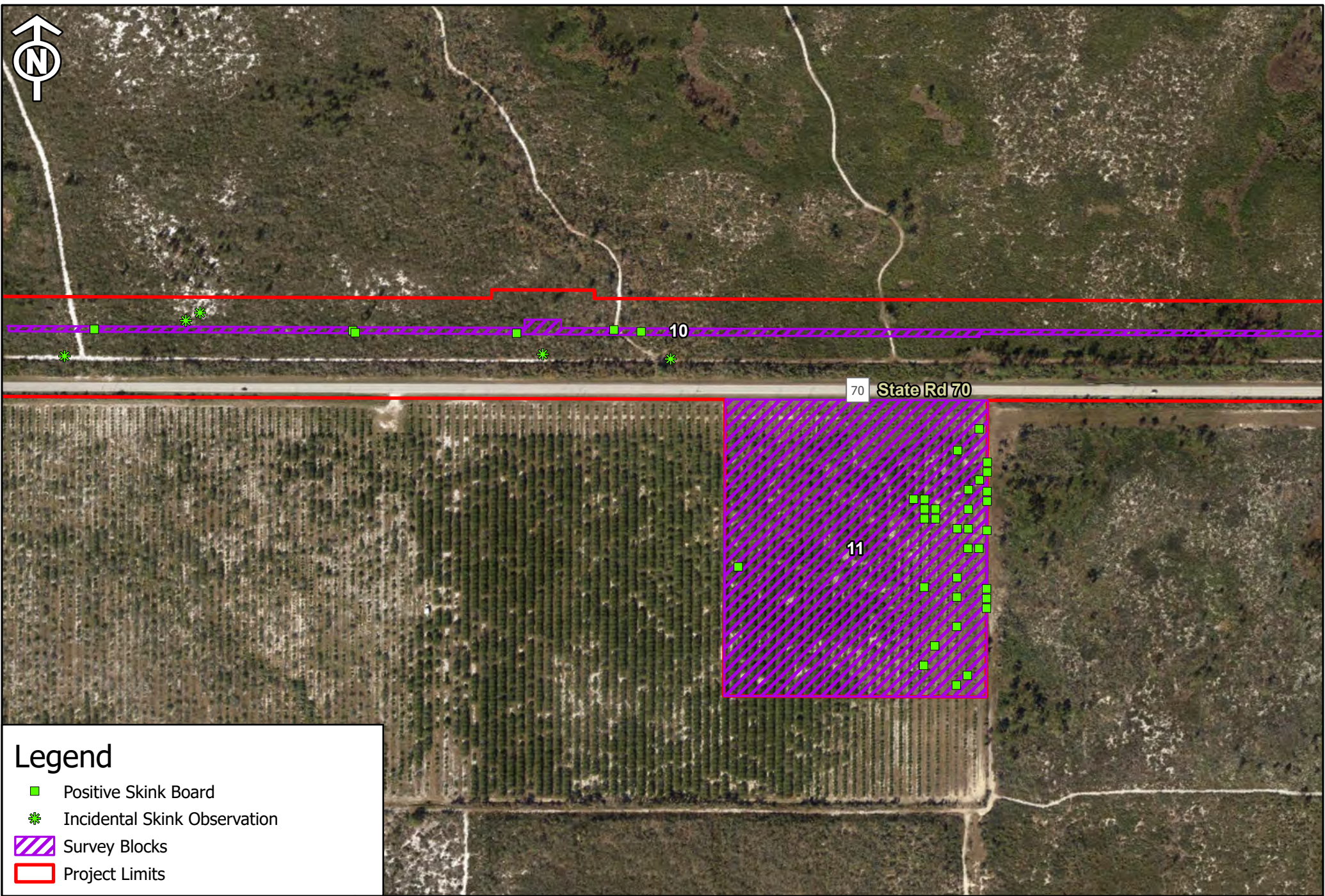


Figure 5 - 3 - Skink Track Observations
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

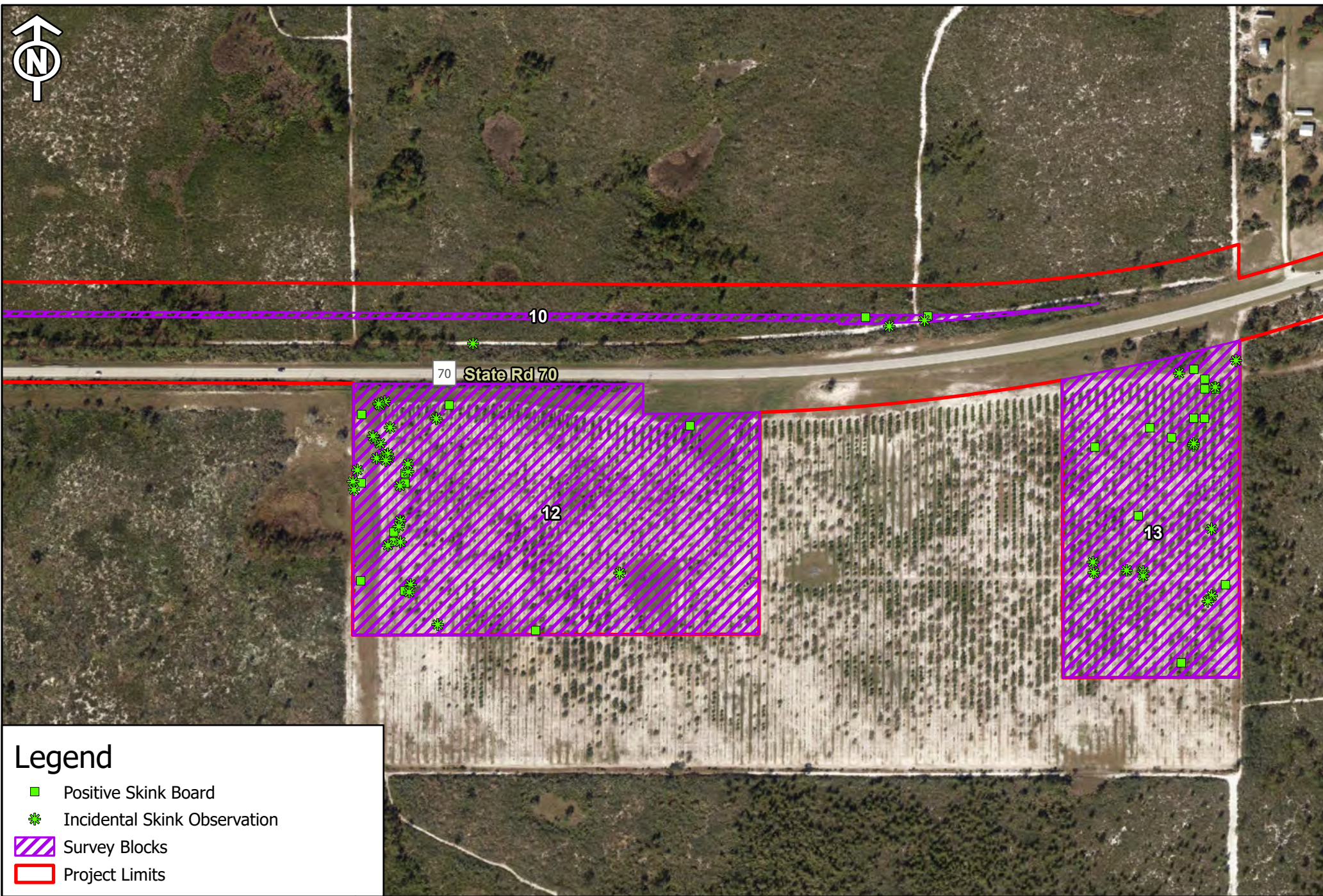


Figure 5 - 4 - Skink Track Observations
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.17 Miles



Legend

- Positive Skink Board
- ✱ Incidental Skink Observation
- ▨ Survey Blocks
- ▭ Project Limits

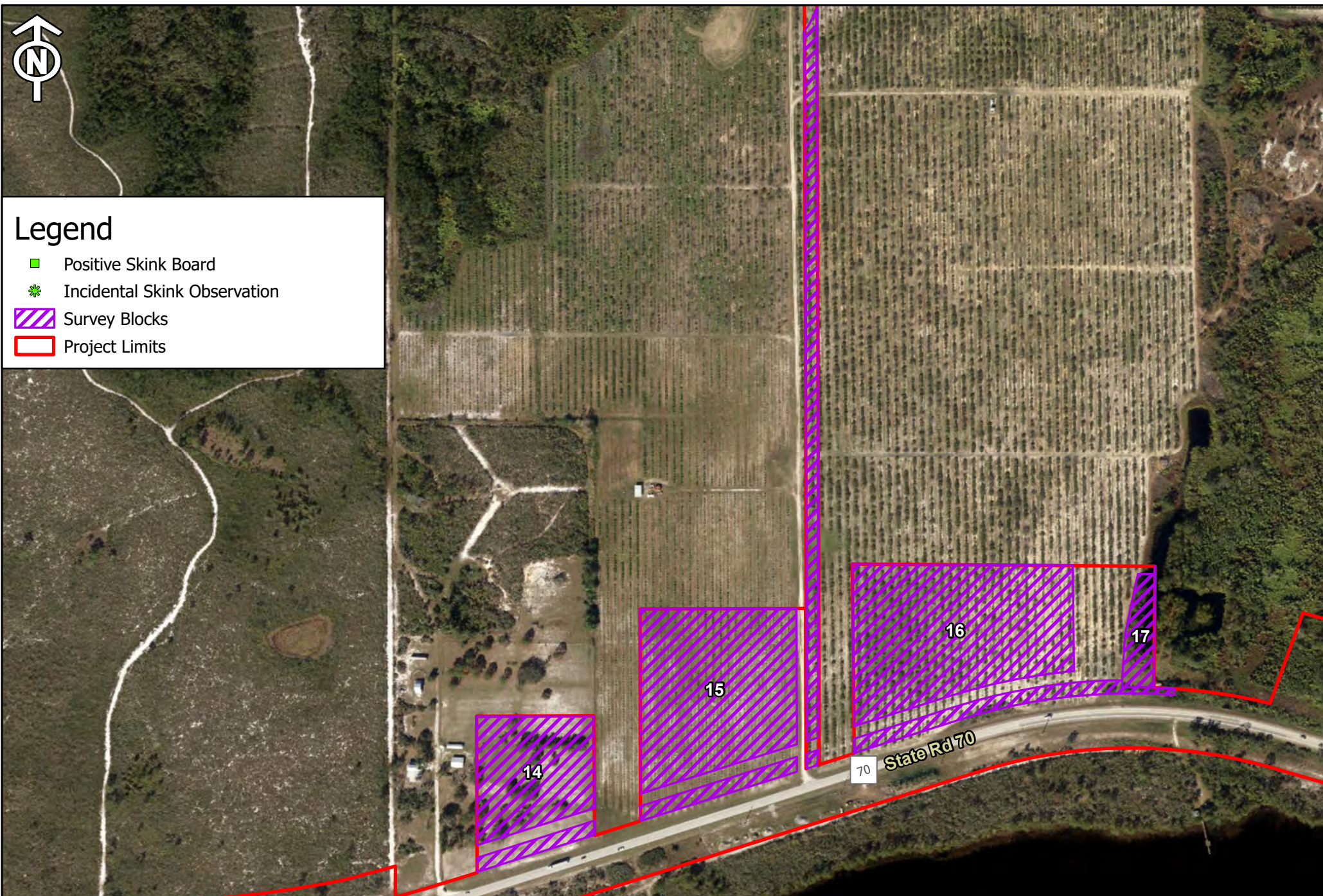


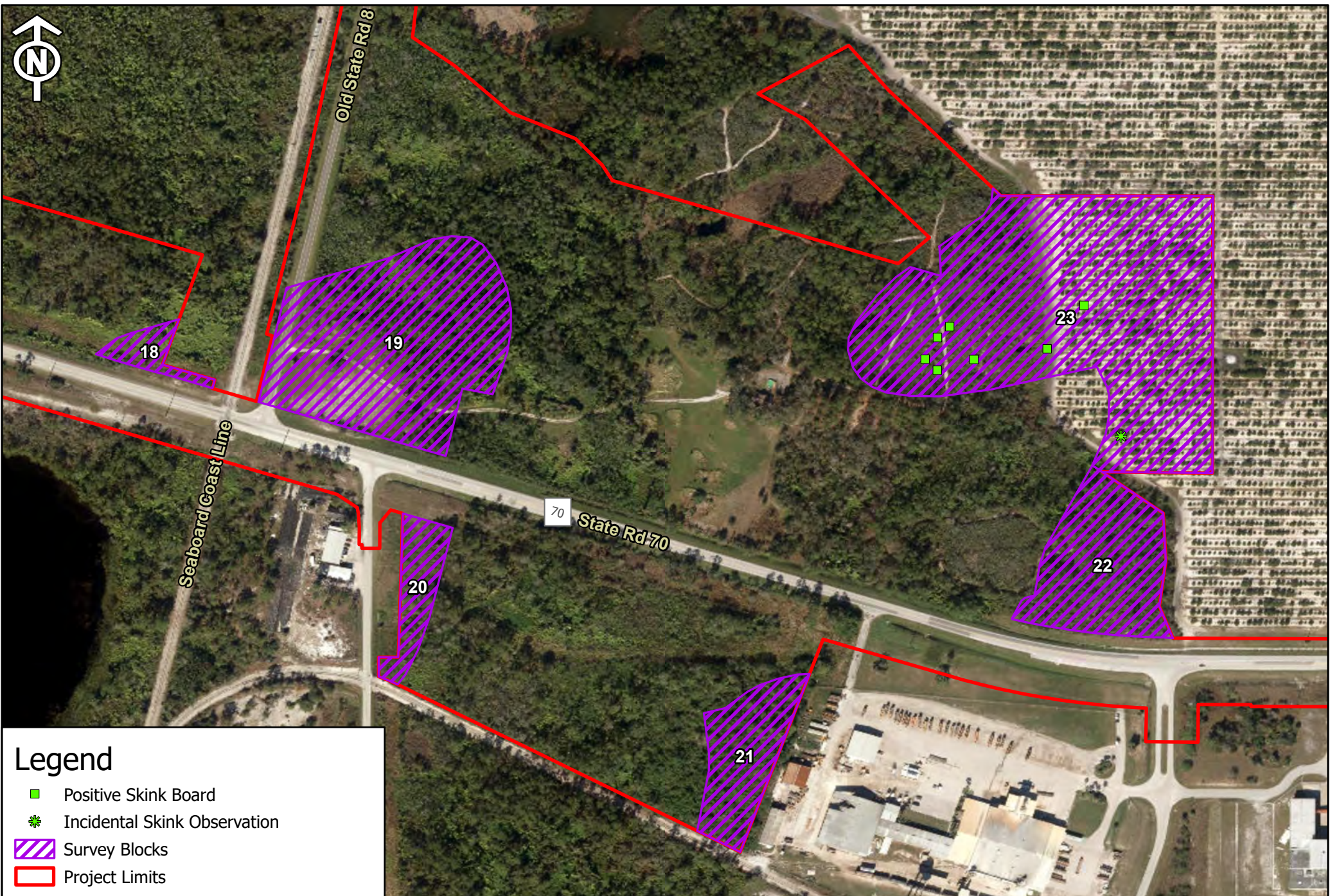
Figure 5 - 5 - Skink Track Observations

SR 70 from Jefferson Avenue to CR 29

FPID 414506-1-22-01

Highlands County, Florida

0 0.18 Miles



Legend

- Positive Skink Board
- ★ Incidental Skink Observation
- ▨ Survey Blocks
- ▭ Project Limits



Figure 5 - 6 - Skink Track Observations
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.14 Miles

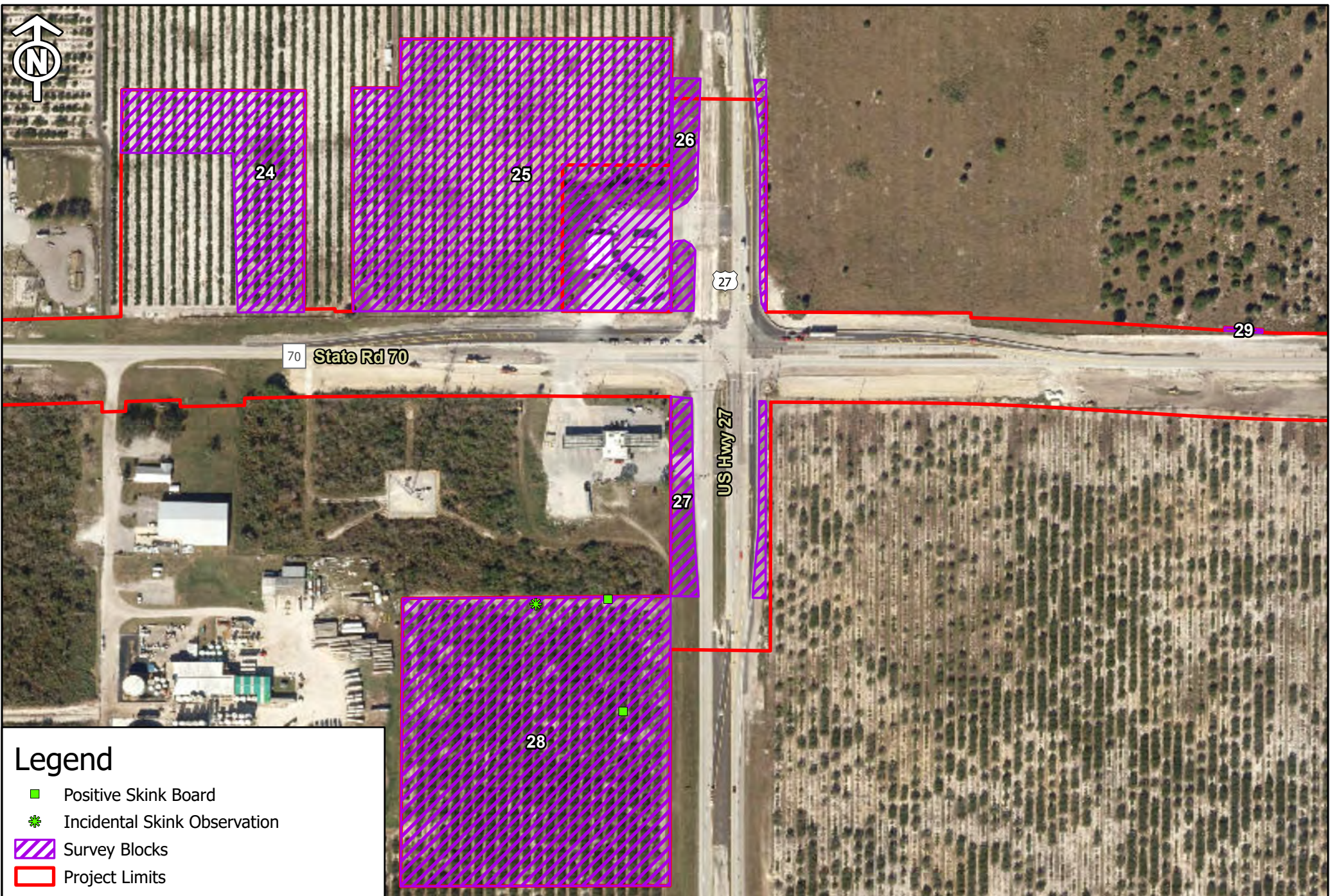
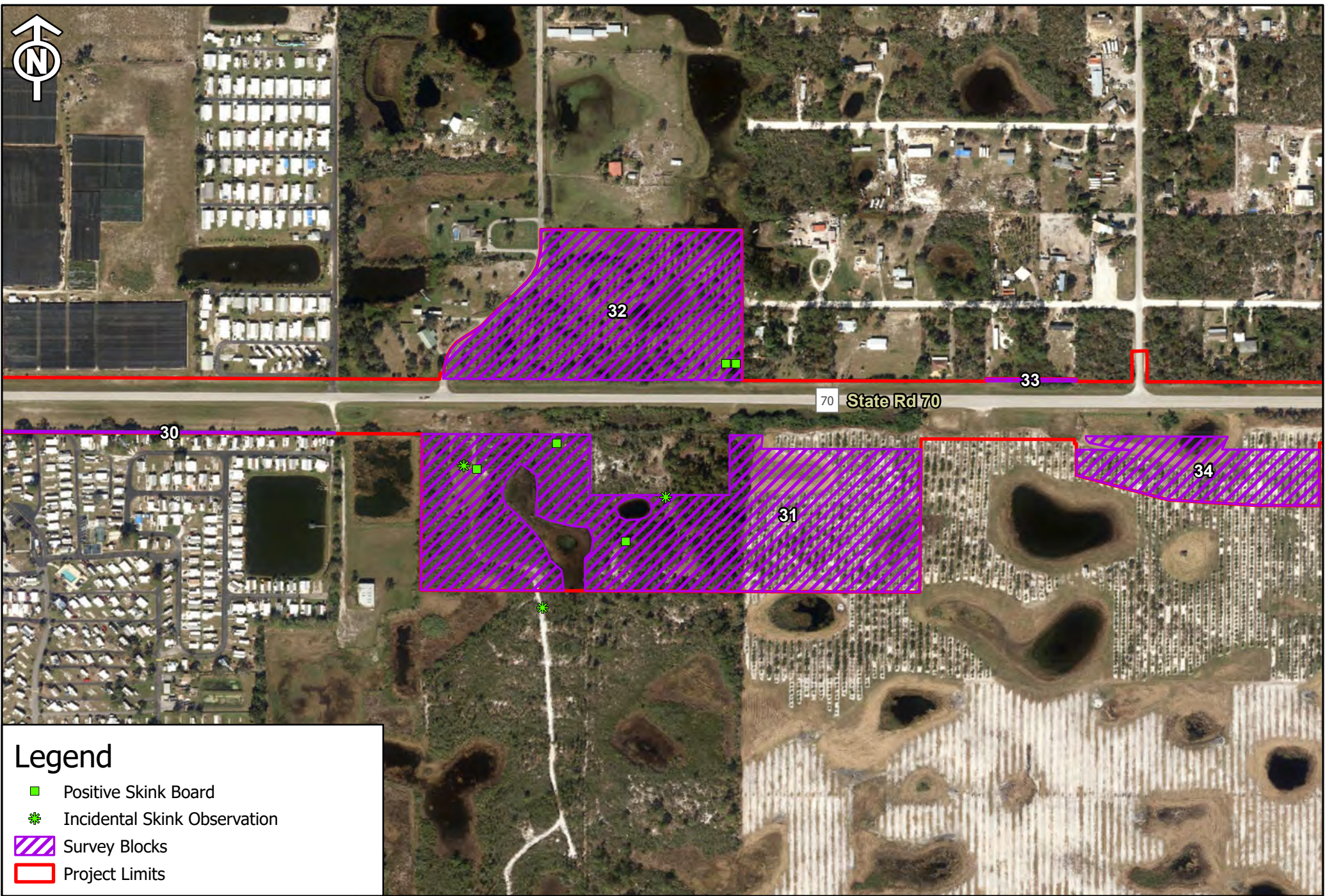


Figure 5 - 7 - Skink Track Observations
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.12 Miles



Legend

-  Positive Skink Board
-  Incidental Skink Observation
-  Survey Blocks
-  Project Limits



Figure 5 - 8 - Skink Track Observations
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.18 Miles



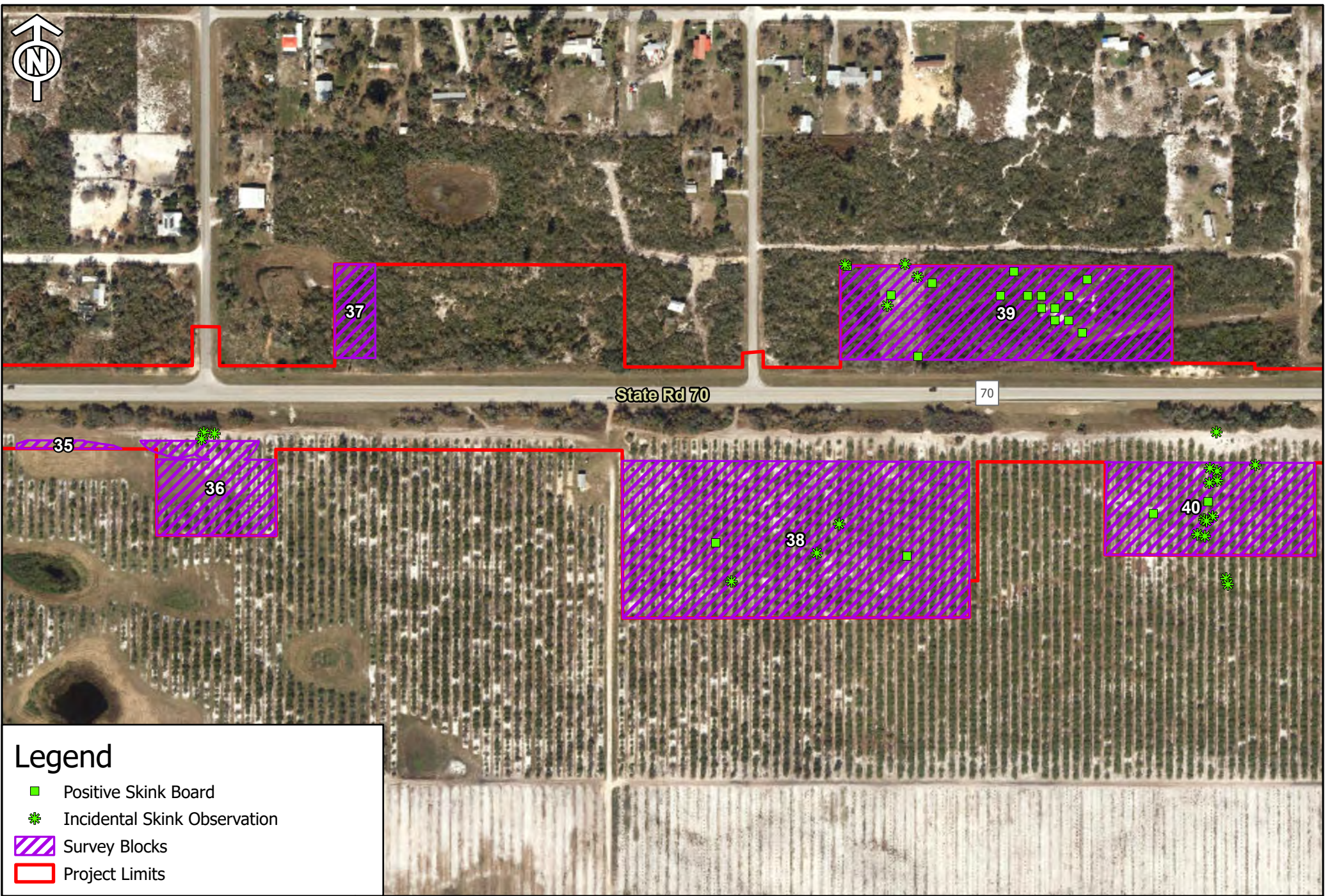


Figure 5 - 9 - Skink Track Observations
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.13 Miles

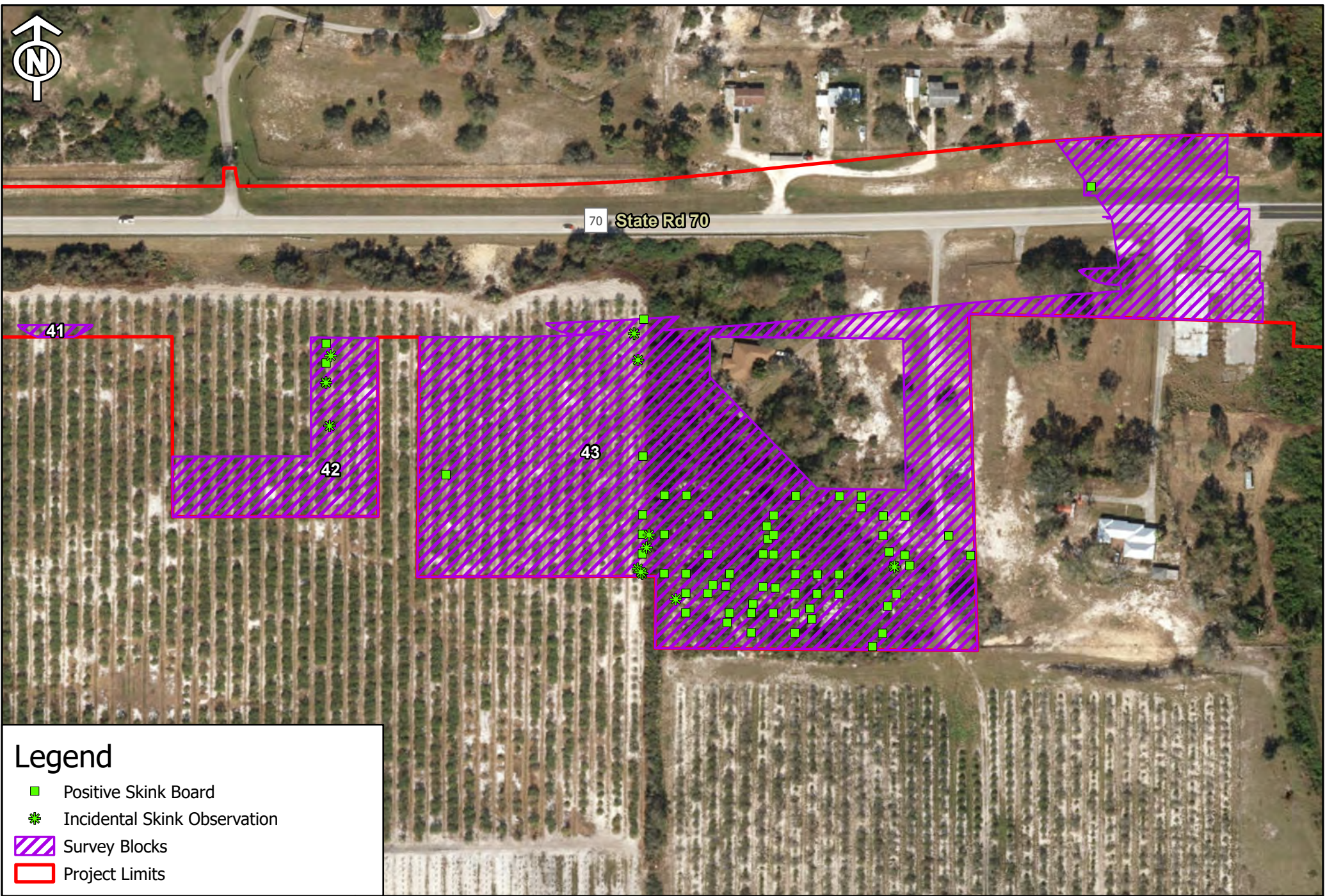


Figure 5 - 10 - Skink Track Observations
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.08 Miles

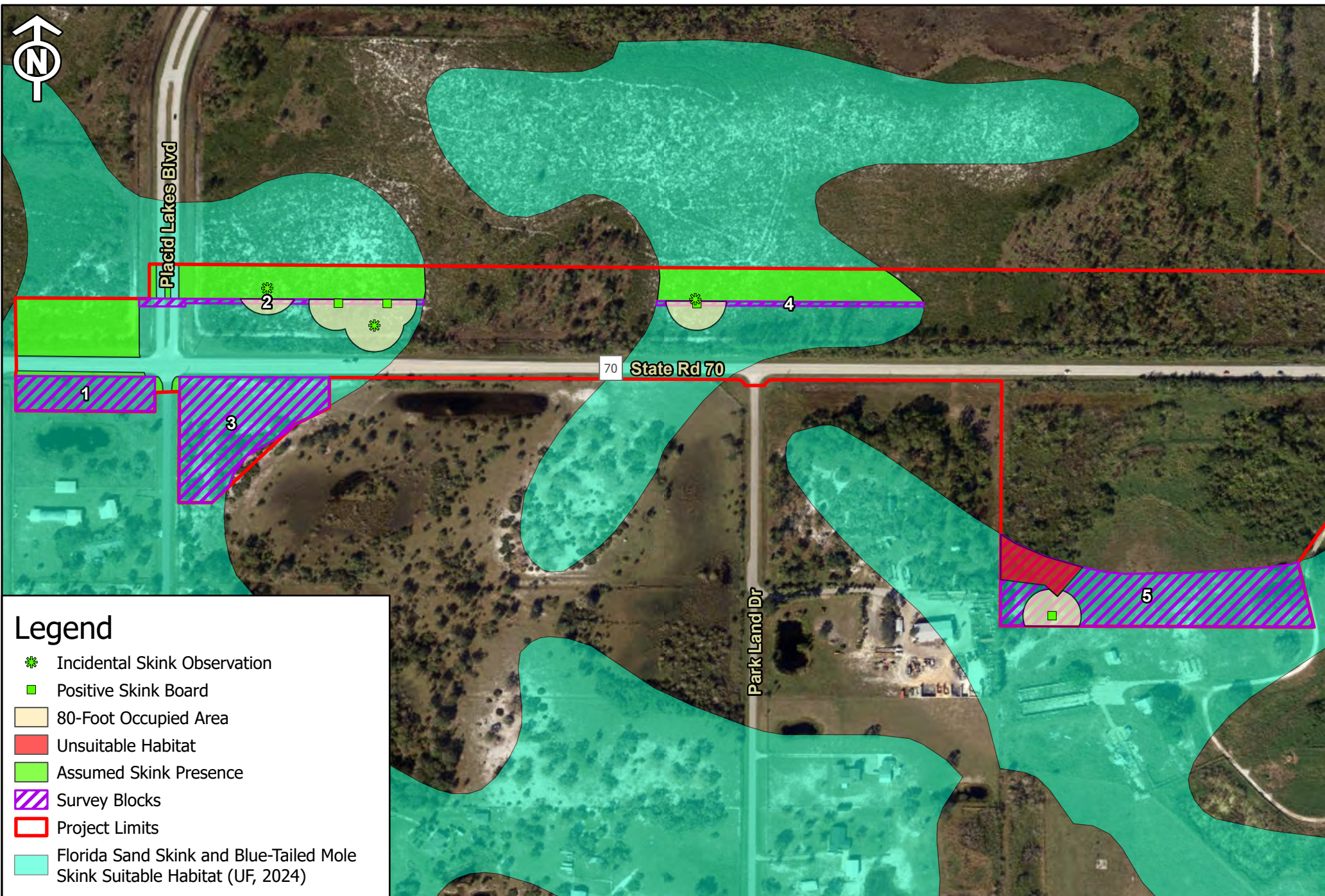


Figure 6 - 1 - Occupied Skink Habitat
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.14 Miles



Figure 6 - 2 - Occupied Skink Habitat
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.09 Miles



Legend

- Incidental Skink Observation
- Positive Skink Board
- 80-Foot Occupied Area
- Unsuitable Habitat
- Assumed Skink Presence
- Survey Blocks
- Project Limits
- Florida Sand Skink and Blue-Tailed Mole Skink Suitable Habitat (UF, 2024)



Figure 6 - 3 - Occupied Skink Habitat
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.17 Miles

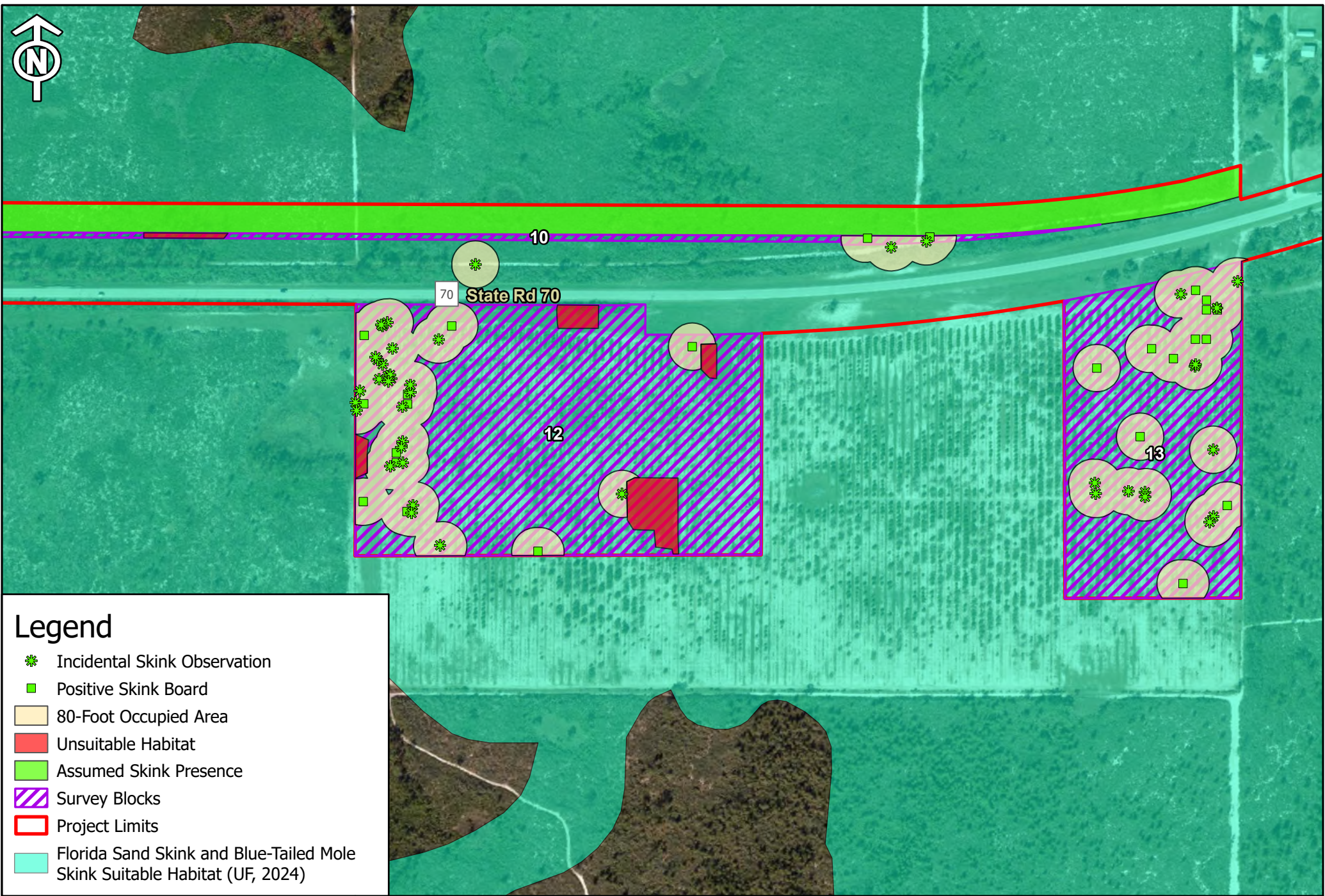


Figure 6 - 4 - Occupied Skink Habitat
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.17 Miles

A horizontal scale bar with a vertical tick mark at the 0.17-mile point, indicating the distance scale for the map.



Legend

- Incidental Skink Observation
- Positive Skink Board
- 80-Foot Occupied Area
- Unsuitable Habitat
- Assumed Skink Presence
- Survey Blocks
- Project Limits
- Florida Sand Skink and Blue-Tailed Mole Skink Suitable Habitat (UF, 2024)



Figure 6 - 5 - Occupied Skink Habitat
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.18 Miles

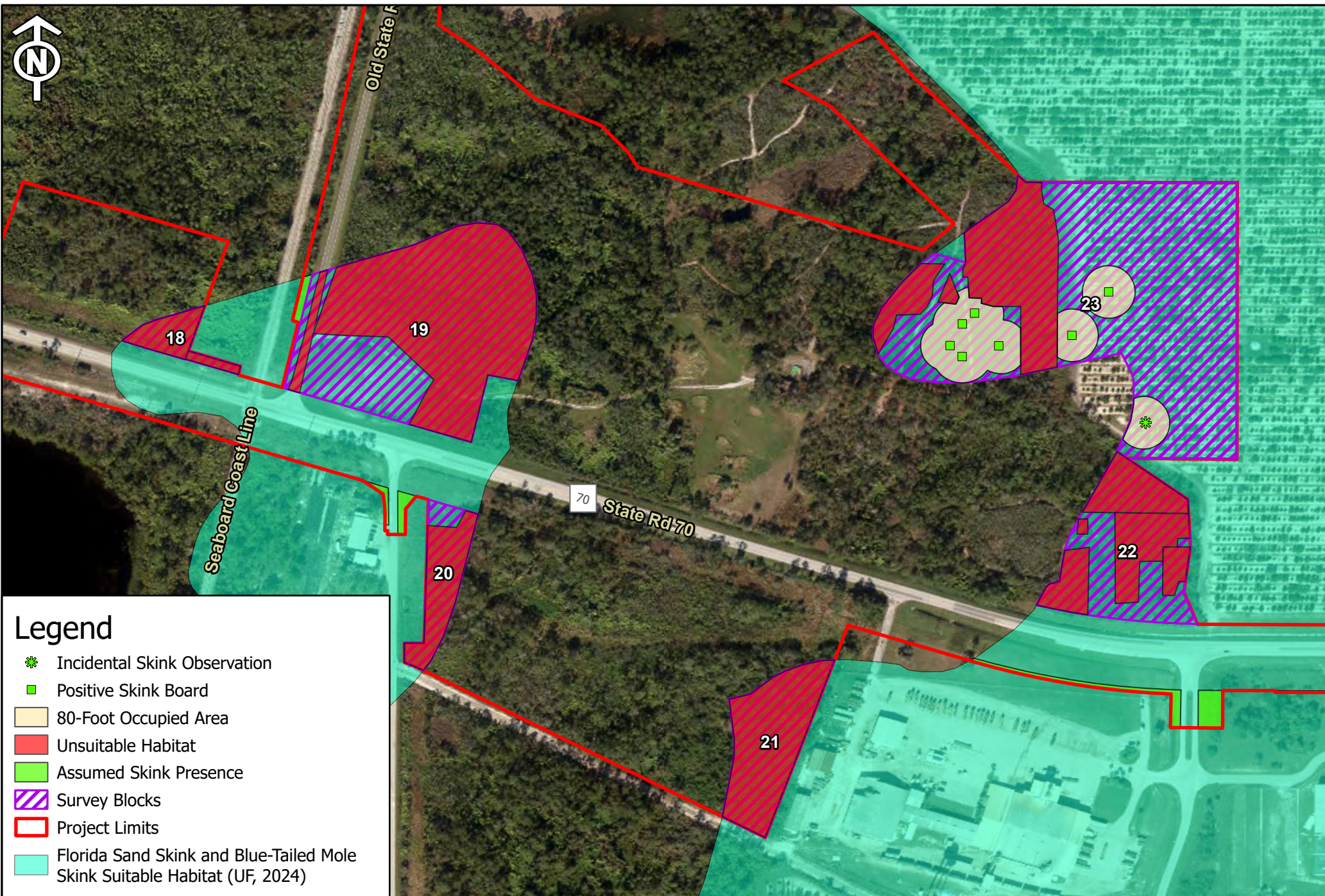






Figure 6 - 8 - Occupied Skink Habitat
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.18 Miles



Figure 6 - 9 - Occupied Skink Habitat
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.13 Miles

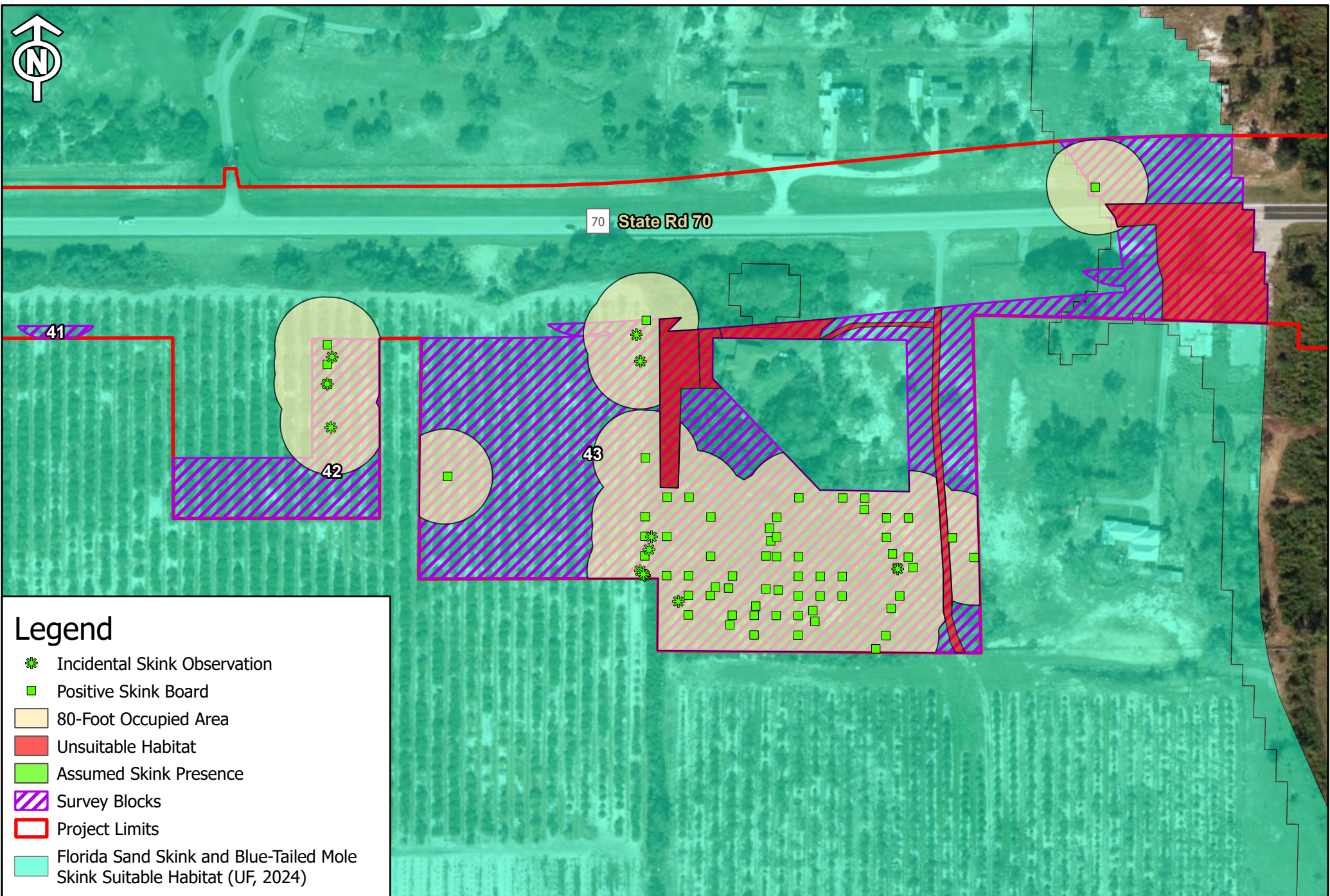


Figure 6 - 10 - Occupied Skink Habitat
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

0 0.08 Miles

A horizontal scale bar with a vertical tick mark at the 0.04-mile point, indicating a total length of 0.08 miles.

Appendix A

Survey Methodology Memorandum

memorandum

date March 17, 2025

to John Wrublik, U.S. Fish and Wildlife Service (USFWS)

cc Matthew Dockins, PE, HNTB Corporation
James Fine, HNTB Corporation
Tori Kuba, Environmental Science Associates

from Alexandra Hipolito, Environmental Science Associates
Shannon Freeman, Environmental Science Associates

subject Sand Skink and Blue-tailed Mole Skink Survey Methodology Memorandum
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Highlands County, Florida

Introduction

The sand skink (*Neoseps reynoldsi*) and blue-tailed mole skink (*Eumeces egregius lividus*) were federally designated as endangered species by the U.S. Fish and Wildlife Service (USFWS) in 1987 and are protected by the Endangered Species Act, as amended (16 U.S. Code (U.S.C.) 1531-1544, 87 Stat. 884). The project falls within the USFWS Consultation Area (CA) for both skink species and are within mapped skink suitable habitat. The geography and elevations throughout the project area is above 80 feet and suitable skink soils (excessively drained, well-drained, and moderately well-drained sandy soils) are present. Thus, a sand skink and blue-tail mole skink coverboard survey was determined to be necessary for the project. This technical memorandum provides a summary of the proposed survey methodology to determine the potential for the presence of the federally listed sand skink and blue-tailed mole skink within the limits of the SR 70 from Jefferson Ave to CR 29 proposed mainline and pond sites (**Figure 1**).

Preliminary Data Collection

A comprehensive literature and Geographic Information System (GIS) database search was conducted for the project area to determine where appropriate geography, elevations, and suitable soils for the species occur. The literature and database search included the following: U.S. Department of Agricultural (USDA), Natural Resources Conservation Service (NRCS), Web Soil Survey, NRCS Soil Survey of Highlands County (1989); 2020 Southwest Florida Water Management District (SWFWMD) Land Use Land Cover spatial data, 2017-2019 South Florida Water Management District (SWFWMD) Land Use Land Cover spatial data, 2023 USFWS National Wetlands Inventory spatial data, USFWS Peninsular Florida Species Conservation and Consultation Guide – Sand Skink and Blue-tailed (Bluetail) Mole Skink, dated December 2023 (USFWS 2023), USFWS Sand Skink and Blue-tail Mole Skink Consultation Area spatial data, and current aerial imagery.

Based on this preliminary protected species data collection effort, sand skink and blue-tail mole skink findings include the following:

- The project falls within the USFWS sand skink and blue-tail mole skink Consultation Areas (CA);
- The project falls within the extant range of the species (Lake Wales Ridge in Highlands County);
- The project area exhibits suitable sand skink soil types (Archbold, Astatula, Daytona, Duette, Orsino, Paola, and Satellite soil series); and
- Elevations within the project area are 80 feet or greater.

Additional literature review included skink survey technical memorandums that were conducted within portions of the project mainline and pond sites (ESA, 2023; HNTB, 2024). The Florida Department of Transportation (FDOT) received approval from USFWS on September 24, 2024 that only the additional areas of right-of-way not surveyed during the 2023 and 2024 surveys would be required to be surveyed during 2025. A memorandum documenting this request and a concurrence email from USFWS are provided in **Appendix A**. ESA reviewed the prior coverboard survey maps and results to determine which areas within the project proposed mainline and pond sites were previously surveyed and which areas require coverboard surveys. A map depicting the previously surveyed areas and proposed coverboard survey areas for the 2025 spring season is included in **Figure 2**.

Proposed Field Survey Methodology

The three most important factors in determining the likelihood of presence of skinks are location, elevation, and suitable soils. The project area is located in the USFWS CAs for sand skinks and blue-tailed mole skinks. Both skink species are found in this geographic area typically at elevations 80 feet above sea level or higher. Within appropriate geographic area and elevation, skinks are found in excessively drained, well-drained, and moderately well-drained sandy soils. Soil types considered suitable for skinks include Apopka, Arredondo, Archbold, Astatula, Candler, Daytona, Duette, Florahome, Gainesville, Hague, Kendrick, Lake, Millhopper, Orsino, Paola, Pomello, Satellite, St. Lucie, Tavares, and Zuber (USFWS 2023). Areas labeled as potentially suitable for skink occurrence, depicted in **Figure 2**, include these soils, per the December 2023 guidance updates from USFWS.

Habitat is also a factor in determining whether skinks may be present. Optimal skink habitat consists of scrub, sandhill, or xeric hammock natural communities. These habitats may be degraded by human impacts and still support skinks. Skinks have been found in degraded conditions, including overgrown scrub, pine plantation, citrus grove, old field, or pasture, where soil types are suitable regardless of vegetative cover. As a result, habitat condition is of secondary importance in determining whether a site is occupied by skinks and vegetation does not preclude coverboard placement. Furthermore, if a site has suitable soils at the appropriate elevation, does not have a thick duff layer, and is within the counties where skinks are known to occur, there is a likelihood of presence, and potential effects to skinks should be considered. However, when soils have been disturbed, compacted, or vegetated with a thick root mass, making the surface of the soils no longer loose and “swimmable,” skinks are less likely to persist.

Following the analysis for which areas within the project mainline and pond sites require coverboard surveys, potentially suitable habitat for skink occurrence was determined and is depicted in **Figure 3**. These areas meet the criteria for location, elevation, and suitable soils, as discussed in the previous section and as outlined in USFWS Peninsular Florida Species Conservation and Consultation Guide, Appendix A - Sand Skinks and Blue-tailed Mole Skinks Survey Protocol Peninsular Florida (USFWS 2023).

Environmental scientists familiar with native Florida flora and fauna will conduct preliminary field reviews within all areas within the project deemed as suitable skink habitat prior to initiating coverboard surveys. Proposed survey

areas may be eliminated if ground truthing surveys find any selected areas to be wetlands, ditches, or have standing water present, thus not suitable for skink inhabitation. Scientists will also perform visual pedestrian surveys in appropriate habitats to detect skink tracks. If skink tracks are observed, scientists will collect GPS coordinates using the ESRI Field Maps application and mobile phones as GPS receivers.

GPS coordinates of skink tracks will be collected and a buffer with a radius of 80 feet around the skink track will be marked to estimate the area of habitat use by skinks. These areas will not require coverboard surveys since presence is noted and assumed, as outlined in USFWS Peninsular Florida Species Conservation and Consultation Guide, Appendix B - Sand Skinks and Blue-tailed Mole Skinks Estimating Skink Habitat Use on a Project Site Peninsular Florida (USFWS 2023).

Coverboard surveys for the project will be conducted during the spring survey season from March 1 through May 15, 2025. The last day to deploy coverboards will be April 17, 2025. Coverboards will be placed within suitable soil types at a minimum density of 100 coverboards per hectare (40 per acre). **Figure 3** depicts the total number of coverboards required per survey block. An approximate total of 7,993 coverboards will be deployed within survey blocks designated throughout the project mainline and pond sites, based on the desktop analysis of soil types and habitats within the project areas. Following the results of the pedestrian survey, survey blocks will be reassessed and the number of required coverboards recalculated to take into account any detected skink tracks and the associated areas of habitat use. During deployment, each coverboard will be labeled by the block number and a unique identification number. GPS coordinates for each coverboard will be collected by project biologists using the ESRI Field Maps application and mobile phones as GPS receivers. Coverboards distribution per block is presented in **Table 1**.

TABLE 1
PROPOSED COVERBOARDS PER SURVEY BLOCK

Survey Polygon	Number of Coverboards
Block 1	36
Block 2	11
Block 3	92
Block 4	8
Block 5	140
Block 6	11
Block 7	7
Block 8	11
Block 9	2
Block 10	117
Block 11	728
Block 12	919
Block 13	523
Block 14	165
Block 15	409
Block 16	367
Block 17	34

Survey Polygon	Number of Coverboards
Block 18	20
Block 19	285
Block 20	42
Block 21	78
Block 22	130
Block 23	514
Block 24	102
Block 25	383
Block 26	29
Block 27	28
Block 28	353
Block 29	1
Block 30	5
Block 31	709
Block 32	414
Block 33	3
Block 34	151
Block 35	4
Block 36	65
Block 37	23
Block 38	325
Block 39	186
Block 40	116
Block 41	2
Block 42	47
Block 43	398
Total	7,993

Each coverboard location (slightly larger than 2-foot by 2-foot) will be cleared of vegetation and roots using a rakes and hoes or other mechanical equipment that minimally disturbs the ground prior to placement. Additional clearing and smoothing of the coverboard locations will be conducted to ensure that each coverboard had maximum contact with exposed soil. Coverboards to be used consist of 2-foot by 2-foot by ½-inch engineered plywood. Coverboards will be labeled, and GPS points will be collected to ensure that positive skink tracks are accurately recorded. Signage stating “FDOT Wildlife Survey” will be placed adjacent to survey areas to deter human disturbance or interference.

Prior to monitoring, coverboards will be left in place for one week minimum, in order to acclimate to the natural environment. Coverboard monitoring events will take place for four consecutive weeks following installation. During the monitoring events, scientists will manually check each coverboard by carefully lifting the boards with a hoe facing away from the observing biologist (for protection in the event of venomous insects or reptiles). The

underlying soil will be observed for the presence of sinusoidal skink tracks. Following each check, the soil will be smoothed out in preparation for subsequent monitoring. If sand skink tracks or live individuals are found, the coverboard number, number of tracks, number of individuals, and weather conditions (temperature, wind speed and direction, cloud cover, and precipitation) will be recorded.

A sand skink survey technical memorandum will be prepared following the coverboard survey. The memorandum will include all results with supporting figures. An estimation of area of habitat use by the species within the project area will be determined and appropriate mitigation measures will be outlined in the memorandum.

Figures

Figure 1 – Project Location

Figure 2 – Sand Skink and Blue-tailed Mole Skink Prior and Proposed Survey Block Locations

Figure 3 – Sand Skink and Blue-tailed Mole Skink Proposed Survey Block Locations and Details



Lake Placid

Lake Grassy

Lake Ann

Seaboard Coast Line

Old State Rd 8

State Rd 70

US Hwy 27

County Road 29

Lightsey Ranch Rd

Placid Lakes Blvd

Placid View Dr

Park Land Dr

Legend

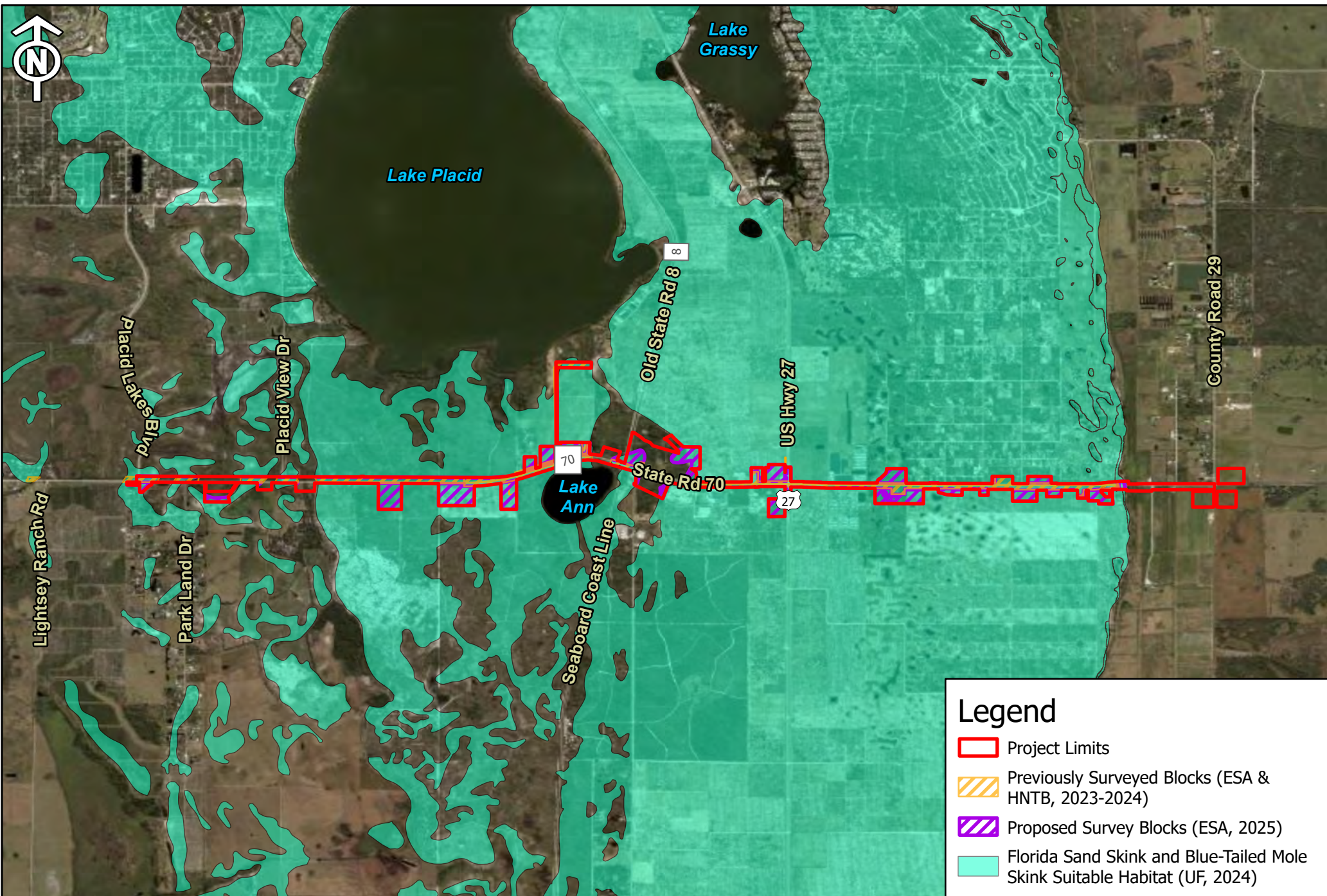
 Project Limits



SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Figure 1 - Project Location

0 1 2 Miles



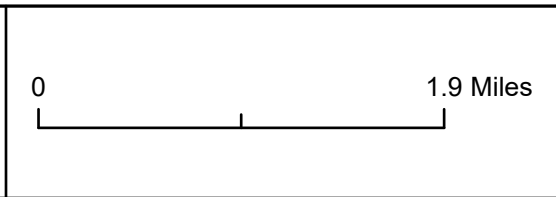


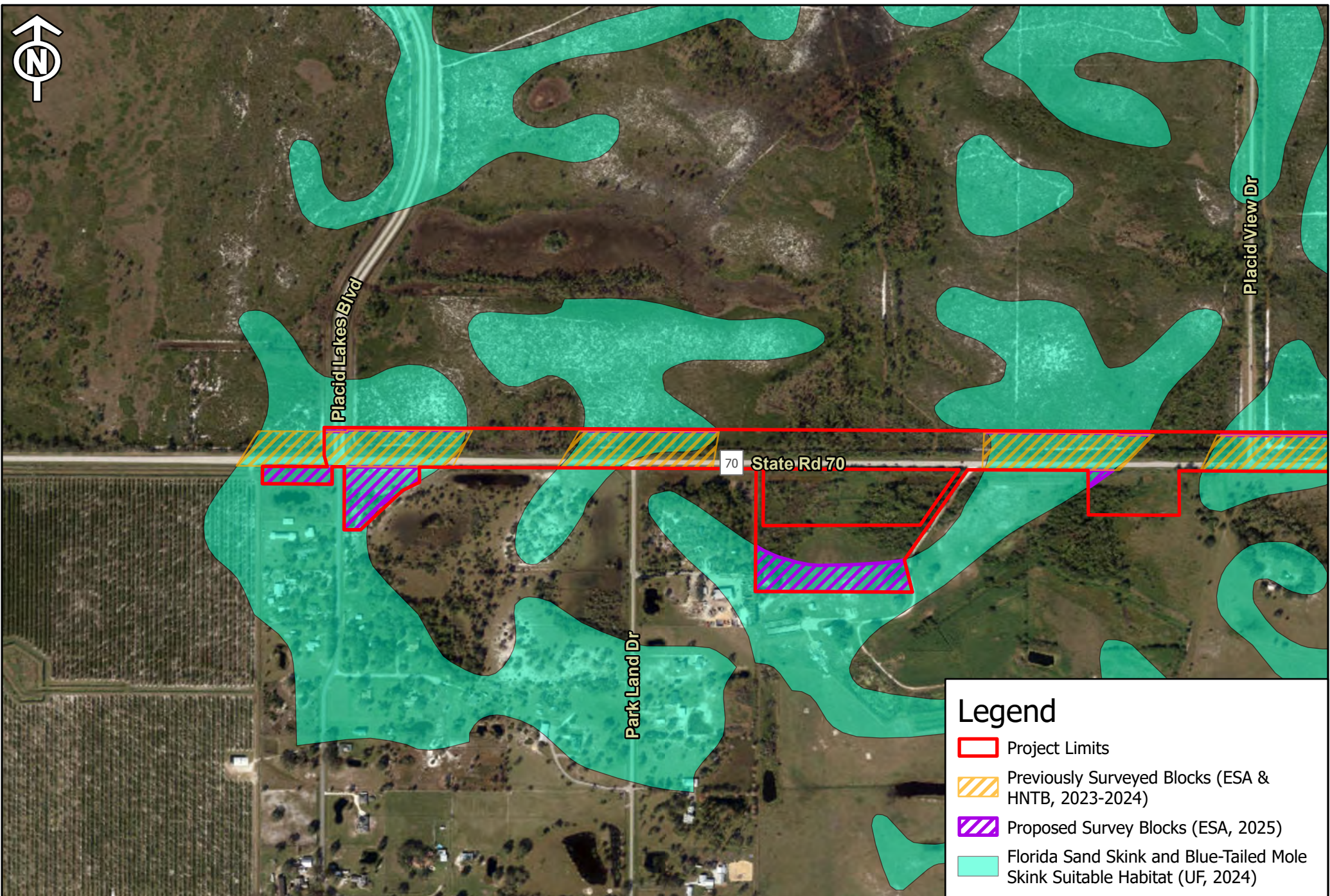
Legend

- Project Limits
- Previously Surveyed Blocks (ESA & HNTB, 2023-2024)
- Proposed Survey Blocks (ESA, 2025)
- Florida Sand Skink and Blue-Tailed Mole Skink Suitable Habitat (UF, 2024)



SR 70 from Jefferson Avenue to CR 29
 FPID: 414506-1-22-01
 Figure 2-1 - Sand Skink and Blue-tailed Mole Skink Prior and Proposed Survey Block Locations





Legend

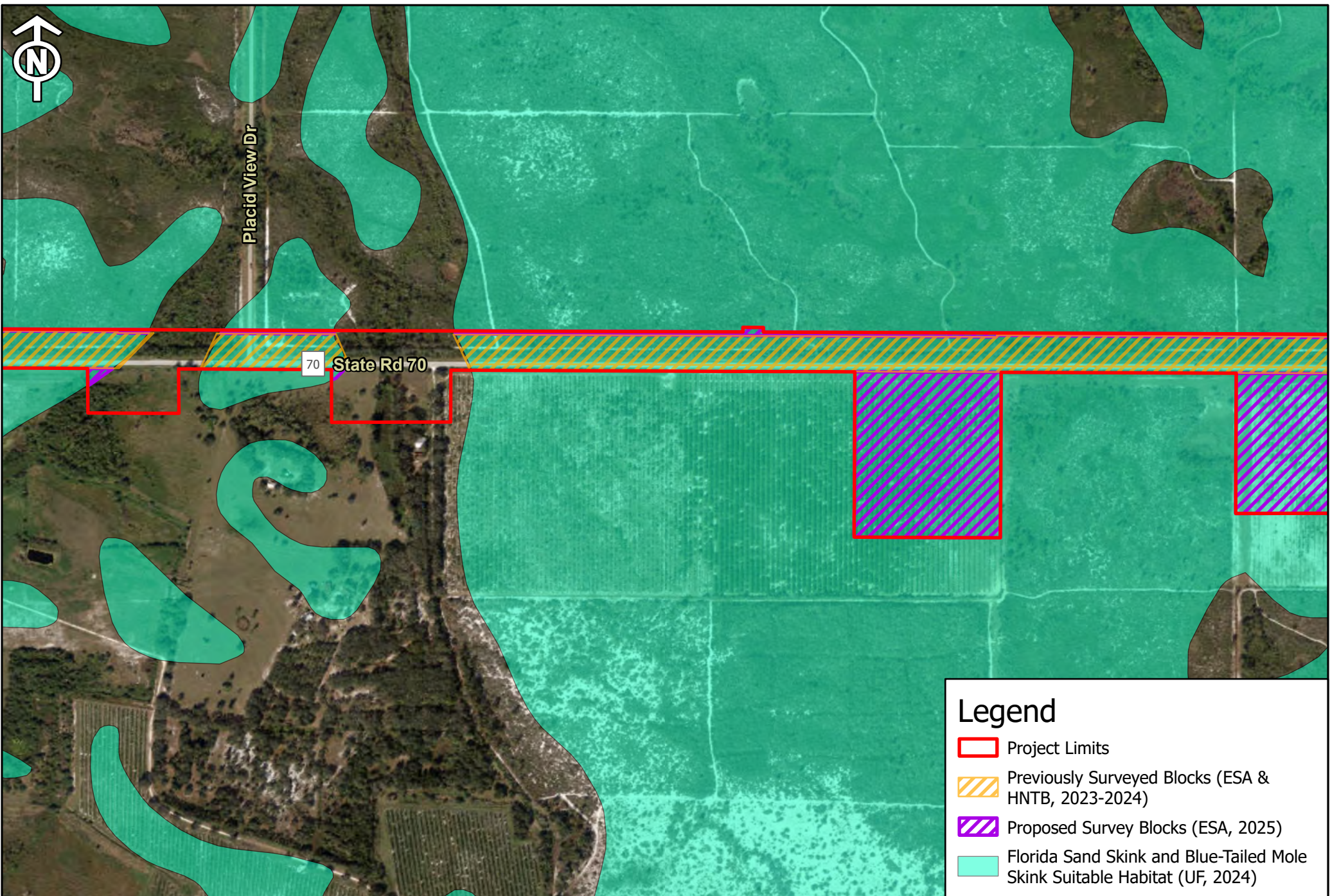
-  Project Limits
-  Previously Surveyed Blocks (ESA & HNTB, 2023-2024)
-  Proposed Survey Blocks (ESA, 2025)
-  Florida Sand Skink and Blue-Tailed Mole Skink Suitable Habitat (UF, 2024)



SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01
Figure 2-2 - Sand Skink and Blue-tailed Mole Skink Prior and
Proposed Survey Block Locations

0 0.3 Miles

A horizontal scale bar with a vertical tick mark at the 0.3-mile point.

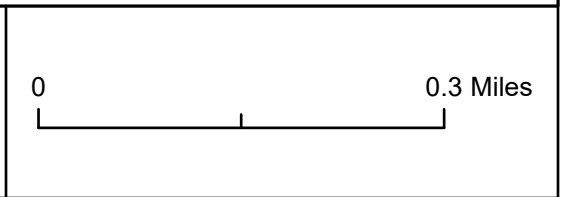


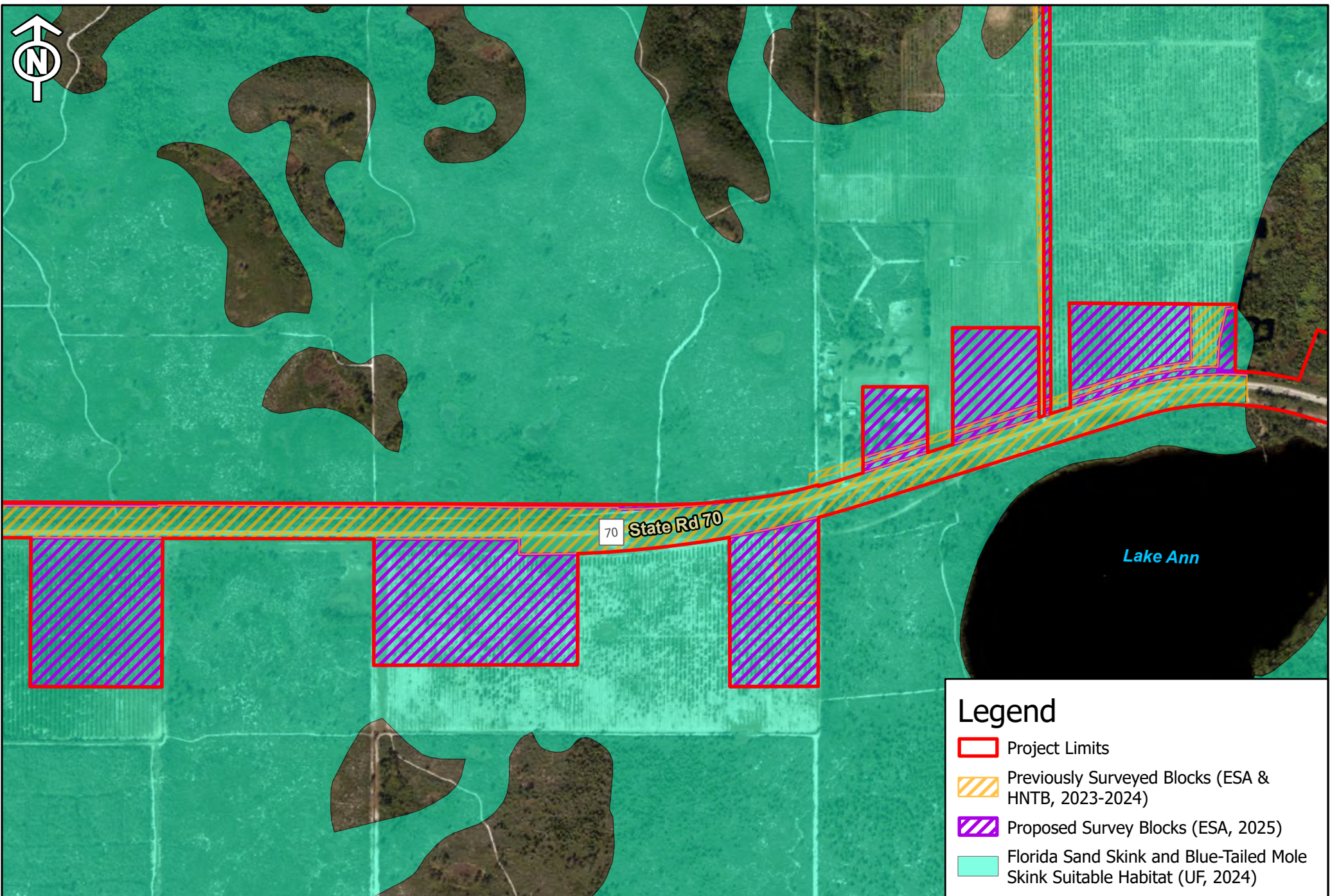
Legend

-  Project Limits
-  Previously Surveyed Blocks (ESA & HNTB, 2023-2024)
-  Proposed Survey Blocks (ESA, 2025)
-  Florida Sand Skink and Blue-Tailed Mole Skink Suitable Habitat (UF, 2024)



SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01
Figure 2-3 - Sand Skink and Blue-tailed Mole Skink Prior and Proposed Survey Block Locations



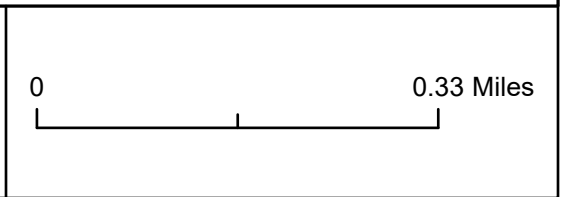


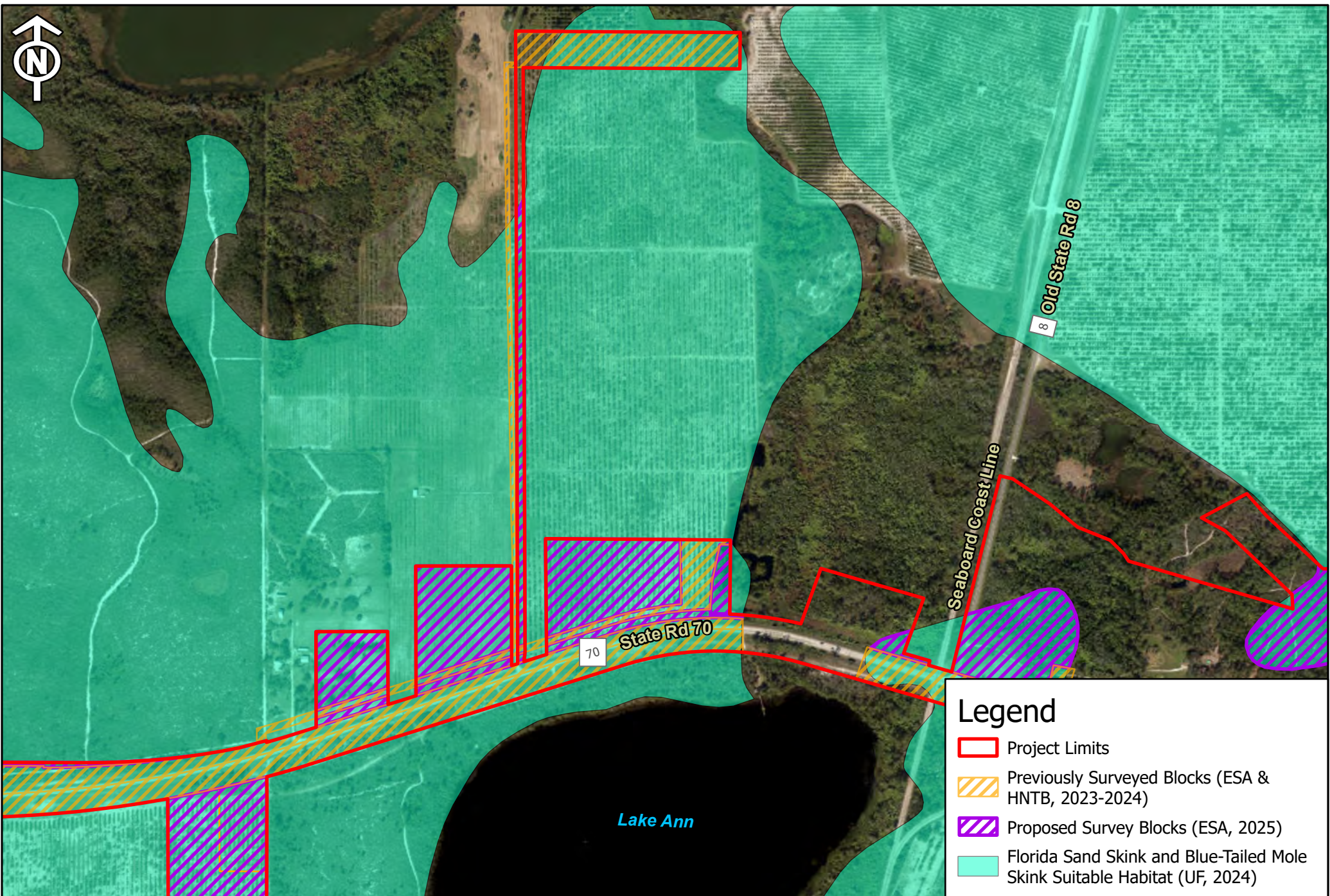
Legend

- Project Limits
- Previously Surveyed Blocks (ESA & HNTB, 2023-2024)
- Proposed Survey Blocks (ESA, 2025)
- Florida Sand Skink and Blue-Tailed Mole Skink Suitable Habitat (UF, 2024)



SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01
Figure 2-4 - Sand Skink and Blue-tailed Mole Skink Prior and Proposed Survey Block Locations





Legend

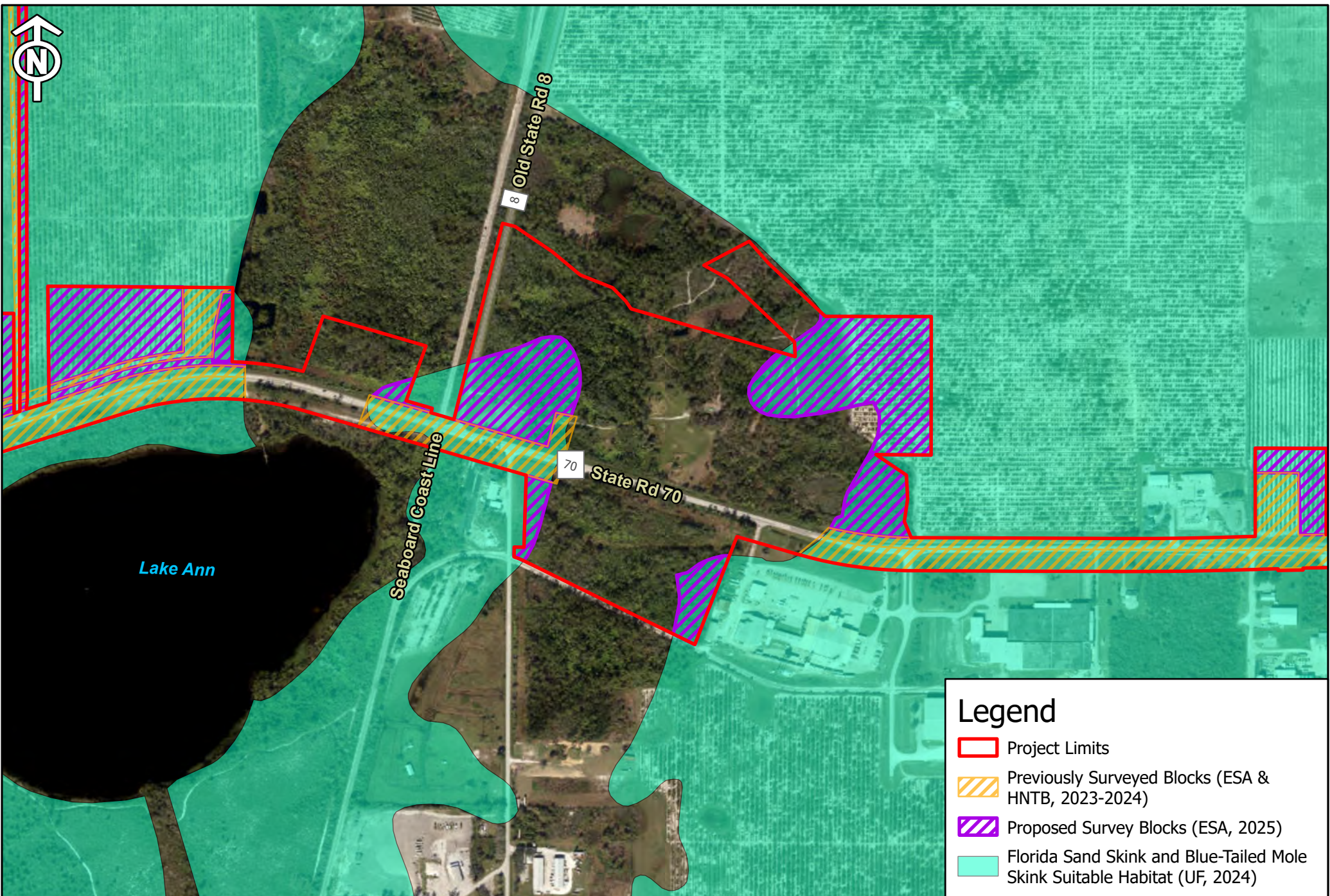
- Project Limits
- Previously Surveyed Blocks (ESA & HNTB, 2023-2024)
- Proposed Survey Blocks (ESA, 2025)
- Florida Sand Skink and Blue-Tailed Mole Skink Suitable Habitat (UF, 2024)



SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01
Figure 2-5 - Sand Skink and Blue-tailed Mole Skink Prior and
Proposed Survey Block Locations

0 0.3 Miles

A horizontal scale bar with a vertical tick mark at the 0.3-mile point.



Legend

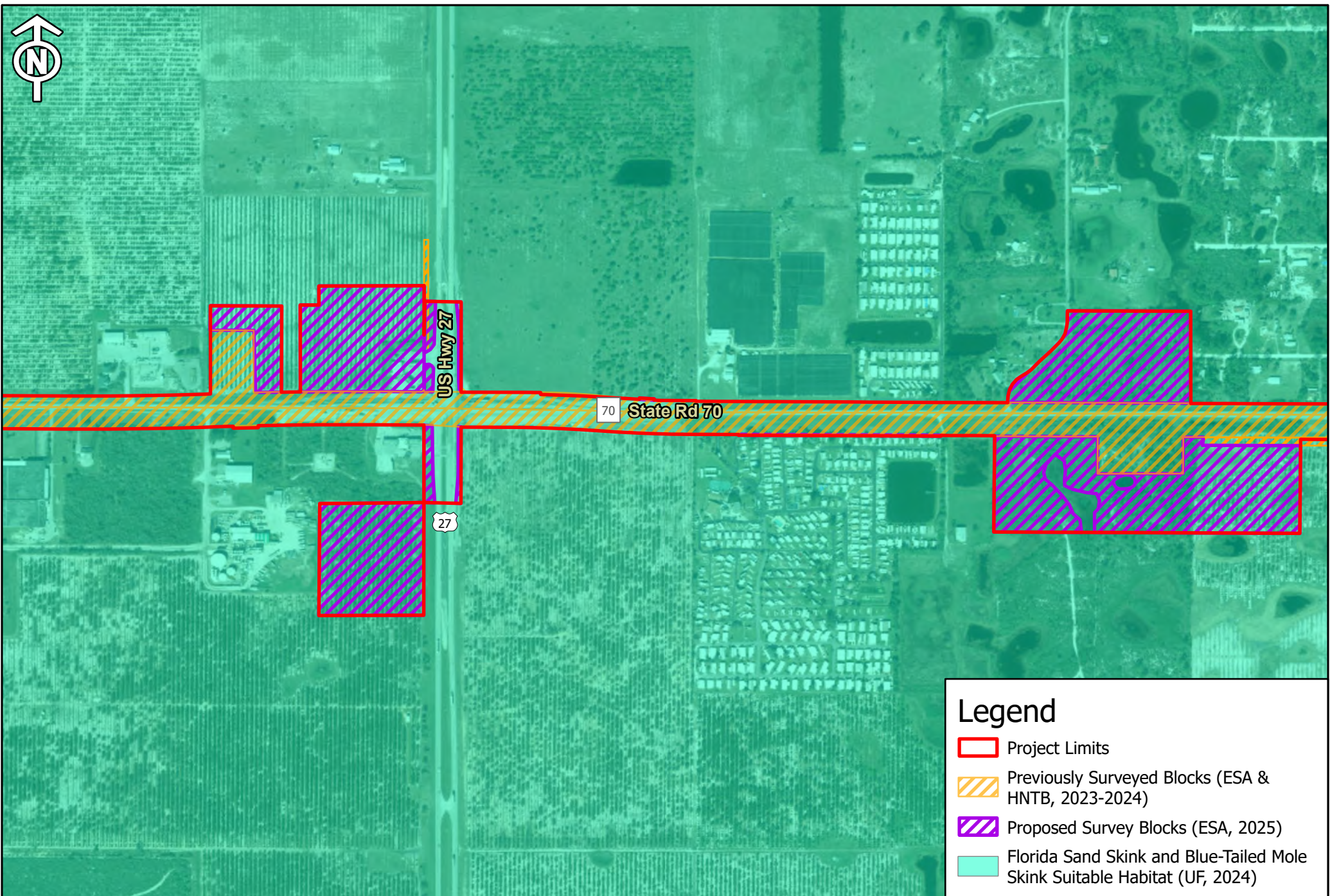
- Project Limits
- Previously Surveyed Blocks (ESA & HNTB, 2023-2024)
- Proposed Survey Blocks (ESA, 2025)
- Florida Sand Skink and Blue-Tailed Mole Skink Suitable Habitat (UF, 2024)



SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01
Figure 2-6 - Sand Skink and Blue-tailed Mole Skink Prior and
Proposed Survey Block Locations

0 0.3 Miles

A horizontal scale bar with a vertical tick mark at the 0.3-mile point.



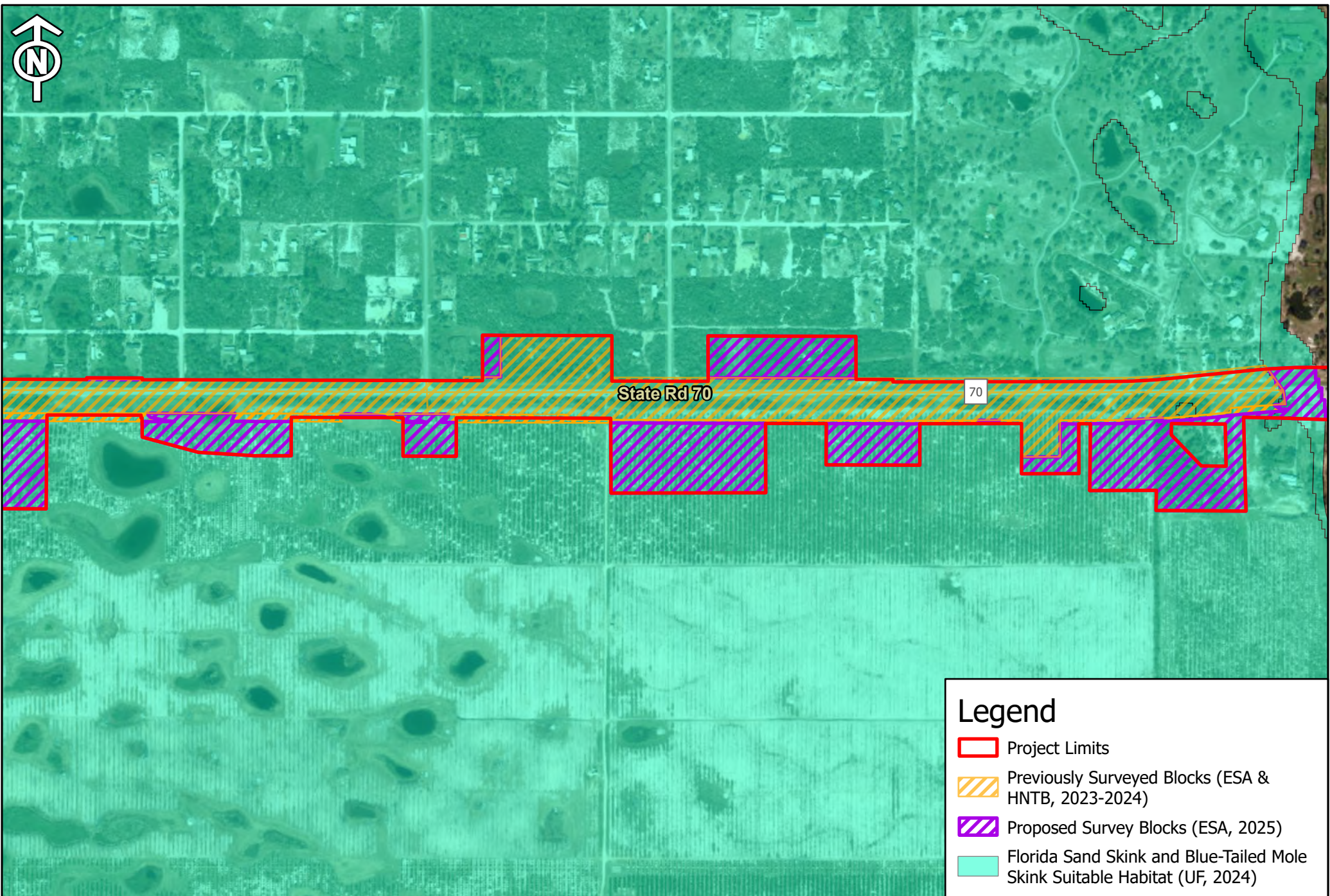
Legend

- Project Limits
- Previously Surveyed Blocks (ESA & HNTB, 2023-2024)
- Proposed Survey Blocks (ESA, 2025)
- Florida Sand Skink and Blue-Tailed Mole Skink Suitable Habitat (UF, 2024)



SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01
Figure 2-7 - Sand Skink and Blue-tailed Mole Skink Prior and Proposed Survey Block Locations





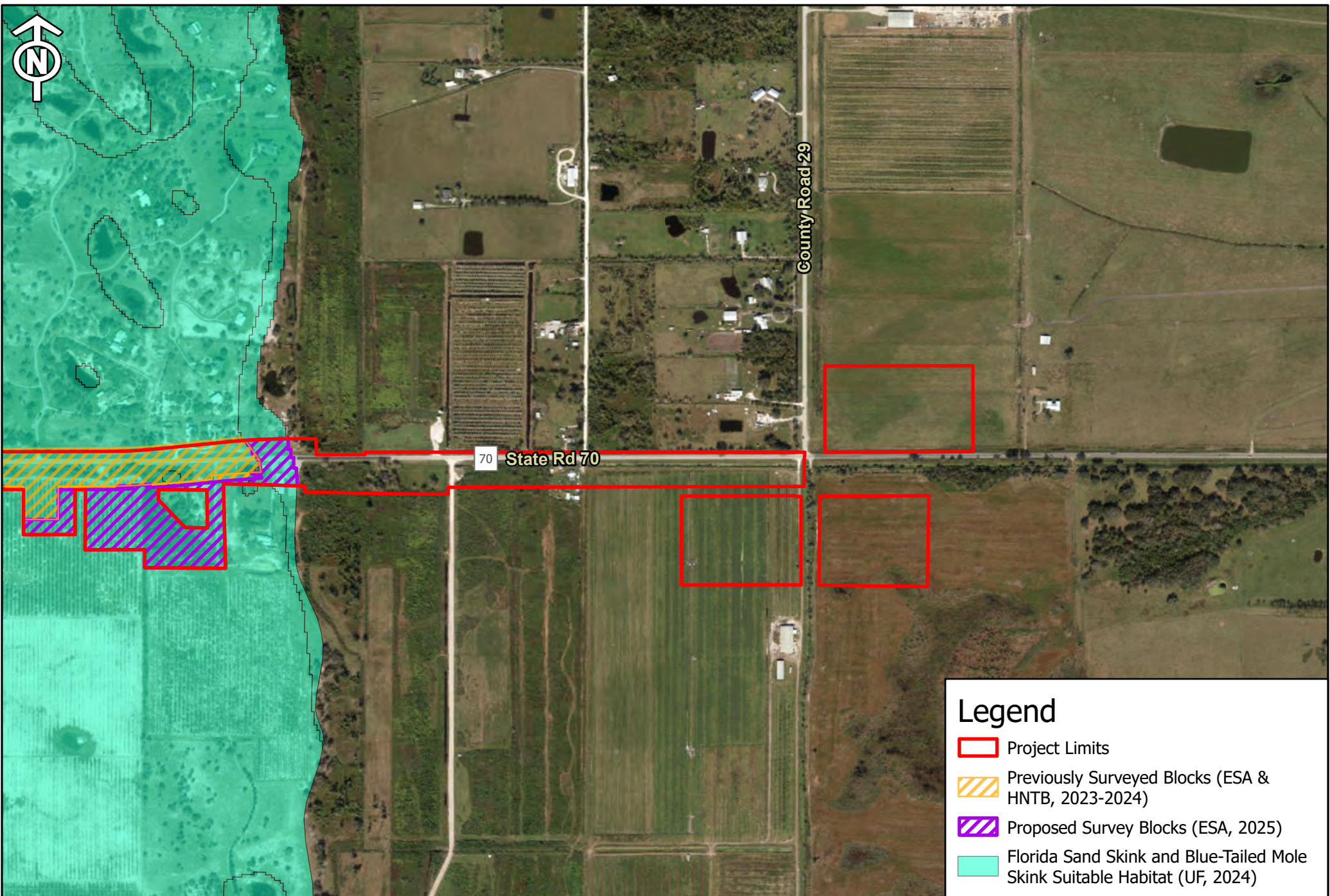
Legend

-  Project Limits
-  Previously Surveyed Blocks (ESA & HNTB, 2023-2024)
-  Proposed Survey Blocks (ESA, 2025)
-  Florida Sand Skink and Blue-Tailed Mole Skink Suitable Habitat (UF, 2024)



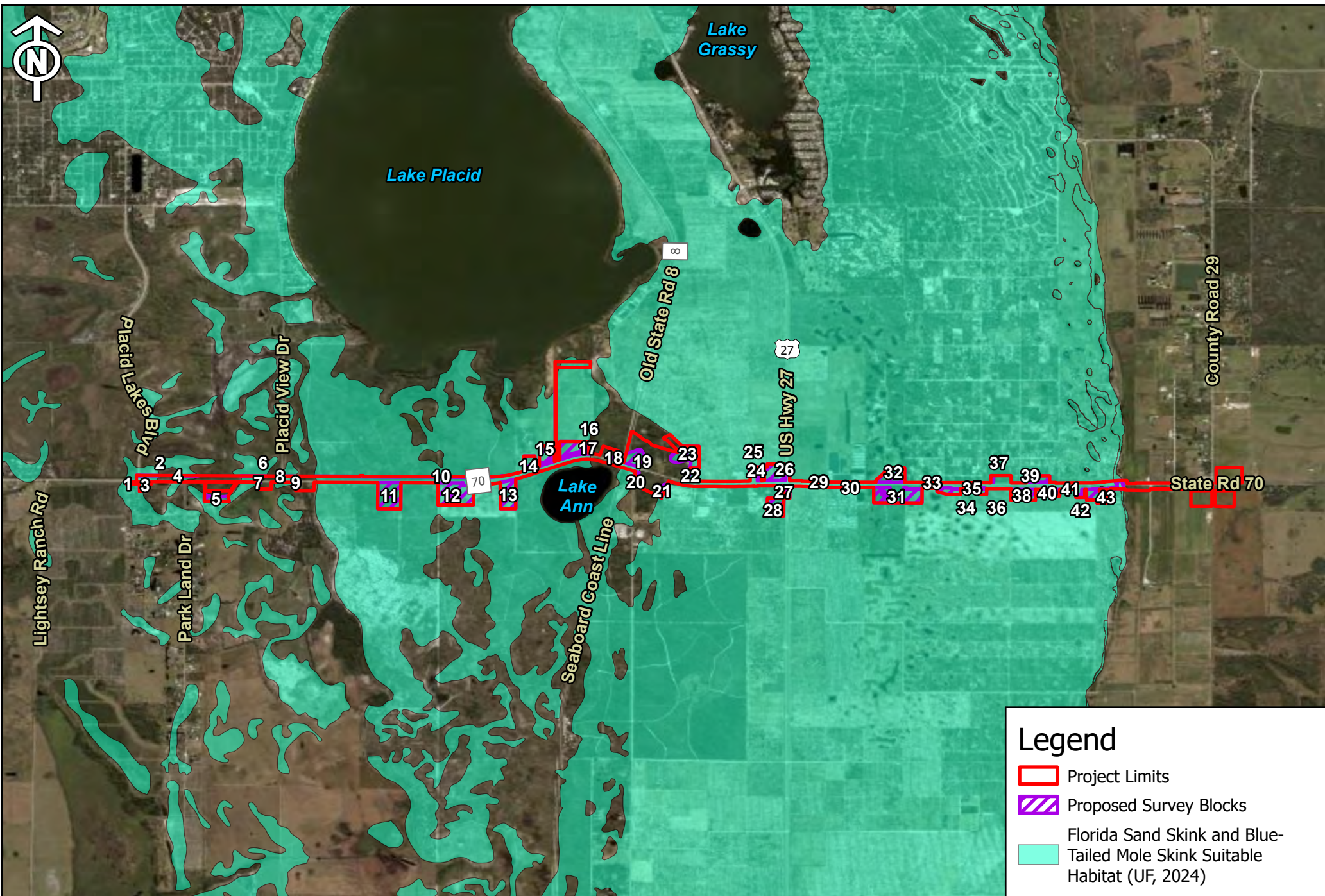
SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01
Figure 2-8 - Sand Skink and Blue-tailed Mole Skink Prior and
Proposed Survey Block Locations





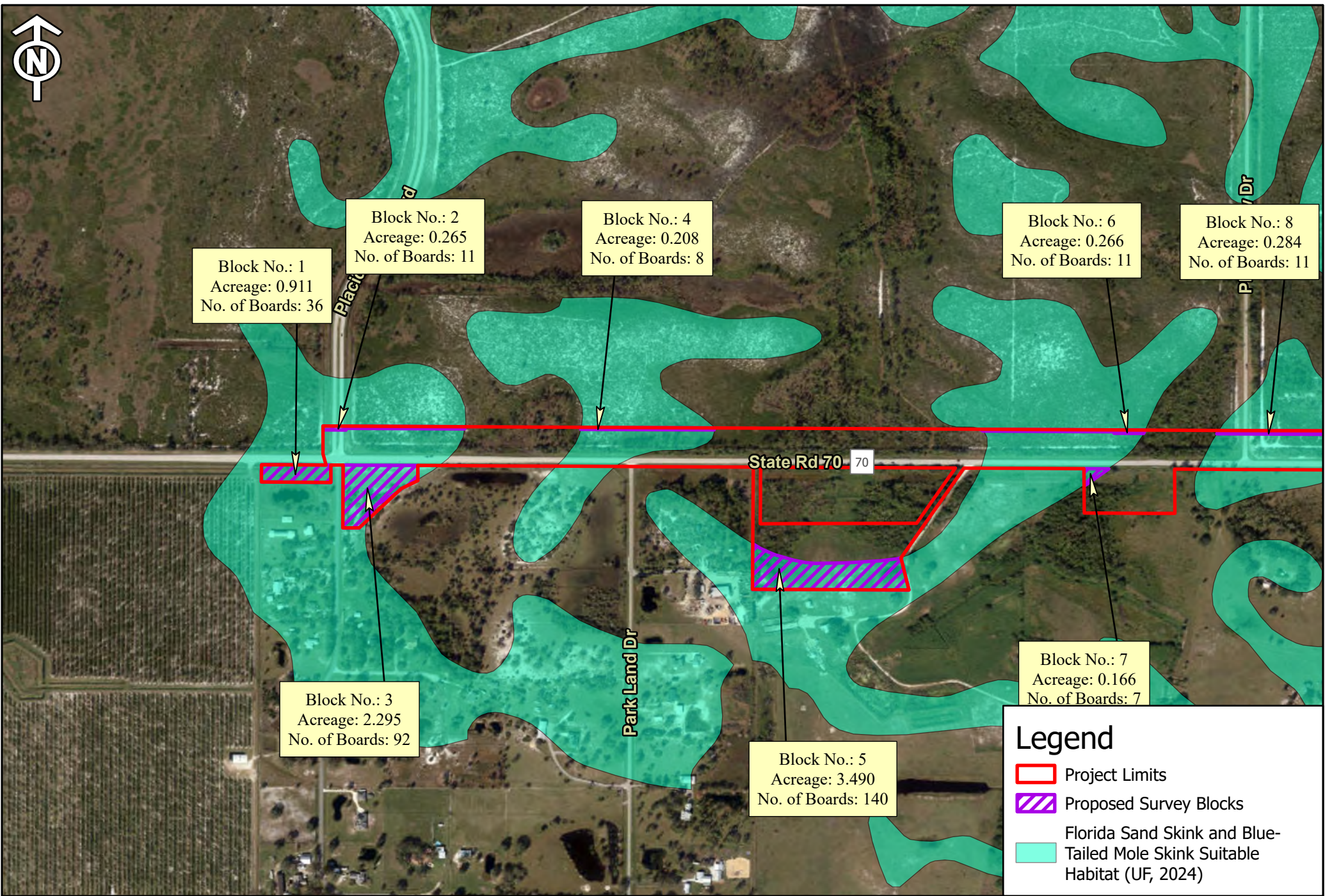
SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01
Figure 2-9 - Sand Skink and Blue-tailed Mole Skink Prior and
Proposed Survey Block Locations

0 0.33 Miles



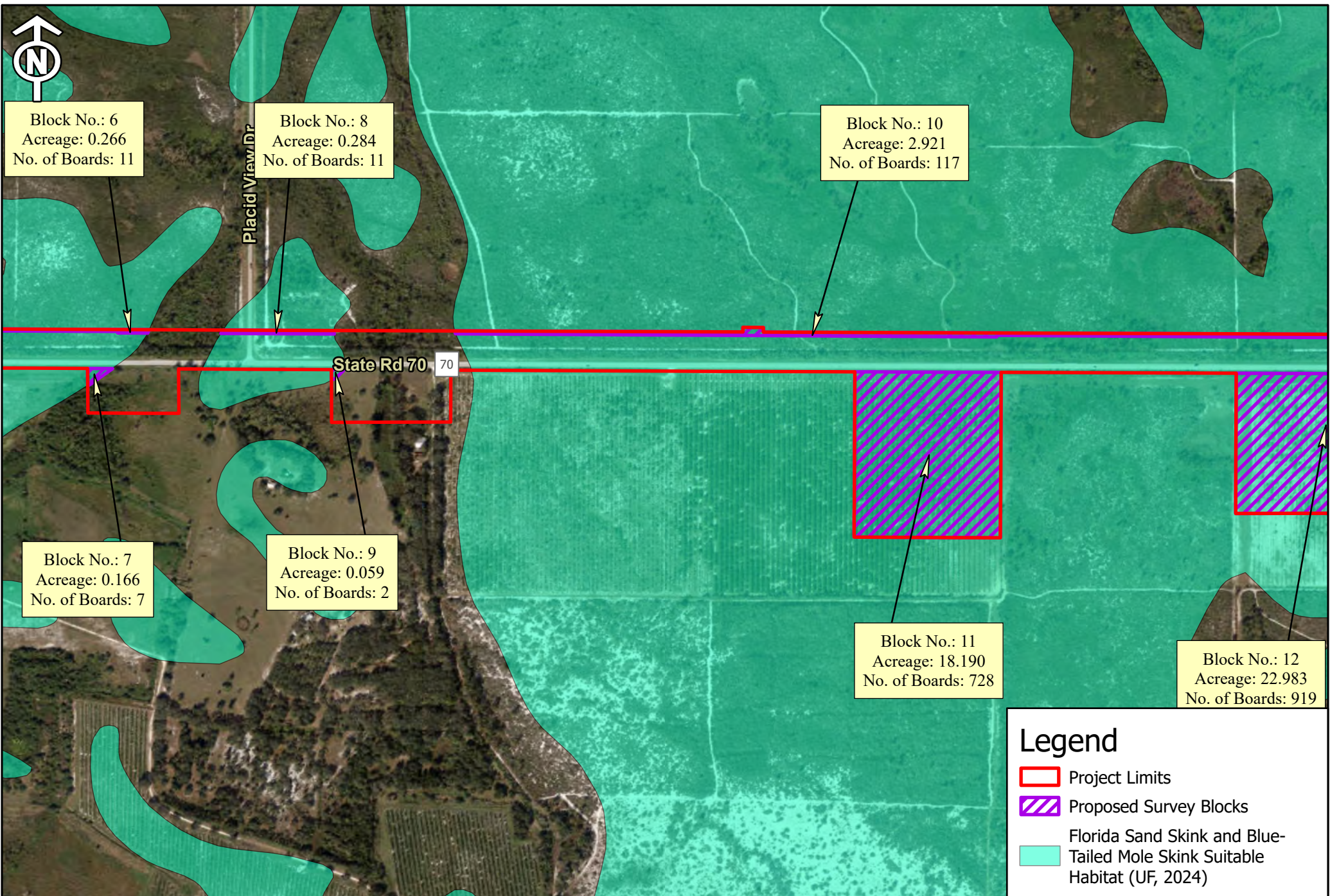
SR 70 from Jefferson Avenue to CR 29
 FPID 414506-1-22-01
 Figure 3-1 - Sand Skink and Blue-tailed Mole Skink
 Proposed Survey Block Locations and Details

0 1.9 Miles

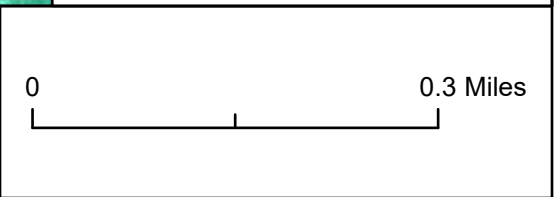


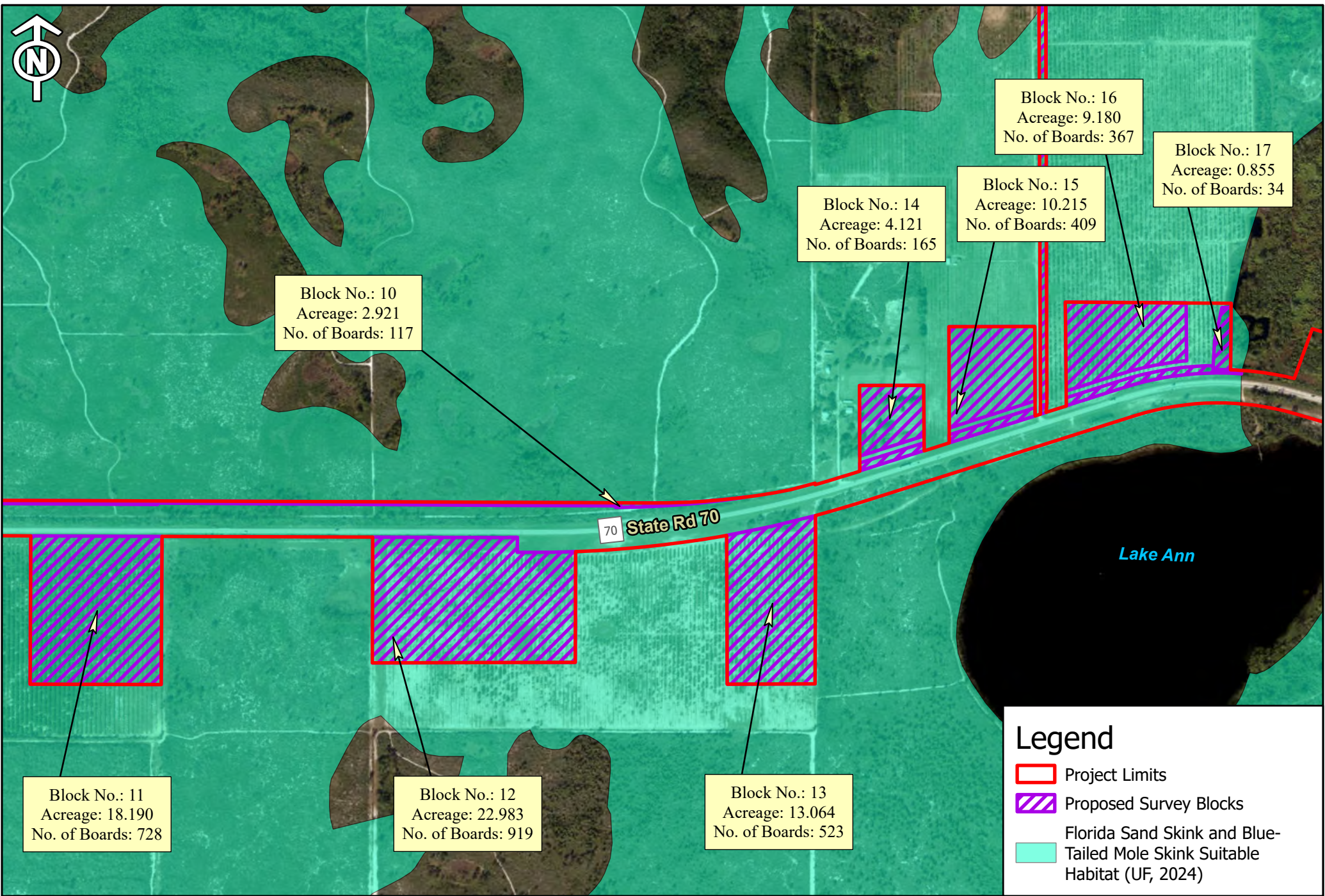
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Figure 3-2 - Sand Skink and Blue-tailed Mole Skink
Proposed Survey Block Locations and Details

0 0.3 Miles



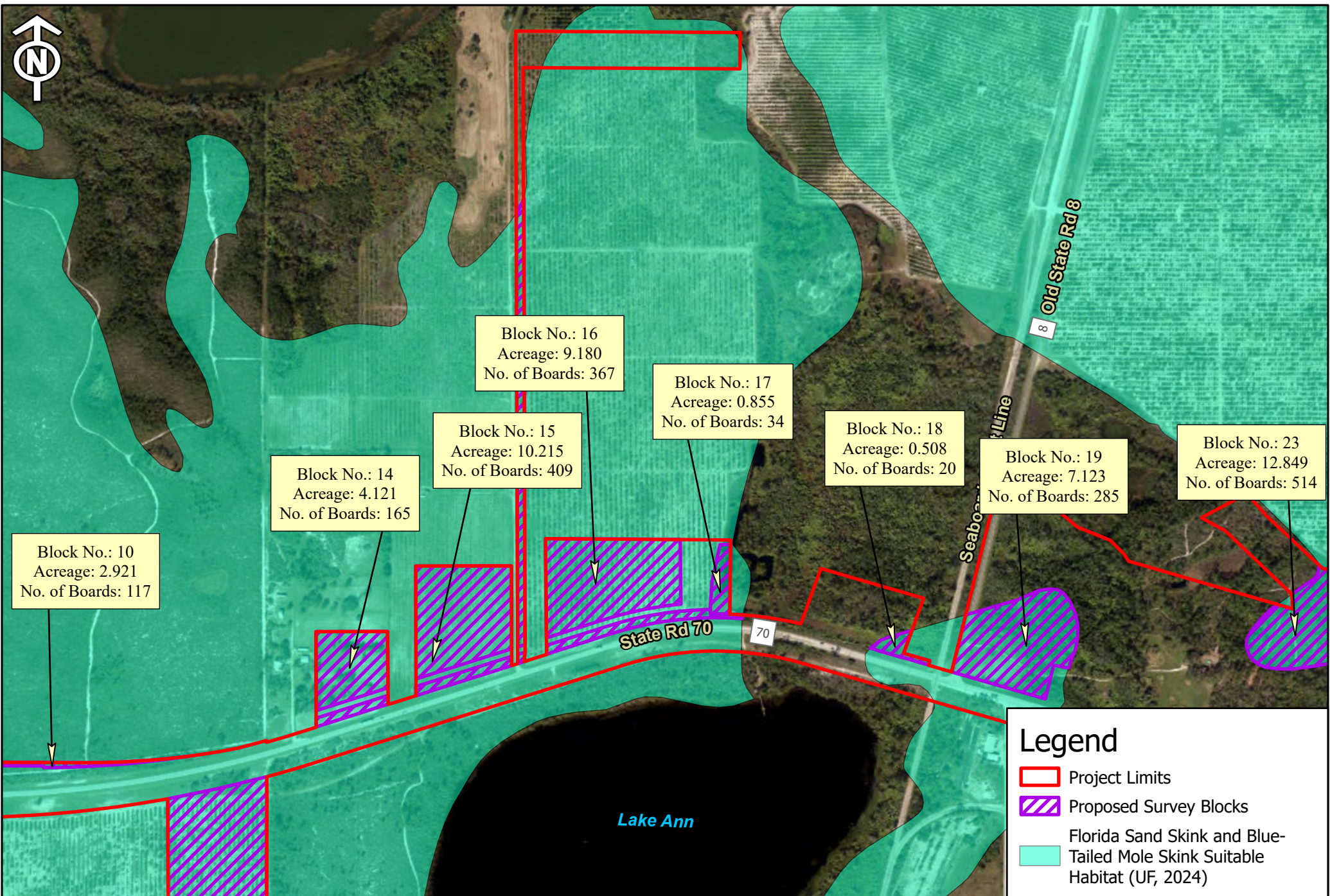
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Figure 3-3 - Sand Skink and Blue-tailed Mole Skink
Proposed Survey Block Locations and Details





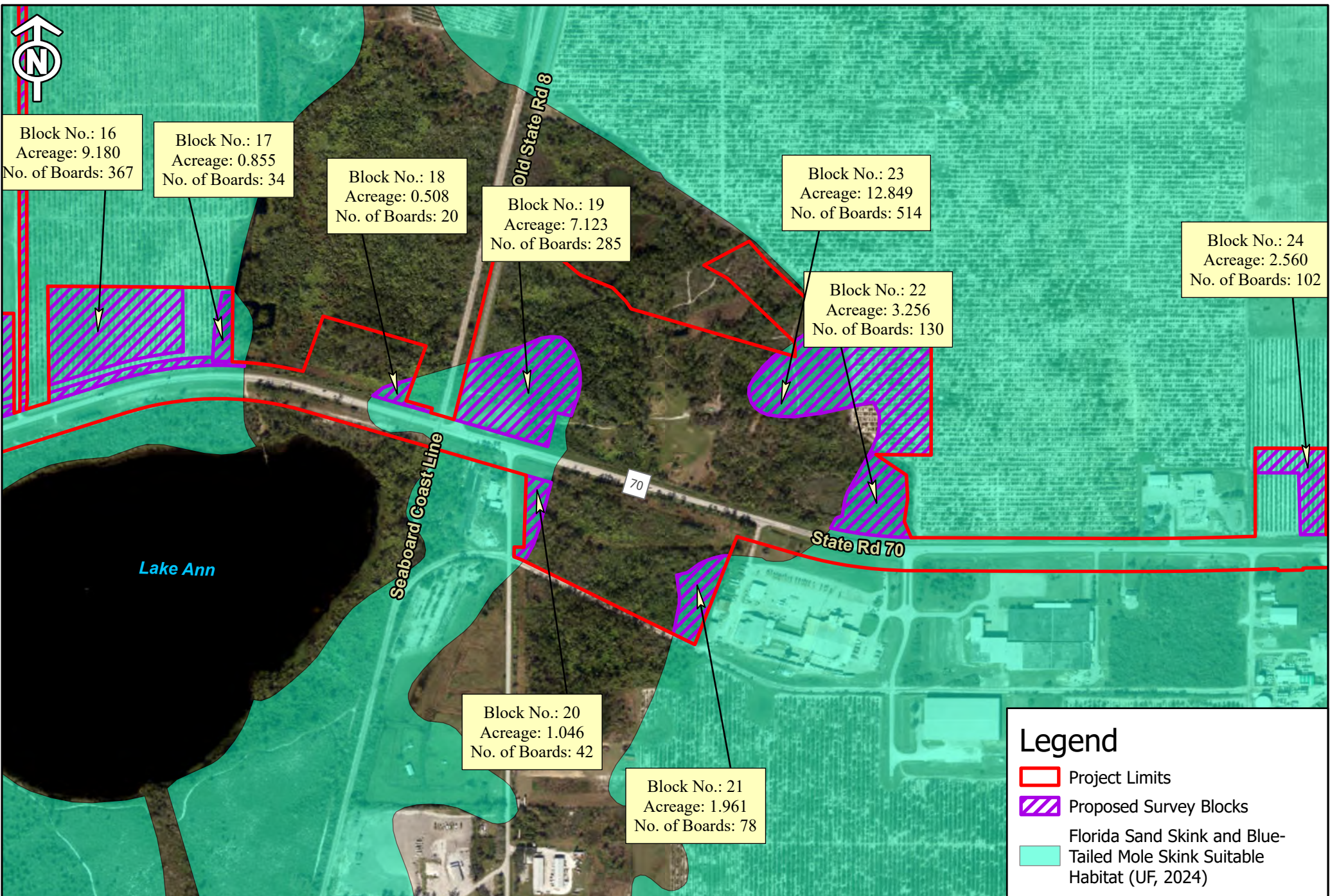
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Figure 3-4 - Sand Skink and Blue-tailed Mole Skink
Proposed Survey Block Locations and Details

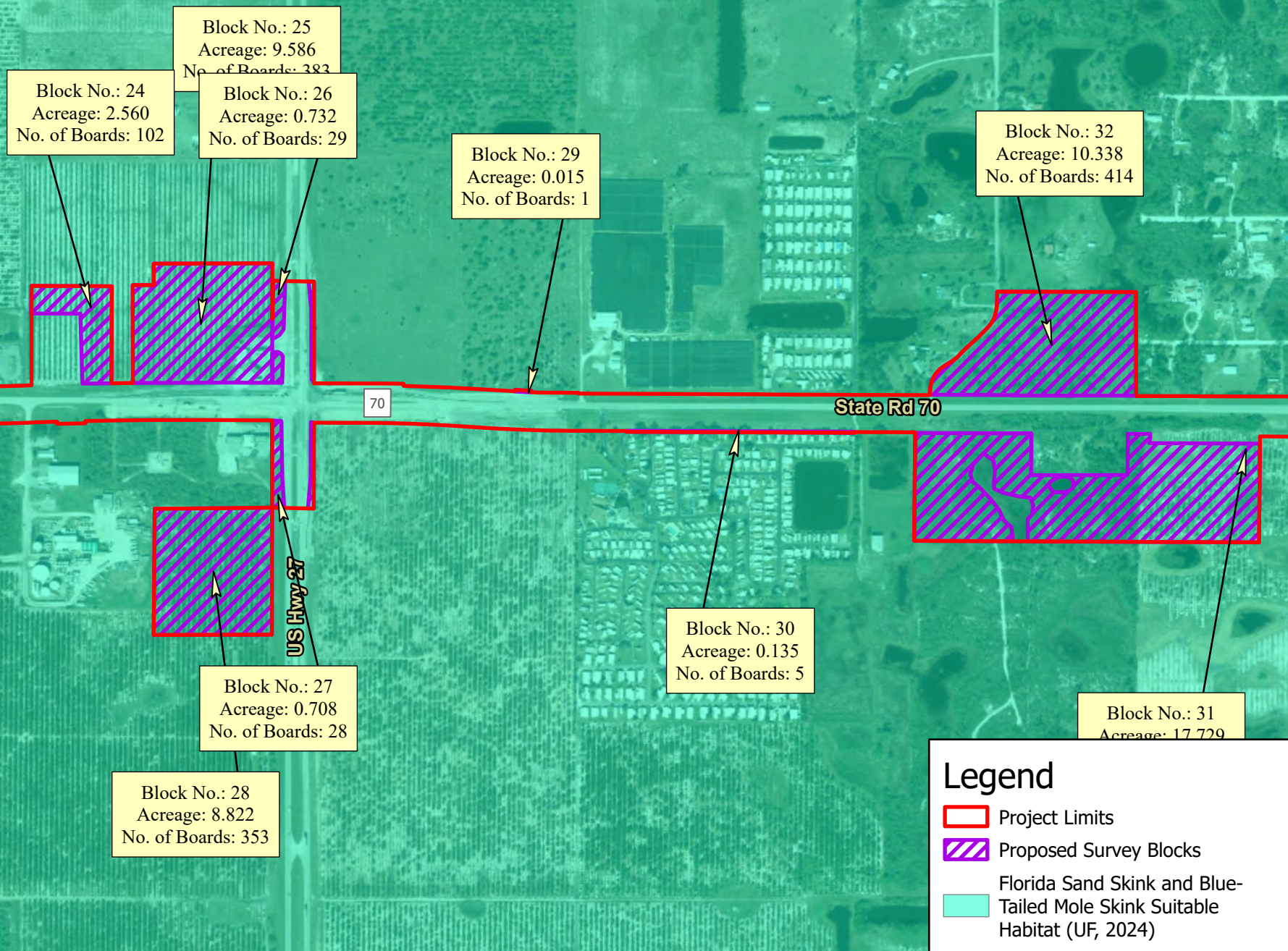
0 0.33 Miles



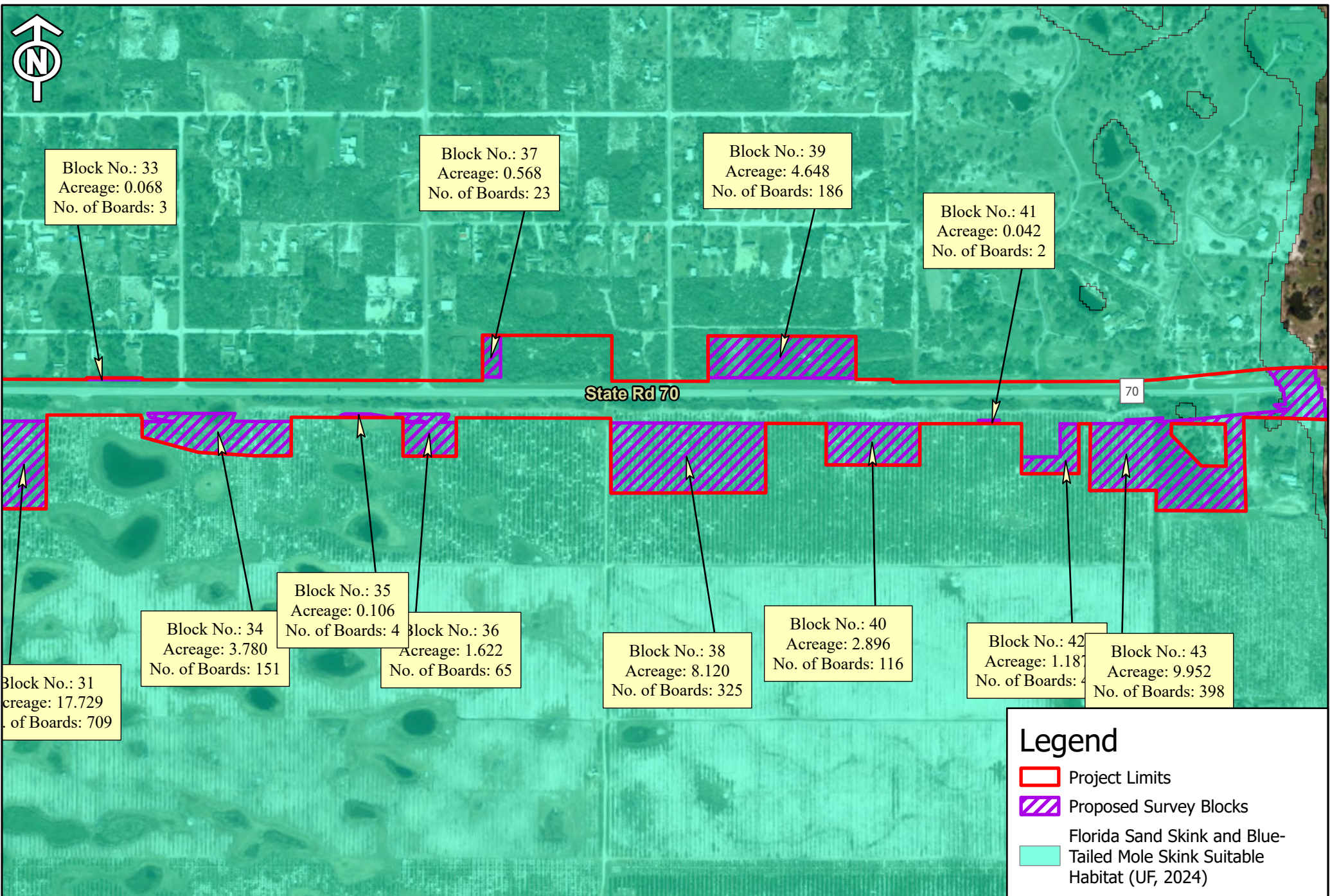
SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Figure 3-5 - Sand Skink and Blue-tailed Mole Skink
Proposed Survey Block Locations and Details

0 0.3 Miles





SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Figure 3-7 - Sand Skink and Blue-tailed Mole Skink
Proposed Survey Block Locations and Details



Block No.: 33
Acreage: 0.068
No. of Boards: 3

Block No.: 37
Acreage: 0.568
No. of Boards: 23

Block No.: 39
Acreage: 4.648
No. of Boards: 186

Block No.: 41
Acreage: 0.042
No. of Boards: 2

Block No.: 31
Acreage: 17.729
No. of Boards: 709

Block No.: 34
Acreage: 3.780
No. of Boards: 151

Block No.: 35
Acreage: 0.106
No. of Boards: 4

Block No.: 36
Acreage: 1.622
No. of Boards: 65

Block No.: 38
Acreage: 8.120
No. of Boards: 325

Block No.: 40
Acreage: 2.896
No. of Boards: 116

Block No.: 42
Acreage: 1.187
No. of Boards: 4

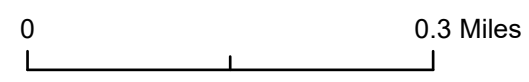
Block No.: 43
Acreage: 9.952
No. of Boards: 398

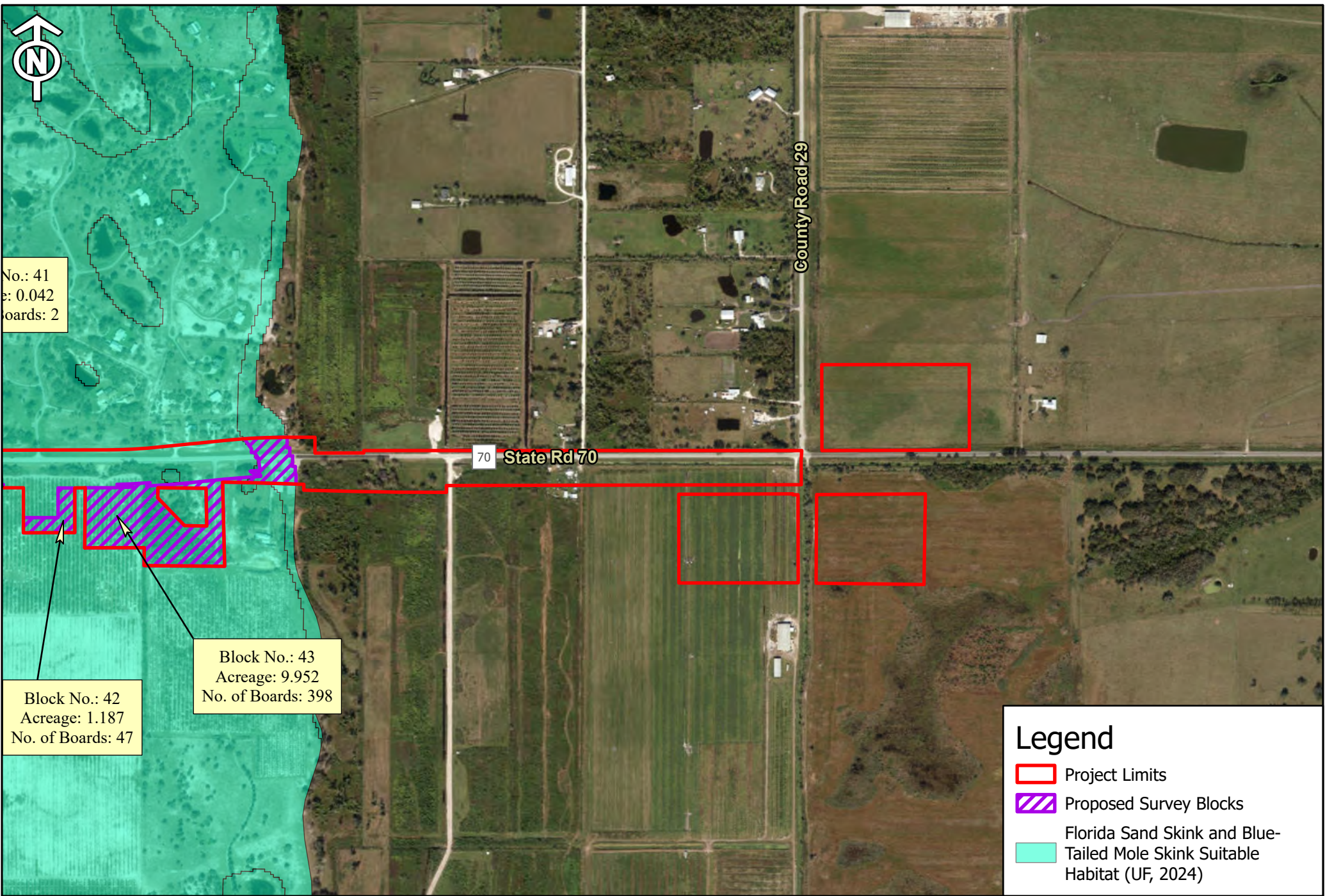
Legend

- Project Limits
- Proposed Survey Blocks
- Florida Sand Skink and Blue-tailed Mole Skink Suitable Habitat (UF, 2024)



SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Figure 3-8 - Sand Skink and Blue-tailed Mole Skink
Proposed Survey Block Locations and Details





SR 70 from Jefferson Avenue to CR 29
FPID 414506-1-22-01
Figure 3-9 - Sand Skink and Blue-tailed Mole Skink
Proposed Survey Block Locations and Details

0 0.33 Miles

Appendices

A. SR 70 Species Survey Questions and USFWS Concurrence

To: John Wrublik, USFWS

From: Nikki Gilmer, FDOT

CC: Jeffrey James, FDOT
Brooke Feagle, AtkinsRéalis on behalf of FDOT

Date: September 23, 2024

RE: SR 70 from Jefferson Avenue to CR 29 and CR 29 to Lonesome Island Road
Financial Project No. 414506-1 and 414506-5
ETDM Nos. 3054 and 14364

SR 70 - Species Survey Questions

The Florida Department of Transportation (FDOT) District One is conducting Project Development and Environment (PD&E) studies to evaluate options for widening State Road (SR) 70 in Highlands County. Two of the projects are SR 70 from Jefferson Avenue to County Road (CR) 29 (FPID #414506-1) and from CR 29 to Lonesome Island Road (FPID #414506-5), a total of approximately 11.4 miles.

The pages following contain the species survey information and questions we have regarding the applicable projects. FDOT kindly requests your review of the attached information and confirmation of the species-specific questions described within. If you feel that any of the methods included below are not sufficient to the applicable species, we respectfully ask that you identify the species and appropriate surveys to be performed during the upcoming season.

If you have any questions or comments regarding the information contained within, or if you would like to discuss the project, please do not hesitate to contact me at 863.519.2375 or nikki.gilmer@dot.state.fl.us. We thank you for your time and consideration!

414506-5 – SR 70 from CR 29 to Lonesome Island Road

Project Description

The PD&E Study for SR 70 from CR 29 to Lonesome Island Road (FPID #414506-5 / ETDM #14364) completed the Natural Resources Evaluation (NRE) in October 2020 and completed Section 7 Consultation with the US Fish and Wildlife Service (USFWS) in April 2021. A Biological Opinion was issued on May 28, 2021 for the determination of *may affect, likely to adversely affect* the eastern indigo snake (*Drymarchon couperi*) and *may affect, not likely to adversely affect* the Audubon's crested caracara (*Caracara cheriway*), American alligator (*Alligator mississippiensis*), Everglade snail kite (*Rhynchoceros sociabilis plumbeus*), Florida bonneted bat (*Eumops floridanus*), and wood stork (*Mycteria americana*).

An addendum to the NRE was completed in June 2021. The NRE, NRE Addendum, and Biological Opinion were sent to the other cooperating regulatory agencies in December 2022 for review and concurrence, which was obtained in January 2023. The Type 2 Categorical Exclusion (CE) is under review by FDOT Office of Environmental Management (OEM) and Location Design and Concept Acceptance (LDCA) for this project is anticipated by the end of 2024.

As part of the Strategic Corridors initiative, this project is anticipated to move quickly through the Design and Right-of-Way phases to Construction. During the upcoming 2025 season, it is anticipated that surveys will be completed for the Audubon's crested caracara, Florida bonneted bat, and eastern black rail (*Laterallus jamaicensis spp.*). A Species Survey Methodology will be prepared and provided for review and approval prior to surveys.

Everglade snail kite

Suitable habitat for the Everglades snail kite is present for this species directly adjacent to the project study area. As a result, a species-specific Everglade snail kite survey was conducted in December 2018 through May 2019. Several Everglade snail kites were documented; however, no nests were identified in or adjacent to the project study area. A map showing the survey area in relation to the project is included (**Figure 1**).

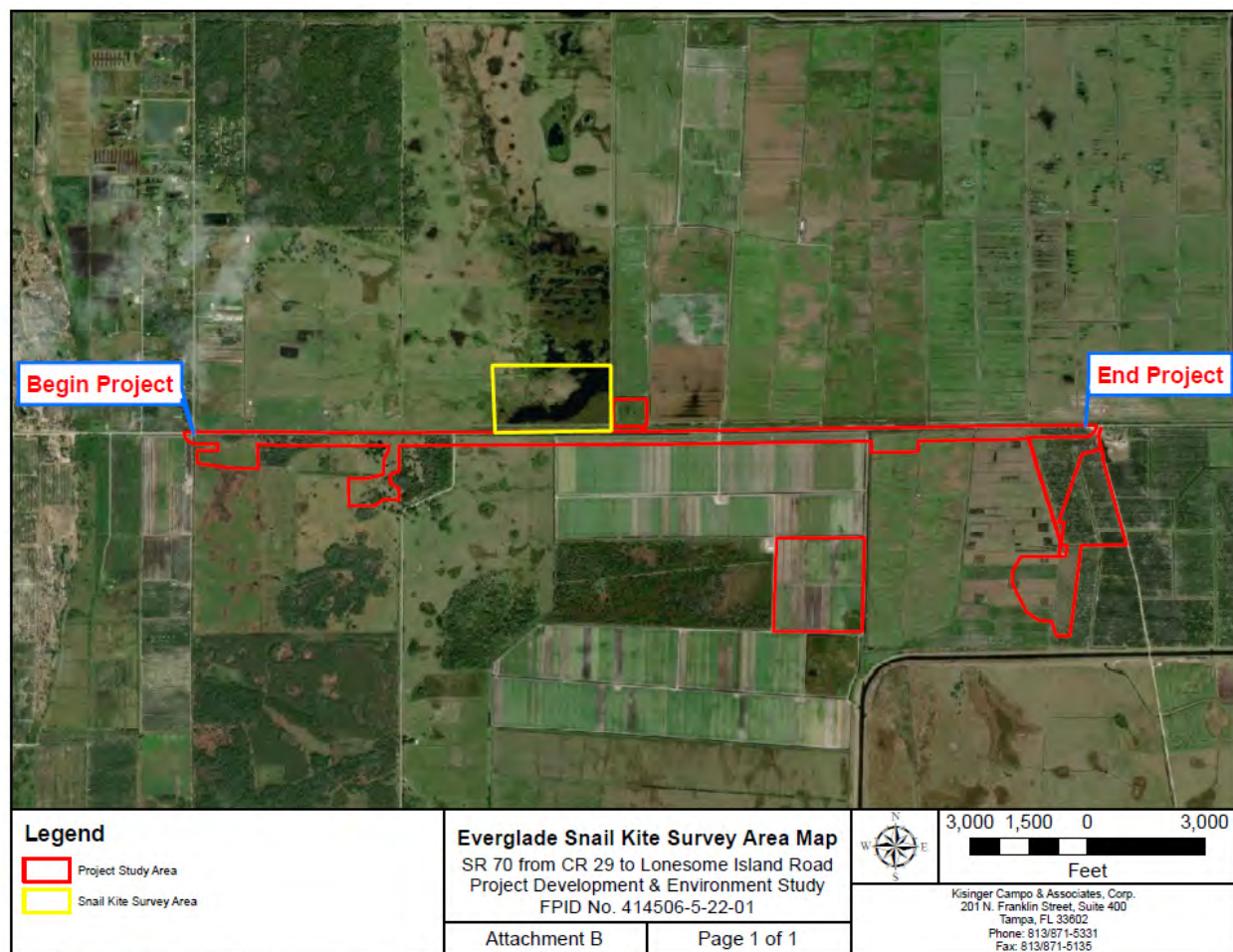
The Biological Opinion issued on May 28, 2020 acknowledged project impacts to 2.86 acres of wetlands and 32.87 acres of surface waters. Pending the mitigation of wetland impacts, along with the survey results resulting in no nests identified and the availability of adjacent habitats, USFWS concurred with the determination of *may affect, not likely to adversely affect*.

As part of this project, impacts to wetlands considered suitable Everglade snail kite habitat will be mitigated at a regional mitigation bank that has been approved by the USFWS to satisfy all mitigation requirements of 33 U.S.C. §1344, or pursuant to Section 373.4137, F.S. If regional mitigation banks are not available, FDOT will provide Permittee-responsible mitigation.

Species-Specific Question

Prior to construction, FDOT plans to perform a visual pre-project survey of the area to determine if any nests are present within the project study area or within 500 meters of the project study area, including final pond sites. Is this sufficient or should a re-survey of the entire project area be completed in 2025?

Figure 1: 414506-5 Everglade Snail Kite Survey Area Map (2018-2019)



414506-1 – SR 70 from Jefferson Avenue to CR 29

Project Description

The PD&E Study for SR 70 from Jefferson Avenue to CR 29 (FPID #414506-1 / ETDM #3054) is in the process of completing the NRE; however, prior coordination regarding this project has occurred. The initial NRE for this project was completed in 2020 and provided to USFWS for review in April 2020. USFWS provided concurrence of the NRE on May 22, 2022; however, a Biological Opinion was not issued. It was decided at the time that formal consultation would be reinitiated at the permitting phase of the project.

The project was placed on-hold until 2022, when it was determined to be a priority project. Since the 2020 NRE submission, the project footprint has changed, and as such, so have the contents of the NRE. It is anticipated with the current project schedule that the new NRE for this project will be submitted to USFWS in late 2025.

Sand Skink/ Blue-Tailed Mole Skink

Skink coverboard surveys were completed in 2023 for the entire project length for the sand skink (*Plestiodon reynoldsi*) and blue-tailed mole skink (*Plestiodon egregius lividus*). Following the completion of the 2023 surveys, there was a minor expansion of the proposed right-of-way limits. The areas where the limits were expanded were surveyed during the Spring 2024 season.

These surveys were aimed at confirming our effect determination and mitigation estimates. The 2023 survey found 35.44 acres of habitat occupied by skinks (**Figure 2**) and the 2024 survey found 3.84 acres of additional habitat occupied by skinks (**Figure 3**).

Design Changes

The limits have changed again after completion of these surveys and there is an area of about three miles long varying from 15 - 30 feet wide that was not included. As such, we propose surveying the additional area, and any other new areas, in the Spring 2025 season and using the data collected from the previous surveys to calculate sand skink presence in the NRE.

Species-Specific Question

We respectfully request confirmation if it is acceptable to perform a survey of just the additional areas of right-of-way for the Spring 2025 season or if a re-survey of the entire project area is needed given that the prior entire project survey was completed in Spring 2023.

We also request confirmation to condense the vast amount of skink data collected throughout the prior skink surveys of the project area (entire project: 2018, entire project: 2023, gaps: 2024, and proposed: 2025) into one overall skink memo for the NRE. The individual Skink Survey Memos for 2018, 2023, 2024, and 2025 will still be available through the project file and upon request. We believe that condensing the amount of data into one memo and dataset will provide a better overall picture of the skink presence and mitigation requirements.

Figure 2: 414506-1 Skink Habitat – Entire Project Surveyed (2023)

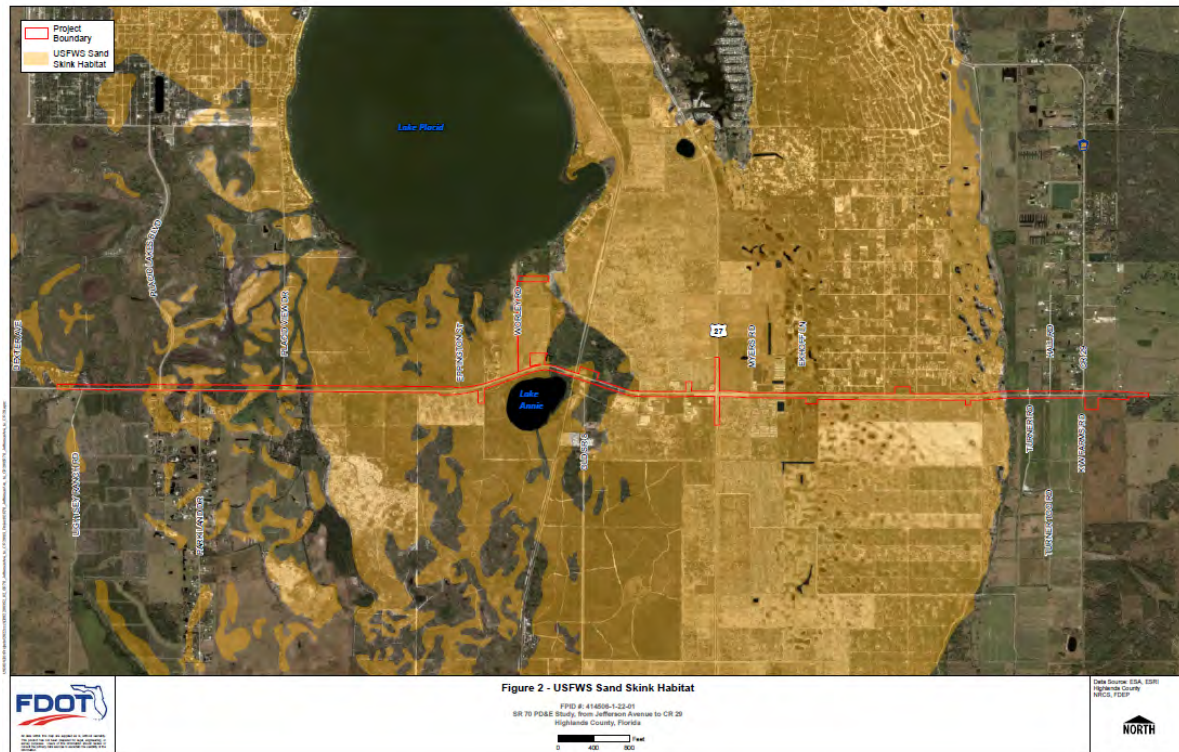
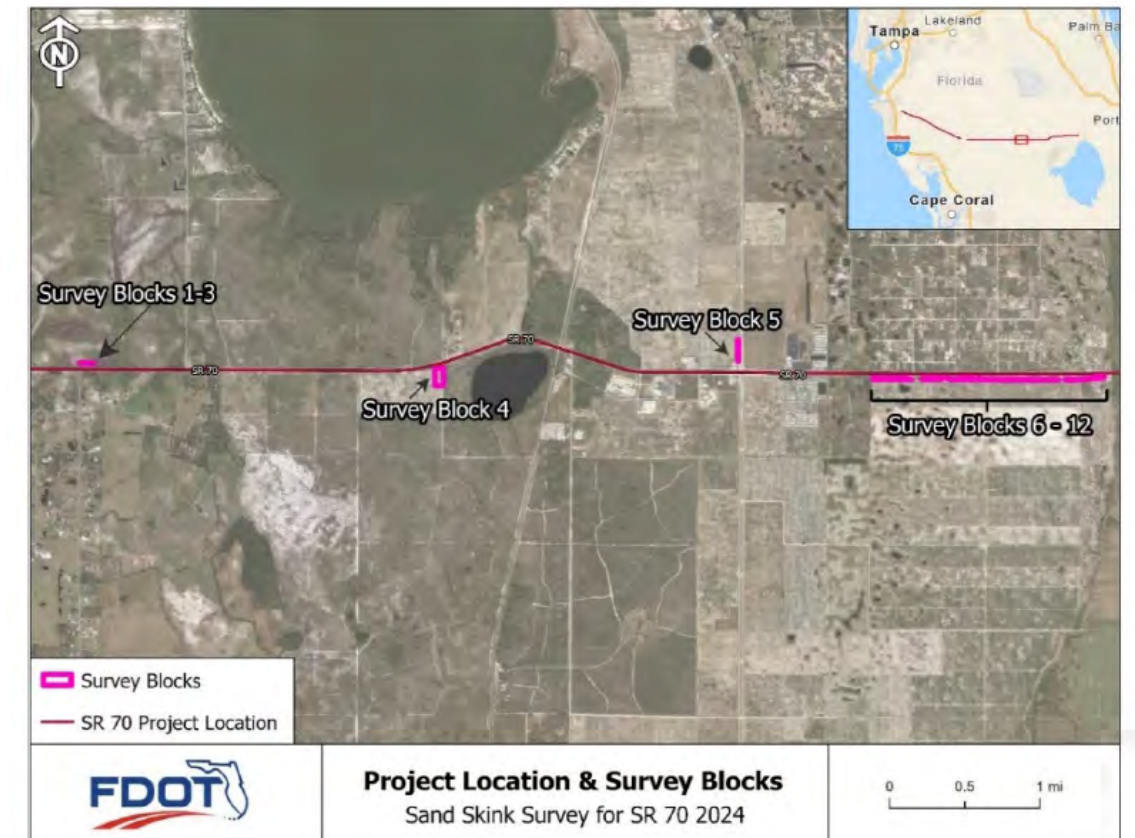


Figure 3: 414506-1 Skink Habitat – Gap Areas Surveyed (2024)



Florida Scrub-Jay

A survey for the Florida scrub-jay (*Alphelocoma coerulescens*) was completed in Spring 2023 that encompassed suitable habitat within the project limits. The 2023 survey resulted in 69.78 acres of occupied habitat (**Figure 4**).

In addition, FDOT received 2024 scrub-jay territory data for areas adjacent to (and partially including) the project limits from Archibold Biological Station (**Figure 5**). In addition to the 2023 survey data previously collected, we intend to use Archibold's 2024 territories information in the NRE in support of the effect determination.

Figure 4: 414506-1 Florida-Scrub Jay Habitat – FDOT Survey (2023)

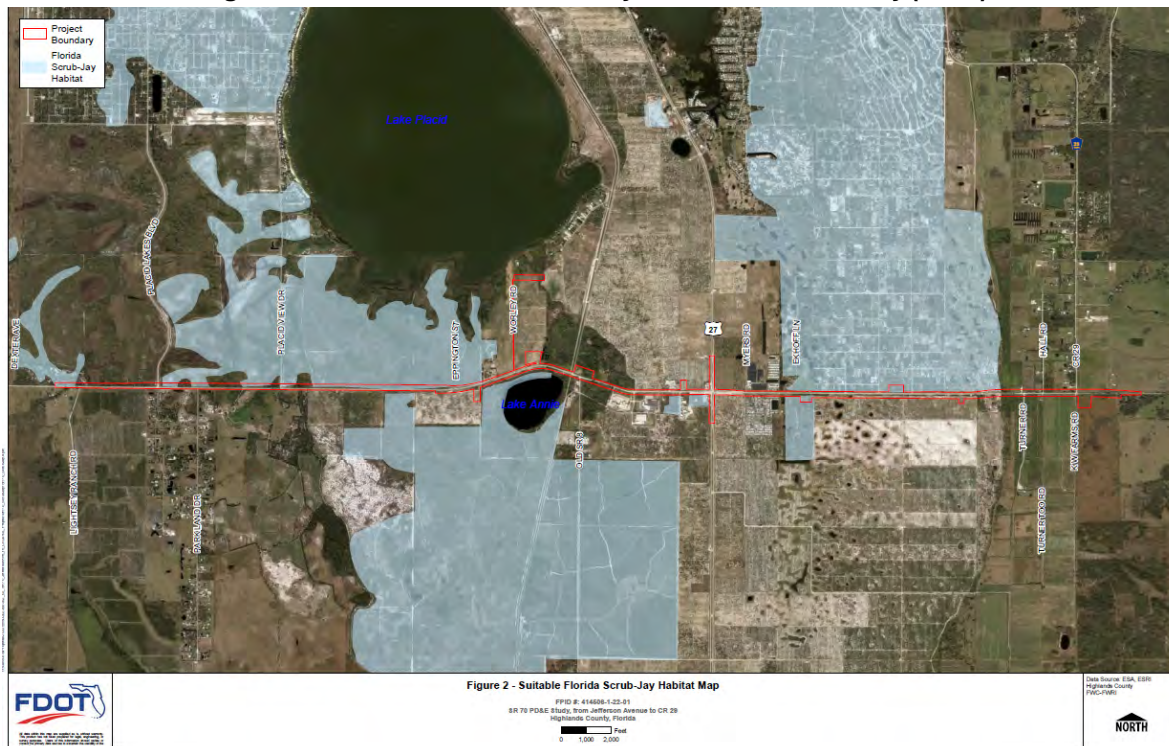
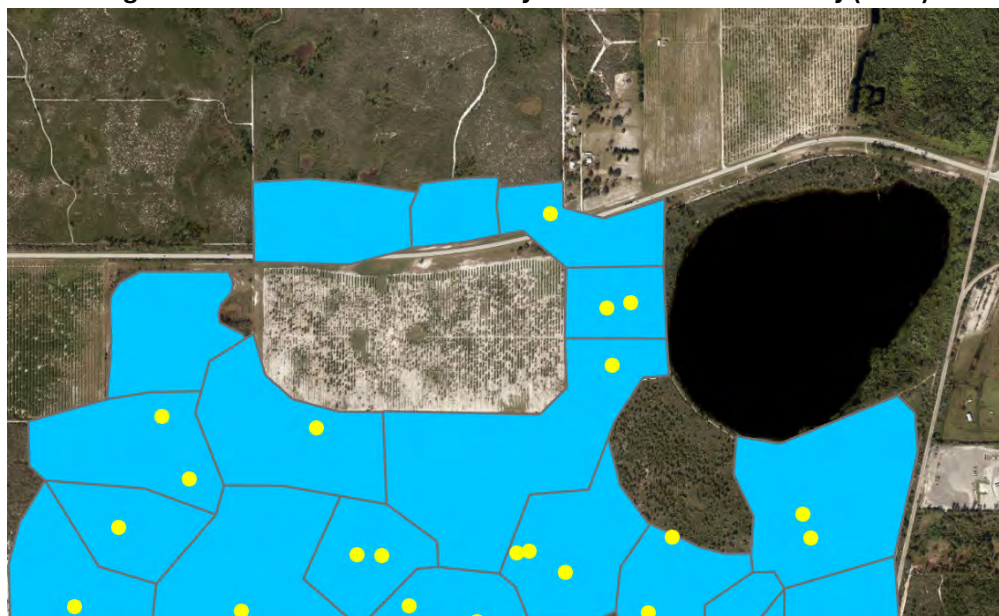


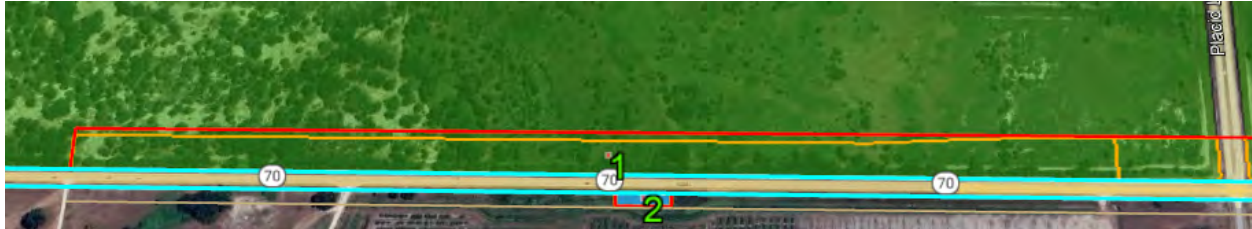
Figure 5: 414506-1 Florida-Scrub Jay Habitat - Archibold Survey (2024)



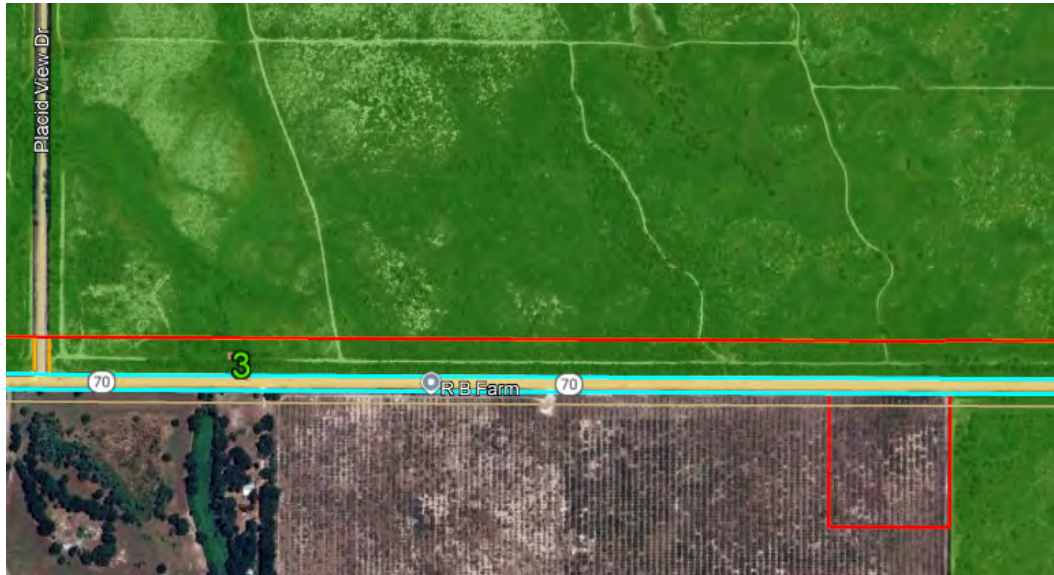
Design Changes

Since the 2023 survey, the design footprint has changed slightly in some areas that result in approximately 16.75 acres of additional impacts.

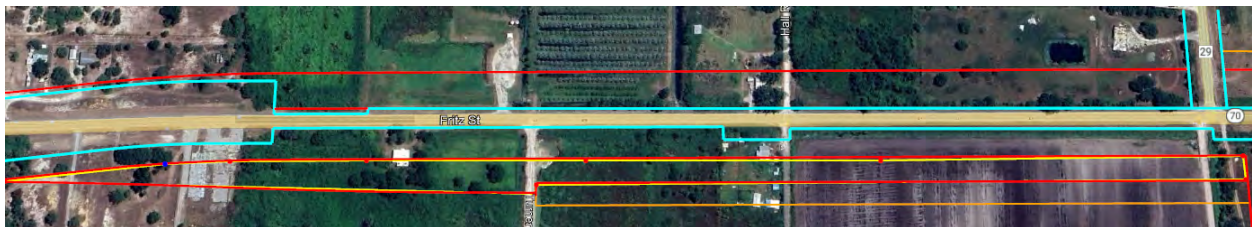
Proposed FP&L Section - The area from the beginning project limits to Placid Lakes Boulevard requires an additional 2.6 acres. The applicable area is between the current proposed right-of-way (red) and the previously proposed right-of-way (orange) which typically ranges from five to 30 feet in width.



Proposed New Pond Site - The area on the south side of SR 70, east of Placid View Drive, adjacent to the McJunkin Tract, requires an additional 7.4 acres. The applicable area is outlined in red.



Proposed Southern SR 70 Mainline Shift - The area west of the SR 70 and CR 29 intersection requires an additional 6.75 acres. The applicable area is outlined in yellow.



Species-Specific Question

We respectfully request confirmation if the use of the 2023 FDOT survey and the 2024 Archbold data is sufficient or if a re-survey of the entire project area is needed given that the prior entire project survey was completed in Spring 2023.

Shannon Freemon

From: Shannon Freemon
Sent: Tuesday, February 25, 2025 2:14 PM
To: Shannon Freemon
Subject: FW: [EXTERNAL] SR 70 Species Survey Questions for FPID 414506-5 SR 70 from CR 29 to Lonesome Island Rd & FPID 414506-1 SR 70 from Jefferson Ave to CR 29
Attachments: 414506-1 & -5_SR 70 Species Survey Questions_9-23-2024.pdf

From: James Fine <jfine@HNTB.com>
Sent: Wednesday, September 25, 2024 9:27 AM
To: Tori Kuba <TKuba@esassoc.com>; lwalt@flatwoodsconsulting.com
Subject: FW: [EXTERNAL] SR 70 Species Survey Questions for FPID 414506-5 SR 70 from CR 29 to Lonesome Island Rd & FPID 414506-1 SR 70 from Jefferson Ave to CR 29

fyi

James Fine, ENV SP

Senior Manager – Environmental

Tel (813) 402-4150 Cell (813) 310-3217 Email jfine@hntb.com

HNTB CORPORATION

201 N. Franklin St #1200 | Tampa, FL 33602 | hntb.com

Celebrating 110 Years of Excellence

[LinkedIn](#) | [X](#) | [Facebook](#) | [Instagram](#) | [YouTube](#)



From: Feagle, Autumn "Brooke" <Brooke.Feagle@dot.state.fl.us>
Sent: Wednesday, September 25, 2024 9:20 AM
To: Katherine Lawlor <klawlor@HNTB.com>; Matthew Dockins <mdockins@HNTB.com>; Gordon Mullen <gsmullen@HNTB.com>; James Fine <jfine@HNTB.com>
Cc: Gilmer, Nikki <Nikki.Gilmer@dot.state.fl.us>; James, Jeffrey W <Jeffrey.James@dot.state.fl.us>; Lauk, Joe <joe.lauk@dot.state.fl.us>
Subject: FW: [EXTERNAL] SR 70 Species Survey Questions for FPID 414506-5 SR 70 from CR 29 to Lonesome Island Rd & FPID 414506-1 SR 70 from Jefferson Ave to CR 29

External Email: Use caution when clicking on links, replying, or opening attachments.

Good morning,

Please see below the responses from USFWS for the Species Survey Questions sent regarding Seg. 12 – 14. Attached is the document that was provided to USFWS for review.

Please let us know if you have any questions.

Thanks,

Brooke Feagle
AtkinsRéalis on behalf of **FDOT**
GEC Senior Planner
FDOT District One
Direct Line: 863.800.9539

From: Wrublik, John <john_wrublik@fws.gov>
Sent: Tuesday, September 24, 2024 12:31 PM
To: Gilmer, Nikki <Nikki.Gilmer@dot.state.fl.us>
Cc: James, Jeffrey W <Jeffrey.James@dot.state.fl.us>; Feagle, Autumn "Brooke" <Brooke.Feagle@dot.state.fl.us>
Subject: Re: [EXTERNAL] SR 70 Species Survey Questions for FPID 414506-5 SR 70 from CR 29 to Lonesome Island Rd & FPID 414506-1 SR 70 from Jefferson Ave to CR 29

EXTERNAL SENDER: Use caution with links and attachments.

Nikki,

I offer the following responses to your questions.

414506-5 – SR 70 from CR 29 to Lonesome Island Road

Everglade snail kite

Species-Specific Question: Prior to construction, FDOT plans to perform a visual pre-project survey of the area to determine if any nests are present within the project study area or within 500 meters of the project study area, including final pond sites. Is this sufficient or should a re-survey of the entire project area be completed in 2025?

Response: *A visual pre-project survey of the area indicated in your email attachment dated September 23, 2024, is acceptable to the Service.*

414506-1 – SR 70 from Jefferson Avenue to CR 29

Sand Skink/ Blue-Tailed Mole Skink

Design Changes

The limits have changed again after completion of these surveys and there is an area of about three miles long varying from 15 - 30 feet wide that was not included. As such, we propose surveying the additional area, and any other new areas, in the Spring 2025 season and using the data collected from the previous surveys to calculate sand skink presence in the NRE.

Species-Specific Question

We respectfully request confirmation if it is acceptable to perform a survey of just the additional areas of right-of-way for the Spring 2025 season or if a re-survey of the entire project area is needed given that the prior entire project survey was completed in Spring 2023.

We also request confirmation to condense the vast amount of skink data collected throughout the prior skink surveys of the project area (entire project: 2018, entire project: 2023, gaps: 2024, and proposed: 2025) into one overall skink memo for the NRE.

Response: *Both requests are acceptable to the Service.*

Florida scrub-jay

Species-Specific Question

We respectfully request confirmation if the use of the 2023 FDOT survey and the 2024 Archbold data is sufficient or if a re-survey of the entire project area is needed given that the prior entire project survey was completed in Spring 2023.

Response: *Use of the 2023 FDOT survey and 2024 Archbold data is acceptable to the Service and a resurvey of the entire project area is not needed.*

I offer no additional comments at this time on these projects, if you have any other questions, please let me know.

Sincerely,

John M. Wrublik
U.S. Fish and Wildlife Service
777 37th Street, Suite D-101
Vero Beach, Florida 32960
Office: (772) 226-8130
email: John.Wrublik@fws.gov

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Gilmer, Nikki <Nikki.Gilmer@dot.state.fl.us>

Sent: Monday, September 23, 2024 1:42 PM

To: Wrublik, John <john_wrublik@fws.gov>

Cc: James, Jeffrey W <Jeffrey.James@dot.state.fl.us>; Feagle, Autumn "Brooke" <Brooke.Feagle@dot.state.fl.us>

Subject: [EXTERNAL] SR 70 Species Survey Questions for FPID 414506-5 SR 70 from CR 29 to Lonesome Island Rd & FPID 414506-1 SR 70 from Jefferson Ave to CR 29

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Good afternoon Mr. Wrublik,

In an effort to ensure FDOT District One is in compliance with ESA, we are respectfully requesting your review and input regarding species work for the subject two projects.

Please see the attached letter which outlines recent design changes in the projects, past species work that has been completed on said project, as well as the Departments questions on how to handle them moving forward. Feel free to reach out to me for any additional information, if needed.

Thanks,

Nikki Gilmer

ETDM Coordinator & Environmental Project Manager

Florida Department of Transportation | District One

801 North Broadway Ave | Bartow, FL 33830

Phone: (863) 519-2375 Email: nikki.gilmer@dot.state.fl.us

This e-mail and any files transmitted with it are confidential and are intended solely for the use of the individual or entity to whom they are addressed. If you are NOT the intended recipient and receive this communication, please delete this message and any attachments. Thank you.

Appendix B

Representative Survey Block Photographs



Block 1



Block 2



Block 3



Block 3



Block 4



Block 5



Block 6



Block 6



Block 6



Block 8

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix B
Representative Survey Block Photographs



Block 10



Block 10

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix B

Representative Survey Block Photographs



Block 10



Block 11

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix B
Representative Survey Block Photographs



Block 12



Block 13

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix B
Representative Survey Block Photographs



Block 13



Block 14

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix B

Representative Survey Block Photographs



Block 15



Block 16

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix B
Representative Survey Block Photographs



Block 17



Block 19



Block 20



Block 22



Block 23



Block 24



Block 25



Block 26



Block 26



Block 27

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix B
Representative Survey Block Photographs



Block 28



Block 29

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix B
Representative Survey Block Photographs



Block 30



Block 31



Block 31



Block 31

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix B
Representative Survey Block Photographs



Block 32



Block 32

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix B
Representative Survey Block Photographs



Block 33



Block 34

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix B
Representative Survey Block Photographs



Block 36



Block 37

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix B
Representative Survey Block Photographs



Block 38



Block 39

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix B
Representative Survey Block Photographs



Block 39



Block 40

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix B
Representative Survey Block Photographs



Block 41



Block 42

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix B

Representative Survey Block Photographs



Block 43



Block 43

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix B
Representative Survey Block Photographs



Block 43



Block 43



Block 43

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix B

Representative Survey Block Photographs

Appendix C

Photographs of Excluded Areas from Coverboard Survey



Block 5 (northwest portion of survey block, wetland)



Block 7 (entire survey block, wetland)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 10 (wetland)



Block 10 (wetland)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 11 (northeast area adjacent to ROW, wetland depression)



Block 12 (northern area, wetland depression)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 12 (northeastern area, wetland depression)



Block 14 (staging area)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 14 (staging area)



Block 14 (driveway)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 17 (surface water)



Block 17 (wetland edge adjacent to surface water)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 17 (cleared, wet depressional area)



Block 18 (cleared wetland area adjacent to ROW)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 18 (wetland)



Block 18 (wetland)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 18 (cogon grass dominated area)



Block 19 (northern portion of survey block, wetland)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 19 (northern portion of survey block, cogon grass dominated area)



Block 19 (eastern portion of survey block, wetland)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 20 (southern portion of survey block, wetland)



Block 20 (eastern portion of survey block, wetland)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 21 (wetland)



Block 21 (wetland)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 21 (wetland)



Block 22 (northwestern portion of survey block, wetland)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 22 (northeastern portion of survey block, forested area)



Block 22 (northeastern portion of survey block, forested area)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 22 (southeastern portion of survey block, forested area)



Block 23 (scrub area - southwestern portion of survey block, wetland depression)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 23 (scrub area - northwestern portion of survey block, forested area)



Block 23 (scrub area - northwestern portion of survey block, unsuitable soils)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 23 (scrub area - eastern portion of survey block overgrown vegetation)



Block 23 (scrub area - eastern portion of survey block, unsuitable soils)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 31 (southwestern portion of survey block, wetland)



Block 31 (western portion of survey block, cogon grass dominated area)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 31 (northwestern portion of survey block, wetland)



Block 31 (western portion of survey block, wetland)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 31 (western portion of survey block, wetland)



Block 31 (eastern portion of survey block, wetland)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 31 (eastern portion of survey block, wetland)



Block 31 (southeastern portion of survey block, wetland)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 32 (northern portion of survey block, wetland)



Block 32 (northern portion of survey block, wetland)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 33 (western portion of survey block, wetland)



Block 33 (eastern portion of survey block, cogon grass dominated area)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 33 (eastern portion of survey block, cogon grass/ Brazilian pepper dominated area)



Block 35 (wetland)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey



Block 43 (unsuitable forested habitat)



Block 43 (eastern portion of survey block, concrete driveway)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix C

Photographs of Excluded Areas from Coverboard
Survey

Appendix D

Coverboard Survey Data

Appendix D - Coverboard Survey Data

Survey Event (Week)	Date	Block	Boards Checked (Total)	Positive Boards (Board ID#)	Total Positive Boards	Notes
1	4/22/2025	24	102			
		25	348			
		26	15			
		27	24			
		28	353			
		29	1			
		30	5			
		39	72			Surveyed coverboards at west end of block.
		40	116			
		41	2			
		42	46	7	1	
		43	172	9, 342	2	Surveyed coverboards in groves and at east end of block.
	4/23/2025	12	867	61, 749	2	
		13	524	378	1	
		14	22			
		15	409			
		16	363			
		17	14			
		19	69			
		20	7			
		22	46			
		23	406	137, 173	2	
		32	288			
		33	2			
		38	325			
		39	120	137, 151	2	Surveyed coverboards at east end of block.
	4/24/2025	1	36			
		2	11			
		3	92			
		4	8	2	1	
		5	123	66	1	
		6	11			
		8	11			
		10	112			
		11	712	33, 40, 43, 44, 46, 72, 216, 287, 335, 454, 502, 695	12	
		31	575	27, 445	2	
		43	178	269, 270, 291, 321, 343, 344, 347, 359	8	Surveyed coverboards in scrub area in block.
		34	113			
	4/25/2025	36	65			
		37	24			

Appendix D - Coverboard Survey Data

Survey Event (Week)	Date	Block	Boards Checked (Total)	Positive Boards (Board ID#)	Total Positive Boards	Notes
2	4/28/2025	14	22			
		19	69			
		20	7			
		22	46			
		23	79	133, 194	2	Surveyed coverboards in scrub area in block.
		39	192	6, 124, 181	3	
		40	116	53, 64	2	
		41	2			
		42	46	4	1	
		43	350	70, 196, 208, 264, 276, 290, 295, 364, 366	9	
	4/29/2025	1	36			
		2	11			
		3	92			
		4	8			
		5	123			
		6	11			
		8	11			
		10	112			
		11	712	34, 142, 258, 259, 283, 284, 334, 384, 410, 574	10	
		12	867	79, 338, 342, 526	4	
		13	524	142, 258, 502	3	
		15	409			
		16	363			
		17	14			
		23	327	292	1	Surveyed coverboards in groves within the block.
		24	102			
		25	348			
		26	15			
		27	24			
		28	353	14	1	
		29	1			
		30	5			
	4/30/2025	32	288	59, 60	2	
		33	2			
		38	325	196	1	
	5/1/2025	31	575			
	5/2/2025	34	113			
		36	65			
		37	24			

Appendix D - Coverboard Survey Data

Survey Event (Week)	Date	Block	Boards Checked (Total)	Positive Boards (Board ID#)	Total Positive Boards	Notes
3	5/6/2025	1	36			
		2	11	8	1	
		3	92			
		4	8			
		5	123			
		6	11	6, 7, 9	3	
		8	11	2	1	
		10	112	5, 21, 22, 111, 115	5	
		11	712	32, 47, 239, 307, 308, 383, 475, 620, 667, 716	10	
		12	867	146, 305, 563, 708, 906	5	
		13	524	19, 36, 54, 104, 115, 133	6	
		24	102			
		25	348			
		26	15			
		27	24			
		28	353	151	1	
		29	1			
		30	5			
	5/7/2025	14	22			
		15	409			
		16	363			
		17	14			
		19	69			
		20	7			
		22	46			
		23	406	115, 224	2	
		32	288			
		33	2			
		38	325	157	1	
		39	192	66, 88, 89, 111, 132, 134, 135, 152, 186	9	
		40	116			
		41	2			
		42	46	1	1	
		43	350	239, 240, 245, 247, 248, 267, 296, 299, 301, 304, 316, 319, 322, 323, 327, 328, 331, 345, 346, 348, 349, 350, 351, 360, 361, 362, 365, 374, 376, 377, 378, 379, 380, 382, 391, 392, 394, 395, 398	39	
	5/8/2025	31	575	111	1	
	5/9/2025	34	113			
		36	65			
		37	24			

Appendix D - Coverboard Survey Data

Survey Event (Week)	Date	Block	Boards Checked (Total)	Positive Boards (Board ID#)	Total Positive Boards	Notes
4	5/13/2025	2	11	10	1	
		4	8			
		6	11	5	1	
		8	11	4	1	
		10	112	32, 37, 39	3	
		13	524	53, 103	2	
		19	69			
		20	7			
		24	102			
		25	348			
		26	15			
		27	24			
		28	353			
		29	1			
		30	5			
	5/14/2025	11	712			
		15	409			
		16	363			
		17	14			
		32	288			
		33	2			
		38	325			
		39	192	112, 169	2	
		40	116			
		41	2			
		42	46			
		43	178	275, 325, 367, 397	4	Surveyed coverboards in scrub area in block.
	5/15/2025	1	36			
		3	92			
		5	123			
		12	867			
		14	22			
		22	46			
		23	406			
		31	575			
		34	113			
		36	65			
		37	24			
		43	172			Surveyed coverboards in groves in block.
Total:					172	



Skink Daily Start-Up

Date: April 22, 2025

Field Staff: ESA – Shannon Freemon, Alex Hipolito; Verdantas - Tristan Sommers, Whitney Kinnison, Kyle Huhn, John Floyd

Project Name: SR 70 From Jefferson Avenue to County Road 29 PD&E Study

FPID No.: 414506-1-22-01

ESA Project Number: D202400953.04

Start Weather

Temperature: 84 (°F)

Wind Direction: Northeast

Wind Speed: 4 (mph)

Visibility: Partly Cloudy (26-50% cloud cover)

Precipitation: No

End Weather

Temperature: 87 (°F)

Wind Direction: Northeast

Wind Speed: 12 (mph)

Visibility: Partly Cloudy (26-50% cloud cover)

Precipitation: No

Activity: Event 1 - Skink coverboard checks

Start Time: 15:30

End Time: 17:30

Notes/Comments: Block #: 40-42, 43 (groves and east end), 39 (west end) (ESA), 24, 25, 26, 27, 28, 29, 30 (Verdantas) completed



Skink Daily Start-Up

Date: April 23, 2025

Field Staff: ESA – Shannon Freemon, Alex Hipolito, Chris Warn, George Burke, Tori Kuba; Verdantas - Matt Gonzalez, Tristan Sommers, Tiffany Knighton, Allison Berkley

Project Name: SR 70 From Jefferson Avenue to County Road 29 PD&E Study

FPID No.: 414506-1-22-01

ESA Project Number: D202400953.04

Start Weather

Temperature: 70 (°F)

Wind Direction: Northeast

Wind Speed: 3 (mph)

Visibility: Clear/Sunny (0-10% cloud cover)

Precipitation: No

End Weather

Temperature: 88 (°F)

Wind Direction:

Wind Speed: 0 (mph)

Visibility: Partly Cloudy (26-50% cloud cover)

Precipitation: No

Activity: Event 1 – Skink coverboard checks

Start Time: 07:45

End Time: 15:00

Notes/Comments: Block #: 39 (east end), 23, 22, 15, 16, 17, 19, 20, 14, 13, 12 (ESA), 32, 33, 38 (Verdantas) completed



Skink Daily Start-Up

Date: April 24, 2025

Field Staff: ESA – Alex Hipolito, George Burke, Chris Warn, Shannon Freemon, Andrea Ramos, Brett Solomon; Verdantas - Allison Berkley, Whitney Kinnison, Steve Gonzalez, Fiona Beane, Max Carfagno, Tiffany Knighton

Project Name: SR 70 From Jefferson Avenue to County Road 29 PD&E Study

FPID No.: 414506-1-22-01

ESA Project Number: D202400953.04

Start Weather

Temperature: 69 (°F)

Wind Direction: East

Wind Speed: 4 (mph)

Visibility: Clear/Sunny (0-10% cloud cover)

Precipitation: No

End Weather

Temperature: 88 (°F)

Wind Direction: East

Wind Speed: 11 (mph)

Visibility: Mostly Sunny (11-25% cloud cover)

Precipitation: No

Activity: Event 1 - Skink coverboard checks

Start Time: 08:00

End Time: 14:14

Notes/Comments: Block # 43 (scrub), 11, 1, 3, 10, 2, 4, 6, 8, 5 (ESA), 31 (Verdantas) completed



Skink Daily Start-Up

Date: April 25, 2025

Field Staff: Verdantas - Steve Gonzalez, Jessie Premet, Tristan Sommers

Project Name: SR 70 From Jefferson Avenue to County Road 29 PD&E Study

FPID No.: 414506-1-22-01

ESA Project Number: D202400953.04

Start Weather

Temperature: 78 (°F)

Wind Direction: East

Wind Speed: 13 (mph)

Visibility: 10 miles

Precipitation: No

End Weather

Temperature: 80 (°F)

Wind Direction: East

Wind Speed: 14 (mph)

Visibility: 10 miles

Precipitation: No

Activity: Event 1 - Skink coverboard checks

Start Time: 08:00

End Time: 17:00

Notes/Comments: Block # 34, 36, 37 (Verdantas) completed



Skink Daily Start-Up

Date: April 28, 2025

Field Staff: ESA – Alex Hipolito, Mike Mulbarger, Alan Alshouse; HNTB – Jonas Leicht, Madison Dulcos, Logan Baxley

Project Name: SR 70 From Jefferson Avenue to County Road 29 PD&E Study

FPID No.: 414506-1-22-01

ESA Project Number: D202400953.04

Start Weather

Temperature: 81 (°F)

Wind Direction: East/Southeast

Wind Speed: 8 (mph)

Visibility: Clear/Sunny (0-10% cloud cover)

Precipitation: No

End Weather

Temperature: 91 (°F)

Wind Direction: East

Wind Speed: 11 (mph)

Visibility: Mostly Sunny (11-25% cloud cover)

Precipitation: No

Activity: Event 2 - Skink coverboard checks

Start Time: 10:40

End Time: 16:15

Notes/Comments: Block #: 43, 42, 40,41, 39, 22, 23 (scrub), 19, 20, 14 completed (ESA, HNTB)



Skink Daily Start-Up

Date: April 29, 2025

Field Staff: ESA – Brett Solomon, Alex Hipolito, Dara Krachenfels, Emily Keenan, Tori Kuba, Alan Alshouse, Richie Patsilevas; Verdantas - Fiona Beane, Emma Robbins, Max Carfagno, Michaela Sweeney

Project Name: SR 70 From Jefferson Avenue to County Road 29 PD&E Study

FPID No.: 414506-1-22-01

ESA Project Number: D202400953.04

Start Weather

Temperature: 75 (°F)

Wind Direction: East

Wind Speed: 10 (mph)

Visibility: Mostly Sunny (11-25% cloud cover)

Precipitation: No

End Weather

Temperature: 95 (°F)

Wind Direction: East

Wind Speed: 13 (mph)

Visibility: Partly Cloudy (26-50% cloud cover)

Precipitation: No

Activity: Event 2 - Skink coverboard checks

Start Time: 09:00

End Time: 15:00

Notes/Comments: Block # 23 (groves), 15, 16, 17, 13, 12, 11, 5, 1, 3, 2, 4, 6, 8, 10 (ESA), 24, 25, 26, 27, 28, 29, 30 (Verdantas) completed



Skink Daily Start-Up

Date: April 30, 2025

Field Staff: Verdantas - Cory Ryder, Fiona Beane, Elijah Blue, Michaela Sweeney

Project Name: SR 70 From Jefferson Avenue to County Road 29 PD&E Study

FPID No.: 414506-1-22-01

ESA Project Number: D202400953.04

Start Weather

Temperature: 73 (°F)

Wind Direction: East

Wind Speed: 11 (mph)

Visibility: 10 miles

Precipitation: No

End Weather

Temperature: 82 (°F)

Wind Direction: Southeast

Wind Speed: 12 (mph)

Visibility: 10 miles

Precipitation: No

Activity: Event 2 - Skink coverboard checks

Start Time: 09:00

End Time: 17:00

Notes/Comments: Block # 32, 33, 38 (Verdantas) completed



Skink Daily Start-Up

Date: May 1, 2025

Field Staff: Verdantas - Tristan Sommers, Elijah Blue, Emma Robins, Michaela Sweeney, Joellen Callahan, Whitney Kinnison

Project Name: SR 70 From Jefferson Avenue to County Road 29 PD&E Study

FPID No.: 414506-1-22-01

ESA Project Number: D202400953.04

Start Weather

Temperature: 79 (°F)

Wind Direction: East /Southeast

Wind Speed: 10 (mph)

Visibility: 10 miles

Precipitation: No

End Weather

Temperature: 82 (°F)

Wind Direction: Southeast

Wind Speed: 9 (mph)

Visibility: 10 miles

Precipitation: No

Activity: Event 2 - Skink coverboard checks

Start Time: 09:00

End Time: 15:00

Notes/Comments: Block # 31(Verdantas) completed



Skink Daily Start-Up

Date: May 2, 2025

Field Staff: Verdantas - Max Carfagno, John Floyd, Tiffany Knighton

Project Name: SR 70 From Jefferson Avenue to County Road 29 PD&E Study

FPID No.: 414506-1-22-01

ESA Project Number: D202400953.04

Start Weather

Temperature: 77 (°F)

Wind Direction: East/ Southeast

Wind Speed: 8 (mph)

Visibility: 10 miles

Precipitation: No

End Weather

Temperature: 80 (°F)

Wind Direction: East/ Southeast

Wind Speed: 8 (mph)

Visibility: 10 miles

Precipitation: No

Activity: Event 2 - Skink coverboard checks

Start Time: 09:00

End Time: 17:00

Notes/Comments: Block # 34, 36, 37 (Verdantas) completed



Skink Daily Start-Up

Date: May 6, 2025

Field Staff: ESA – Victoria Scriven, Alex Hipolito, Mark Barton, Shannon Freemon;
HNTB – Jonas Leicht, Logan Baxley, Madison Dulcos; Verdantas - Michaela
Sweeney, Max Carfagno, Joellen Callahan, Elijah Blue

Project Name: SR 70 From Jefferson Avenue to County Road 29 PD&E Study

FPID No.: 414506-1-22-01

ESA Project Number: D202400953.04

Start Weather

Temperature: 74 (°F)

Wind Direction: North/Northwest

Wind Speed: 10 (mph)

Visibility: Cloudy (88-100% cloud cover)

Precipitation: No

End Weather

Temperature: 92 (°F)

Wind Direction: Southeast

Wind Speed: 4 (mph)

Visibility: Partly Cloudy (26-50% cloud cover)

Precipitation: No

Activity: Event 3 - Skink coverboard checks

Start Time: 08:00

End Time: 15:45

Notes/Comments: Block #1-8, 10-13 (ESA, HNTB), 24, 25, 26, 27, 28, 29, 30 (Verdantas) completed



Skink Daily Start-Up

Date: May 7, 2025

Field Staff: ESA – Alex Hipolito, Mark Barton, Brody Beckert, Andrea Ramos, Dara Krachenfels, Lindsay Cross; HNTB – Jonas Leicht, Logan Baxley, Madison Dulcos; Verdantas - Tristan Sommers, Emma Robbins, Michaela Sweeney, Joellen Callahan

Project Name: SR 70 From Jefferson Avenue to County Road 29 PD&E Study

FPID No.: 414506-1-22-01

ESA Project Number: D202400953.04

Start Weather

Temperature: 72 (°F)

Wind Direction: East/Southeast

Wind Speed: 4 (mph)

Visibility: Clear/Sunny (0-10% cloud cover)

Precipitation: No

End Weather

Temperature: 85 (°F)

Wind Direction: Southeast

Wind Speed: 4 (mph)

Visibility: Partly Cloudy (26-50% cloud cover)

Precipitation: No

Activity: Event 3 - skink coverboard checks

Start Time: 07:30

End Time: 17:30

Notes/Comments: Block# 39-43, 22-23, 14-17, 19-20 (ESA, HNTB), 32, 33, 38 (Verdantas) completed



Skink Daily Start-Up

Date: May 8, 2025

Field Staff: Verdantas - Tristan Sommers, Fiona Bean, Emma Robbins, Elijah Blue, Joellen Callahan, Max Carfagno

Project Name: SR 70 From Jefferson Avenue to County Road 29 PD&E Study

FPID No.: 414506-1-22-01

ESA Project Number: D202400953.04

Start Weather

Temperature: 76 (°F)

Wind Direction: South/Southeast

Wind Speed: 6 (mph)

Visibility: 10 miles

Precipitation: No

End Weather

Temperature: 79 (°F)

Wind Direction: South/Southeast

Wind Speed: 11 (mph)

Visibility: 10 miles

Precipitation: No

Activity: Event 3 - skink coverboard checks

Start Time: 07:30

End Time: 17:30

Notes/Comments: Block# 31 completed (Verdantas)



Skink Daily Start-Up

Date: May 9, 2025

Field Staff: Verdantas - Joellen Callahan, Michaela Sweeney, Tristan Sommers,
Emma Robbins

Project Name: SR 70 From Jefferson Avenue to County Road 29 PD&E Study

FPID No.: 414506-1-22-01

ESA Project Number: D202400953.04

Start Weather

Temperature: 73 (°F)

Wind Direction: South

Wind Speed: 7 (mph)

Visibility: 9 miles

Precipitation: No

End Weather

Temperature: 77 (°F)

Wind Direction: South

Wind Speed: 9 (mph)

Visibility: 10 miles

Precipitation: No

Activity: Event 3 - skink coverboard checks

Start Time: 07:30

End Time: 17:30

Notes/Comments: Block# 34, 36, 37 completed (Verdantas)



Skink Daily Start-Up

Date: May 13, 2025

Field Staff: ESA – Alex Hipolito, Andrea Ramos, Kodi Feldpausch; Verdantas - Michaela Sweeney, Emma Robbins, Max Carfagno, Tristan Sommers

Project Name: SR 70 From Jefferson Avenue to County Road 29 PD&E Study

FPID No.: 414506-1-22-01

ESA Project Number: D202400953.04

Start Weather

Temperature: 74 (°F)

Wind Direction: West/Southwest

Wind Speed: 3 (mph)

Visibility: Clear/Sunny (0-10% cloud cover)

Precipitation: No

End Weather

Temperature: 82 (°F)

Wind Direction: West

Wind Speed: 6 (mph)

Visibility: Partly Cloudy (26-50% cloud cover)

Precipitation: No

Activity: Event 4 - skink coverboard checks and coverboard pick up

Start Time: 08:30

End Time: 18:00

Notes/Comments: Block#: 2,4,6,8,10,13,19,20 (ESA), 24, 25, 26, 27, 28, 29, 30 (Verdantas) completed



Skink Daily Start-Up

Date: May 14, 2025

Field Staff: ESA – Alex Hipolito, Andrea Ramos, Lindsay Cross, Kodi Feldpausch;
HNTB – Jonas Leicht, Logan Baxley; Verdantas - Nate Goddard, Emma Robbins,
Elijah Blue, Cory Ryder

Project Name: SR 70 From Jefferson Avenue to County Road 29 PD&E Study

FPID No.: 414506-1-22-01

ESA Project Number: D202400953.04

Start Weather

Temperature: 72 (°F)

Wind Direction: West/Southwest

Wind Speed: 2 (mph)

Visibility: Clear/Sunny (0-10% cloud cover)

Precipitation: No

End Weather

Temperature: 82 (°F)

Wind Direction: South

Wind Speed: 3 (mph)

Visibility: Mostly Sunny (11-25% cloud cover)

Precipitation: No

Activity: Event 4 - skink coverboard checks and coverboard pick up

Start Time: 08:00

End Time: 19:30

Notes/Comments: Block#: 39,41, 42, 40, 15,16,17,11, 43 (scrub) (ESA, HNTB), 32, 33, 38 (Verdantas) completed



Skink Daily Start-Up

Date: May 15, 2025

Field Staff: ESA – Alex Hipolito, Lindsay Cross, Kodi Feldpausch, Andrea Ramos, Shannon Freemon; HNTB – Jonas Leicht, Logan Baxley; Verdantas - Tristan Sommers, Max Carfagno, Michaela Sweeney, Fiona Beane, Kyle Huhn, Joellen Callahan, Emma Robbins

Project Name: SR 70 From Jefferson Avenue to County Road 29 PD&E Study

FPID No.: 414506-1-22-01

ESA Project Number: D202400953.04

Start Weather

Temperature: 75 (°F)

Wind Direction: South/Southwest

Wind Speed: 1 (mph)

Visibility: Clear/Sunny (0-10% cloud cover)

Precipitation: No

End Weather

Temperature: 88 (°F)

Wind Direction: West

Wind Speed: 10 (mph)

Visibility: Clear/Sunny (0-10% cloud cover)

Precipitation: No

Activity: Event 4 skink coverboard checks and coverboard pick up

Start Time: 08:00

End Time: 17:30

Notes/Comments: Block#: 43 (groves and east end), 22,23,14,12,1, 3,5 (ESA, HNTB), 31, 34, 36, 37 (Verdantas) completed

Appendix E

Representative Skink Track Photographs



Block 2, Board 8 (5/6/2025)



Block 2, Board 10 (5/13/2025)



Block 4, Board 2 (4/24/2025)



Block 5, Board 66 (4/24/2025)



Block 6, Board 5 (5/13/2025)



Block 6, Board 6 (5/6/2025)



Block 6, Board 7 (5/6/2025)



Block 6, Board 9 (5/6/2025)



Block 8, Board 2 (5/6/2025)



Block 8, Board 4 (5/13/2025)



Block 10, Board 5 (5/6/2025)



Block 10, Board 21 (5/6/2025)



Block 10, Board 22 (5/6/2025)



Block 10, Board 32 (5/13/2025)



Block 10, Board 37 (5/13/2025)



Block 10, Board 39 (5/13/2025)



Block 10, Board 111 (5/6/2025)



Block 10, Board 115 (5/6/2025)



Block 11, Board 32 (5/6/2025)



Block 11, Board 33 (4/24/2025)



Block 11, Board 34 (4/29/2025)



Block 11, Board 40 (4/24/2025)



Block 11, Board 43 (4/24/2025)



Block 11, Board 44 (4/24/2025)



Block 11, Board 46 (4/24/2025)



Block 11, Board 47 (5/6/2025)



Block 11, Board 72 (4/24/2025)



Block 11, Board 142 (4/29/2025)



Block 11, Board 216 (4/24/2025)



Block 11, Board 239 (5/6/2025)



Block 11, Board 258 (4/29/2025)



Block 11, Board 259 (4/29/2025)



Block 11, Board 283 (4/29/2025)



Block 11, Board 284 (4/29/2025)



Block 11, Board 287 (4/24/2025)



Block 11, Board 307 (5/6/2025)



Block 11, Board 308 (5/6/2025)



Block 11, Board 334 (4/29/2025)



Block 11, Board 335 (4/24/2025)



Block 11, Board 383 (5/6/2025)



Block 11, Board 384 (4/29/2025)



Block 11, Board 410 (4/29/2025)



Block 11, Board 454 (4/24/2025)



Block 11, Board 475 (5/6/2025)



Block 11, Board 502 (4/24/2025)



Block 11, Board 574 (4/29/2025)



Block 11, Board 620 (5/6/2025)



Block 11, Board 667 (5/6/2025)



Block 11, Board 695 (4/24/2025)



Block 11, Board 716 (5/6/2025)



Block 12, Board 61 (4/23/2025)



Block 12, Board 79 (4/29/2025)



Block 12, Board 146 (5/6/2025)



Block 12, Board 305 (5/6/2025)



Block 12, Board 338 (4/29/2025)



Block 12, Board 342 (4/29/2025)



Block 12, Board 526 (4/29/2025)



Block 12, Board 563 (5/6/2025)



Block 12, Board 708 (5/6/2025)



Block 12, Board 749 (4/23/2025)



Block 12, Board 906 (5/6/2025)



Block 13, Board 19 (5/6/2025)



Block 13, Board 36 (5/6/2025)



Block 13, Board 53 (4/12/2025)



Block 13, Board 54 (5/6/2025)



Block 13, Board 103 (5/12/2025)



Block 13, Board 104 (5/6/2025)



Block 13, Board 115 (5/6/2025)



Block 13, Board 133 (5/6/2025)



Block 13, Board 142 (4/29/2025)



Block 13, Board 258 (4/29/2025)



Block 13, Board 378 (4/23/2025)



Block 13, Board 502 (4/29/2025)



Block 23, Board 115 (4/29/2025)



Block 23, Board 133 (5/7/2025)



Block 23, Board 137 (4/28/2025)



Block 23, Board 173 (4/23/2025)



Block 23, Board 194 (4/23/2025)



Block 23, Board 224 (4/28/2025)



Block 23, Board 292 (5/7/2025)



Block 28, Board 14 (4/29/2025)



Block 28, Board 151 (5/6/2025)



Block 31, Board 27 (4/24/2025)



Block 31, Board 111 (5/8/2025)



Block 31, Board 445 (4/24/2025)



Block 32, Board 59 (4/30/2025)



Block 32, Board 60 (4/30/2025)



Block 38, Board 157 (5/7/2025)



Block 38, Board 196 (4/30/2025)



Block 39, Board 6 (4/28/2025)



Block 39, Board 66 (5/7/2025)



Block 39, Board 88 (5/7/2025)



Block 39, Board 89 (5/7/2025)



Block 39, Board 111 (5/7/2025)



Block 39, Board 112 (5/14/2023)



Block 39, Board 124 (4/28/2025)



Block 39, Board 132 (5/7/2025)



Block 39, Board 134 (5/7/2025)



Block 39, Board 135 (5/7/2025)



Block 39, Board 137 (4/13/2025)



Block 39, Board 151 (4/23/2025)



Block 39, Board 152 (5/7/2025)



Block 39, Board 169 (5/14/2025)



Block 39, Board 181 (4/28/2025)



Block 39, Board 186 (5/7/2025)



Block 40, Board 53 (4/28/2025)



Block 40, Board 64 (4/28/2025)



Block 42, Board 1 (5/7/2025)



Block 42, Board 4 (4/28/2025)



Block 43, Board 9 (4/22/2025)



Block 43, Board 70 (4/28/2025)



Block 43, Board 196 (4/28/2025)



Block 43, Board 208 (4/28/2025)



Block 43, Board 239 (5/7/2025)



Block 43, Board 240 (5/7/2025)



Block 43, Board 245 (5/7/2025)



Block 43, Board 247 (5/7/2025)



Block 43, Board 248 (5/7/2025)



Block 43, Board 264 (4/28/2025)



Block 43, Board 267 (5/7/2025)



Block 43, Board 269 (4/24/2025)



Block 43, Board 270 (4/24/2025)



Block 43, Board 275 (5/14/2025)



Block 43, Board 276 (4/28/2025)



Block 43, Board 290 (4/28/2025)



Block 43, Board 291 (4/24/2025)



Block 43, Board 295 (4/28/2025)



Block 43, Board 296 (5/7/2025)



Block 43, Board 299 (5/7/2025)



Block 43, Board 301 (5/7/2025)



Block 43, Board 304 (5/7/2025)



Block 43, Board 316 (5/14/2025)



Block 43, Board 319 (5/7/2025)



Block 43, Board 321 (4/24/2025)



Block 43, Board 322 (5/7/2025)



Block 43, Board 323 (5/7/2025)



Block 43, Board 325 (5/14/2025)



Block 43, Board 327 (5/7/2025)



Block 43, Board 328 (5/7/2025)



Block 43, Board 331 (5/7/2025)



Block 43, Board 343 (4/24/2025)



Block 43, Board 344 (4/24/2025)



Block 43, Board 345 (5/7/2025)



Block 43, Board 346 (5/7/2025)



Block 43, Board 347 (4/24/2025)



Block 43, Board 348 (5/7/2025)



Block 43, Board 349 (5/7/2025)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix E
Representative Sand Skink Track
Photographs



Block 43, Board 350 (5/7/2025)



Block 43, Board 351 (5/7/2025)



Block 43, Board 359 (4/24/2025)



Block 43, Board 360 (5/7/2025)

SR 70 from Jefferson Avenue to CR 29
FPID: 414506-1-22-01

Appendix E

Representative Sand Skink Track Photographs



Block 43, Board 361 (5/7/2025)



Block 43, Board 362 (5/7/2025)



Block 43, Board 364 (4/28/2025)



Block 43, Board 365 (5/7/2025)



Block 43, Board 366 (4/28/2025)



Block 43, Board 367 (5/14/2025)



Block 43, Board 374 (5/7/2025)



Block 43, Board 376 (5/7/2025)



Block 43, Board 377 (5/7/2025)



Block 43, Board 378 (5/7/2025)



Block 43, Board 379 (5/7/2025)



Block 43, Board 380 (5/7/2025)



Block 43, Board 382 (5/7/2025)



Block 43, Board 391 (5/7/2025)



Block 43, Board 392 (5/7/2025)



Block 43, Board 394 (5/7/2025)



Block 43, Board 395 (5/7/2025)



Block 43, Board 397 (5/14/2025)



Block 43, Board 398 (5/7/2025)