Appendix 5B-5: Summary of STA Black-necked Stilts and Other Protected Birds during the 2015 Nesting Season

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The South Florida Water Management District (SFWMD or District), in cooperation with the United States Fish and Wildlife Service (USFWS), finalized an Avian Protection Plan (APP) in 2008 for the Everglades Stormwater Treatment Areas (STAs) and their expansions, which focused on black-necked stilts (*Himantopus mexicanus*) and Florida burrowing owls (*Athene cunicularia floridana*) (Pandion Systems 2008). These two species are afforded protected status under the Migratory Bird Treaty Act of 1918. Additional protected status has been given to the burrowing owl, as they are also listed as a species of special concern in the state of Florida. Black-necked stilts and Florida burrowing owls are used as sentinel species for the APP. This means that by addressing these two species, negative impacts to other protected migratory bird species should also be minimized within the Everglades STAs. The APP characterizes the risks to ground-nesting migratory bird species from STA construction, operation, start-up, drought conditions, routine maintenance and enhancement activities, and outlines actions intended to minimize harmful impacts to migratory birds and their nests due to these potential disturbances. The APP is unconventional in that it has been developed to help manage the operation of constructed treatment wetlands, i.e., the STAs, which already provide important habitat, nesting, and foraging benefits to migratory birds as compared to the previous agricultural land use (Gawlik and Beck 2010). This was the tenth year the black-necked stilt nesting surveys have been conducted using the methods outlined in the APP. The protective measures outlined in the APP were implemented between April and July 2015. The APP survey results from Calendar Year 2015 (CY2015) are presented in this appendix.

Everglade snail kites (*Rostrhamus sociabilis*) were observed nesting within STA-5 Cell 1A and Cell 2A in April 2010 (Kitchens 2010). This was the first documented nesting of this federally and state-listed endangered avian species in any of the STAs operated by the District. Since that time, the University of Florida (UF) Snail Kite Lab has conducted snail kite nesting surveys in the STAs during this species' nesting season. When snail kite nests are observed, the UF Snail Kite Lab examines the nests and reports their findings to the District and USFWS. From 2010 to 2014, there were 189 snail kite nesting attempts observed within the Everglades STAs.

During CY2015, the UF Snail Kite Lab conducted snail kite nesting surveys within the Everglades STAs between mid-January and mid-August. There were 93 snail kite nests that were established in STA-1 East (STA-1E) Cell 4N (15 nests; **Figure 1**), STA-1E Cell 1 (5 nests; **Figure 1**), STA-5/6 Cell 5-3B (19 nests; **Figure 2**), STA-5/6 Cell 5-5A (6 nests; **Figure 2**), and STA-5/6 Cell 5-5B (48 nests; **Figure 2**). Everglade snail kite nesting activities for the 2015 nesting season in the STAs, based on surveys conducted by UF, are summarized in this appendix.

Figure 1. Locations of the 20 Everglade snail kite nests in STA-1E Cells 1 and 4N from March 5 to August 12, 2015.
[Note: Diamonds represent snail kite nests.]

Figure 2. Locations of the 73 Everglade snail kite nests in STA-5/6 Cells 5-3B, 5-5A and 5-5B from January 13 to August 5, 2015.
[Note: Diamonds represent snail kite nests.]

BURROWING OWLS

No burrowing owl nests were observed within the confines of any of the Everglades STAs during the CY2015 surveys.

BLACK-NECKED STILTS

Standardized surveys were conducted according to the APP. Close coordination among scientists, water operators, field stations, and USFWS biologists was maintained throughout the black-necked stilt nesting season. Operational procedures related to water flow and levee and canal maintenance were implemented accordingly to reduce impacts to ground-nesting birds within the STAs. Although the abundance of stilt chicks was not measured, several dozen black-necked stilt chicks were observed foraging near adult birds in several STAs during May, June, and July 2015.

Consistent with the APP, black-necked stilts were the focus of the surveys, as they are considered to be an abundant and conservative indicator species for ground-nesting birds in the STAs. Black-necked stilts nest directly on the ground, often close to the water's edge, or they construct nests that emerge about three to five inches above shallow water. Nest sites are vulnerable to increases in water levels, more than other ground-nesting species that select sites farther upslope or in standing vegetation.

During the 2015 nesting season, 204 black-necked stilt nests were observed in the STAs (**Table 1**). This number of nests was below the previous nine-year average (318 nests per year); however, it was higher than the average observed over the past five years (164 nests per year). There were several hydrologic events that occurred in the Everglades STAs, which likely contributed to the number of stilt nests observed during 2015: (1) prior to the start of the stilt nesting season, water managers were able to keep most STA cells hydrated by managing available water sources, (2) Cell 1A of STA-1 West (STA-1W) was dried down by STA managers in order for new plants to be placed in this cell as well as the construction of a new levee north of Cell 1A, and (3) the rainy season began later than normal, after the majority of stilt nesting was complete. Over 40 percent of the stilt nests observed were associated with the Cell 1A drydown event. Without this cell drydown, black-necked stilt nesting during 2015 would have likely been similar to the prior three years. Within other Everglades STA cells, most cells were inundated to a level at which few black-neck stilts were able find shallow water or exposed ground to establish nests within the STAs. In addition to these hydrologic conditions, the coverage of emergent plants in many cells has increased as the STA marshes have matured. STA managers have also continued to plant large areas of the marsh with emergent vegetation to limit short circuits through the STAs and to help keep submerged aquatic vegetation from moving large distances during strong wind events. Increased emergent vegetation coverage and the decrease in shallow open water areas that are the preferred nesting locations for black-necked stilts and other ground-nesting migratory birds have resulted in less overall available nesting habitat. Once the rainy season began, the District was able to manage water levels and, to the greatest extent possible, minimize the flooding of locations where nests were present.

Table 1. Summary of black-necked stilts nesting in the STAs from 2006 to 2015.

Year	STA-1E	STA-1W	STA-2	STA-3/4	STA-5/6	Total Nests
2006	186	49	0	5	122	362
2007	102	236	74	55	147	614
2008	69	26	16	7	73	191
2009	102	360	237	69	105	873
2010	150	19	29	15	14	227
2011	42	105	39	142	11	339
2012	9	5	0	4	15	33
2013	23	13	12	4	45	97
2014	0	16	32	1	73	122
2015	4	95	36	0	69	204

Sources: Pietro et al. (2010), Germain and Pietro (2011), Ivanoff et al. (2012, 2013), Chimney (2014, 2015).

Black-necked stilt nest surveys of treatment cells were performed from the levees (levee surveys) by experienced and trained District staff. Levee surveys represent a resourceful way to observe a large area and obtain useful information regarding the relative number of nests within a treatment cell. Three different types of levee surveys were implemented based on the type of information needed to make operational decisions:

1. Monthly – This survey type was performed once a month from the beginning of the breeding season. All treatment cells were surveyed to provide baseline nesting information and the basis for operational decisions throughout the season.
2. Supplementary – This survey type was performed on an as needed basis depending on nesting and water conditions. This type of survey was performed during periods between monthly surveys. Selected treatment cells were surveyed to provide information needed to make operational decisions.
3. Spot-check – This survey type was performed on an as-needed basis, depending on nesting and water conditions. Inspections were done on specific nest locations previously recorded.

Levee surveys were conducted using binoculars [16 x 50 millimeter (mm)] or a spotting scope (20–60 x 80 mm). A hand-held global positioning system (GPS) unit provided latitude and longitude of the observer location on the levee where nests were detected inside a treatment cell. Distance from the observer to the nest(s) was measured with a rangefinder (6 x 216.0 degrees). Information including coordinates of observer, number and distance of nests, observations, and observer initials were recorded in the field on survey sheets. After each survey was completed, summarized data were analyzed and incorporated into reports. Reports were standardized for all STAs and used to inform District staff of the location of black-necked stilt nests and number of nests by treatment cell. Reports regarding black-necked stilt nest activity and locations, and the resulting activity restrictions within the STAs, were distributed by e-mail to both District and USFWS staff.

MODIFICATION OF OPERATIONAL PROCEDURES AND LEVEE, CANAL AND STRUCTURE MAINTENANCE

Adjustments to STA operations and maintenance procedures were developed in accordance with the APP to reduce impacts to ground-nesting birds within the STAs. Where possible, flow was routed to areas that did not have nests. Schedules for grass mowing and road grading for levee and canal maintenance were adjusted at locations where nesting was observed to times outside of the black-necked stilt nesting season. Additionally, bean-bag markers were placed along roadways to mark nests that could potentially be impacted by vehicle traffic.

While grass mowing schedules within the STAs were modified based on the black-necked stilts' nesting season, these changes also benefited other protected ground-nesting migratory bird species including killdeer (*Charadruis vociferous)*, common nighthawks (*Chordeiles minor*), and least terns (*Sternula antillarum*). Several dozen protected ground-nesting birds were observed nesting on STA levee roads and staging areas between March and July 2015. Black-necked stilts, killdeers, common nighthawks, and least terns have similar incubation periods ranging between 18 to 25 days (Robinson et al. 1999, Jackson and Jackson 2000, Thompson et al. 1997, Poulin et al. 1996). While black-necked stilts and killdeer have normally completed their nesting activities in the Everglades STAs by early July, common nighthawks and least terns can sometimes nest into mid-August. Modifications to operations and maintenance within the STAs during Water Year 2015 (WY2015) (May 1, 2014–April 30, 2015) are shown in **Table 2**. Access to individual STA levees and structures was modified as necessary to protect ground-nesting birds and to keep activities to a minimum within the USFWS recommended 500-foot buffer zones around snail kite nests (**Table 3**).

Table 2. Modified STA operations and maintenance activities implemented during WY2015 due to migratory bird nesting.

WY2015 Operational Changes to Individual STAs Due to Nesting					
STA	**Cell**	**Affected Time Period**	**# of Nests**	**Species**	**Adjustment to Operations**
1E	4N	May 1 to May 21, 2014	1	Everglade Snail Kite	Guidance was issued to operate stages in Cell 4N between 16.4 feet and 15.1 feet between May 1 and May 12. Limited access to Cells 4N and 4S for all O&M activities from May 1 to May 21.
1E	4N	March 3 to April 30, 2015	12	Everglade Snail Kite	Guidance was issued to operate stages in Cell 4N between 16.3 feet and 15.1 feet between March 3 and March 28. Guidance was issued to operate stages in Cell 4N between 16.7 feet and 15.1 feet between March 29 and April 18. Guidance was issued to operate stages in Cell 4N between 16.3 feet and 15.1 feet between April 19 and April 30. Limited access to Cells 2, 4N, and 4S for all O&M activities from March 3 to April 30.
1E	1	March 28 to April 30, 2015	1	Everglade Snail Kite	Guidance was issued to keep stages above 17.9 feet in this cell during this period. Limited access to Cell 1 for all O&M activities from March 28 to April 30.
1E	5	April 24 to April 30, 2015	1	Black-necked Stilt	Guidance was issued to keep stages under 14.3 feet in this cell during this period.
1W	5B	May 1 to June 19, 2014	16	Black-necked Stilt	Guidance was issued to keep stages under 11.0 feet in this cell during this period.
1W	1A	April 28 to April 30, 2015	18	Black-necked Stilt	Guidance was issued to keep stages under 10.8 feet in this cell during this period.
2	3	May 14 to June 18, 2014	6	Black-necked Stilt	Guidance was issued to keep stages under 10.9 feet in this cell during this period.
2	5	May 9 to April 3, 2014	6	Black-necked Stilt	Guidance was issued to keep ages under 10.9 feet in this cell during this period.
2	6	May 9 to June 18, 2014	20	Black-necked Stilt	Guidance was issued to keep stages under 10.9 feet in this cell during this period.
2	5	April 27 to April 30, 2013	3	Black-necked Stilt	Guidance was issued to keep stages under 10.6 feet in this cell during this period.
2	6	April 27 to June 30, 2015	2	Black-necked Stilt	Guidance was issued to keep stages under 10.7 feet in this cell during this period.
3/4	3B	May 21 to June 18, 2014	1	Black-necked Stilt	Guidance was issued to keep stages under 10.9 feet in this cell during this period.
5/6	5-2A	May 1 to May 6, 2014	1	Everglade Snail Kite	Guidance was issued to keep stages above 14.3 feet in this cell during this period. Access to the G-343F structure was restricted during this period due to its proximity to the nest.
5/6	5-3B	May 1 to October 13, 2014	73 & 10	Everglade Snail Kite & Black-necked Stilt	Guidance was issued to operate stages in Cell 5-3B between 14.4 feet and 13.4 feet between May 1 and June 11. Guidance was issued to operate stages in Cell 5-3B between 13.8 feet and 13.4 feet between June 12 and August 15. Guidance was issued to operate stages in Cell 5-3B between 14.1 feet and 13.4 feet between August 16 and August 27. Guidance was issued to operate stages in Cell 5-3B between 14.6 feet and 13.4 feet between August 28 and September 29. Guidance was issued to operate stages in Cell 5-3B between 15.0 feet and 13.4 feet between September 16 and October 13. Limited access to Cell 5-3B for all O&M activities from May 1 to October 13, 2014.

Table 2. Continued.

WY2015 Operational Changes to Individual STAs Due to Nesting					
STA	**Cell**	**Affected Time Period**	**# of Nests**	**Species**	**Adjustment to Operations**
5/6	5-4A	May 1 to July 17, 2014	3 & 53	Everglade Snail Kite & Black-necked Stilt	Guidance was issued to operate stages in Cell 5-4A between 16.4 feet and 14.4 feet between May 1 and May 12. Guidance was issued to operate stages in Cell 5-4A between 15.4 feet and 14.4 feet between May 13 and June 3. Guidance was issued to operate stages in Cell 5-4A between 14.9 feet and 14.4 feet between June 4 and June 19. Guidance was issued to operate stages in Cell 5-4A between 14.4 feet and 13.4 feet between June 20 and July 17. Limited access to Cell 5-4A for all O&M activities from May 1 to July 17, 2014.
5/6	5-4B	May 1 to June 23, 2014	16	Black-necked Stilt	Guidance was issued to keep stages above 13.2 feet in this cell between May 1 and May 20. Guidance was issued to keep stages above 13.3 feet in this cell between May 21 and June 23.
5/6	6-4	May 1 to June 3, 2014	2	Black-necked Stilt	Guidance was issued to operate stages under 10.3 feet in this cell during this period.
5/6	5-5A	May 20 to June 20, 2014	6	Black-necked Stilt	Guidance was issued to keep stages above 13.2 feet in this cell between May 20 and June 20.
5/6	5-5B	May 20 to October 24, 2014	25 & 5	Everglade Snail Kite & Black-necked Stilt	Guidance was issued to keep stages above 13.0 feet in this cell between May 20 and May 30. Guidance was issued to operate stages in Cell 5-5B between 14.5 feet and 13.0 feet between May 31 and June 19. Guidance was issued to operate stages in Cell 5-5B between 14.6 feet and 13.0 feet between June 20 and July 1. Guidance was issued to operate stages in Cell 5-5B between 14.2 feet and 13.0 feet between July 2 and July 17. Guidance was issued to operate stages in Cell 5-5B between 14.6 feet and 13.0 feet between July 18 and August 15. Guidance was issued to operate stages in Cell 5-5B between 15.2 feet and 13.0 feet between August 16 and August 27. Guidance was issued to operate stages in Cell 5-5B between 14.2 feet and 13.0 feet between August 28 and September 9. Guidance was issued to operate stages in Cell 5-5B between 14.0 feet and 13.0 feet between September 10 and September 29. Guidance was issued to operate stages in Cell 5-5B between 15.0 feet and 13.0 feet between September 30 and October 13. Limited access to Cell 5-4A for all O&M activities from May 20 to October 24, 2014. Access to the G-344I structure was restricted between July 17 and August 15 due to its proximity to the multiple nests.
5/6	5-5A	August 15 to October 24, 2014	8	Everglade Snail Kite	Guidance was issued to operate stages in Cell 5-5A between 15.2 feet and 14.7 feet between August 15 and August 27. Guidance was issued to operate stages in Cell 5-5A between 15.8 feet and 14.0 feet between August 28 and September 9. Guidance was issued to operate stages in Cell 5-5A between 16.1 feet and 14.0 feet between September 10 and September 29. Guidance was issued to operate stages in Cell 5-5A between 16.5 feet and 14.0 feet between September 30 and October 11. Limited access to Cell 5-4A for all O&M activities from August 15 to October 24, 2014.
5/6	5-3B	January 14 to April 30, 2015	10 & 5	Everglade Snail Kite & Black-necked Stilt	Guidance was issued to operate stages in Cell 5-3B between 15.6 feet and 13.4 feet between January 14 and March 30. Guidance was issued to operate stages in Cell 5-3B between 14.9 feet and 13.4 feet between March 31 and April 20. Guidance was issued to operate stages in Cell 5-3B between 14.5 feet and 13.4 feet between April 21 and April 30. Limited access to Cell 5-3B for all O&M activities from January 14 to April 30, 2015.

Table 2. Continued.

WY2015 Operational Changes to Individual STAs Due to Nesting					
STA	**Cell**	**Affected Time Period**	**# of Nests**	**Species**	**Adjustment to Operations**
5/6	5-5A	January 14 to March 9, 2015	2	Everglade Snail Kite	Guidance was issued to operate stages in Cell 5-5A between 15.2 feet and 13.6 feet between January 14 and March 9. Limited access to Cell 5-5A for all O&M activities from January 14 to March 9, 2015.
5/6	5-5B	February 13 to April 30, 2015	14	Everglade Snail Kite	Guidance was issued to operate stages in Cell 5-5B between 13.8 feet and 13.0 feet between February 13 and March 9. Guidance was issued to operate stages in Cell 5-5B between 13.6 feet and 13.0 feet between March 10 and March 30. Guidance was issued to operate stages in Cell 5-5B between 14.7 feet and 13.0 feet between March 31 and April 20. Guidance was issued to operate stages in Cell 5-5B between 14.0 feet and 13.0 feet between April 21 and April 30. Limited access to Cell 5-5B for all O&M activities from February 13 to April 30, 2015.
5/6	5-5A	March 30 to April 30, 2015	1	Everglade Snail Kite	Guidance was issued to operate stages in Cell 5-5A between 15.6 feet and 13.6 feet between March 31 and April 20. Guidance was issued to operate stages in Cell 5-5A between 15.3 feet and 13.6 feet between April 21 and April 30. Limited access to Cell 5-5A for all O&M activities from March 30 to April 30, 2015.
5/6	5-4A	April 29 to April 30, 2013	2	Black-necked Stilt	Guidance was given to keep stages under 13.5 feet in this cell during this period.

Note: O&M – operations and maintenance.

Table 3. Modified STA access to levees and structures implemented during WY2015 due to migratory bird nesting.

WY2015 Structure and Levee Access to Individual STAs Due to Nesting				
Location	**Affected Time Period**	**# of Nests**	**Species**	**Adjustment to Operations**
STA-1E at the rock stockpiles on the eastern part of the north levee	May 1 to June 19, 2014	~20	Least Tern	Tern nesting became widespread and activities near the stockpiles ceased. These rock stockpiles are used to repair washouts on STA levee roads.
STA-1E at southern portion of Cell 4N and the northern portion of Cell 4S	May 1 to May 21, 2014	1	Everglade Snail Kite	Access was restricted in an approximate 18-acre area in Cell 4N and vegetation treatments were limited in the approximate 300-acre northern half of Cell 4S.
STA-1W on levee between Cells 2B and 4	May 16 to June 9, 2014	1	Black-necked Stilt	Ground nest was marked with bean bags and reported to District staff. Mowers avoided area until nesting was completed in early June 2014.
STA-2 on levee at the northeastern corner of Cell 4	May 1 to May 9, 2014	1	Killdeer	Ground nest was marked with bean bags and reported to District staff. Mowers avoided area until nesting was completed in early May 2014.
STA-2 on levee at the northeastern corner of Cell 4	June 18 to July 17, 2014	1	Killdeer	Ground nest was marked with bean bags and reported to District staff. Mowers avoided area until nesting was completed in mid-July 2014.
STA-5/6 on levee on the west levee of Cell 6-2	May 1 to May 7, 2014	1	Killdeer	Ground nest was marked with bean bags and reported to District staff. Mowers avoided area until nesting was completed in early May 2014.
STA-5/6 on levee on the west levee of Cell 6-3	May 1 to May 7, 2014	1	Killdeer	Ground nest was marked with bean bags and reported to District staff. Mowers avoided area until nesting was completed in early May 2014.
STA-5/6 on levee on the west levee of Cell 6-5	May 1 to May 7, 2014	1	Killdeer	Ground nest was marked with bean bags and reported to District staff. Mowers avoided area until nesting was completed in early May 2014.

Table 3. Continued.

WY2015 Structure and Levee Access to Individual STAs Due to Nesting				
Location	**Affected Time Period**	**# of Nests**	**Species**	**Adjustment to Operations**
STA-5/6 levee between Cells 5-2A and 5-2B	May 1 to May 6, 2014	1	Everglade Snail Kite	The levee between Cells 5-2A and 5-2B was closed from the G-343E structure to the south end of the levee with access completely closed to the G-343F structure.
STA-5/6 levees south of Cell 5-2B and north of Cell 5-3B	May 1, 2014 to October 13, 2014	70	Everglade Snail Kite	The south levee of Cell 5-2B was closed from May 1 to July 28. The north levee of Cell 5-3B was closed from May 1 to October 7. No access to structures was restricted due to these levee closures.
STA-5/6 north and east levees of Cell 5-5B	May 30, 2014 to October 7, 2014	25	Everglade Snail Kite	The northern levee of Cell 5-5B was closed from May 30 to October 7. The eastern levee was partially closed from the northeastern corner of the cell to the G-344I structure from May 30 to June 17. During this period of time no access to structures was restricted due to this levee closure. From June 17 to August 15 the eastern levee was closed from the northeastern corner of the cell to the G-344K structure. This closure restricted access to the G-344I and G-344J structures. From August 15 to September 16, the levee was closed from the northeastern corner of the G-344I structure. Once again no access to structures was restricted during this period of time.
STA-1E levees south and east of Cell 4N	March 6 to April 30, 2015	8	Everglade Snail Kite	The southern and eastern levees of Cell 4N was closed from March 6 to April 30. This limited access to the structures on the southern levee, but water quality crews were allowed to make a visit for water quality sampling purposes. The east levee closure did not restrict access to any structures.
STA-2 on levee at the northeastern corner of Cell 4	April 27 to April 30, 2015	1	Killdeer	Ground nest was marked with bean bags and reported to District staff. Mowers avoided area until nesting was completed in late May 2015.
STA-5/6 levee north of Cell 5-3B	January 14 to April 30, 2015	10	Everglade Snail Kite	The north levee of Cell 5-3B was closed from January 14 to April 30. No access to structures was restricted due to these levee closures.
STA-5/6 levee north of Cell 5-5B	March 30 to April 30, 2015	14	Everglade Snail Kite	The north levee of Cell 5-5B was closed from March 30 to April 30. No access to structures was restricted due to these levee closures.
STA-5/6 on levee between Cells 5-4A and 5-4B	April 9 to April 30, 2014	2	Killdeer	Ground nest was marked with bean bags and reported to District staff. Mowers avoided area until nesting was completed in late June 2015.
STA-5/6 on the eastern internal levee of Cells 5-4A	April 9 to April 30, 2014	1	Killdeer	Ground nest was marked with bean bags and reported to District staff. Mowers avoided area until nesting was completed in late-June 2015.
STA-5/6 on levee in between Cells 5-3A and 5-3B	April 20 to April 30, 2014	1	Killdeer	Ground nest was marked with bean bags and reported to District staff. Mowers avoided area until nesting was completed in late June 2015.
STA-5/6 on levee between Cells 5-3A and 5-4A	April 29 to April 30, 2014	1	Killdeer	Ground nest was marked with bean bags and reported to District staff. Mowers avoided area until nesting was completed in late July 2015.

SURVEY RESULTS FROM THE 2015 BLACK-NECKED STILT NESTING SEASON

The CY2015 nesting season surveys began in late April 2015, with the earliest stilt nest observed on April 24 in STA-1E. Because few nests are observed during the April monthly survey, the May monthly surveys are conducted during the middle of the month. The May monthly surveys were implemented between May 15 and 22. The June monthly survey was performed between June 8 and 18. A supplementary survey was conducted in STA-1E at the beginning of June to observe nesting in Cell 5 of this STA. Five supplementary surveys were performed in STA-1W during May and April. Three spot checks of the known nests in Cell 5B were performed during July after rain events to see if nests were still active. Two supplementary surveys were conducted during June in Cells 5 and 6 of STA-2 to check on the status of nests within this STA and the last survey found that all nesting was complete. A spot check survey was conducted in STA-5/6 Cells 5-3B, 5-4A, and 5-5B in late June to check the status of nesting in this STA. The nesting season was determined to be complete on July 10 when a spot check survey in STA-1W Cell 5B observed no active stilt nests.

Overall, 204 black-necked stilt nests were observed via levee surveys during the 2015 nesting season (**Table 1**), with the highest number of nests observed in STA-1W (95 nests), followed by STA-5/6 (69 nests). This appeared to be a typical nesting season compared to prior stilt nesting seasons in the STAs with nest observations increasing about a week earlier than normal and also slowing down about a week earlier than normal (**Figure 3**). All surveys from 2010 to 2015 were conducted by the same individuals, so the annual nest counts are comparable. Several dozen precocial black-necked stilt chicks (**Figure 4**) were observed in the STAs where stilt nests had been observed.

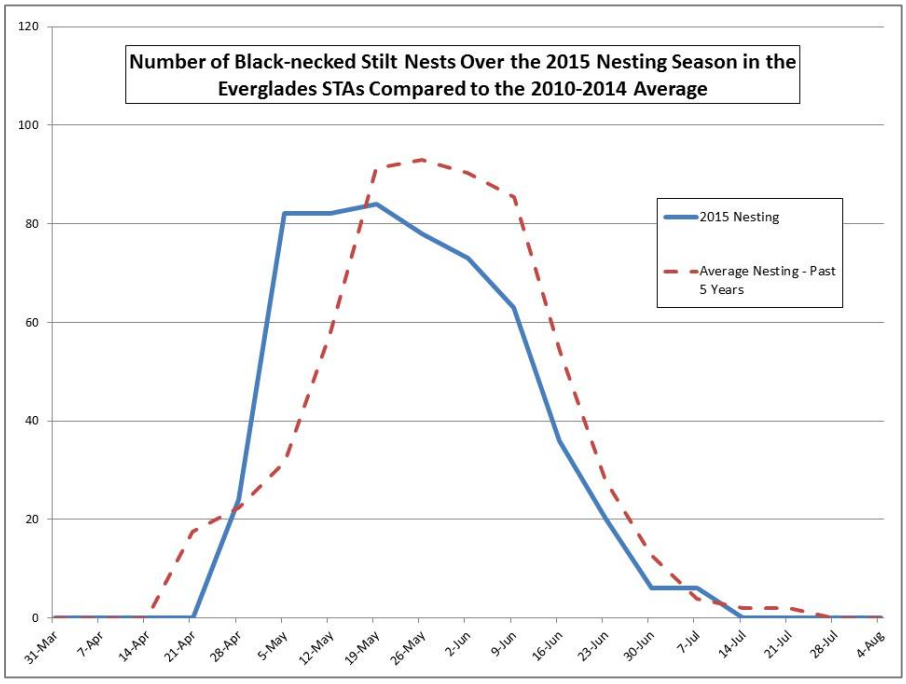

Figure 3. Total number of black-necked stilt nests each week during the 2015 nesting season compared to the average number of nests during the 2010–2014 nesting seasons.

Figure 4. A precocial black-necked stilt chick in STA-5/6 Cell 5A (photo by SFWMD, June 2015).

EVERGLADE SNAIL KITES

The UF Snail Kite Lab personnel confirmed reports of snail kite nests within STA-5/6 during their January survey and within STA-1E during their March survey. From March 5 to August 31, there were 20 snail kite nests confirmed within STA-1E Cells 1 (Fletcher 2015; **Figure 1**). These snail kite nests were found in two different cells in STA-1E including Cell 1 (5 nests) and Cell 4N (15 nests). From January 13 to August 5, there were 73 snail kite nests observed in STA-5/6 (Fletcher 2015; **Figure 2**). These snail kite nests were found in three separate cells in STA-5/6 including Cell 5-3B (19 nests), Cell 5-5A (6 nests), and Cell 5-5B (48 nests). Although snail kite nesting has occurred in STA-3/4 previously, there were no nests established in this STA during 2015 (Fletcher 2015). No snail kite nests have ever been observed in STA-1W or STA-2. Construction, operations, and maintenance activities near all of the snail kite nests were performed in ways to avoid disturbing the nests (**Table 2**). The stages in STA cells with snail kite nests were adjusted multiple times during WY2015 to minimize potential impacts to nests and chicks (**Tables 2**). The USFWS was consulted on construction, maintenance, and operational activities that might negatively affect snail kite nesting.

Snail kites have been confirmed nesting in the Everglade STAs since 2010. Since that time, there have been 282 recorded nests constructed by snail kites within the Everglades STAs with 42 percent of known nests successfully fledging one or more chicks during this period (**Table 4**).

Table 4. Annual snail kite nesting numbers and success rate within the STAs. Success rate is measured by a nest fledging one or more chicks.

	2010	2011	2012	2013	2014	2015	Six Year Totals
Nesting Attempts	29	1	1	45	113	93	282
Successful Nests	7	0	1	22	40	48	118
Failed/Incomplete Nests	18	1	0	18	54	34	125
Unknown Final Status	4	0	0	5	19	11	39
Percent Successful	**24%**	**0%**	**100%**	**49%**	**35%**	**52%**	
Overall Success Rate	**42%**						

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