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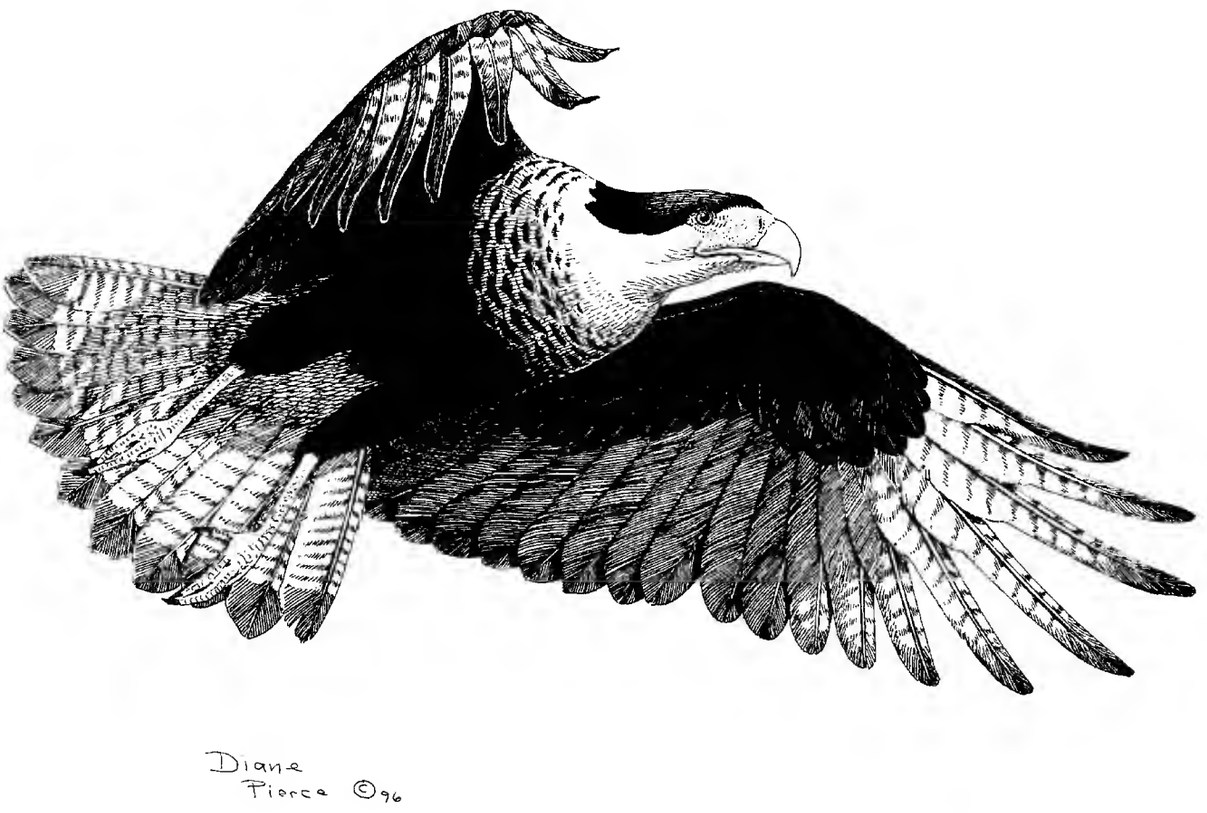

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(1) be double-spaced throughout, including tables and figure captions;

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FALL MIGRATION OF YELLOW WARBLERS (*Setophaga petechia*) IN WEST-CENTRAL FLORIDA

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Abstract.—A total of 5,993 Yellow Warblers (*Setophaga petechia*) were counted during fall migration at two study sites on and near the Gulf coast of Florida from 2006 through 2014. The total number of individuals counted per month for the nine years was 85 in July, 1,710 in August, 3,369 in September, and 829 in October. The migration pattern revealed three peaks in numbers: one in the middle of August, one at the end of the first week in September, and the highest peak in the third week of September. Photography was also used to classify 1,713 warblers by age and dorsal color. Of this sample, 807 warblers were "first-fall" birds and 906 were "after-hatch-year" adults. The high percentage of adult birds (53%) indicates that the west-central area of Florida is near the center of the main Yellow Warbler fall migration route, because first-fall birds are expected to predominate on the periphery. First-fall birds also appeared earliest in the migration and continued to be in the majority until the end of the second week in August. Birds with green and darker dorsal-plumage made up the majority of the migrants in the photo sample from September through October; this coloration, which is characteristic of more western and northern subspecies such as *S. p. amnicola*, suggests that the later arriving birds had relatively distant origins.

INTRODUCTION

Yellow Warblers (*Setophaga petechia*) are uncommon during spring migration in west-central Florida (Dunn and Garrett 1997), but are abundant during fall migration (Stevenson and Anderson 1994). A 10-year spring migration count at Green Key Peninsula, on the west-central coast of Florida, resulted in only six Yellow Warblers in a total of 12,885 warblers identified (Tracey and Greenlaw 2011), indicating that spring migration chiefly crosses the Gulf of Mexico west of Florida. Fall migration appears to begin along a broad front that corresponds to the width of the species' breeding range in North

America (Lincoln et al. 1998), and continues across the lower United States with extralimital reports east to Bermuda (Lowther et al. 1999). Peak fall migration in Florida is believed to occur from mid-August to early September (Dunn and Garrett 1997, Floyd 2008). Some August migrants appear to be diurnal and use a circum-Gulf route (Duncan and Weber 1985).The Yellow Warbler has nine recognized subspecies (Browning 1994). The nesting areas for seven of these subspecies are in North America; the eighth is in Mexico, and the ninth is bisected by the border (Fig. 6). The fall migration routes of some subspecies have been confirmed by collected specimens. Confirmed fall subspecies passing through Florida include *S. p. aestiva,* which nests all over eastern/central U.S. and southern Canada; *S. p. amnicola,* which nests in northern Canada; *and S. p. rubiginosa,* which nests in the coastal areas of Alaska and British Columbia (Stevenson and Anderson 1994). Although western/Pacific subspecies generally migrate to Mexico and South America (Dunn and Garrett 1997), the fact that *S. p. rubiginosa* has been collected in eastern and southern states, ranging from Massachusetts to Louisiana (Chamberlin 1934, Griscom 1941, Mcatee et al. 1944, Parkes 1968), indicates that these subspecies can pass through Florida.

The chief goal of this study was to document the timing and nature of the Yellow Warblers' fall migration in west-central Florida. This goal was achieved through counting methods and through digital photography, which allowed me to assess characteristics of each bird. Characteristics included age, gender, and plumage color on the head and upperparts of adult males. These images were used to match colors and patterns of subspecies described in the literature (Browning 1994) known to pass through Florida (chiefly *S. p. aestiva* and *S. p. amnicola*), and to clarify the importance of the Florida gulf coast as a route of southward travel.

Methods

Study areas

This study covered nine fall seasons from 2006 through 2014 in Pasco County, Florida. Data was collected from 21 July to 29 October of each year. The majority of Yellow Warblers counted in this study were at Robert K. Rees Park (28.25449 N, -82.75383 W), which is on the Gulf of Mexico at the Green Key peninsula, and at Lake Lisa Park (28.28756 N, -82.69742 W), which is two miles inland from the Gulf in Port Richey, FL. A 2014 point count survey was done along Green Key Road 145 m east of the entrance gate at Robert K. Rees Park (28.254938 N, -82.749925 W). Because most migrants pass unseen overhead in both nocturnal and diurnal variations, I focused on two appealing habitats for stopover warblers: mangroves along the coast at Robert K. Rees Park, and Brazilian pepper (*Schinus terebinthifolius*) stands on the edge of an inland pond at Lake Lisa Park. These areas not only have suitable vegetation that provides food and shelter – they also resemble wooded and scrubby wetland areas that Yellow Warblers use for breeding (Lowther et al. 1999).

Counting methods

Of the 909 possible count days during these fall seasons, I completed morning counts on 469. Bad weather and other commitments were limiting factors on some mornings, but the successful sample of count days represents more than half of the available days. An additional 28 evening counts were performed in 2014. All counts lasted approximately one hour. Two counting methods were employed: standard count and point count. The standard count method was followed during each morning count. At Robert K. Rees Park, I walked the 0.58 km Green Key Road from the park gate to the beach searching for birds in the mangroves. Due to the very dense vegetation, I initially recognized the presence of warblers by the sound of their bills snapping on insects in the mangroves. I then played a Yellow Warbler recording to bring them into view. All identifiable warblers were counted.

At Lake Lisa Park, which is an old lime-rock quarry, I walked the 0.65 km pedestrian path along the east side of the quarry's edge. Migrating warblers frequented a narrow strip of Brazilian Peppers between this path and the quarry's edge. A Yellow Warbler recording was, again, used to lure the warblers out of the Brazilian peppers to photograph and count.

Migrating Prairie Warblers (*Setophaga discolor*) were also counted at Robert K. Rees Park as a control measure. This data gave me the opportunity to conduct a comparative analysis of fall migration patterns between the two species, in effort to look for potential environmental effects that are unique to this study area. The geography of the Green Key peninsula provides an excellent landmark for wind-displaced birds to find and reorient themselves (Tracey and Greenlaw 2011). If peaks in data are a result of wind-displaced birds finding their way back to land, those peaks would occur simultaneously for both species. The data obtained by the standard count method provided an index of the total number of warblers involved in early morning migration movements. Instead of comparing daily peaks during each of the nine seasons, I opted for three-day average counts. This approach smoothed the temporal pattern in the data by offering 34 data points in lieu of 101 one-day evaluations.

In 2014, I initiated a stationary point-count (Hostetler and Main 2008) survey of Yellow Warblers along Green Key Road, which is 145 meters east of the entrance gate at Robert K. Rees Park (28.254938 N, -82.749925 W). This count was utilized only during the last year to assist in validating the three possible migration peaks that appeared in the standard count data pattern. I chose this location after noticing a large evening flow of Yellow Warblers there in 2013. Although Yellow Warblers feed in the mangroves while moving south all day, I found that their numbers increased in the evening during their diurnal migration (Duncan and Weber 1985). I decided to count at that time to obtain a large sample size.

The point-count was conducted from 18:30 to 19:30 for 28 count days: one day in July, 10 days in August, 13 days in September, and four days in October. At this location, most warblers were noted flying in from the north, with a few coming in from the west off the Gulf. All identifiable warblers were counted using wide-field binoculars (8X 32) while standing at the point-count center. The mangroves at this location were approximately 100 meters wide and followed the coast in a north to south direction.

Photographic documentation

Along with recording the total number of Yellow Warblers seen each day, I attempted to photograph each bird for later analysis. Since Yellow Warblers are usually in constant motion as they flit from branch to branch, three cameras that focus rapidly were used in this study: the Kodak Z990 and Fuji S8200, which allow a 30 or 40 optical zoom, respectively, and the Canon Rebel XT, which has a 300 mm lens. Photographs captured

plumage characteristics not seen in most binocular views. Each photograph was dated and assigned a unique code for categorization purposes.

Evaluations of photographs focused on identifications of age, gender, and dorsal body plumage (hereafter called the "dorsum"). Age was determined by apparent bill color: "first fall" or "hatch year" warblers have a tan lower mandible, while adults have black beaks (Mundy and McCracken 1997). Identifying age is important for determining overall migratory routes: first-fall wood warblers are more abundant along the geographic periphery of the mainstream adult migratory movement (Murray 1966, Dunn and Nol 1980, Ralph 1981). A high ratio of adult-to-young warblers thus indicates that a location is near the center of a migratory route. If a warbler's bill was not clear enough for age determination, the photograph was not used in the analysis.

For adult birds, gender was determined by the presence (males) or absence (females) of chestnut streaking on the underparts. Dorsum color was recorded for most of the photographs and categorized by yellow, green, olive, dark-green, and brown coloring. These categories are consistent with descriptions of Yellow Warbler subspecies and give indication as to which region each bird originates from. Generally, lighter-colored dorsum birds breed in southern regions while darker-colored birds breed in northern regions (Dunn and Garrett 1997). The color categories were defined as: "yellow" birds with a yellow head, yellow or yellow-green dorsum; "green" birds with a yellow forehead, green crown, or green dorsum; "olive," for the first fall *S. p. amnicola* birds from northeastern Canada that are olive overall; "dark-green" birds with a green forehead, green crown, green or dark green dorsum; and "brown" birds with a brown crown and brown dorsum.

Results

A total of 5,993 Yellow Warblers were recorded during this study. The standard count method produced a record of 5,149 Yellow Warblers over 469 count days which average out to 11 warblers per day. Three distinct migration peaks emerged from this data (Fig. 1). These peaks occurred from 17 to 19 August, which averaged 14 warblers per day; 7 to 9 September, which averaged 18 per day; and 16 to 18 September, which averaged 25 per day. This last peak was the highest average recorded in this study.

During the point-count survey in 2014 (Fig. 2), 844 Yellow Warblers were counted on 28 evenings. Point counts with the largest number of birds closely matched the migration peaks discovered by the standard count method: 45 warblers were counted on 16 August; 63 warblers were counted on 12 September; and 132 warblers were counted on 18 September (Fig. 1). This last point-count, when combined with the standard count of warblers earlier that day, represents the highest count day (n=179) for this nine-year study. The monthly totals for the entire Yellow Warbler migration study were 85 in July, 1,710 in August, 3,369 in September, and 829 in October.

A total of 2,577 Prairie Warblers were also counted alongside the Yellow Warblers as a comparative measure (Fig. 3). Peak migration of Prairie Warblers was on 27 July (Fig. 3, "A"), which predates the first Yellow Warbler peak on 17 August by over two weeks (Fig. 3, "B"). After this peak, and in contrast to the pattern exhibited by Yellow Warblers,

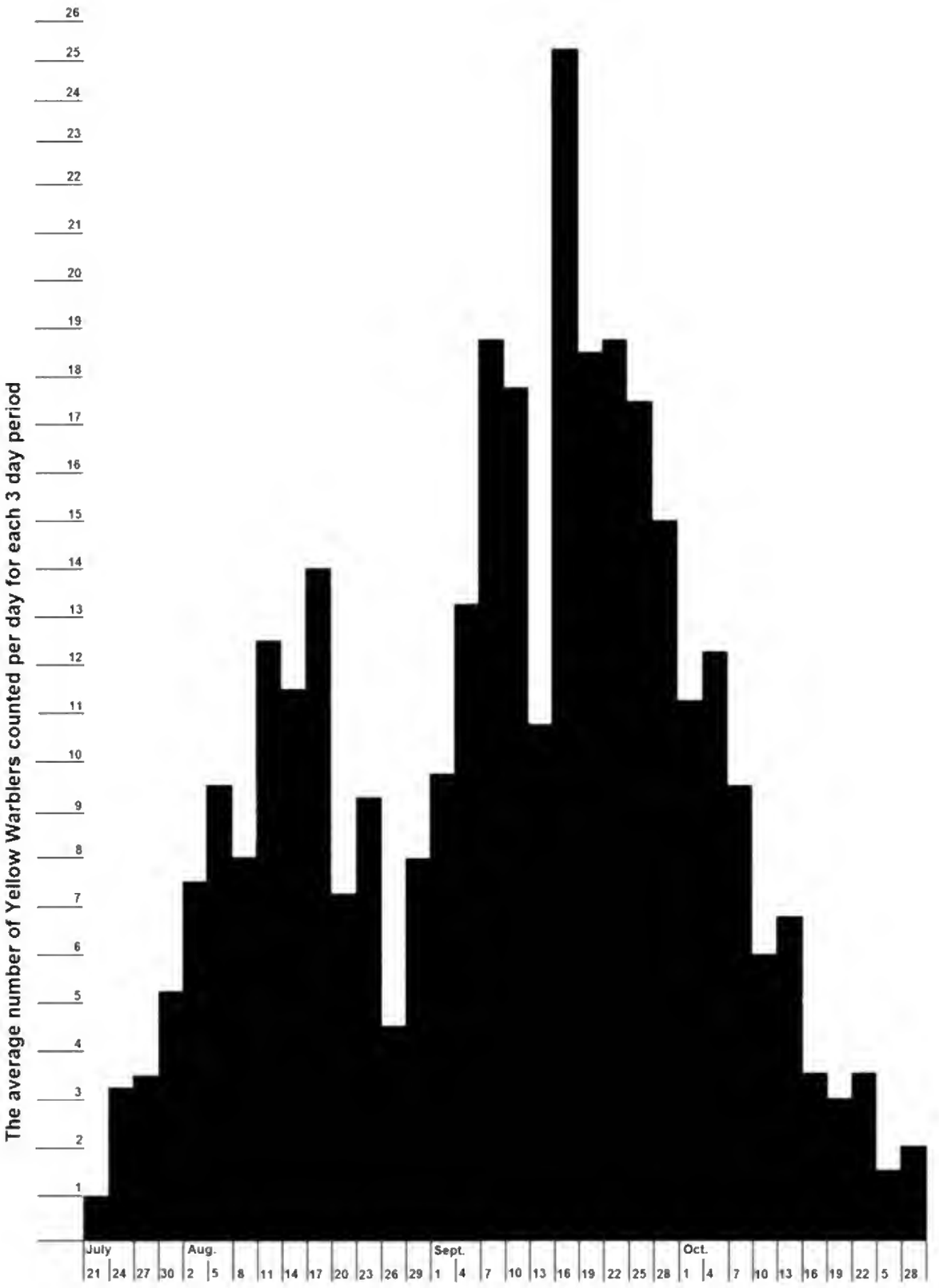

Figure 1. Frequency distribution of standard counts summarized; as daily averages over 3-day survey periods for the 5,149 Yellow Warblers counted for 9 years from 2006 to 2014.

the Prairie Warbler numbers steadily decrease until the final count period of 28 October. In September, the two migration peaks of Yellow

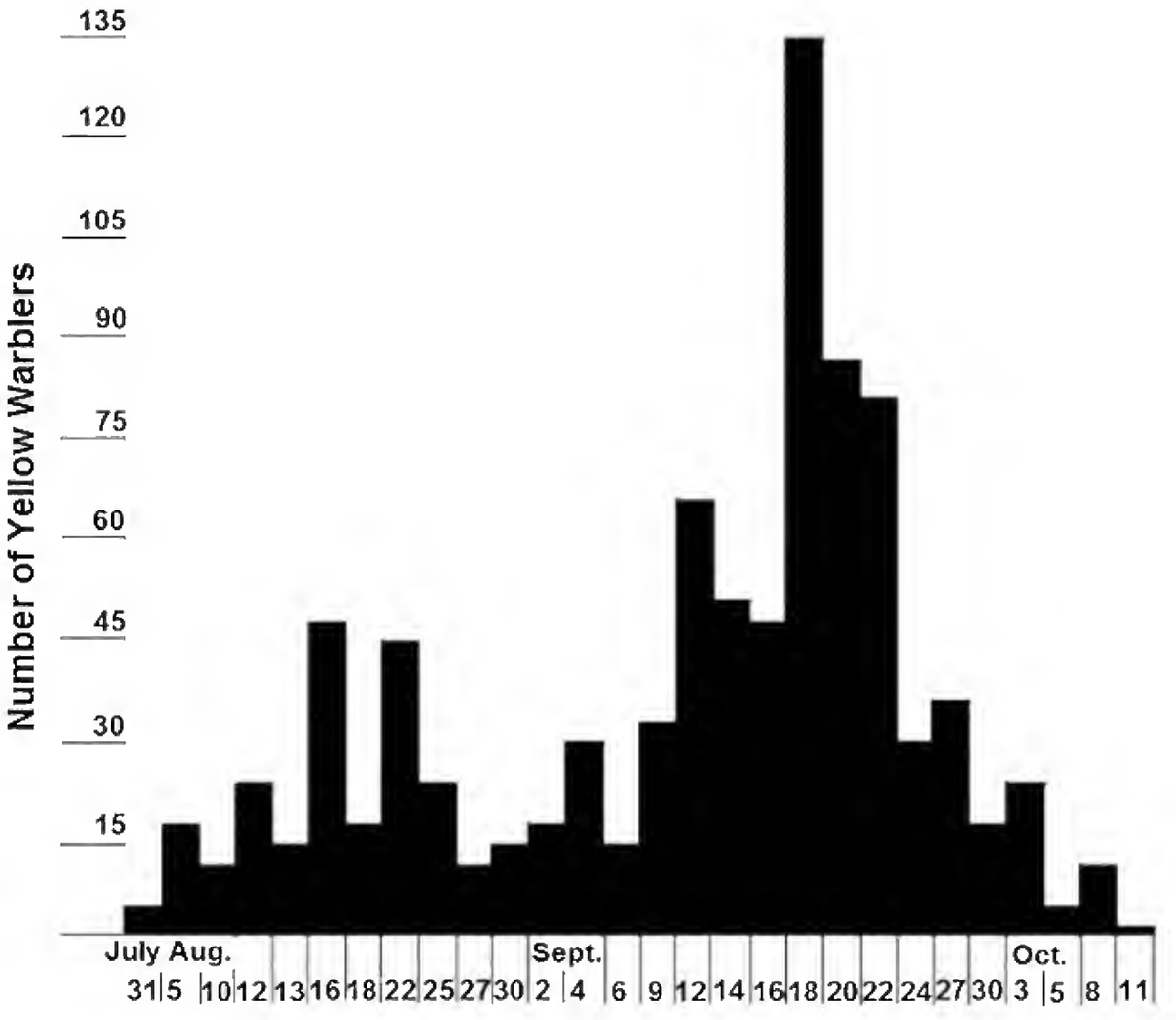

Figure 2. Frequency distribution of the 2014 point-count data collected along Green Key Road.

Warblers are evident at "C" on 7 September and at "D" on 16 September, with no corresponding peaks in Prairie Warblers (Fig. 3).

A total of 1,713 Yellow Warbler photographs were used in this study. These photographs confirmed that 906 birds (53%) were adult warblers as indicated by all black beaks and 807 birds (47%) were "first fall" or "hatch year" warblers as indicated by tan lower mandibles (Mundy and McCracken 1997). This yields an overall adult-to-young ratio of 0.53. However, between 17 August to 7 October, the number of adult warblers grew to 61% (Fig. 4), yielding an adult-to-young ratio of 0.61 for all migration peaks. On the other hand, "hatch year" birds were the first to arrive as migration season began, comprising of 76% of warblers before 17 August, and made up the majority of migrants at the end of the season, comprising of 58% after 6 October (Fig. 4).

Another significant trend was discovered by evaluating the plumage color of each photographed warbler. Birds with yellow dorsum comprised of 89% of the July/August migration, while birds

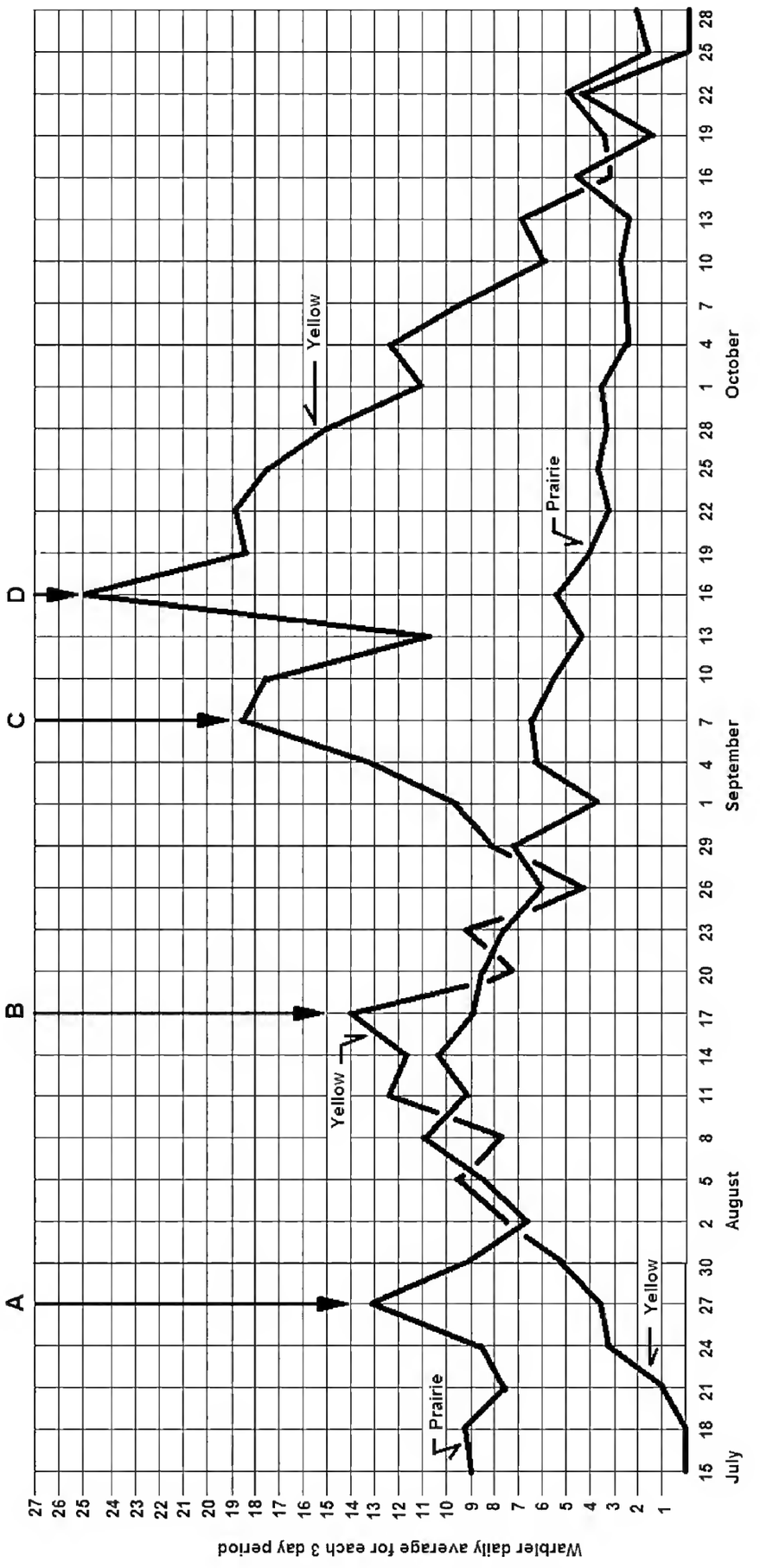

Figure 3. The migration timing of Prairie Warblers (N=2,577) compared to the migration timing of Yellow Warblers (N=5,149).

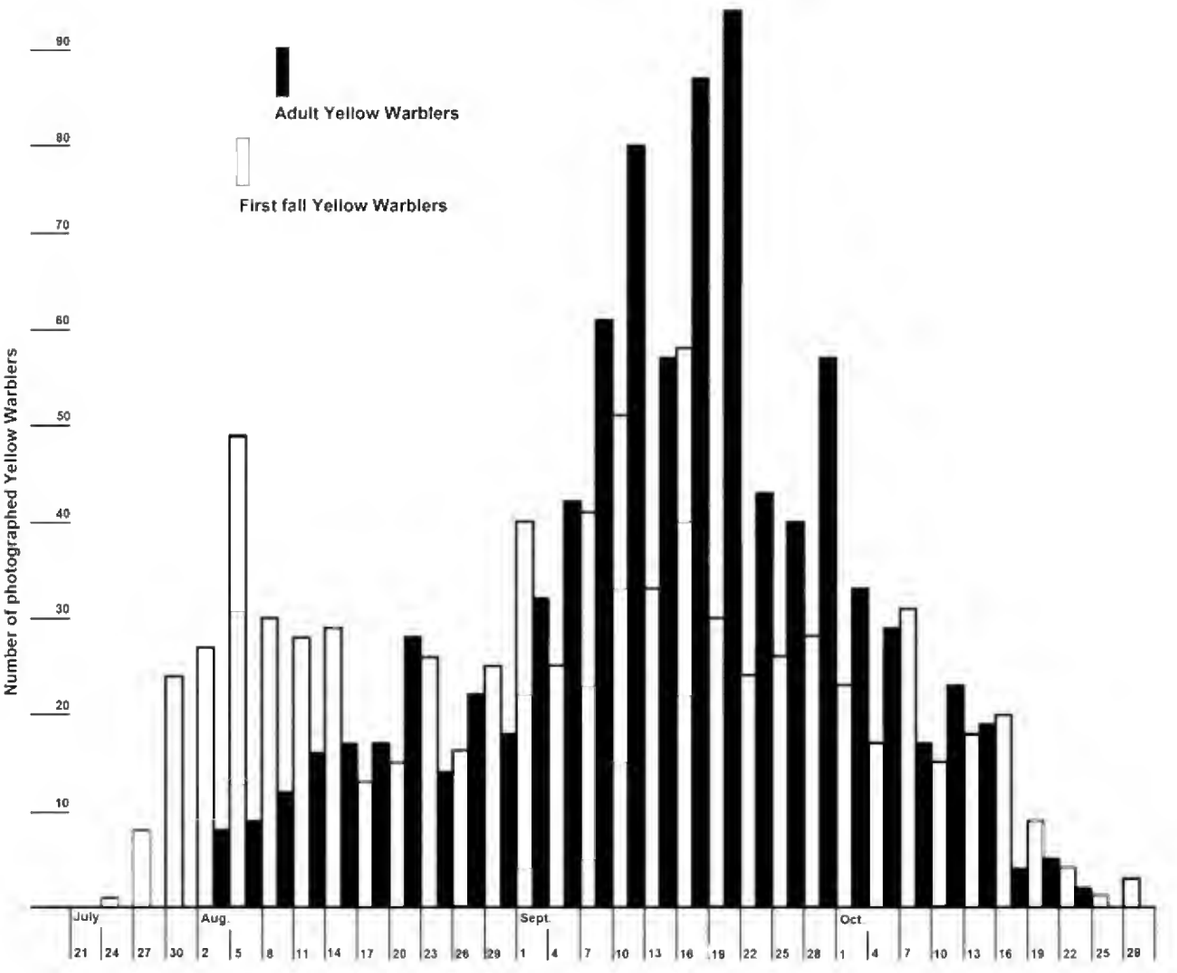

Figure 4. The migration timing of all 1,713 photographed Yellow Warblers, showing "first fall" (N=807) and adult (N=906) age groups.

with green, olive, dark-green, or brown dorsum accounted for 59% of those photographed in September/October. Of the 1,713 total warblers photographed, 917 had a yellow dorsum (259 adult males); 571 had a green dorsum (192 adult males); 32 had an olive dorsum (0 adult males); 137 had a dark green dorsum (26 adult males); 49 had a brown dorsum (15 adult males); and 7 were indeterminate.

Discussion

The timing of Yellow Warblers' fall migration through Florida has been described by several authors as occurring from mid-August to early September (Dunn and Garrett 1997), with the highest passage expected in August (Floyd 2008). However, I found that the September numbers in west-central Florida nearly doubled those of August, with the highest passage occurring in mid-September (Fig. 1). There were also three migration peaks, which were defined as three-day periods averaging more than 11 birds per day: the first occurred 17 to 19 August (n=14 birds per day), the second occurred 7 to 9 September (n=18 birds per day), and the final occurred from 16 to 18 September (n=25 birds

per day). These three-day average peaks were confirmed by the 2014 point-count survey, in which 45 warblers were counted on 16 August, 63 warblers on 12 September, and 132 warblers on 18 September.

This triple-peak pattern appears to have biological meaning rather than being a result of environmental factors, such as the wind displacement of birds (Tracey and Greenlaw 2011), that are unique to the Green Key peninsula. The Prairie Warbler migration data also collected in this study supports this argument: the highest passage of Prairie Warblers occurred more than two weeks before the Yellow Warblers' first peak, and the number of migrant Prairie Warblers decreased as the season continued. Moreover, the two species did not share any overlapping peaks. This finding aligns with the more complex temporal distribution of different Yellow Warbler populations in North America relative to the simple distribution of Prairie Warblers.

The Yellow Warbler peaks can be envisioned as "waves" of migrants (Fig. 6), and the approximate distances from the study area of west-central Florida to the potential origin of the birds may account for these three peaks. The first wave of *S. p. aestiva*, which nest approximately 1,000 km from the study area in the eastern United States, was observed in mid-August in Florida; the second wave of *S. p. aestiva* and *S. p. amnicola*, which are centered approximately 2,000 km from the study area in northeastern Canada, passed through Florida at the end of the first week of September; and the final wave of *S. p. aestiva*, *S. p. amnicola*, and possibly other western and northern subspecies arrived in Florida during the third week in September from locations approximately 4,000 km from the study area in northwestern Canada. The third wave may be typical of subspecies identified in two tower kills. The Westport Minnesota tower kill occurred on 9-10 September 1962 and had *S. p. aestiva*, *S. p. amnicola*, and Mackenzie Delta (*S. p. parkesi*) subspecies identified as traveling the same nights (Raveling and Warner 1990). The Warner Robbins Georgia tower kill occurred on 7-8 October 1954 and had *S. p. amnicola* and *S. p. rubiginosa* identified (Johnston and Haines 1957). These towers appear to be on a direct flight line to the study area in Florida (Fig. 4).

Although photographs are not a generally accepted standard for definitively identifying subspecies, in some cases, determinations can be made from well-lit photographs. In this study, the combination of counting methods, appropriate timing, and photography skills resulted in a number of subspecies identifications. Categorizing Yellow Warblers by their dorsum colors provided evidence that *S. p. aestiva* (259 males with a yellow dorsum) and *S. p. amnicola* (193 males with a green dorsum) are migrating through Pasco County, FL. Olive-colored first-fall birds were most likely *S. p. amnicola* from northeast Canada – this population is known to exhibit this plumage color in first fall (Dunn

and Alderfer 2011). The dark-green and brown dorsum assignments are more subjective, and could represent *S. p. amnicola*, *S. p. parkesi*, *S. p. banksi*, *S. p. morcomi*, or *S. p. rubiginosa*.

A review of specimens in the Florida Museum of Natural History's collection (n=40) shows that while *S. p. aestiva* were collected throughout the entire Yellow Warbler migration period, *S. p. amnicola* and *S. p. rubiginosa* were only collected in September and October (Fig. 5). This migration timeline closely matches this study's findings of 59% green, dark-green, and brown dorsum birds in September and October. There is also evidence that *S. p. rubiginosa's* dorsum color fluctuates between dark-green in the spring/summer and brown in prebasic fall molt, which may cloud efforts to identify subspecies that were originally defined by spring male or breeding plumages (Browning 1994). Similarly, my photographs of brown dorsum first fall warblers were a good match to the drawing of a brownish Yellow Warbler that appears in Dunn and Alderfer (2011) and is identified as *S. p. rubiginosa*.

Several authors have suggested that some *S. p. rubiginosa* specimens collected along the east coast of the U.S. could be *S. p. parkesi*, as the latter subspecies was not named until recently (Browning 1994). However, an inspection of three "first fall" *S. p. rubiginosa* specimens at the Florida Museum of Natural History revealed bill lengths between 8.08–8.24 mm, which is, indeed, consistent with *S. p. rubiginosa* and outside the accepted range of 6.90–7.90 mm for *S. p. parkesi* (Browning 1994). Aside from this difference in bill length, *S. p. rubiginosa* and *S. p. parkesi* are hard to differentiate because both subspecies share a dark-green dorsum color. Despite this, my photographs of 41 males with dark-green and brown dorsum suggest that other northern and

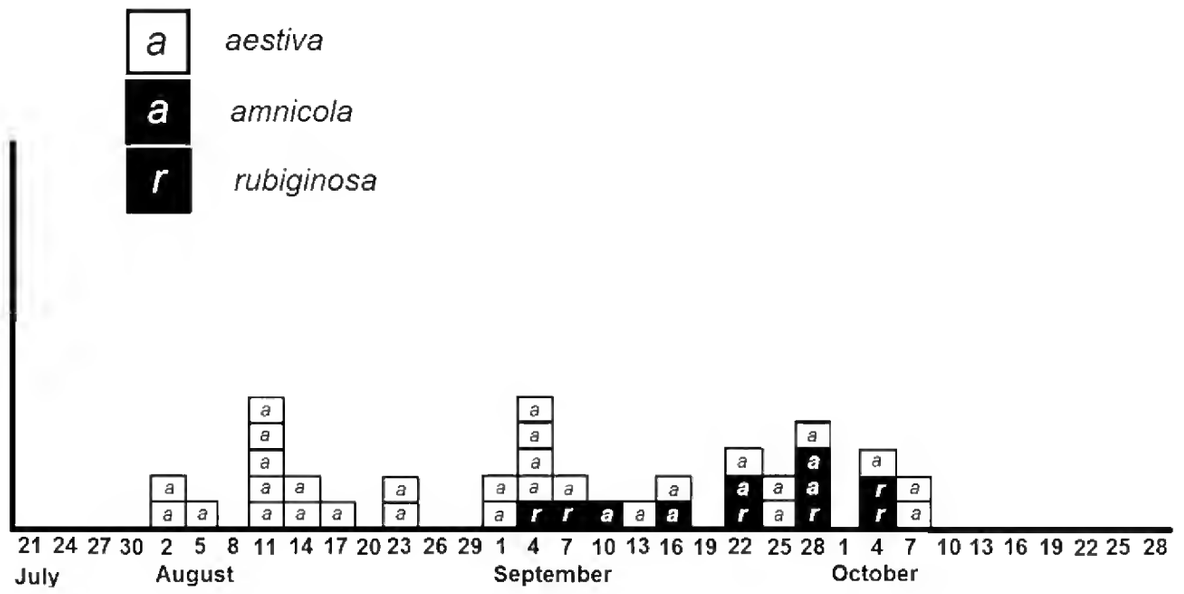

Figure 5. The timing of fall migration represented by Florida museum specimens (N=40) of Yellow Warblers that were identified to subspecies.

western subspecies, aside from *S. p. rubiginosa*, may also be migrating through Florida. Fig. 6 shows the nesting area of *S. p. rubiginosa,* which is the most western and northern subspecies after *S. p. banksi.* It is hypothetical that northern *S. p. morcomi* and *S. p. parkesi,* which are nesting east of *S. p. rubiginosa,* may also be Florida migrants. To date, *S. p. parkesi* specimens have only been collected on the east coast in Massachusetts (Parkes 1968).

The overall adult-to-young ratio of 0.53 for the photographed sample – which increased to 0.61 during the three peak periods – suggests that the

Figure 6. Map of study area showing nesting regions of currently recognized subspecies and general wintering grounds of northeastern birds. Boundaries of breeding areas of subspecies are from Browning (1994) with updates by Dunn and Garrett (1997). Westport Minnesota and Warner Robbins Georgia, tower kill locations are shown (Raveling and Warner 1978, Johnston and Haines 1957). Possible "migration waves" as interpreted by the author are indicated from collected data. Study area inserts show the locations of Lake Lisa Park and Robert K. Rees Park, and the point-count location at the latter site.

Gulf coast of central Florida is near the center of the Yellow Warblers' fall migration route. A similar ratio of 0.56 adults was found in Ralph's (1981) review of 234 Blackpoll Warbler (*Setophaga striata*) specimens in Bermuda, which is located in the center of their migration route (Stephenson and Whittle 2013). However, this Yellow Warbler study also revealed a fluctuating percentage of "first fall" warblers throughout the migration season. Before 17 August, first fall constituted 76% of migrants; after this, their numbers dropped to 39% until 6 October. This initial youth-majority ratio, which appears to contradict my assertion that this study area lies near the center of the migration path, may be explained by the prebasic molt of adult warblers. Prebasic molt occurs on the breeding grounds just before fall migration: while adults lose all of their feathers, first fall birds retain their flight feathers (Dunn and Garrett 1997, Pyle 1997). Consequently, first-falls can begin their journeys sooner than their adult counterparts.

Although 1,713 photographs aided in identifying the age and probable subspecies of passerby warblers, there are limitations to using this method alone for a study. To begin with, Yellow Warbler subspecies in North America are relatively weakly differentiated and evidently clinal (Pyle 1997), so a categorical classification of predominant plumage hues will likely result in some erroneous assignments of photographed birds to named populations. Also, the dorsal plumage categories used in this study were subjective and dependent upon the quality of each individual photograph. It is also important to remember that the position of the bird in relation to the sun and the camera's orientation can lead to differences in color absorption.

Nevertheless, the value in using photographs that capture plumage characteristics of hue and pattern may be particularly useful for subspecies that are reasonably well-marked. Digital photographs of geographically variable species – taken under well-lit conditions and associated with time and location data – can provide evidence of possible origins of migrating birds. Plumage characteristics of well-marked subspecies can be better understood if photography archives that document variations within known populations are created. For Yellow Warblers, the result of such effort could provide an invaluable tool for assessing likely regions of origin using the plumage markers of migrating or wintering populations that do vary geographically on their breeding grounds.

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LITERATURE CITED

BROWNING, M. R. 1994. A taxonomic review of *Dendroica petechia* (Yellow Warbler; Aves: Parulinae). Proceedings of the Biological Society of Washington 107:27–51.

CHAMBERLAIN, E. B. 1934. Unusual birds in South Carolina. Auk 51:250–251.

DUNCAN, R. A., AND W. E. WEBER. 1985. The Yellow Warbler: A diurnal circum-Gulf fall migrant. Florida Field Naturalist 13:20–22.

DUNN, J. L., AND K. L. GARRETT. 1997. A Field Guide to Warblers of North America. Houghton Mifflin Co., Boston.

DUNN, J. L., AND J. ALDERFER, 2011. National Geographic Field Guide to the Birds of North America. 6th ed. National Geographic Society, Washington, D.C.

DUNN, E. H., AND E. NOL. 1980. Age-related migratory behavior of warblers. Journal of Field Ornithology 51:254–269.

FLOYD, T. 2008. Smithsonian Field Guide to the Birds of North America. Harper Collins, New York.

GRISCOM, L. 1941. Two Yellow Warblers new to Massachusetts. Auk 58:100.

HOSTETLER, M. E., AND M. B. MAIN. 2008. Florida Monitoring Program: Point Count Method to Survey Birds. Institute of Food and Agricultural Sciences Extension, Report No. WEC 144, University of Florida, Gainesville. <http://edis.ifas.ufl.edu>.

JOHNSTON, D. W., AND T. P. HAINES. 1957. Analysis of mass bird mortality in October, 1954. Auk 74: 447–458.

LINCOLN, F. C., S. R. PETERSON, AND J. L. ZIMMERMAN. 1998. Migration of Birds. U.S. Department of the Interior, U.S. Fish and Wildlife Service, Washington, D.C. Circular 16. Jamestown, North Dakota: Northern Prairie Wildlife Research Center Online. <http://www.npwrc.usgs.gov/resource/birds/migratio/index.htm> (Version 02APR2002).

LOWTHER, P. E., C. CELADA, N. K. KLEIN, C. C. RIMMER, AND D. A. SPECTOR. 1999. Yellow Warbler (*Setophaga petechia*) *in* The Birds of North America Online (A. Poole, Ed.). Cornell Lab of Ornithology, Ithaca, New York. <http://bna.birds.cornell.edu/bna/species/454>.

MCATEE, W. L., T. D. BURLEIGH, G. H. LOWERY, JR., AND H. L. STODDARD, 1944. Eastward migration through the Gulf states. Wilson Bulletin 56:152–160.

MUNDY R. P., AND J. D. MCCRACKEN. 1997. Bill color as an age character in Yellow Warblers. North American Bird Bander 22:116–118.

MURRAY, B. G., JR. 1966. Migration of age and sex classes of passerines on the Atlantic coast in autumn. Auk 83:352–360.

PARKES, K. C. 1968. Some bird records from western Pennsylvania. Wilson Bulletin 80:100–102.

PYLE, P. 1997. Identification Guide to North American Birds. Part I, Columbidae to Ploceidae. Slate Creek Press, Bolinas, California.

RALPH, C. J. 1981. Age ratios and their possible use in determining autumn routes of passerine migrants. Wilson Bulletin 93:164–188.

RAVELING, D. G., AND D. W. WARNER. 1978. Geographic variation of Yellow Warblers killed at a TV tower. Auk 95:73–79.

STEPHENSON T., AND S. WHITTLE, 2013. The Warbler Guide. Princeton University Press, Princeton, New Jersey.

STEVENSON, H. M., AND B. H. ANDERSON. 1994. The Birdlife of Florida. University Press of Florida, Gainesville.

TRACEY, K. F., AND J. S. GREENLAW. 2011. Easterly winds displace wood-warblers (Parulidae) during spring migration along the Florida Gulf coast. Florida Field Naturalist 39:35–73.

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PRODUCTIVITY OF OSPREYS (*Pandion haliaetus*) NESTING IN HIGHLY URBANIZED PINELLAS COUNTY, FLORIDA

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Ospreys (*Pandion haliaetus)* are highly adaptable fish-eating birds of prey that have a worldwide distribution. Osprey populations declined throughout much of their range due to bioaccumulation related to spraying of the DDT biocide, but increased after the DDT ban (Houghton and Rymon 1997). In Florida, Ospreys nest throughout the state both in coastal and inland wetland environments (Florida Natural Areas Inventory 2001). The post-DDT rebound of Ospreys in Florida has occurred during a time of increasing urbanization, particularly in coastal areas (Rayer and Wang n.d.), perhaps aided by an increase in man-made nesting structures (Watts and Paxton 2007). Increases in Osprey and human populations have led to more frequent conflicts between Ospreys and utilities such as power poles and transmission towers, cell-phone towers and Osprey-aircraft collisions (Washburn 2014).

The purpose of this paper is to examine nest success and productivity of Ospreys nesting in Pinellas County, the most densely populated county in Florida. In addition, we compared nest success of Ospreys nesting on natural nest sites (live and dead trees), artificial structures not specifically designed for Osprey nesting (e.g., light poles, cell-phone towers) and nesting platforms specifically designed for Ospreys.

METHODS

Pinellas County is located on the Gulf of Mexico in central Florida (Fig. 1). It is the most densely populated county in Florida with > 3,000 people per square mile (Rayer and Wang n.d.) but it is also home to >100 pairs of Ospreys (Osprey Watch Database).

Beginning in 2009, we compiled a database of Osprey nests in the southern half of Pinellas County by soliciting information from the local birding community and systemically driving and walking through areas where Ospreys are likely to nest. From September 1, 2013 to August 30, 2014, we monitored all known Osprey nests once each week during daylight hours using protocol established by Project Osprey-watch (Osprey Watch Database). Nests were monitored from the ground using 10x40 binoculars for at least 15 minutes/survey and we recorded presence of adult Ospreys, incubation, chicks and flight capable chicks (fledges). For a nest to be considered occupied, a pair of adult ospreys had to been seen. For a nest to be classified as active, an adult needed to be in incubation posture. We further required that the incubation must be seen in at least two weekly surveys. An inactive nest had either no Ospreys or was visited by a single Osprey.

Nests were categorized as being on a natural substrate, an artificial substrate that was not designed for Ospreys, or on an Osprey platform.

SPSS software was used to compare overall nest success and nest productivity by nesting substrate. A chi-square goodness of fit test was conducted to determine if nesting success varied between nests on artificial or natural nests and to measure success rates for Ospreys nesting specifically on platforms built for Osprey nesting compared to nests on artificial structures such as utility poles and cell phone towers. Overall productivity was calculated using a standard method of taking the number of fledges or birds almost fledged and dividing by the number of active nests (Bierregaard et al. 2014).

RESULTS

Out of 90 nests monitored, 70 nests were active with an incubating pair during the 2013-2014 breeding season (Table 1). While some nests were directly on the coast, nests were found throughout our study area and up to 4 km from saltwater (Fig. 1). Approximately half of the pairs began incubating from December to February (31 out of 70) while the remainder began incubating in March or April. No new nesting was observed in late spring or summer.

Only 11 of the Osprey nests were on natural substrate and all were on dead trees, 10 slash pine (*Pinus elliottii*) and 1 Canary Island date palm (*Phoenix canariensis*). The remaining 59 were on artificial structures. Sixteen of the nests were on Osprey platforms that had been placed above existing lights or poles, 41 were directly on utility poles or lights, 1 was on the concrete remains of a dock, and 1 pair nested on a cell phone tower.

Thirty-seven out of 70 nests produced at least 1 fledge and overall productivity was 0.80 young/active nest (Table 1). Artificial active nests were significantly more likely to fledge at least one young than active nests on trees ($\chi^2 = 6.30$, d.f. = 1, $p = 0.012$; Fig. 2). Two of the active nests on dead trees both produced 1 fledge, the other 9 active nests failed to hatch any chicks. Two out of the 9 unsuccessful natural nests fell to the ground during storms but we were not able to determine why the other natural nests were unsuccessful. The majority of active nests on artificial substrates fledged young. Twenty active nests produced 1 fledge, 11 produced 2 fledges, and 4 nests fledged 3 young.

Table 1. Fate of the 90 Osprey nests in Southern Pinellas County.

	Natural substrate	Artificial substrate	Total
All nests	15	75	90
Inactive (not occupied or active)	0	7	7
Occupied (but not active)	4	9	13
Active nests	11	59	70
Nests with fledglings	2	35	37
Number of fledglings	2	54	56

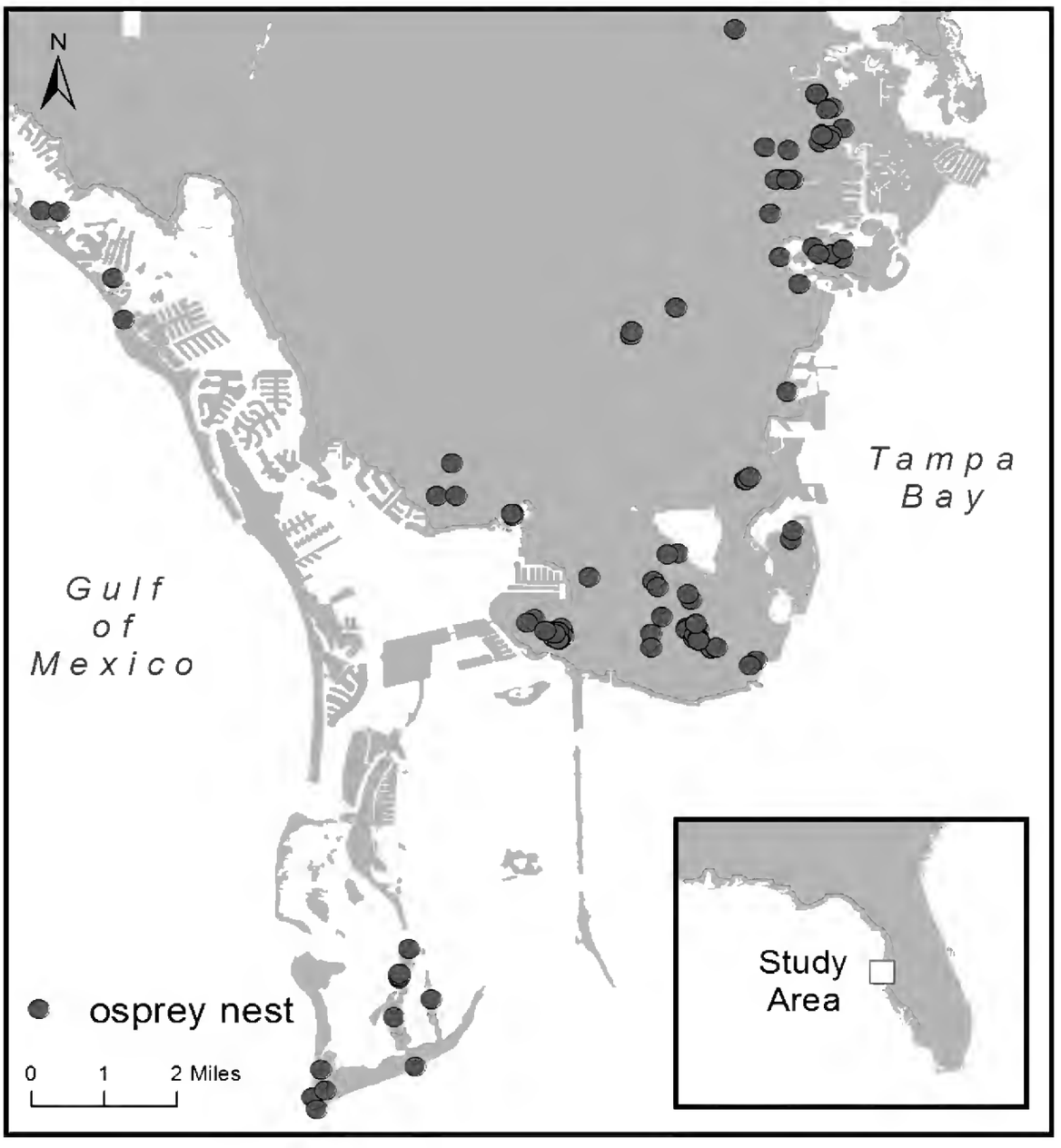

Figure 1. Southern Pinellas County Osprey nests that were monitored during this study. The shaded area is land, the white is water.

Osprey platforms were more likely to produce fledges than other artificial structures (75% compared to 53%) but this difference was not statistically significant ($\chi^2 = 2.24$, d.f. = 1, $p = 0.135$).

Discussion

In Pinellas County, Florida, the majority of Osprey nesting is occurring on artificial structures, and these nests fledged more young than Ospreys nesting on trees. The increase in development, especially in Pinellas County, probably contributed to more artificial nesting structures being used as natural nesting sites were destroyed. As Poole (1981) suggested, the Osprey using these artificial nesting structures in

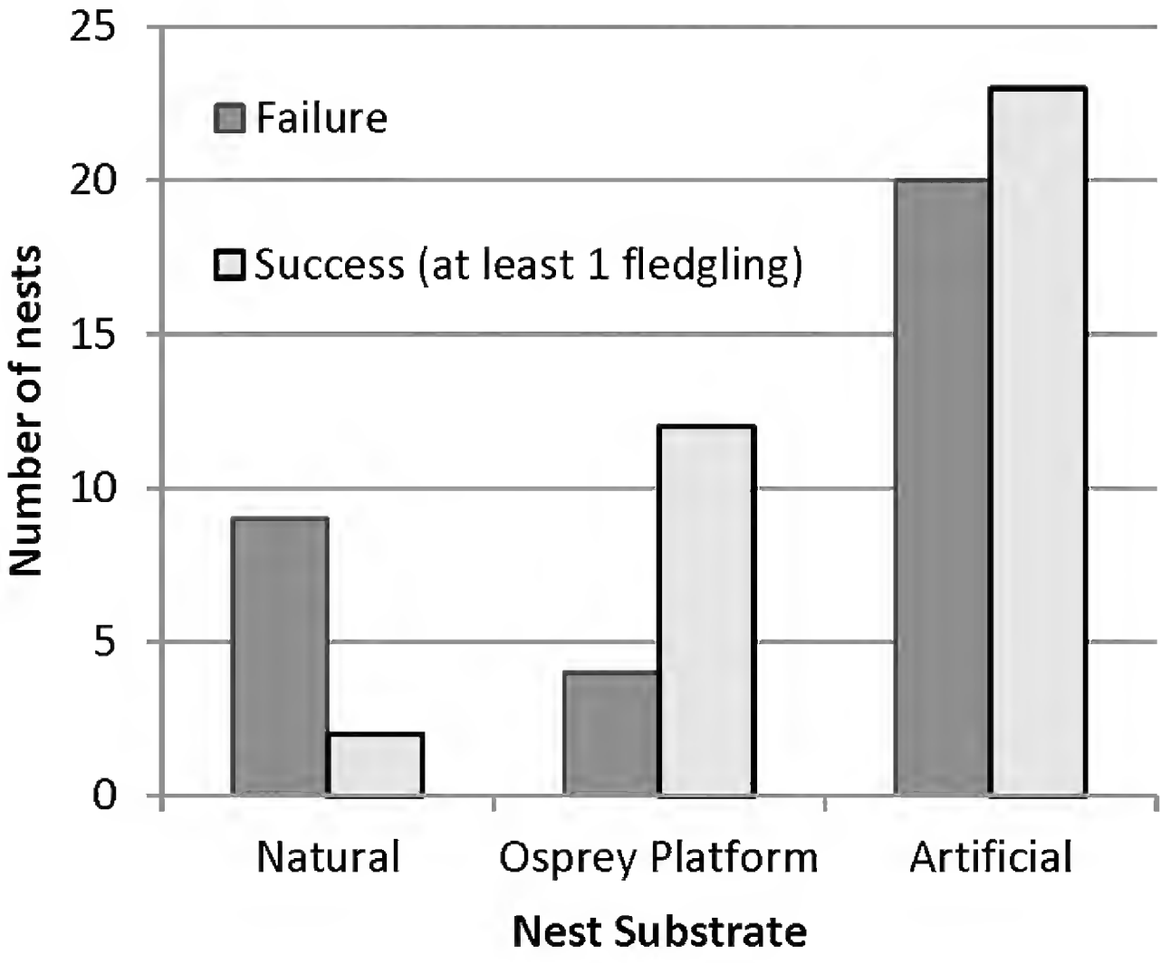

Figure 2. Number of Osprey nests on each substrate that either failed and produced no fledglings, or produced at least 1 fledgling.

urban settings have probably also adapted to having close proximity with humans. These artificial structures may also be assisting the growth of the southern Pinellas County Osprey population, a trend found by Ewins (1996) at the Canadian Great Lakes Basin and Henny et al. (2008) in northwestern Mexico. Our study agrees with research done in Sanibel Island, FL where artificial nests produced nearly twice as many chicks than those nests in trees (Westall 1983). Our study differs from that of Martin et al. (2005) who found that nests on tree stumps around lakes in Ontario were more successful than nests on artificial structures.

Nesting platforms specifically designed for Ospreys appear to be a successful management strategy when Ospreys are nesting on a dangerous artificial substrate such as electric wire. Our study area had proportionally fewer Ospreys nesting platforms compared to a comprehensive study of Ospreys in the Northeastern US (Bierregaard et al. 2014).

Osprey productivity in Southern Pinellas County during 2013/2014 reflects Spitzer's (1980) estimate of maintaining a stable Osprey population with an average of 0.8 fledglings/active nest. Compared

with Osprey productivity in urban Minneapolis-St. Paul (1.57 fledges/active nests), Pinellas County's Osprey productivity is stable but has the opportunity to increase (Martell et al. 2002). However, our data are from only one year of intensive monitoring, and clearly more years of monitoring are needed to get an average productivity rate. In addition, future monitoring using webcams or similar technology would enhance our understanding of nest successes and failures.

ACKNOWLEDGMENTS

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LITERATURE CITED

BIERREGAARD, R. O., A. F. POOLE, AND B. E. WASHBURN. 2014. Ospreys (*Pandion haliaetus*) in the 21st century: Populations, migration, management, and research priorities. Journal of Raptor Research 48:301-308.

EWINS, P. J. 1996. The use of artificial nest sites by an increasing population of Ospreys in the Canadian Great Lakes Basin. Pages 109-123 *in* Raptors in Human Landscapes: Adaptations to Built and Cultivated Environments (D. M. Bird, D. E. Varland, and J. J. Negro, Eds.). Academic Press Inc., San Diego.

FLORIDA NATURAL AREAS INVENTORY. 2001. Field Guide to the Rare Animals of Florida. <http://www.fnai.org/FieldGuide/pdf/Pandion_haliaetus.PDF>. Accessed 1 April 2014

HENNY, C. J., R. A. GROVE, AND J. L. KAISER. 2008. Osprey distribution, abundance, reproductive success and contaminant burdens along lower Columbia River, 1997/1998 versus 2004. Archives of Environmental Contamination and Toxicology 54:525-534.

HOUGHTON, L. M., AND L. M. RYMON. 1997. Nesting distribution and population status of U.S. Ospreys 1994. Journal of Raptor Research 31:44-53.

MARTELL, M. S., J. V. ENGLUND, AND H. B. TORDOFF. 2002. An urban Osprey population established by translocation. Journal of Raptor Research 36:91-96.

MARTIN, P. A., S. R. DE SOLLA, P. J. EWINS, AND M. E. BARKER. 2005. Productivity of Osprey, *Pandion haliaetus,* nesting on natural and artificial structures in the Kawartha Lakes, Ontario, 1991-2001. Canadian Field-Naturalist 119:58-63.

OSPREY WATCH DATABASE. <http://www.osprey-watch.org/>. Accessed 1 April 2015.

POOLE, A. 1981. The effects of human disturbance on Osprey reproductive success. Colonial Waterbirds 4:20-27.

RAYER, S., AND Y. WANG. No date. Measuring population density for counties in Florida. <https://www.bebr.ufl.edu/articles/population-studies/measuring-population-density-counties-florida>. Accessed 1 April 2015.

SPITZER, P. R. 1980. Dynamics of a discrete coastal breeding population of Ospreys (*Pandion haliaetus*) in the northeastern United States during a period of decline and recovery, 1969-1978. PhD dissertation, Cornell University, Ithaca, New York.

WASHBURN, B. E. 2014. Human-Osprey conflicts: industry, utilities, communication, and transportation. Journal of Raptor Research 48:387-395.

WATTS, B. D., AND B. J. PAXTON. 2007. Ospreys of the Chesapeake Bay: population recovery, ecological requirements, and current threats. Waterbirds 30 (Special Publication 1):39-49.

WESTALL, M. A. 1983. An Osprey population aided by nest structures on Sanibel Island, Florida. Pages 287-291 *in* Biology and Management of Bald Eagles and Ospreys: Proceedings of the 1st International Symposium on Bald Eagles and Ospreys, Montreal, 28-29 October, 1981 (D. M. Bird, Ed.). Harpell Press, Ste Anne de Bellevue, Quebec.

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FIRST RECORD OF SURF SCOTER (*Melanitta perspicillata*) FOR CUBA, AND NOTES ON AN EIGHTEENTH-CENTURY RECORD FOR JAMAICA

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On 25 January 2015, Felix Medina Isa, a hunter and President of the Cerro Municipality hunting club, along with fellow hunters Nelson Ferrer, Javier de la Rosa, and Orlando Piñeira collected a Surf Scoter (*Melanitta perspicillata*) from Presa Canasí reservoir (700 ha; 23° 07' 00" N, 81° 46' 00" W), Mayabeque province, Cuba. The bird, a young male in its first winter plumage (Fig. 1), is deposited in the Museo Nacional de Historia Natural de Cuba (MNHNC catalogue number 24.001419).This individual is the first specimen of this species for Cuba and possibly the second record for the West Indies.

Surf Scoter breeds and winters exclusively in North America. Breeding occurs in northern Canada and Alaska south through

Figure 1. Male Surf Scoter (*Melanitta perspicillata*; Museo Nacional de Historia Natural de Cuba catalogue number 24.001419) in first-winter plumage, shot by Felix Medina Isa on 25 January 2015 at Presa Canasí reservoir, Mayabeque province, Cuba

Canada from northeastern British Columbia to eastern Quebec and southern Labrador (AOU 1998, Savard et al. 1998). Nonbreeders are rare summer visitors in Florida (Stevenson and Anderson 1994). Surf Scoters winter primarily along the eastern and western coasts of North America as far south as central Baja California on the Pacific coast, and to North Carolina on the Atlantic coast; wintering occurs less commonly south to Florida (AOU 1998, Savard et al. 1998). Individual wanderers have been recorded in many distant localities, including continental Europe (Amos 1991, AOU 1998, Savard et al. 1998).

In Florida, Surf Scoter is rare to uncommon along the panhandle and northern peninsula coasts, and occasional farther south in fall and winter (Robertson and Woolfenden 1992, Stevenson and Anderson 1994). Examining eBird (2015) reports, we found a minimum of 18 sightings (deleting probable duplicates among reports) for coastal Florida below 26° N latitude, 1983–2014. Most of those sightings were of individuals, but two birds were reported twice, three individuals once, and one group of 13 birds was observed. Reports included 1 from October, 10 from November, 4 in December, 1 from January, and 2 from May. We found no reports from the Bahamas or West Indies in eBird (2015) check-lists, nor did Savard et al. (1998) mention records south of Florida. The nearest report to Cuba we found was of a single Surf Scoter observed and photographed by William Nichols at Key West, Florida on 22 November 2012 (eBird Checklist S12132872).

An eighteenth century record of Surf Scoter in Jamaica was originated possibly by Dr. Anthony Robinson (d. 1768). Gosse (1847:408) listed Surf Scoter among waterfowl recorded from Jamaica, noting that the observation was furnished by his friend, "Dr. Chamb." This was likely Richard Chamberlaine, who had earlier written (1842:20–21) that *Oidemia perspicillata*, "Black Duck or Surf Duck," had been observed and illustrated by Robertson (Anthony Robinson), a surgeon and botanist who resided in Jamaica for 20 years. Robinson had compiled his studies and drawings of Jamaican natural history into five folio manuscript volumes, but died young and published none of his substantial materials. Robert Long (1729–1775) sorted the sketches, mounted them, added his comments, and transcribed and bound the loose sheets of description. Robinson's 164 bird and more than 100 plant drawings and several manuscript volumes on Jamaican natural history are conserved in the National Library of Jamaica (NHMJ; Robinson ms., Levy 2010), and have yet to be published. We examined surviving manuscript notes and drawings, but failed to find information on Surf Scoter in Jamaica. We concluded that either Robinson did not produce an illustration of the duck, or the illustration is now missing (as is a drawing of "*Anas dominica*" [Masked Duck *Nomonyx dominicus*]). Chamberlaine (1842) noted that Surf Scoters

"are common in winter in Florida, and are in some years found not to be uncommon here [Jamaica]. Being worthless for the table they are not frequently seen in the market. . . . They have been shot in the marshes at Hunt's Bay [17° 58' 44" N, 76° 50' 57" W; a part of Kingston Harbour] this season, and brought to the Kingston Markets."

Chamberlaine's (1842, 1843) report of Surf Scoter in Jamaica was repeated in several subsequent publications, without reference to origin (e.g., Albrecht 1862, March 1864, Sclater and Salvin 1876, Newton and Newton 1881, Scott 1891, Salvadori 1895, Sclater 1910). Although Cory (1885, 1886) questioned the record, he later (1888) included the scoter from Jamaica, based on Gosse (1847). Bangs and Kennard (1920) were more skeptical of the record, writing "Said to have occurred in Jamaica, but definite records seem to be wanting." Sclater and Salvin (1876) suggested a specimen existed, writing "The Surf-scoter has been obtained in Jamaica, according to Gosse, only once", though we found no specimen from there. Baird et al. (1884:99) included Jamaica, as well as "other West India islands?" in the scoter's winter range, whereas Sharpe (1899:225) also included the West Indies in its winter range and Sclater and Salvin (1873) reported it from "Antill. (raro)." We suspect the broader inclusions of islands are only logical expansion of the Jamaica reports of Chamberlaine to other Antilles.

Savard et al. (1998) noted that migrating Surf Scoter occasionally inhabits freshwater habitats near the sea, similar to Canasí reservoir, but wintering populations usually live in shallow marine coastal waters in their normal winter range.

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We are grateful to Felix Medina and Nelson Ferrer for their donation of the scoter specimen. We thank Calixto Year, who kindly took us to visit the homes of these hunters. Catherine Levy provided us with information from *Jamaica Almanack* (1842, 1843) and helped clarify some of Chamberlaine's notes therein, as well as accompanied Wiley to examine Robinson's manuscript and drawings in the NHMJ. Further, Levy engaged in stimulating discussion regarding the Robinson materials. We thank Gary Graves, whose suggestions improved the manuscript.

LITERATURE CITED

ALBRECHT, R. 1862. Zur ornithologie von Jamaica. Nach Osburn, Sclater und Gosse zusammengestellt. Journal für Ornithologie 10(57):192–207.

AMOS, E. J. R. 1991. The Birds of Bermuda. Warwick, Bermuda.

AOU [AMERICAN ORNITHOLOGISTS' UNION]. 1998. Check-list of North American Birds, 7th ed.). American Ornithologists' Union, Washington, D.C.

BAIRD, S. F., T. M. BREWER, AND R. RIDGWAY. 1884. The Water Birds of North America. Vol. 2. Memoirs of the Museum of Comparative Zoology XII. Little, Brown, and Co., Boston, Massachusetts.

BANGS, O., AND F. H. KENNARD. 1920. A list of the birds of Jamaica. Pages 684–701 *in* Handbook of Jamaica. (F. Cundall, Ed.). Government Printing Office, Kingston.

CHAMBERLAINE, R. 1842. Contributions to ornithology, in continuation of "An account of those birds which are to be found in this island" &c. Pages 19–28 *in* Jamaica Almanack for 1842 (W. Cathcart, compiler). Cathcart and Sherlock, Kingston.

CHAMBERLAINE, R. 1843. Contributions to ornithology, (in continuation [of "An account of those birds which are to be found in this island" etc.]). Pages 68–99 *in* Jamaica Almanack for 1843 (W. Cathcart, compiler). Cathcart and Sherlock, Kingston.

CORY, C. B. 1885. A List of Birds of the West Indies, Including the Bahama Islands and the Greater and Lesser Antilles, Excepting the Islands of Tobago and Trinidad. Estes & Lauriat, Boston, Massachusetts.

CORY, C. B. 1886. A List of the Birds of the West Indies, Including the Bahama Islands and the Greater and Lesser Antilles, Excepting the Islands of Tobago and Trinidad. Revised edition. Estes & Lauriat, Boston, Massachusetts.

CORY, C. B. 1888. The birds of the West Indies, including the Bahama Islands, the Greater and the Lesser Antilles, excepting the islands of Tobago and Trinidad. Auk 5:48–82.

EBIRD. 2015. eBird: an online database for bird distribution and abundance. eBird, Cornell Lab of Ornithology, Ithaca, New York. <http://www.ebird.org>. Accessed 8 February 2015.

GOSSE, P. H. 1847. The Birds of Jamaica. John Van Voorst, London.

LEVY, C. 2010. Home at last – 90 years later! BirdLife Jamaica Broadsheet 91:15–16.

MARCH, W. T. 1864. Notes on the birds of Jamaica. Part III. Proceedings of the Academy of Natural Sciences of Philadelphia 16:62–72.

NEWTON, A., AND E. NEWTON. 1881. List of the birds of Jamaica. Pages 103–117 *in* The Handbook of Jamaica for 1881. Government Printing and Stationery Establishment, Kingston.

ROBERTSON, W. B., JR., AND G. E. WOOLFENDEN. 1992. Florida Bird Species: An Annotated List. Special Publication Number 6. Florida Ornithological Society, Gainesville.

ROBINSON, A. MS. [Drawings and manuscript (Vol. 5, Birds) on Jamaican natural history]. Deposited in National Library of Jamaica, Kingston.

SALVADORI, T. 1895. Catalogue of the Chenomorphæ (Palamedeæ. Phœnicopteri, Anseres), Crypturi, and Ratitæ in the Collection of the British Museum. Catalogue of the Birds in the British Museum. Vol. 27. British Museum of Natural History, London.

SAVARD, J.-P. L., D. BORDAGE, AND A. REED. 1998. Surf Scoter (*Melanitta perspicillata*) *in* The Birds of North American Online (A. Pool, Ed.). Cornell Lab of Ornithology, Ithaca, New York. Retrieved from Birds of North America <Online: http://bna.birds.cornell.edu/bna/species/363>.

SCLATER, P. L. 1910. Revised list of the birds of Jamaica. Pages 596–619 *in* The Handbook of Jamaica for 1910. Comprising historical, statistical and general information concerning the island, compiled from official and other reliable records. (J. C. Ford and F. Cundall, Eds.). The Institute of Jamaica, Kingston.

SCLATER, P. L., AND O. SALVIN. 1873. Nomenclator Avium Neotropicalium: sive Avium quæ in Regione Neotropica Hucusque Repertæ sunt Nomina Systematice Disposita Adjecta sua Cuique Speciei Patria Accedunt Generum et Specierum Novarum Diagnoses. Sumptibus Auctorum (J. W. Elliot), London.

SCLATER, P. L., AND O. SALVIN. 1876. A revision of the Neotropical Anatidae. Proceedings of the Zoological Society of London 1876:358–412.

SCOTT, W. E. D. 1891. Observations on the birds of Jamaica, West Indies. II. A list of the birds recorded from the island, with annotations. Auk 8:353–365.

SHARPE, R. B. 1899. A Hand-list of the Genera and Species of Birds. [Nomenclator Avium tum Fossilium tum Viventium]. Vol. I. British Museum, London.

STEVENSON, H. M., AND B. H. ANDERSON. 1994. The Birdlife of Florida. University Press of Florida, Gainesville.

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BATHING BEHAVIOR OF GRAY KINGBIRDS (*Tyrannus dominicensis*)

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A previous article in Florida Field Naturalist described the breeding behavior of Gray Kingbird (*Tyrannus dominicensis*) in St. Johns County, Florida (Doyle 2013). In that account, I noted "On one occasion I arrived to find the male completely wet, on a sunny day, suggesting the possibility of recent bathing." However the question of bathing by Gray Kingbirds was left unresolved. The Birds of North America Online species account (Smith and Jackson 2002) lists "No Information" for bathing, so the purpose of this note is to present supplementary observations on this behavior for this species.

On three occasions (12 May 2015, 31 May 2015, and 27 June 2015) I observed Gray Kingbirds engaged in an aerial bathing behavior. This bathing technique is consistent with the previously unresolved partial observation reported in the original article. The observations described below occurred at Key West Tropical Forest & Botanical Garden, Key West, Monroe County, Florida, in a 30 m x 45 m freshwater pond. For all three dates the behavior was similar, so I recount below in detail the observation on 27 June 2015.

The kingbird began by perching in a mid-sized tree at the edge of the pond. It then sallied out over the pond, swooping down in a U-shaped flight path to impact the water surface about ⅓ of the distance across the pond. The impact with the water is not one of bill-dipping, which was observed at other times, nor leg-dipping, as I have observed with Least Terns (*Sternula antillarum*) during extremely hot weather. Each impact is a submersion "belly-flop" splash (see Fig. 1) that results in a water "haystack" at the impact location, a wake of 2.5 m (as measured from the photo relative to the kingbird's length), water droplets flying, and extensively wetting the bird. The water impact is part of a flight pattern where the kingbird swoops down, impact-submerges with wings open, immediately flies up, and then banks to return to its same perch. After two to three seconds on the perch, the kingbird repeated this swoop-and-splash maneuver, for a total of three repetitions of swoop, splash, bank, perch. Then the kingbird remained on the same perch, completely wet, and preened for several minutes, with special attention to the underwings.

Although there is a report of Gray Kingbird foraging by diving (Sprunt 1942), my observations are consistent with bathing rather than foraging. I did not observe insects emerging from the water, nor aquatic insects or small fish near the water surface. Viewed with binoculars multiple times, nothing was noted in the birds' bills as they returned to the perch. And there was no subsequent behavior that suggested foraging, such as bill wiping. Upon alighting, the birds commenced to preen.

There were at least four Gray Kingbirds in the area of the pond, presumably a family from that territory's breeding pair. About 10 minutes later, two kingbirds, presumably different individuals than the previously observed bird since they each had different preferred perches, engaged in a similar bathing behavior, with variations. One kingbird's pattern was to impact the water twice on each down-swoop, hitting the water then rising up only a few feet to impact the water again, reminiscent of a twice-skipped stone, before swooping up and banking to its preferred perch. This individual also repeated this wetting behavior three times, with two to three seconds at its perch between dips. It then remained perched to fluff and preen. A third kingbird, engaged in bathing at the

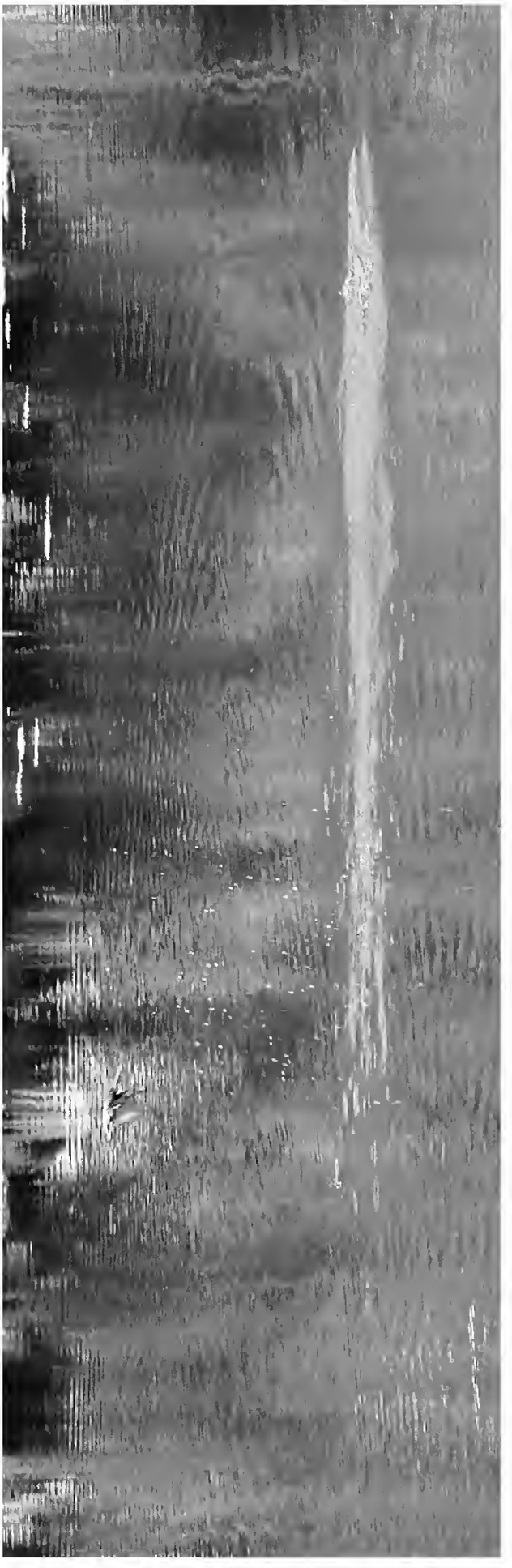

Figure 1. Gray Kingbird engaged in aerial bathing behavior at Key West, Florida, 27 June 2015. Photograph by Diana Doyle.

same time as the second, was more cautious. It flew with much less speed toward the pond's surface, dipped into the water much closer to the pond's edge, and with a less forceful impact but that still resulted in completely wetting its belly and underwings, before returning to its preferred perch to fluff and preen.

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LITERATURE CITED

DOYLE, D. 2013. Observations of Gray Kingbird (*Tyrannus dominicensis*) habits and breeding behavior in St. Johns County, Florida. Florida Field Naturalist 41:117-122.

SMITH, G. A., AND J. A. JACKSON. 2002. Gray Kingbird (*Tyrannus dominicensis*) *in* The Birds of North America Online (A. Poole, Ed.). Cornell Lab of Ornithology, Ithaca, New York. <bna.birds.cornell.edu/bna/species/668doi:10.2173/bna.668>.

SPRUNT, A., JR. 1942. *Tyrannus dominicensis dominicensis* (Gmelin) Gray Kingbird. Pages 29-50 *in* Life Histories of North American Flycatchers, Larks, Swallows, and their Allies. (A. C. Bent, Ed.). U. S. National Museum Bulletin 179.

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A NEW LONGEVITY RECORD FOR THE NORTHERN CARACARA (*Caracara cheriway*) IN FLORIDA

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Raptors, at least those with larger body mass, are known to be relatively long-lived, but obtaining longevity records for wild birds is difficult unless individuals are marked or can be tracked for multiple years. Here we report a resighting that establishes a longevity record for the Northern Caracara (*Caracara cheriway*, hereafter caracara). This raptor occurs in Florida as an isolated and resident population in the south-central region (Morrison and Dwyer 2012). In this region, caracaras are most often found nesting on cattle ranches, which typically include large acreages of improved pastures, open grasslands that are intensely managed as forage for cattle (Morrison and Humphrey 2001). Breeding pairs of caracaras exhibit strong fidelity to a nest site and territory, even to a nest tree (Morrison 1999).

During the mid-1990s and again in the mid-2000s, this population was intensively studied, and over 500 caracaras, both adults and nestlings, were marked. Resighting and recovery information over the years has allowed estimation of annual survival for sub-adults (Dwyer et al. 2012) and for adults and juveniles (Morrison 2003). Adult annual survival is relatively high, 0.88 for males and 0.91 for females (Morrison 2003).

On 7 March 1994, JLM and SMM banded an adult breeding caracara at its nest (N 27° 28', W 85° 01') along NW 240th St., in northern Okeechobee County, Florida. This bird was sexed as male, using DNA obtained from a blood sample. JLM and SMM monitored nesting success in this territory, through 2000. During these 7 years, this male remained in this territory and, with its mate, successfully fledged a total of 11 young.

On 15 March 2015, BKS came upon a banded adult caracara feeding on road kill within 200 m of the site where the adult male caracara was banded in 1994. BKS observed the caracara for several minutes and watched it take food to a cabbage palm (*Sabal palmetto*), which presumably contained the caracara's nest. The caracara returned to the road kill within a few minutes, and at this time, BKS was able to obtain photographs of the caracara. On 16 March 2015, BKS submitted a banding report, along with several photographs showing the US Fish and Wildlife Service (USFWS) band, to the USGS Bird Banding Laboratory (BBL). Verification of this caracara's identity was made on 16 March 2015, when the BBL submitted the photographs to JLM, who confirmed the caracara's identity using numbers visible on the USFWS band. Since caracaras attain adult plumage at a minimum of 3 years of age (Nemeth and Morrison 2002), this male was at least 3 years old when it was banded; thus, when photographed in March 2015, it was at least 24 years old.

Previous longevity records for wild caracaras have been reported as 9 years (Klimkiewicz and Futcher 1989) and 22 years (J. Layne, unpubl. data). No details are available for these records although they presumably are resightings of marked individuals. The lifespan of captive caracaras has been recorded as 15 years (Bent 1938),

21 years (J. Layne, unpubl. data), and 37 years (Newton 1979). For comparison, longevity records for other raptors resident in Florida include Snail Kite *(Rostrhamus sociabilis)*, 14 years, and Red-shouldered Hawk (*Buteo lineatus*), 22 years (Lutmerding 2015).

Florida's population of the Northern Caracara is federally and state listed as Threatened. Perhaps as few as 500 nesting pairs may remain in the state, and the population is believed to be in decline because of ongoing loss of its favored pasture- and grassland habitats (Morrison and Humphrey 2001). All available habitat suitable for nesting appears to be occupied, and a large population of non-breeding floaters is continually searching for and evaluating prospective territories and breeding opportunities (Dwyer et al. 2013). The landscape in this male caracara's territory is typical of caracara nesting habitat and includes improved pasture, scattered cabbage palms and live oaks (*Quercus virginiana*), and seasonally flooded wetlands. This landscape has not changed since this caracara was banded in 1994, so it is likely that this individual has remained there and attempted nesting, annually, since it was banded.

Individual birds that live longest typically produce more offspring over their lifetimes, thereby have a greater probability of producing recruits and thus influencing long-term population persistence (Newton 1985, Espie and Oliphant 2000, Herényi et al. 2012). A management strategy focused on retaining suitable nesting habitat will likely benefit Florida's caracara population by enhancing survival and reproductive success of breeding individuals. However, the strong site fidelity and sedentary behavior typical of this species, combined with a long lifespan, suggest that breeding pairs may maintain residence on a territory even if habitat quality is declining, as long as they can forage successfully and attempt to breed there. Once breeding adults are gone from a territory, though, they might not be replaced if the altered landscape is no longer attractive to new potential breeders. In this case, a long lifespan may pose an additional conservation challenge for this species in that a decline in population size may not be noticed until it becomes drastic.

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LITERATURE CITED

BENT, A. C. 1938. Life Histories of North American Birds of Prey. Part 2. U.S. National Museum Bulletin 170.

DWYER, J. F., J. D. FRASER, AND J. L. MORRISON. 2012. Within-year survival of non-breeding Crested Caracaras. Condor 114:295–301.

DWYER, J. F., J. D. FRASER, AND J. L. MORRISON. 2013. Range sizes and habitat use of non-breeding Crested Caracaras in Florida. Journal of Field Ornithology 84:223–233.

ESPIE, R. H. M., AND L. W. OLIPHANT. 2000. Age-dependent breeding performance in merlins (Falco columbarius). Ecology 81:3404–3415.

HERÉNYI, M., G. HEGYI, L. GARAMSZEGI, R. HARGITAI, G. MICHL, B. ROSIVALL, AND J. TÖRÖK. 2012. Lifetime offspring production in relation to breeding lifespan, attractiveness, and mating status in male collared flycatchers. Oecologia 170:935–942.

KLIMKIEWICZ, M. K., AND A. G. FUTCHER. 1989. Longevity records of North American birds. Supplement 1. Journal of Field Ornithology 60:469–494.

LUTMERDING, J. A. 2015. Longevity records of North American Birds. USGS Bird Banding Laboratory, Patuxent Wildlife Research Center. <http://www.pwrc.usgs.gov/BBL/longevity/Longevity_main.cfm>. Accessed 26 December 2015.

MORRISON, J. L. 1999. Breeding biology and productivity of Florida's Crested Caracaras. Condor 101:505–517.

MORRISON, J. L. 2003. Age-specific survival of Florida's Crested Caracaras. Journal of Field Ornithology 74:321–330.

MORRISON, J. L. AND S. R. HUMPHREY. 2001. Conservation value of private lands for Crested Caracaras in Florida. Conservation Biology 15:675–684.

MORRISON, J. L., AND J. F. DWYER. 2012. Crested Caracara (*Caracara cheriway*) *in* The Birds of North America Online (A. Poole, Ed.). Cornell Lab of Ornithology, Ithaca, New York. <http://bna.birds.cornell.edu/bna/species/249, doi:10.2173/bna.249>.

NEMETH, N. M., AND J. L. MORRISON. 2002. Natal dispersal of the Crested Caracara in Florida. Journal of Raptor Research 36:203–206.

NEWTON, I. 1979. Population Ecology of Raptors. Buteo Books, Vermillion, South Dakota.

NEWTON, I. 1985. Lifetime reproductive output of female sparrowhawks. Journal of Animal Ecology 54:241–253.

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TWENTY-FOURTH REPORT OF THE FLORIDA ORNITHOLOGICAL SOCIETY RECORDS COMMITTEE: 2014

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Abstract.—The Florida Ornithological Society Records Committee held its annual meeting in Gainesville on 2 August 2014. As Old Business, the Committee revisited five (three unresolved and two tabled) old reports, and resolved four of them. The Tricolored Munia on the Dry Tortugas, a pair of White-cheeked Pintails in Miami, and a Black-faced Grassquit on Key Biscayne, were accepted. The identification of Bahama Warbler in Palm Beach County was not affirmed. The tabled report on a *Thalasseus* tern identified as an Elegant Tern remained tabled pending a broader review to include an earlier report. Related to the last, FOSRC 2012-912, "Cayenne" Tern, was re-opened and then tabled to include in the *Thalasseus* review. In addition, the report FOSRC 2013-975, previously not accepted on a group of Cackling Geese in Jackson County, was re-opened to consider additional information, and was accepted. A total of 52 new reports were evaluated by the Committee this year. Of these reports, 44 were accepted (42 [95%] of which were records verified by specimens, diagnostic photographs, or sound recordings), 5 not accepted, 2 unresolved, and 1 tabled. Four species (Egyptian Goose, Red-necked Stint, Violet-green Swallow, Tricolored Munia) were added to the Florida bird list, bringing the total species to 520.

The twenty-fourth report of the Florida Ornithological Society Records Committee (FOSRC) summarizes decisions made by the Committee for the submission year ending in August 2014. Committee activity and operations are guided by our "Rules and Procedures," which are found on the Florida Ornithological Society website under the Records tab at http://www.fosbirds.org/. The FOSRC routinely evaluates reports of review-listed rate species (15 or fewer previously accepted reports) and reports of species occurring for the first (known) time in the state. On occasion, when we receive a recommendation, we also consider whether an exotic species meets our criteria for establishment in Florida. Reference here to "the Committee" refers to FOSRC.

At its annual meeting on 2 August 2014 in Gainesville, the FOSRC attended to three unresolved and one tabled old report. A second tabled report on an Elegant Tern (2013-979) was re-tabled together with a similar report (2012-912), which was re-opened and added to the first report, for joint reconsideration at our 2015 meeting. The other old business reports were resolved (2010-820, 2012-913, 2013-973, 2013-992), and are covered below in appropriate sections. A total of 51 new reports, and an old report (not accepted in 2013) on Cackling Geese in

Jackson County, were evaluated, or re-evaluated, by the Committee this year. Of the new reports, 43 (84%) were accepted, five (10%) were not accepted, two were unresolved, and one was tabled. The re-opened report on the geese, which was previously not accepted based on inadequate information, was accepted because of new information. Acceptance rates have been high in recent meetings chiefly because of supporting, diagnostic digital photographs made available by observers. Four species were added to the official list of Florida's birds: Egyptian Goose (an exotic species deemed to be established), Red-necked Stint, Violet-green Swallow, and Tricolored Munia (believed to be an immigrant to the Dry Tortugas; see account below). These four species bring the Florida list to 520 species.

All documentation reviewed by the FOSRC is archived in the Ornithology Division of the Florida Museum of Natural History (FLMNH), University of Florida, Gainesville, Florida. Observers of review-listed species in Florida, and of birds that may be new to the State List, should submit reports to the FOSRC, either by using the online form or by requesting a form from the managing Secretary of the Committee directly (see http://www.forbirds/org/). A report to the managing Secretary that includes the basic information on field observations of a review listed or new species (who, where, when, and diagnostic description based on what the observer saw), together with any photographs provided as attachments, also is acceptable. We request that photographs not be sent without a detailed description of the bird, as photographs are not always diagnostic, or they may show only limited, non-diagnostic parts of the bird being reported.

This report was prepared on behalf of all members of the FOSRC serving during the 2013-14 reporting year. The members serving during these reviews and their last year of tenure on the Committee were John Murphy (2014), Jon Greenlaw (2015), Ed Kwater (2016), Michael Brothers (2017), Rafael Galvez (2018), Dave Goodwin (2019), and Andy Kratter (2020). See the FOS website (above) for a list of the current members of the FOSRC and their addresses.

Submitters of reports (all submitters are acknowledge by mail, but only those reports that are accepted include initials of the submitter here): S. Agri (SA), Elsa Alvear (EA), Danny Bales (DB), Oron "Sonny" Bass (SB), Mark Berney (MBe), Kevin Brabble (KB), Michael Brothers (MBr), Brenda & Jerry Callaway (B&JC), Corey Callaghan (CC), Jerry Callaway (JC), Jim Cavanagh (JCa), Kevin E. Dailey (KED), Michelle Davis (MD), Gina DelPizzo (GD), Robin Diaz (RD), Michael Dryden (MD), Lucy and Bob Duncan (L&BD), Lucy Duncan (LD), Marcello Gomes (MG), Gary Ellis (GE), Samuel Ewing (SE), Reinhard Geisler (RGe), Elizabeth Golden (EG), Hans Gonsembach (HG), Pamela Graber (PG), Jon S. Greenlaw (JSG), Jack Hailman (JHa), Randy Harrod (RH), John Hintermister (JHi), Alice Horst (AH), Tom Johnson (TJ), John K. Killian (JKK), Andy Kratter (AK), Ed Kwater (EK), Mike Manetz (MM), Larry Manfredi (LM), Steve Mann (SM), Matthew O'Sullivan

(MO), Pam Overmyer (PO), Judd Patterson (JP), Roy E. Peterson (REP), Georgia and Eric Pourchot (G&EP), Bill Pranty (BP), Rex Rowan (RR), William E. Sexton (WES), Russell Titus (RT), Ann & Phil Weinrich (A&PW), James A. Wheat (JAW), Graham Williams (GW), Meret Wilson (MW), Stu Wilson (SW), Chris L. Wood (CLW), Andy Wraithmell (AW), Adam Zions (AZ).

COMMITTEE NEWS, FORMATS, AND TERMINOLOGY

Committee news.—During 2014, the FOSRC met once on 2 August at the Florida Museum of Natural History, Gainesville. John Murphy reached the end of his term this year on the Committee and cycled off. He was replaced by Cameron Cox. Cameron brings an exceptional background in international birding and deep experience in identification fine-points honed during his tour leadership over a period of years.

No species were removed from the Review List this year, pending consideration of suitable guidelines to use in the future. The Committee's Rules provide no guidance on this matter, and we have used 10 and 15 accepted reports as thresholds for removal in our past practices.

Formats and terminology.—We followed the current nomenclature and sequence used in the American Ornithologists' Union Check-list (AOU 1998) and its supplements through July 2014 (http://checklist.aou.org/) in the species accounts. Within accounts with more than one submission for a species, each report is introduced sequentially by catalog number. The initials following the catalog number refer to one or more contributors who supplied information to the Committee on accepted reports (see list above). We employ the terminology for age of birds outlined by Kratter (2010). We normally do not review subspecies, but we have accepted submissions on distinctive, field-identifiable subspecies whose taxonomic rank may be reevaluated by the AOU in the future. Our use of the words "report" and "record" to describe occurrences of species in Florida follow Robertson and Woolfenden (1992), a distinction that has been followed by subsequent major reviews of the Florida avifauna, and by the Field Observations Committee of the FOS. Individual occurrences that are independently verifiable (specimen, diagnostic photograph, or an audio or video file) are characterized as "records," and if not verifiable as "reports." Accepted reports are special only in the sense that the non-verifiable documentation is deemed to be fully supportive of the identification and the circumstances do not warrant special consideration. In past practice, only a record has been accepted by the Committee for addition of a species to the Florida List. After that initial hurdle has been met, reports are considered on the basis of their merits based on available physical evidence and circumstance (provenance not an issue). For

each species, I provide a review of the status of the species in Florida chiefly based on FOSRC data or through the end of 2014, as specified.

Abbreviations used here in the species accounts are AOU (American Ornithologists' Union), FLMNH (Florida Museum of Natural History, Gainesville), FOSRC (Florida Ornithological Society Records Committee), NP (National Park), NWR (National Wildlife Refuge), SP (State Park), TTRS (Tall Timbers Research Station, Tallahassee).

Submissions Accepted

Cackling Goose, *Branta hutchinsii*

FOSRC 2013-975 (JKK, PO, AW, CLW). This group of four small geese was initially reviewed in 2013 and was not accepted because of poor, low-resolution photographs and a concern about our inability to discount the small Canada Goose (*B. canadensis parvipes*) (Greenlaw 2015). The group had been found on 11 January 2013 near Sneads, Jackson County, and in the ensuing few days, it was observed by several people. After the decision, the Committee received new photographs, a video, and a descriptive report from CLW, who had gotten close to the geese on 15 February. The new information impelled the Committee to re-open the report to reconsider the new information. A reevaluation by S. G. Mlodinow, a white-cheeked geese specialist, now affirmed the identification as a group of Richardson's Cackling Geese (*B. h. hutchinsii*).

This occurrence represents the fifth acceptance (all records) of this species in Florida since 2005, a year after *B. canadensis* was split (Banks et al. 2004). The first was a specimen taken in 1956 in Wakulla County, which awaited reevaluation following a split of the white-cheeked geese.

Egyptian Goose, *Alopochen aegyptiaca*

FOSRC 2014-1024 (BP). BP submitted a request to consider this goose as a currently established, exotic breeder in Florida. The submission was based on a review of the history, status, and distribution of the species in the state by Pranty and Ponzo (2014). This goose is native to sub-Saharan Africa and the Nile Valley of southern Egypt, and is popular in aviculture. It was first reported in Florida in the 1960s and breeding has occurred in the state outside captivity since the 1980s. Its Florida range is represented by coastal and subcoastal localities in a swath of settled landscape extending from Miami-Dade County north through Martin County. The acceptance of Egyptian Goose to the Florida list constitutes the state's 517th species. Subsequently, the American Birding Association followed the lead of the state committee and accepted the species on its ABA Checklist (Pranty et al. 2014), and the AOU acquiesced and added the species to the North American list (Chesser et al. 2015).

White-cheeked Pintail, *Anas bahamensis*

FOSRC 2012-913 (LM). An apparent pair was discovered on 3 October 2012 on a marshy lagoon in a landfill facility at 23707 SW 97th Avenue, near Cutler, Miami-Dade County. They remained in the area until 5 October, after which they were not seen again. The report remained unresolved until this year because of an issue over provenance. The birds in this case were associated with native ducks, and were wary and appeared to be in fresh plumage condition.

FOSRC 2014-1015 (RD). This pintail was observed on 8 and 16 October 2013 at the central District Wastewater Treatment Plant on Virginia Key, Key Biscayne,

Miami-Dade County. It was associating with teal and shovelers in sludge lagoons, where it fed and rested. It was unbanded and was described as "skittish" and "wary" during the entire observation period on 8 October. The location was in a large parcel of preserve land less than 200 m from the Atlantic shoreline at Bear Cut.

Anas bahamensis was known to Howell (1932) from a single specimen taken by a hunter on the Banana River, Brevard County, in March 1912 (corrected date in Stevenson and Anderson 1994). Robertson and Woolfenden (1992) listed the specimen, two other mounted specimens formerly displayed in the Foxbower Wildlife Museum and taken in Aripeka, Fillman Bayou, Pasco County, in January 1970 (Greenlaw et al. 2014), a bird that was shot and photographed, Hickory Mound Lake, Taylor County, in February 1970, and a photographed bird taken in Everglades NP, Monroe County, on April 1974, as acceptable records from Florida. Through 2014 (Greenlaw et al. 2014), about 30 reports of the species were known from the state, including a few that were known to have escaped from captivity. The records Committee has processed only six reports through 2014, one of which was an observation from Merritt Island NWR in March 1990 and treated as an acceptable sight report. From 1990 until 2012, most Committee members treated the few reports of this species with suspicion about the possible natural occurrence of the birds involved. This changed in 2013 when an unpublished assessment of this species in Florida documented a concentration of occurrences along the central and southeast Atlantic coast near potential sources of wild pintails in The Bahamas and Cuba, and a distinct seasonal pattern that chiefly extends from December into early spring.

COMMON MERGANSER, *Mergus merganser*

FOSRC 2014-1021 (KB). This merganser, an adult female, was observed and photographed on 3 January 2013 off Fort Island Gulf Beach, Crystal River, Citrus County.

FOSRC 2014-1022 (PG). Two female–plumaged individuals were found and photographed together on 11 November 2012 on a pond beside McKendree Road south of SR-52, San Antonio, Pasco County.

FOSRC 2014-1023 (JC). This adult female was observed and photographed on 8 December 2013 on Tiger Point Golf Course, Gulf Breeze, Santa Rosa County.

Documented occurrences of this species have become more regular in Florida in the last few years. Reports of three different individuals in three consecutive months are unusual. Since 2009, the species has been documented photographically at least once annually in the state (six records), while previously only two were known based on specimens (the first taken in December 1953, the other in 1968 now lost and only recently accepted by the Committee based on a photograph of the mounted specimen) (Greenlaw et al. 2014). Still, over 60 reports before 1992 (Robertson and Woolfenden 1992) suggest the species has been present in Florida more often than the few modern records imply, but until the advent of digital photography, much doubt surrounded early identifications. Stevenson and Anderson (1994) reviewed some of these early reports and discussed the issues surrounding them.

NEOTROPIC CORMORANT, *Phalacrocorax brasilianus*

FOSRC 2014-1004 (MBe, JSG). We believe, based on structure and plumage, that this female is the same individual that nested in a mixed pairing last year (2013-972) on the same *Annona* island in Wakodahatchee Wetland, Delray Beach, Palm Beach County. This past year, MBe recorded the bird from 1 February–1 June 2013. It formed a pair bond with a male Double-crested Cormorant (*P. auritus*),

copulated with him, and successfully reared three hybrid nestlings to fledging. This represents the first known case of a successful nesting of a Neotropic Cormorant in Florida. See below for accounts of three other birds of this species in the wetland.

FOSRC 2014-1007 (LM). This cormorant was discovered on Jun 2014, and observed again on 5 June from Card Sound Road in Crocodile Lakes NWR, Monroe County. Relative small size was evident in direct comparison to a Double-crested Cormorant in one photograph.

FOSRC 2014-1008 (MG). This cormorant was found and photographed at Peaceful Waters Sanctuary, 11700 Pierson Road, Wellington, Palm Beach County.

FOSRC 2014-1036, 2014-1037, and 2014-1038 (MBe). Reports on these three individuals are presented together because they were in the same breeding colony of mixed species cormorants at the same time in Wakodahatchee Wetlands, Delray Beach, Palm Beach County. I refer to these individuals in the respective reports here as "bird 2," "bird 3," and "bird 4" (see 2014-1004 above for "bird 1" in the wetlands). Bird 2 was an adult male (verified by wing-waving display and territorial behavior). It was recorded from 15 September 2013 through 1 February 2014. Based on a unique crescent-shaped, white mark on its foreneck, it also was present from December 2012–April 2013 the previous year. This year, it undertook two nesting attempts that failed. Bird 3, was an adult female (copulation received) recorded from 6 October 2013 through 3 January 2014. She paired with a Double-crested Cormorant they successfully fledged five hybrid young on the northwest *Annona* island in the wetlands. This represents the second known successful nesting by *P. brasilianus* in Florida. Bird 4 was an adult of unknown sex. It was observed from 6 October 2013 through 3 January 2014. It paired with a Double-crested Cormorant and fledged four hybrid young on the northwest *Annona* island, for the third known successful nesting of the species in Florida.

FOSRC 2014-1040 (MBr). This adult cormorant was discovered and photographed on 16 July 2014 off the end of Boca Chica Road, Boca Chica Key, Monroe County. This is the seventh record of the species this year in Florida.

A total of 19 records have been verified in the state in just eight years since the first in April 2007. This represents a notable change in status of the species in such a short period of time.

Bar-tailed Godwit, *Limosa lapponica*

FOSRC 2014-996 (JSG). This godwit was found on 18 September (Ahern 2014) and remained through the winter, when it visited several sites, including Anclote Key, in the vicinity. It was most often observed by birders on the bayside beach in the island section of Fred Howard Park, Tarpon Springs. The bird belonged to the nominate subspecies *L. l. lapponica*.

FOSRC 2014-1009 (LD). This godwit was observed on 18 March 2014 by three people in Mounds Pool, St. Marks NWR, Wakulla County. The description of barred tail and other details of morphology and plumage supported the identification. One observer reported seeing white underwings when the bird briefly stretched its wings, suggesting an individual of the nominate subspecies.

The FOSRC has accepted six reports (three accompanied by photographs) of this species in Florida, with the first found in 1983. Two other records (photographs) from 1970 and 1985 were not examined by the Committee, but were accepted by Robertson and Woolfenden (1992) in their critical review of the state's avifauna.

Red-necked Stint, *Calidris ruficollis*

FOSRC 2014-1039 (MBr). This stint, still in partial breeding plumage, was discovered on 16 July 2014 by V. Nilsson, and observed by MBr and others on

17 July, when it was photographed. It was found feeding with other sandpipers a couple hundred meters beyond the end of Boca Chica Road, on Boca Chica Key, Monroe County. It remained in the area through at least 25 July, but it was not always reliably seen on any particular day. This record is the first of the species for Florida, and constitutes the 518th species on the state's bird list.

SOUTH POLAR SKUA, *Stercorarius maccormicki*

FOSRC 2014-1026 (HG, AK). This skua was found beached on 21 May 2014 on Deerfield Beach, Broward County. It was taken to a rehabilitation center where it was kept until it died. AK saw the bird alive on 3 June and later received the specimen (UF 50489) for the FLMNH.

Five records (photographs) of this species have been reviewed and accepted by FOSRC. Two additional sight reports also have been accepted, but the earliest (observed in September 1982 off Brevard County) was not accepted as a first state occurrence by Robertson and Woolfenden (1994), who regarded the identification as uncertain in the absence of verifiable material.

RAZORBILL, *Alca torda*

FOSRC 2014-1041 (AK). This bird was found dead on 13 December 2013 on Flagler Beach near the beach pier, town of Flagler Beach, Flagler County. The bird was preserved as a specimen (UF 50442) at FLMNH, where the Committee examined it.

Thirty occurrences (28 records) have been affirmed by FOSRC since the first in 1985. This specimen was the only individual known to occur in Florida during the winter of 2013–14 following the major incursion of the previous winter, when most of Florida's records were documented. Thus, Florida did not experience an "echo" effect of the historic winter influx.

LONG-BILLED MURRELET, *Brachyramphus perdix*

FOSRC 2014-1044 (AK). This Murrelet was found dead on the beach on 27 February 2013 in Gulf Stream, Palm Beach County. It is deposited as a specimen (UF 50267) at FLMNH, where the Committee examined it.

Six records were accepted by FOSRC through 2014 since the first found in December 1986 (Hoffman and Woolfenden 1988). These are the only known occurrences of the species in Florida.

BLACK-HEADED GULL, *Chroicocephalus ridibundus*

FOSRC 2014-1016 (AZ). This gull was observed and photographed on 13 February 2014 at the Welaka National Fish Hatchery (southern unit) on the St. Johns River, Welaka, Putnam County. It was in non-breeding plumage, and associated with Bonaparte's Gulls (*C. philadelphia*).

Eleven reports (nine of which are photographic records) of this species have been accepted by the FOSRC since 1982. The earliest record, not included in the FOSRC tally, was of a bird photographed in the winter of 1971-72 in Brevard County.

CALIFORNIA GULL, *Larus californicus*

FOSRC 2014-1018 (MBr). An adult gull in non-breeding plumage discovered and photographed on 6 January 2014 represents another of several recent occurrences of this species to come from the evening gull aggregations at Daytona Beach Shores, Volusia County.

FOSRC 2014-1019 (L&BD). An adult in breeding plumage, this bird was found and photographed on 16 March 2014 at the entrance to Fort Pickens on Pensacola Beach, Escambia County.

FOSRC 2014-1034 (MBr). This adult gull was discovered on 24 February 2014 on the open Atlantic beach at Daytona Beach Shores, Volusia County. It also

was present on 6 and 18 March, when it was differentiated from an earlier adult present on 6-15 January on the same beach by distal beak-color pattern.

FOSRC 2014-1043 (MBr). This first-cycle gull was discovered on 26 February 2014 at Daytona Beach Shores, Volusia County. It also was seen on three ensuing dates, 27 February, and 5 and 18 March. The bird was observed and photographed standing on the beach with other gulls and in flight, and identification was verified by individual plumage pattern.

There are now 11 photographic records of this species for Florida through the end of 2014, all examined by FOSRC. The Committee also accepted a report of a bird seen at the Toytown landfill, Pinellas County, in March–April 1979, but Robertson and Woolfenden (1992) relegated that report, and one other also from Pinellas County in 1978, both based on photographs, to their "unverified stragglers" appendix because of doubts about the original identifications. Greenlaw et al. (2014) characterized the current status in Florida as rare and of irregular occurrence, but these four records in one year stand out as unusual in that context. The statement in Greenlaw et al. (2014) that Robertson and Woolfenden (2014) had accepted the Pinellas County reports is in error.

VEGA HERRING GULL, *Larus argentatus vegae*

FOSRC 2014-1035 (MBr). This adult gull in the Herring Gull complex was found on 10 March 2014 in Daytona Beach Shores, Volusia County. The taxon, while still ranked as a subspecies by the AOU (1957, 1998), is recognized as a species by others (e.g., Olsen and Larsson 2004). It breeds in northeast Russia and winters farther south in east Asia, including Japan. Photographs of the Florida gull were sent to gull specialists in the United States and Japan. They concurred on its identification. The late primary molt in this gull was unusual, but was within the range of variation known in Japanese gulls of this species (O. and M. Ujihara, in litt. to MBr). This is the first documented occurrence of this taxon in Florida.

This is the second verifiable report of this taxon in Florida. The first (FOSRC 2009-761) occurred in January 2009 at the same location as that of the current bird (Kratter 2010).

RUDDY QUAIL-DOVE, *Geotrygon montana*

FOSRC 2014-1030 (MD, RD, EG). This dove was captured in a mist net on 3 October 2013 at the Cape Florida Banding Station, Bill Baggs Cape Florida SP, Key Biscayne, Miami-Dade County. The bird was captured again on 8 October and seen on several other days until the last encounter on 22 October.

Two specimens (first, May 1923), one archived photograph at TTRS, and a single accepted sight report constitute the previous occurrences in Florida (Greenlaw et al. 2014). All three were from Key West or Dry Tortugas, Monroe County, so the current record departs from this geographic pattern. The nearest population is on Cuba, where it is regarded as "common" and is widespread (Garrido and Kirkconnell 2000).

SNOWY OWL, *Bubo scandiacus*

FOSRC 2014-1001 (G&EP, KED, JAW). This owl was observed initially on 27 December 2013 on the south end of Little Talbot Island, Little Talbot Island SP, Duval County. It remained in the area until at least 19 January 2014 (eBird.org).

Only two records precede this bird. One occurred in Franklin County in 1999, and the second was in St. Johns County in 2013 (Greenlaw et al. 2014).

ALDER FLYCATCHER, *Empidonax alnorum*

FOSRC 2014-995 (MM, AZ). This flycatcher was discovered on 27 August 2013 at the La Chua Trail entrance to Paynes Prairie Preserve State Park, Gainesville, Alachua County, when it was videotaped (with sound) and photographed. The bird mostly uttered its typical 'pip' call and a few other notes, and occasionally also its song. The bird evidently continued at its discovery site until 21 September (R. Rowan, in litt.).

This species and *E. traillii* are both poorly known in Florida. Because the two species sometimes call or sing during migration stopover, they were placed on the review list to obtain more information on seasonal occurrence in the state based on recorded or well-described typical call or song. *E. alnorum* has been documented on seven occasions in Florida, including this case, since it was placed on the state review list. Even more reports have been mentioned informally in other media without involving the Records Committee. For example, 2014-995 apparently was one of seven *E. alnorum* found by birders in Alachua County between 24 August and 26 September 2013 (R. Rowan, in litt.). These dates conform well with seasonal occurrences of verifiably documented birds (five records, audio-recordings), extending in fall from 27 August to 26 September. One spring migrant was heard and photographed on 4 April in the Gainesville area.

WILLOW FLYCATCHER, *Empidonax traillii*

FOSRC 2014-994 (LM, GW). This *Empidonax* flycatcher was found by LM on 21 August 2013 beside Aerojet Road in the "Annex" section of Southern Glades Wildlife and Environmental area, Miami-Dade County, when it was photographed and sound recorded. Later in the fall on 20 October, GW encountered it again (assumed, see below) at the same location and recorded its vocalizations for Xeno-canto (http://www.xeno-canto.org/). A Willow Flycatcher has been present on other occasions at this site between mid-August and mid-October (LM in litt.); because vocal Willow Flycatchers are seldom reported in Florida, we presume that one individual remained temporarily localized at the Annex in late summer-fall 2013. This site more often attracts fall stop-over Alder Flycatchers.

FOSRC 2014-1025 (MBr). This individual was discovered and sound recorded on 20 October 2013 in a wooded swamp in Lake Woodruff NWR, Volusia County. Two other observers re-encountered the bird and also heard its distinctive call.

Apart from this bird and the previous one, only one other record of the species is known from Florida since it was placed on the review list. That involved an individual present in Alachua County from 18-24 September 2011 at a single site where it was encountered almost daily by different observers.

SULPHUR-BELLIED FLYCATCHER, *Myiodynastes luteiventris*

FOSRC 2014-1005 (GE, RT). This flycatcher was discovered on 3 October 2013 in Richardson Park and Nature Preserve, Wilton Manors, Broward County. The bird was not seen again at this location.

FOSRC 2014-1006 (SA). Dates and location on this bird were obtained from Tropical Audubon's listserv website (tropicalaudubon.org/tasboard/), while photographs were supplied by SA. The bird was observed from 28-30 October 2013 at Evergreen Cemetery, Fort Lauderdale, Broward County.

FOSRC 2014-1014 (no observer support). This bird was discovered on 1 November 2013 in Sugden Park, Naples, Collier County. A brief report and photographs were posted to the "BrdBrain" website (listserv.admin.usf.edu/scripts/wa.exe?A0=BRDBRAIN). Critical identification was verified by the photographs.

Ten reports (nine photographic records) have been accepted by FOSRC since 1995. Seven of these have been in the last ten years from the end of November

2013. Only two have been from the Panhandle (Escambia, Franklin counties), while the most northerly peninsular occurrence was in Pinellas County.

TROPICAL KINGBIRD, *Tyrannus melancholicus*

FOSRC 2014-998 (BP). This female was observed on 17 May 2014 near St. Armands Square on St. Armands Key, Sarasota County. She was localized and nest-building in the same oak tree where a female, presumptively the same, successfully fledged young alone last year for Florida's first breeding record involving an inferred Tropical Kingbird x Gray Kingbird (*T. dominicensis*) mating (Wilson et al. 2015).

Eighteen reports have been accepted by FOSRC since 2000. A specimen and a published photograph extend the early records back to 1996 (Greenlaw et al. 2014). Fourteen records (photographic, audio, or video, all involving at least diagnostic descriptions of the typical call) have occurred in the last 10 years since the end of 2014.

CASSIN'S KINGBIRD, *Tyrannus vociferans*

FOSRC 2014-999 (AZ). This flycatcher was observed on 27 November 2013 about seven miles (11 km) west of Bunnell on CR-305 near the intersection with SR-100. It was reported as early as 21 November and again on 23 November (BrdBrain listserv archives, above), and probably is the same bird that was present at that location last winter (FOSRC 2013-954).

FOSRC 2014-1000 (LM). This individual appeared on 15 March 2014 in a residential neighborhood on SW 322nd Street, Homestead, Monroe County, and remained in the area at least to 6 April. It roosted about 0.4 mi (0.6 km) away from the residence in a grove of bamboo with Western Kingbirds (*T. verticalis*).

FOSRC has accepted seventeen reports (12 based on photographs and one on an audio-file) since 1985. In the last ten years ending in December 2014, the Committee has verified 10 reports. A few others have been reported to birding listservs during the latter period that have not been evaluated by the Committee.

VIOLET-GREEN SWALLOW, *Tachycineta thalassina*

FOSRC 2014-1032 (TJ). A single swallow of this western species was discovered on 10 January 2013 about 200 m north of the Coastal Prairie Trails near Flamingo campground, Everglades NP, Monroe County. It was observed as close as five meters for a period of about 45 minutes as it foraged and vocalized in a mixed swallow flock dominated by Tree Swallows (*T. bicolor*). This well-photographed individual represented the first example of the species in Florida, making it the 519th species on the Official State List.

TOWNSEND'S SOLITAIRE, *Myadestes townsendi*

FOSRC 2014-1002 (DB, EK, RH, SM). The solitaire was discovered on 3 November 2013 beside the Osprey Trail parking lot in Honeymoon Island SP, Pinellas County. It occurred in scrub thicket habitat with an open canopy of dispersed taller trees, where it fed on the pale seed cones of *Chamaecyparis thyoides* (JSG). It was last seen on 6 November (BrdBrain archives above).

The only previous record in Florida was one documented in March 2008 in Orange County (Bankert et al. 2009).

VARIED THRUSH, *Ixoreus naevius*

FOSRC 2014-1003 (BP). This thrush was observed and photographed by BP on 6 November 2013 in a residential yard along 141st Street North in Seminole, Pinellas County. The individual quickly disappeared and was not seen by other birders.

Including the present record, FOSRC has accepted seven reports (five records) of the species in Florida since 1984. The earliest record, which was not assessed

by the records Committee, was a bird photographed in Palm Beach County in October 1977 (Stevenson and Anderson 1994, Greenlaw et al. 2014).

MACGILLIVRAY'S WARBLER, *Geothlypis tolmiei*

FOSRC 2014-1029 (A&PW, CC). This wood-warbler was observed on 6 March 2014 in Riverbend County Park, Indiantown Road, Jupiter, Palm Beach County. It was present from 2 March through 13 April.

Including this record, FOSRC has accepted eight reports (five records) since 1998 on this species. The first encounter in Florida was a single bird in Lee County in April 1998 that was videotaped during an eight day stopover. Greenlaw et al. (2014) mentioned five accepted occurrences through 2012, but the actual count was seven (five in the spring, not "three").

KIRTLAND'S WARBLER, *Setophaga kirtlandii*

FOSRC 2014-1013 (no observer support). This adult female Kirtland's Warbler was discovered on 19 April 2014 along Haulover Canal, Merritt Island NWR, Brevard County. Photographs, and an account of the discovery, were posted to a listserv (BrdBrain archives, above) website and on the Florida Rare Bird Alert, respectively.

Nine reports (seven records), including this one, have been accepted by FOSRC. Seven occurrences have occurred in the last ten years since August 2014. Most of the birds were encountered along the Atlantic coast (Volusia south to Broward counties) opposite their wintering grounds in the Bahamas. A spring individual was found during a spring stopover in Alachua County seemingly on course northwestward across the Florida peninsula to breeding sites in the northern Midwest. Another spring individual in Pinellas County apparently took a longer route to get back north. It seems clear that some individuals of *S. kirtlandii* use the Florida peninsula as portions of their routes to and from their breeding and wintering locations. An advantage of the trans-Florida routes is a relatively short water crossing between the mainland and the Bahamas.

BULLOCK'S ORIOLE, *Icterus bullockii*

FOSRC 2014-997 (GD, SE, MM, MO, RR, WES, AZ). This adult male was observed from 5–11 January 2014 in a residential yard on NW 37th Drive, Gainesville, Alachua County.

FOSRC 2014-1012 (JCa). This female-plumaged oriole was observed on 16 January 2014 at feeders in a residential yard on Shantilly Court, Tallahassee, Leon County.

Pranty et al. (2005) reviewed the identification status of early reports of this species in Florida after *I. bullockii* and *I. galbula* were each reinstated by the AOU (1995) to species rank from a more inclusive lumped taxon. The review was stimulated by issues of misidentification of female-plumaged birds (females and immatures of both sexes) after the status of the two species was resurrected. Overall, FOSRC has accepted 20 reports since 1988. Pranty et al. (2005) covered early occurrences through 2004 (Greenlaw and Kratter 2007). From 2004 through 2014, 14 reports (11 records) of *I. bullockii* were accepted by FOSRC.

BLACK-FACED GRASSQUIT, *Tiaris bicolor*

FOSRC 2013-973 (AH, LM, RGe). An immature male of this species was discovered on 30 April 2013 and later photographed on 5 May in Bill Baggs Cape Florida SP along No Name Road, Key Biscayne, Miami-Dade County. The identification was not an issue, but unsupported information on the presence of this species in the captive bird trade previously raised an issue (2013) about its provenance. Recent evidence (e.g., Restall 2007; L. Manfredi in litt.) indicated that our earlier understanding was unfounded, and that the species' presence in the cagebird

industry is unlikely. Manfredi pointed out that this grassquit is sometimes mistakenly listed in trade sources for Yellow-faced Grassquit (*T. olivacea*). The individual in this case was not found in urban or suburban residential neighborhoods where an escapee might be expected, but was at a well-known migrant and vagrant hot-spot in a park on the outer coast. Including this bird, five reports have been accepted by FOSRC between 1987 and 2013.

Tricolored Munia, *Lonchura malacca*

FOSRC 2010-820 (LM). This was an unresolved report from last year's meeting of a single bird initially found alive on an unspecified date in April 2003 (and later discovered dead, when it was photographed) at Fort Jefferson, Dry Tortugas NP, Monroe County. This report has been unresolved since the FOSRC meeting in 2011 after submission in October 2010.

FOSRC 2014-1017 (JP, SB, EA, RD). This munia was discovered on 17 December 2013 and was observed again on 18 December, inside Fort Jefferson, Dry Tortugas NP, Monroe County. It represented the fourth record of the species from Garden Key, where the fort is located, since 1999.

The issue concerning the first of the munias listed here, and two others reported earlier from the Dry Tortugas, was the likely provenance of the birds. Because munias of this species have not been found in the avicultural center of Greater Miami, the provenance question depended on speculative assertions about releases or escapes of birds carried in boats by immigrant Cubans fleeing their homeland. The gridlock on this matter was finally broken by two factors: first we received still another report of *L. malacca* on the Dry Tortugas (2014-1017 above) and, second, specific information, coupled with photographs of and testimony on the circumstances of the Cuban traffic coming to Florida by boats. Three people with direct experience concerning Cubans traveling across the Straits of Florida reported to us in emails that the immigrants were crowded in small, open boats and carried little else in personal belongings other than the clothes they wore, some food, and identification papers – certainly not pets of any kind on such a dangerous crossing. The most likely alternative hypothesis is natural vagrancy from established populations on western Cuba, where they are regarded as "widespread" (but local) on the island and "abundant" on the Zapata Peninsula in ricefields southeast of Havana (Garrido and Kirkconnell 2000). Another item came to our attention in relation to the two reports listed here, which provided additional support to the natural-vagrancy hypothesis. T. White (in litt. to A. Kratter, 16 October 2012) provided information on a record of an apparent vagrant to Great Inagua in southeastern Bahamas on 5 October 2011. The occurrence at this remote location was regarded as a likely part of the "pattern of wandering from Cuba or Hispaniola" (T. White). One member of the Committee disagreed with the majority view, but was not able to offer another reasonable explanation for the munia dispersal pattern. This is a case in which a small but growing number of observations point to an apparent pattern of dispersal from a source population and help to resolve an initial suspicion of human-related transport. The decision to accept natural vagrancy of *L. malacca* on the Dry Tortugas added the 520th species to the Florida birdlist.

Submissions not Accepted

Inca Dove, *Columbina inca*

FOSRC 2014-1027. This dove was observed at a residential backyard feeding station from 29 December 2013 to 1 January 2014 in Jupiter Inlet Colony, Palm

Beach County. It lacked the scalloping evident on both adult and immature birds. It was about the size of the Common Ground-Dove (*C. passerina*), but with a longer tail. The bird may have been a juvenile as the observer surmised, but iris color (tan in juveniles, red in adults) was not noted and potential look-alike, small, long-tailed exotic doves (e.g., Scaled Dove [*Columbina squammata*], Diamond Dove [*Geopelia cuneata*]) that may be held in captivity were not discounted.

VAUX'S SWIFT, *Chaetura vauxi*

FOSRC 2014-1031. This swift was seen on 2 February 2014 at Dewey Boster County Park, Volusia County. Although not photographed, it was observed for 45 sec at distances as close as 30 m, but it remained silent. The bird was later than any documented record of Chimney Swift (*C. pelagica*) in Florida, and the observer had field experience with both species. The flight behavior suggested *C. vauxi* (Johnson 2013), but the description of plumage pattern and body structure was insufficient to support the identification of this difficult-to-identify and rare species in the state.

CASSIN'S VIREO, *Vireo cassinii*

FOSRC 2014-1020. This vireo was captured, measured, banded, and photographed on 29 September 2013 at the banding station on Bill Baggs Cape Florida SP, Key Biscayne, Miami-Dade County The bird remained in the vicinity and was seen again on 1 October. The in-hand photographs were useful in assessments made by two outside authorities that the Committee contacted, who had experience with identification of the western vireos in the "Solitary Vireo" complex. Also, several other people commented on the photographs on "ID Frontiers," an online bird identification website. Bill size, a relatively strong throat-cheek contrast, and a very white abdomen raised the likely possibility that the Key Biscayne bird was a variant, rather early Blue-headed Vireo (*V. solitarius*) passing through Florida.

BLACK-CRESTED TITMOUSE, *Baeolophus atricristatus*

FOSRC 2014-1011. This complex and improbable case involved two sightings of this Mexican and Texas species in one Florida county just a few kilometers apart, but separated by seven months. Each was assigned its own catalog number to avoid making assumptions about what otherwise could be reasonably viewed as a single individual. The two observers involved were unable to supply any photographs. This report is the second observation, which was made on 6 October 2013 on St. Armand's Key, Sarasota County (the first was in March; see below). Based on descriptions, no issues arose concerning identifications, but the matter of provenance was raised. The species is resident in a limited range from northeastern Mexico north across the Lower Rio Grande Valley to Corpus Christi (Rappole and Blacklock 1985) then through central Texas to the Oklahoma border and west to some mountain ranges in the Trans-Pecos region (Tweit 2009). It has not been recorded in Louisiana (losbird.org/lbrc/checklist.pdf), and it does not occur on the Yucatan Peninsula, Mexico (Howell and Webb 1995), where it would be relatively close to Florida. We find no record of vagrancy in the species. The absence of extralimital occurrences raised the question of status and provenance of the birds involved in the reports covered here, specifically whether they represented one or two individuals and whether a human agency explained the presence of one or two birds in Sarasota County. The occurrence of even one individual in Florida seems remote given the non-migratory status of the species, distance, and geography. The dissenting vote on this report simply accepted the identification with few other remarks.

Bahama Warbler, *Setophaga flavescens*

FOSRC 2013-992. This report had been tabled in 2014 pending further review of plumage and external morphological variation in Yellow-throated Warblers (*S. dominica*). This warbler was discovered and photographed (single image) on 12 July 2012 at Green Cay Wetlands on Hagen Ranch Road, Boynton Beach, Palm Beach County. Several experienced people thought the bird could be a Bahama Warbler, but the species is resident on two northern islands in the Bahamas and is not known to be a vagrant, even in the Bahamas (White 2001, Hallett 2006). The Committee's evaluation of bill length variation in mainland Yellow-throated Warblers (Ficken et al. 1968, McKay 2008, McKay et al. 2010), coupled with an analysis of plumage variation by M. Berney in relation to what we could see on the single photograph, supported the parsimonious view that the warbler in question was a probable variant Yellow-throated Warbler.

Lazuli Bunting, *Passerina amoena*

FOSRC 2014-1028. This bird was discovered on 20 April 2014 in Tomoka SP, Ormond Beach, Volusia County. The description was too vague and inadequate to support identification of this western species.

Submissions Reopened, Tabled, or Not Resolved

Elegant Tern, *Thalasseus elegans*

FOSRC 2013-979. This report was tabled pending a more thorough review of plumage variation and bill morphology in this group as they concern the orange-billed and yellow-billed *Thalasseus* terns found in Sarasota County since August 2012. Related to this report, we reopened and then tabled 2013-979, "Cayenne" Tern, for review at the same time (2015).

Black-crested Titmouse, *Baeolophus atricristatus*

FOSRC 2014-1010. See 2014-1011 above for a related report that was not accepted. This report was unresolved. The titmouse was first seen on 5 March 2013 in a residential yard on Poplar Street, Sarasota, Sarasota County. The description of the bird was diagnostic. The observer said she had accidentally discarded a photograph of the bird she had taken. Others who visited the yard failed to find it. Two members felt that the report warranted recognition as a natural vagrant even though our past practice has been not to accept a new species on the Florida birdlist without verifiable evidence. The majority felt that a natural vagrancy was so unlikely that the bird's provenance was suspect. We found no record of vagrancy in the species, not even on the upper coast of Texas.

Western Meadowlark, *Sturnella neglecta*

FOSRC 2014-1033. This report was unresolved. An individual meadowlark thought to be *S. neglecta*, based on songs that were of the type sung by that species. It was observed at a distance on 9 December 2013 in a grazed pasture on Van Pelt Dairy farmland, near the intersection of Pelt Road and SR-97, Escambia County. Some members of the Committee were wary of the possibility of misidentification by voice, because rarely some individuals of both meadowlark species do mimic the other's song (e.g., Lanyon 1957). Two members argued the likelihood that this bird was a returning individual from the previous year.

Lesser Goldfinch, *Carduelis psaltria*

FOSRC 2014-1042. This adult male, green-backed goldfinch appeared at a residential feeder on 15 July 2014 on Crescent Drive, Melbourne, Brevard County.

It re-appeared on 18 July. The bird was photographed and correctly identified. The report was tabled pending resolution of questions on unseasonal date, status of species in captivity, and apparently odd molt pattern of the bird.

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LITERATURE CITED

AHERN, B. 2014. Fall report: August-November 2013. Florida Field Naturalist 42:73–88.

AOU [AMERICAN ORNITHOLOGISTS' UNION]. 1957. Check-list of North American birds, 5th ed. American Ornithologists' Union, Washington, D. C.

AOU [AMERICAN ORNITHOLOGISTS' UNION]. 1995. Fortieth supplement to the American Ornithologists' Union *Check-list of North American Birds*. Auk 112:819–830.

AOU [AMERICAN ORNITHOLOGISTS' UNION]. 1998. Check-list of North American Birds, 7th ed. American Ornithologists' Union, Washington, D. C.

BANKERT, A., B. H. ANDERSON, AND B. PRANTY. 2009. First record of Townsend's Solitaire (*Myadestes townsendi*) for Florida. Florida Field Naturalist 37:16–21.

BANKS, R. C., C. CICERO, J. L. DUNN, A. W. KRATTER, P. C. RASMUSSEN, J. V. REMSEN, JR., J. D. RISING, AND D. F. STOTZ. 2004. Forty-fifth supplement to the American Ornithologists' Union *Check-list of North American Birds*. Auk 121:985–995.

CHESSER, R. T., R. C. BANKS, K. J. BURNS, C. CICERO, J. L. DUNN, A. W. KRATTER, I. J. LOVETTE, A. G. NAVARRO-SIGÜENZA, P. C. RASMUSSEN, J. V. REMSEN, JR., J. D. RISING, D. F. STOTZ, AND K. WINKER. 2015. Fifty-sixth supplement to the American Ornithologists' Union: *Check-list of North American birds*. Auk 132:748–764.

FICKEN, R. W., M. S. FICKEN, AND D. H. MORSE. 1968. Competition and character displacement in two sympatric pine-dwelling warblers (*Dendroica*, Parulidae). Evolution 22:307–314.

GARRIDO, O. H., AND A. KIRKCONNELL. 2000. Field Guide to the Birds of Cuba. Comstock Publishing Associates, Ithaca, New York.

GREENLAW, J. S. 2015. Twenty-third report of the Florida Ornithological Society Records Committee: 2013. Florida Field Naturalist 43:19–36.

GREENLAW, J. S., AND A. W. KRATTER. 2007. Sixteenth report of the Florida Ornithological Society Records Committee:2006. Florida Field Naturalist 35:49–59.

GREENLAW, J. S., B. PRANTY, AND R. BOWMAN. 2014. The Robertson and Woolfenden Florida Bird Species: An Annotated List. Special Publication No. 8, Florida Ornithological Society, Gainesville.

HALLETT, B. 2006. Birds of the Bahamas and the Turks and Caicos Islands. Macmillan Publishers Limited, Oxford, United Kingdom.

HOFFMAN, W., AND G. E. WOOLFENDEN. 1988. A specimen of the Asiatic Marbled Murrelet from Florida. Florida Field Naturalist 16:37–38.

HOWELL, A. H. 1932. Florida Bird Life. Florida Department of Game and Fresh Water Fish, Tallahassee.

HOWELL, S. N. G., AND S. WEBB. 1995. A Guide to the Birds of Mexico and Northern Central America. Oxford University Press, New York, New York.

JOHNSON, T. 2013. *Chaetura* swifts and you: identifying some of our most unfamiliar familiar birds. Birding 45:48–52.

KRATTER, A. W. 2010. The nineteenth report of the Florida Ornithological Society Records Committee: 2009. Florida Field Naturalist 38:150–174.

LANYON, W. E. 1957. The Comparative Biology of the Meadowlarks (*Sturnella*) in Wisconsin. Publications of the Nuttall Ornithological Club no. 1.

McKay, B. D. 2008. Phenotypic variation is clinal in the Yellow-throated Warbler. Condor 110:569–574.

McKay, B. D., M. B. J. Reynolds, W. K. Hayes, and D. S. Lee. 2010. Evidence for the species status of the Bahama Yellow-throated Warbler (*Dendroica "dominica" flavescens*). Auk 127:932–939.

Olsen, K. M., and H. Larsson. 2004. Gulls of North America, Europe, and Asia. Princeton University Press, Princeton, New Jersey.

Pranty, B., A. W. Kratter, and R. Bowman. 2005. Records of the Bullock's Oriole in Florida. Florida Field Naturalist 33:41–46.

Pranty, B., J. Barry, J. L. Dunn, K. L. Garrett, D. D. Gibson, M. W. Lockwood, R. Pittaway, and D. A. Sibley. 2014. 25th report of the ABA Checklist Committee: 2013–2014. Birding 46:26–34, 36.

Pranty, B., and V. Ponzo. 2014. Status and distribution of Egyptian Geese (*Alopochen aegyptiaca*) in southeastern Florida. Florida Field Naturalist 42:91–107.

Rappole, J. H., and G. W. Blacklock. 1985. Birds of the Texas Coastal bend: Abundance and Distribution. Texas A&M University Press, College Station.

Restall, R. 2007. Breeding the Black-faced Grassquit *Tiaris bicolor omissa*, with some notes on behaviour. Avicultural Magazine 109: [no pagination, 6 pp.].

Robertson, W. B., and G. E. Woolfenden. 1992. Florida Bird Species: An Annotated List. Special Publication No. 6, Florida Ornithological Society, Gainesville.

Stevenson, H. M., and B. H. Anderson. 1994. The Birdlife of Florida. University Press of Florida, Gainesville.

Tweit, R. C. 2009. Black-crested Titmouse. *In* The Texas Breeding Bird Atlas. Texas A&M University System, College Station. <http://txtbba.amu.edu>.

White, T. 2011. The false Kirtland's: a cautionary tale. Birding 43:34–39.

Wilson, S., R. E. Peipert, J. Ginaven, and B. Rossheim. 2015. Nesting and hybridization of a Tropical Kingbird (*Tyrannus melancholicus*) and Gray Kingbird (*T. dominicensis*) in Sarasota, Florida. Florida Field Naturalist 43:1–11.

Florida Field Naturalist 44(1):45-51, 2016.

FIELD OBSERVATIONS

Summer Report: June-July 2015.—This report consists of significant bird observations compiled by the Field Observations Committee (FOC). Electronic submissions to the FOC should be in the following format: species, number of individuals, age and sex of the bird(s), color morph if applicable, location (including county), date, observer(s), and significance. Seasons are winter (December-February), spring (March-May), summer (June-July), and fall (August-November). Submit observations to regional compilers within two weeks after the close of each season, or to the state compiler within one month. Addresses of the compilers follow this report.

Sight-only observations are considered "reports" while only those observations supported by verifiable evidence (photographs, video or audio recordings, or specimens) are called "records." Species for which documentation is required by the FOC and by the FOS Records Committee (FOSRC; <fosbirds.org/official-florida-state-bird-list>) are marked here with an asterisk (*). A county designation (in italics) accompanies the first-time listing of each site in this report. Abbreviations in this report are: AFB = Air Force Base, AFR = Air Force Range, EOS = end of season, NERR = National Estuarine Research Reserve, NP = National Park, NSRA = North Shore Restoration Area, NWR = National Wildlife Refuge, SF = State Forest, SP = State Park, STA = Stormwater Treatment Area, STF = sewage treatment facility, WMA=Wildlife Management Area, and N, S, E, W etc., for compass directions. Bold-faced species denote birds newly reported or verified in Florida, or record numbers. +Photographs or video- or audio-recordings archived by the FOC are identified by a plus (+).

Summary of the Summer Season

Temperatures above normal in nearly every county characterized the summer season while the majority of the state also experienced below normal rainfall throughout June and into July. Overall it was a rather unremarkable season across the state, perhaps highlighted most significantly by a number of notable pelagic observations on both coasts. This report does not purposefully include much data collected from the Breeding Bird Atlas II, which concluded the fourth season of the planned five-year project. FOSRC review species listed in this report include a single Red-billed Tropicbird and two reports of Neotropic Cormorant.

Species Accounts

Black-bellied Whistling-Duck: 9 at International Paper Wetlands (*Escambia)* 8 Jun (J. Callaway); 24 at Jefferson County Recycling Center (*Jefferson*) 21 Jun (A. Smith, M. Smith); 13 adults and 17 juveniles at Taminco/Eastman Sanctuary (*Santa Rosa*) 22 Jun (L. Kelly, L. Goodman, B. Furlow); 45+ at Lem Turner Spray Fields (*Duval*) 27 Jun (K. Dailey); 10 adults and 25 juveniles at Escambia County Utilities Authority (*Escambia*) 22 Jul (J. Callaway); a pair with 8 young at Sawgrass Lake Park (*Pinellas*) 23 Jul (+J. Clayton, S. Tavaglione) provided the first county breeding record.

Fulvous Whistling-Duck: a brood of 8 was at Duda farms (*Orange*) 15 Jun (H. Robinson).

Greater White-fronted Goose: 1 at Key West Golf Course (*Monroe*) 18 Jun (D. Doyle).

Egyptian Goose: 2 at Bystre Lake (*Hernando*) 25 Jun-EOS (S. Mann, J. Mann et al.).

Blue-winged Teal: 1 female at Cockroach Bay (*Hillsborough*) 12 Jun (E. Kwater); 2 at Spoonbill Pond (*Duval*) 13-14 Jun (K. Dailey); 1 at Key West Golf Course 18 Jun (D. Doyle); up to 5 at Paynes Prairie Preserve SP (*Alachua*) to 13 Jul (M. Manetz, S. Ew-

ing et al.); 1 at Gainesville (*Alachua*) 5-19 Jun (L. Hensley, T. Greenberg, T. Anderson); 1 at Bystre Lake 10-26 Jun (S. Mann, J. Mann).

NORTHERN SHOVELER: 1 at Spoonbill Pond 1 Jun (T. Rohtsalu); 1 male at Cutler Wetlands (*Miami-Dade*) 1-15 Jun (Ra. Diaz, m. obs.); 1 male at Green Cay Wetlands (*Palm Beach*) 5 Jun (C. Hughes).

GREATER SCAUP: 2 at Taylor Park (*Pinellas*) 7 Jun (+N. Armstrong).

LESSER SCAUP: 2 at Spoonbill Pond 1 Jun-25 Jun (+K. Dailey); 2 at Bystre Lake 2-28 Jun (S. Mann, J. Mann); 1 at Paynes Prairie Preserve SP 20-27 Jun (J. Martin et al.); 1 male at Cockroach Bay 25 Jun-EOS (E. Kwater).

SURF SCOTER: 5 males and an uncounted number of females at Alligator Point (*Franklin*) 19 Jul (J. Eager).

BLACK SCOTER: 29 in Indian River Lagoon south of Parrish Park, Titusville (*Brevard*) 5 Jun (J. Eager); an uncounted number at Alligator Point 19 Jul (J. Eager).

HOODED MERGANSER: 1 male at The Villages (*Sumter*) 28 Jun and 5 Jul (J. Dinsmore); 1 at Bystre Lake 26 Jun-3 Jul (S. Mann, J. Mann).

RED-BREASTED MERGANSER: 1 at Huguenot Memorial Park (*Duval*) 4 Jun-9 Jul (K. Dailey et al.); 1 at Anastasia SP (*St. Johns*) 12-17 Jun (S. Killeen).

COMMON LOON: 1 at Newnans Lake (*Alachua*) 12 Jun (C. Cattau, P. Polshek).

HORNED GREBE: 1 at Bayport Park (*Hernando*) 8 Jun (M. Liberton).

AMERICAN FLAMINGO: 2 at Deering Estate (*Miami-Dade*) 1 Jul (+Ra. Diaz); 8 flying NE of STA-1E (*Palm Beach*) 4 Jul (C. Ford).

BLACK-CAPPED PETREL: 4 ca. 96 km offshore Ponce de Leon Inlet (*Volusia*) 7 Jun (M. Brothers et al.).

CORY'S SHEARWATER: 57 including 2 "Scopoli's Shearwater," *C. d. borealis*, considered by some authorities to be a separate species rather than a subspecies, offshore Ponce de Leon Inlet 7 Jun (M. Brothers et al); 1 offshore *Palm Beach* 22 Jul (C. Callaghan).

GREAT SHEARWATER: 2 offshore Ponce de Leon Inlet 7 Jun (+M. Brothers et al.); 1 bird 33 mi NW of Clearwater (*Pinellas*) 24 Jun (+N. Goddard); 1 bird 9.5 mi off Clearwater Pass (*Pinellas*) 8 Jul (N. Goddard).

AUDUBON'S SHEARWATER: 17 offshore Ponce de Leon Inlet 7 Jun (M. Brothers et al.); 1 at one mile south of Destin Pass (*Okaloosa*) 26 Jun (E. Plage) provided the first June record in the area; 3 offshore *Palm Beach* 22 Jul (C. Callaghan).

WILSON'S STORM-PETREL: 7 offshore Ponce de Leon Inlet 7 Jun (M. Brothers et al.); 1 ca. 50 mi off Sanibel Island (*Lee*) 18 Jul (J. Bouton, D. McQuade, T. McQuade, D. Peacock).

LEACH'S STORM-PETREL: 3 offshore Ponce de Leon Inlet 7 Jun (+M. Brothers et al.); 1 bird 40 mi off John's Pass (*Pinellas*) 20 Jun (+ T. Ploger); 2 ca. 50 mi off Sanibel Island 18 Jul (J. Bouton, D. McQuade, J. Padilla, S. Daughtrey).

BAND-RUMPED STORM-PETREL: 9 offshore Ponce de Leon Inlet 7 Jun (M. Brothers et al.); 1 ca. 25 mi off Alligator Point (*Franklin*) 7 Jun (J. Murphy); 1 bird 35 mi SW of Clearwater 28 Jun (N. Goddard); 2 ca. 50 mi off Sanibel Island 18 Jul (+J. Bouton, D. McQuade, T. McQuade, D. Peacock).

WHITE-TAILED TROPICBIRD: 1 offshore of Juno (*Palm Beach*) 12 and 24 Jun (D. Gawlik).

*RED-BILLED TROPICBIRD: 1 bird 30 mi off John's Pass 20 June (+T. Ploger) provided *Pinellas* with its first documented record.

MAGNIFICENT FRIGATEBIRD: 50+ at Cedar Key (*Levy*) 18 Jun (B. Bergstrom); 1 at Julia's Island (*St. Johns*) 24 Jun (L. Sansom).

MASKED BOOBY: 1 sub-adult 6-7 mi off Sanibel Island 20 Jun (D. McQuade, T. McQuade, +J. Bouton, D. Peacock).

BROWN BOOBY: 2 adults and 1 immature at Destin Pass 8–29 Jun (B. Purdy, M. Swan, W. Greene, L. Goodman, S. Duncan).

*NEOTROPIC CORMORANT: 1 at Wakodahatchee Wetlands (*Palm Beach*) 7 Jun (m. obs.); 1 at Little Card Sound, Key Largo (*Monroe*) 14 Jun (J. Eager).

BROWN PELICAN: 1 at Paynes Prairie Preserve SP 3 Jun (E. Schwartz).

AMERICAN BITTERN: 1 was exceptionally rare at Cockroach Bay 3 Jul (E. Kwater); 1 at Taminco/Eastman 20 Jul furnished the first local July record (L. Kelly, L. Goodman, B. Purdy).

LEAST BITTERN: 2 pair nesting at Imeson Center (*Duval*) 1 Jun-EOS (+K. Dailey, D. Foster); up to 16 at Cockroach Bay 12 Jun (E. Kwater); 13 at Lake Apopka NSRA (*Orange*) 27 Jun (J. Dinsmore).

WHITE-FACED IBIS: 1 at Lake Apopka NSRA 5 Jun (+P. Hueber).

ROSEATE SPOONBILL: Up to 30 at Paynes Prairie Preserve SP throughout the season (J. Hintermister et al.).

OSPREY: 127 at Zellwood (*Orange*) 30 Jun (H. Robinson).

SWALLOW-TAILED KITE: A nest with 2 juveniles at Pace (*Santa Rosa*) 20 Jun (+D. Stangeland, L. Goodman) provided the first documented breeding record in the area; 483 over melon fields near Oxford (*Sumter*) 26 Jul (J. Dinsmore); 40 in NE *Jefferson* 28 Jul (M. Smith, B. Bergstrom).

MISSISSIPPI KITE: 1 nesting at Crystal River (*Citrus*) throughout the period (S. Levins); 3 at Eustis (*Lake*) 1 Jun (A. Hill); 3 (2 adult, 1 juv.) at Lake Apopka NSRA 5 Jun-5 Jul (+P. Hueber, L. Mathis, m. obs.); 2 over Wildwood (*Sumter*) 11 Jun (J. Dinsmore); 2 at Lady Lake (*Lake*) 3 Jul (G. Quigley); 6 in NE *Jefferson* 11 Jul (M. Smith, K. Seward, L. Most).

BROAD-WINGED HAWK: 2 adults with a juvenile at High Springs (*Alachua*) 24 Jun-8 Jul (P. Polshek et al.); 1 juvenile at Ormond Beach (*Volusia*) 3 Jul (M. Brothers).

SHORT-TAILED HAWK: 4+ in *Alachua* 8 Jun-19 Jul (J. Martin, L. Davis et al.); 1 at Masaryktown (*Hernando*) 1, 9, 28 Jun and 9 Jul (D. Love); 1 adult dark morph at Tomoka Landfill, Daytona Beach (*Volusia*) 3 Jul (M. Brothers); 1 dark morph in Brandon (*Hillsborough*) 23 Jul (E. Kwater); 2 at Six Mile Cypress Preserve (*Lee*) 28 Jul (R. Bishop), providing continued evidence of breeding.

PURPLE GALLINULE: 2 at Key West Golf Course 26 Jun (D. Doyle).

AMERICAN COOT: Breeding pair produced 3 juveniles in south Jacksonville (*Duval*) 11 Jul (+K. Dailey).

LIMPKIN: 1 at Outback Crab Shack (*St. Johns*) 19-20 Jun (S. Killeen et al.); 69 at Lake Okeechobee Rim Canal south of Moore Haven Lock (*Glades*) 1 Jul (D. Doyle).

WHOOPING CRANE: 1 at Paynes Prairie Preserve SP 26 Jun-21 Jul (P. Polshek, J. Donsky et al.).

AMERICAN AVOCET: 1 in alternate plumage at Spoonbill Pond 16 Jul (+K. Dailey); 2 at Fort De Soto Park (*Pinellas*) 22 Jul (+C. Weatherhead); 1 at Hague (*Alachua*) 30 Jul (J. Hintermister et al.).

AMERICAN OYSTERCATCHER: 2 at Fort Pickens (*Escambia*) 15 Jun (R. Sinclair).

SNOWY PLOVER: 12 at Fort De Soto Park's Outback Key 28 Jul (E. Plage).

WILSON'S PLOVER: 3 at Merritt Island NWR (*Brevard*) 17 Jul (+P. Hueber, K. Hamblett); 55 at Fort De Soto Park's Outback Key 28 Jul (R. Smith).

SEMIPALMATED PLOVER: 1 at Paynes Prairie Preserve SP 1 Jun (M. Manetz et al.).

PIPING PLOVER: 7 at Fort De Soto Park's Outback Key 28 Jul (E. Plage).

SPOTTED SANDPIPER: 1 at Bystre Lake 2 Jun (S. Mann, J. Mann); 1 at Newnans Lake 6 Jun (C. Cattau); 1 at Paynes Prairie Preserve SP 12 Jul (T. Anderson); 1 at Orlando Wetlands Park (*Orange*) 19 Jul (E. Kwater); 1 at Bayport Park 30 Jul (A. Hansen, B. Hansen).

SOLITARY SANDPIPER: 2 at east Clearwater 30 Jul (+J. Clayton); 1 at Hague 31 Jul (H. Adams).

GREATER YELLOWLEGS: 1 at Paynes Prairie Preserve SP 1 Jun (S. Ewing et al.); 2 at Bystre Lake 3 Jun-5 Jul (S. Mann, J. Mann); 3 at Brookridge Waste Water Treatment ponds (*Hernando*) (S. Mann, J. Mann); 2 at Paynes Prairie Preserve SP 20 Jun-11 Jul (T. Anderson, B. Shea et al.); 1 at Hague 31 Jul (H. Adams).

LESSER YELLOWLEGS: 3 at Bystre Lake 5 Jul (S. Mann, J. Mann); 37 at Brookridge Waste Water Treatment ponds 18 Jul (M. Gardler); 1 at Paynes Prairie Preserve SP 24 Jul (R. Rowan, R. Robinson).

Upland Sandpiper: 1 at Fort Zachary Taylor SP (*Monroe*) 6 Jun (D. Doyle).

Whimbrel: 3 at Fort De Soto Park 13 Jun (D. Margeson, +T. Ploger).

Marbled Godwit: 1 at Spoonbill Pond 25-27 Jul (+K. Dailey).

Red Knot: 166 at Fort De Soto Park 4 Jul (T. Koser).

Semipalmated Sandpiper: Up to 8 at Paynes Prairie Preserve SP to 6 Jun (R. Rowan, A Zions et al.); 3 at Hague 30 Jul (J. Hintermister).

Western Sandpiper: 250 at Fort De Soto Park's Outback Key 28 Jul (E. Plage).

Least Sandpiper: 1 at Paynes Prairie Preserve SP 1-2 Jun (R. Rowan, L. Davis et al.).

White-rumped Sandpiper: 3 at Spoonbill Pond 1-15 Jun (+K. Dailey); 3 at Lake Apopka NSRA 12 Jun (P. Hueber, +L. Mathis, m. obs.); 1 adult at Mosquito Lagoon, Merritt Island NWR 15 Jun (M. Brothers, D. Hartgrove); 1 at Little Estero Island Critical Wildlife Area 25 Jun (+K. Laakkonen).

Pectoral Sandpiper: 1 at Spoonbill Pond 30 Jun (+T. Rohtsalu); 1 at Dog Island (*Franklin*) 22 Jul (E. Thompson, J. Murphy); 1 at Honeymoon Island SP (*Pinellas*) 23 Jul (+D. Sauvageau); 1 at Hague 30-31 Jul (J. Hintermister, H. Adams).

Stilt Sandpiper: 1 in alternate plumage at Spoonbill Pond 17 Jul (+K. Dailey); 1 at Paynes Prairie Preserve SP 24 Jul (R. Rowan, R. Robinson).

Ruff: 1 at Merritt Island NWR 5 Jun (J. Eager); 1 on the Tolomato River (*St. Johns*) 11 July (D. Doyle).

Long-billed Dowitcher: 1 at Brookridge Waste Water Treatment ponds 17 Jul (M. Gardler).

Wilson's Snipe: 1 at Pine Glades Natural Area (*Palm Beach*) 20 Jun (+M. Cook).

Wilson's Phalarope: 1 at Little Marsh Island (*Duval*) 14 July (J. Martin); 1 at Dog Island 17 Jul (E. Thompson, +J. Murphy).

Red-necked Phalarope: 1 at Paynes Prairie Preserve SP 1-2 Jun (S. Ewing, R. Rowan et al.).

Pomarine Jaeger: 1 ca. 12 mi off Alligator Point 7 Jun (J. Murphy); up to 5 at various distances up to 50 mi off Sanibel Island 20 Jun (+D. McQuade, T. McQuade, J. Bouton, D. Peacock); 1 bird 15 mi off John's Pass 20 Jun (T. Ploger); 3 were 10-15 mi off Clearwater Beach 30 Jun (N. Goddard); 1 off Clearwater Beach 1 Jul (N. Goddard).

Parasitic Jaeger: 1 was 30 mi off Clearwater 24 Jun (N. Goddard).

Laughing Gull: 4 at Wooton Park, Tavares (*Lake*) 1 Jun (E. Horn).

Lesser Black-backed Gull: 1 adult at Fort De Soto Park 28 Jul (E. Plage).

Brown Noddy: 2 ca. 50 mi off Sanibel Island 20 Jun (D. McQuade, T. McQuade, +J. Bouton, D. Peacock); 1 ca. 15 mi N of Key West 28 Jun (D. Doyle).

Sooty Tern: 46 offshore Ponce de Leon Inlet 7 Jun (+M. Brothers et al.); 15 in various locations ca. 50 mi off Sanibel Island 20 Jun (+J. Bouton, D. McQuade et al.); 1 was 25 mi west of Clearwater 24 Jun (N. Goddard).

Bridled Tern: 4 at one mi south of Destin Pass 26 Jun (E. Plage); 8 in various locations ca. 50 mi off Sanibel Island 20 Jun and 2 on 18 Jul (+J. Bouton, D. McQuade et al.); 12 off *Palm Beach* 22 Jul (C. Callaghan); 1 was 35 mi SW of Clearwater 28 Jun (N. Goddard).

Least Tern: 1 at Newnans Lake 9 Jun (J. Martin, M. Manetz); 2 recently fledged and one adult at Lake Sue, Orlando (*Orange*) 23 Jun (+B. Sicolo); 105 among 53 nests on Little Marsh Island 14 Jul (J. Martin).

Gull-billed Tern: 1 at Gandy Beach (*Pinellas*) 2 Jun (M. Burns); 2 at Little Talbot Island SP (*Duval*) 2 Jun (M. Simmons) provided the only county report; up to 10 at Cockroach Bay 12 Jun (E. Kwater); 30 at Gandy Beach 12 Jul (C. Cox); as many as 120 at Gandy Beach 30 Jul (C. Cox); 178 at Courtney Campbell Causeway (*Pinellas*) 31 Jul (R. Lane).

Caspian Tern: 1 at Lake Santa Fe (*Alachua*) 28 Jun (L. Davis).

Black Tern: 697 at Little St. George Island (*Franklin*) 30 Jul (E. Thompson).

Roseate Tern: 1 adult at Disappearing Island, Ponce de Leon Inlet 15 Jun (+M. Brothers).

COMMON TERN: 6 at Gandy Beach 12 Jul (C. Cox); 118 at Alligator Point 20 Jul (J. Murphy); 28 at Fort De Soto Park 28 Jul (E. Plage, P. Plage).

ROYAL TERN: 2 at Bystre Lake 16 Jun (S. Mann, J. Mann); 1 at Lake Santa Fe 30 Jun (P. Polshek).

SMOOTH-BILLED ANI: 2 at Loxahatchee NWR (*Palm Beach*) 9 Jun-EOS (M. Baranski, m. obs.).

BURROWING OWL: 12 at Watermelon Pond (*Alachua*) 13 Jun (A. Kratter, S. Hetrick et al.); 6 at Neighborhood Lakes Unit, Rock Springs Run SP (*Lake*) 24 Jun (G. Quigley).

RUBY-THROATED HUMMINGBIRD: Nest with 2 young (both eventually fledged) at John Chesnut Park (*Pinellas*) Jun 2015 (J. Zarolinski).

BELTED KINGFISHER: 1 at Paynes Prairie Preserve SP throughout the season (B. Carroll et al.); 1 male at Bystre Lake 8 Jun and female there 23 Jun (S. Mann, J. Mann); 2 at Haulover Canal, Merritt Island NWR 7 Jul (D. Doyle); 2 at Orlando Wetlands Park 19 Jul (E. Kwater).

HAIRY WOODPECKER: 1 at Taye Brown Regional Park (*Duval*) 13 Jun (L. Booker).

MERLIN: 1 in Key West (*Monroe*) 14 Jun (D. Doyle).

EASTERN WOOD-PEWEE: 1 at Julington-Durbin Preserve (*Duval*) 30 Jun (+T. Rohtsalu); 1 at Sawgrass Lake Park 28-29 Jul furnished *Pinellas* with its earliest fall date (+J. Clayton et al.).

ACADIAN FLYCATCHER: 1 singing male at Potts Preserve (*Citrus*) through at least 6 Jun (B. Hansen, L. Lane); 2 at Blackwater Creek, Seminole SF (*Lake*) 21 Jun (G. Quigley, R. Risch).

TROPICAL/COUCH'S KINGBIRD: 1 at Road to Nowhere (*Dixie*) 19 Jul (D. Richard).

GRAY KINGBIRD: 1 at Lake Apopka NSRA 5-6 Jun (+P. Hueber, L. Mathis, m. obs.).

YELLOW-THROATED VIREO: A nest with 3 young at John Chesnut Park 6 Jun (J. Zarolinksi, +E. Tess).

HORNED LARK: 1 at Crooked Island (*Bay*) 5 Jun (K. Christman).

TREE SWALLOW: 1 female at Lake Apopka NSRA 1 May-19 Jul (+P. Hueber, K. Hamblett, m. obs.); up to 3 at Paynes Prairie Preserve SP through 14 Jun (L. Davis, T. Anderson et al.).

NORTHERN ROUGH-WINGED SWALLOW: 2 at Tomoka Landfill, Daytona Beach 13 Jun (M. Brothers).

BANK SWALLOW: 1 at Apalachicola (*Franklin*) 23 Jun (J. Murphy); 2 at Lake Apopka NSRA 11 Jul (J. Dinsmore).

CLIFF SWALLOW: Up to 4 in South Dade (*Miami-Dade*) 17-24 Jun (+L. Manfredi et al.); 1 at Dog Island 8 Jul (J. Murphy).

MARSH WREN: 1 singing on Powerline Road at Tosohatchee WMA (*Orange*) 24 Jun (B. Sicolo).

BLUE-GRAY GNATCATCHER: 1 feeding a Brown-headed Cowbird at San Felasco Hammock (*Alachua*) 12 Jun (R. Rowan, R. Robinson).

AMERICAN ROBIN: Up to 3 at Nelmar Avenue (*St. Johns*) 5-25 Jun (A. Kent, G. Kent et al.); up to 3 in Gainesville throughout the season (G. Parks); 2 at Gulf Breeze (*Santa Rosa*) 16 Jun (D. Timmons).

GRAY CATBIRD: 1 in Gainesville 1-13 Jun (C. Cattau et al.); 1 at Royal Highlands, Leesburg (*Lake*) 10-16 Jun (G. Walker); 1 at Weedon Island Preserve 13 Jun (T. Mast).

CEDAR WAXWING: 4 at Coquina Key Park (*Pinellas*) 22 Jun (E. Plage).

WORM-EATING WARBLER: 1 at Six Mile Cypress Preserve 28 Jul (R. Bishop).

LOUISIANA WATERTHRUSH: 1 at Melrose (*Bradford*) 21 Jun (J. King); 1 at Sawgrass Lake Park 29 Jul (+J. Clayton).

BLACK-AND-WHITE WARBLER: 1 at Gainesville 30 Jun (T. Greenberg); 2 at Ocala NF (*Marion*) 7 Jul (D. Hartgrove, D. Stock); 1 female east of Brooksville (*Hernando*) 7 Jul (S. Mann, J. Mann); 1 in north St. Petersburg 12 Jul (+J. Clayton).

PROTHONOTARY WARBLER: 1 in west St. Petersburg 20-28 Jun (+W. Tallyn).

SWAINSON'S WARBLER: 2 singing at McIntyre (*Franklin*) 22 Jun (J. Murphy).

HOODED WARBLER: 1 at Boyd Hill Nature Preserve (*Pinellas*) 26 Jul (+J. Clayton, S. Tavaglione, R. Smith); 1 at Fort De Soto Park 28 Jul (E. Plage).

AMERICAN REDSTART: 1 at Gainesville 5 Jun (A. Kratter); 1 at Gainesville 20 Jul (J. Donsky).

CERULEAN WARBLER: 1 at Fort Walton Beach (*Okaloosa*) 16 Jul (K. Jones) was the earliest ever there by 5 days.

YELLOW WARBLER: 3 at Paynes Prairie Preserve SP 24 Jul (R. Rowan, R. Robinson).

BLACKPOLL WARBLER: 1 at Bonner Park (*Pinellas*) 1 Jun (K. Nelson, S. Aversa); 1 at Paynes Prairie Preserve SP 3 Jun (M. O'Sullivan); 1 female at Lantana Nature Preserve (*Palm Beach*) 4 Jun (M. Gomes).

PRAIRIE WARBLER: 1 at Paynes Prairie Preserve SP 4 Jun (M. O'Sullivan); 1 at Paynes Prairie Preserve SP 21 Jul (J. Donsky).

DARK-EYED JUNCO: 1 at Mandalay Road (*Taylor*) 5 Jul (R. Kittinger).

SUMMER TANAGER: 1 at Babcock-Webb WMA (*Charlotte*) 1 Jun (S. Daughtery); 1 at Brooker Creek Preserve 6 Jun (B. Ahern et al.); 1 at John Chesnut Park 24 Jun (J. Zarolinski).

PAINTED BUNTING: 1 singing male on County Line Ditch Road (*Volusia*) 12 Jun (+M. Brothers); 3 (2 adults, 1 fledgling) at Apalachicola 23 Jun (+J. Murphy).

BOBOLINK: 1 at Paynes Prairie Preserve SP to 3 Jun (R. Rowan, M. Manetz, L. Davis); 1 mid-*Pinellas* 7 Jun (J. Fisher).

SHINY COWBIRD: 2 (1 male, 1 female) at Lake Apopka NSRA 9 May–12 Jul (+P. Hueber, +B. Sicolo, m. obs.); 1 at Paynes Prairie Preserve SP 1 Jul (L. Davis).

BROWN-HEADED COWBIRD: 1 juvenile being fed by a Blue-gray Gnatcatcher at San Felasco Hammock 12 Jun (R. Rowan, R. Robinson).

ORCHARD ORIOLE: Up to 4 (incl. adult and first summer males) at Belle Glade Marina (*Palm Beach*) 7-24 Jun (+C. Weber); 1 adult male in Everglades National Park (*Monroe*) 14 Jul (B. Showler).

AMERICAN GOLDFINCH: 2 males at Cedar Key 1 Jun (D. Henderson).

SCALY-BREASTED MUNIA: 6 at International Paper Wetlands 12 Jul (J. Callaway, B. Callaway); 29 in Pace (*Santa Rosa*) 31 Jul (D. Stangeland).

PIN-TAILED WHYDAH: A pair at east Pensacola (*Escambia*) 6–7 Jul (+B. Gilley, L. Tilley, L. Goodman); 1 in western Pensacola 7 Jul (G. Money).

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Spring 2015 report not published previously: Brown Booby: 1 sub-adult about 4 mi off Boca Grande Pass (*Lee*) 23 and 25 May (+D. McQuade, T. McQuade, D. Lusk, A. Lusk).

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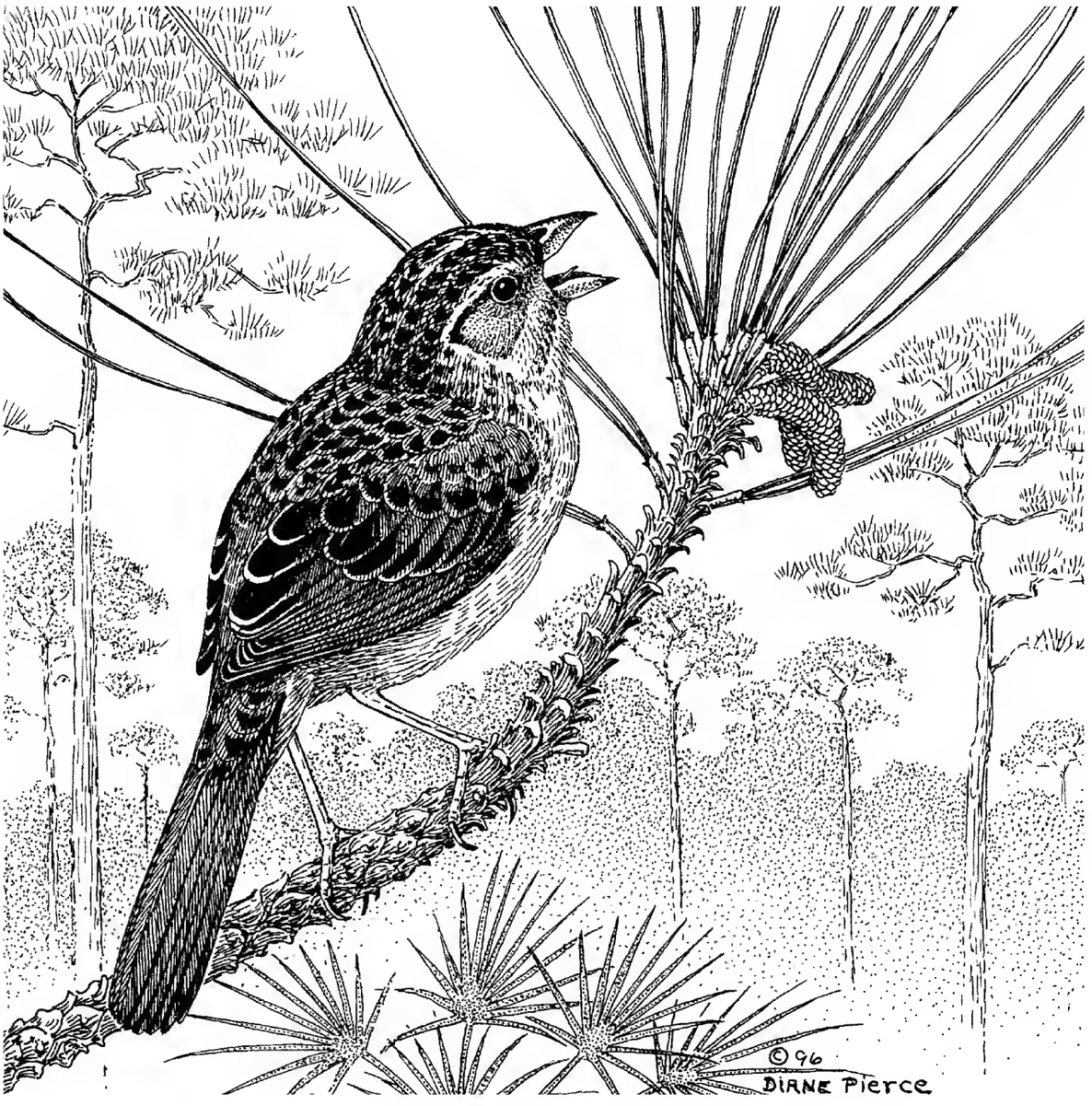

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KING RAIL (*Rallus elegans*) AND BLACK RAIL (*Laterallus jamaicensis*) OBSERVATIONS IN THE FLORIDA EVERGLADES

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The Everglades Complex of Wildlife Management Areas (ECWMA) includes Everglades and Francis S. Taylor Wildlife Management Area (EWMA), Holey Land Wildlife Management Area (HWMA), and Rotenberger Wildlife Management Area (RWMA). These areas are located in southwestern Palm Beach, western Broward, and northwestern Miami-Dade counties, respectively. The Florida Fish and Wildlife Conservation Commission (FWC) is the lead managing agency on these 730,061 acres of the remaining Everglades ecosystem. The ECWMA encompasses approximately 690,000 acres of wetland, a significant amount of habitat suitable for marsh birds in south Florida.

The Black Rail (*Laterallus jamaicensis*) and King Rail (*Rallus elegans*) are two of the most secretive birds that inhabit Florida (Florida Fish and Wildlife Conservation Commission 2003). Both species have been experiencing steep population declines throughout their ranges, and the Black Rail has been petitioned for Federal listing (Cooper 2008, USDI 2011). Additionally, both species inhabit densely vegetated marshes, thus making their detection very difficult (FWC 2003).

Confirmed observations of these two rail species in south Florida have not been widely documented. Prior to 2008, there have only been

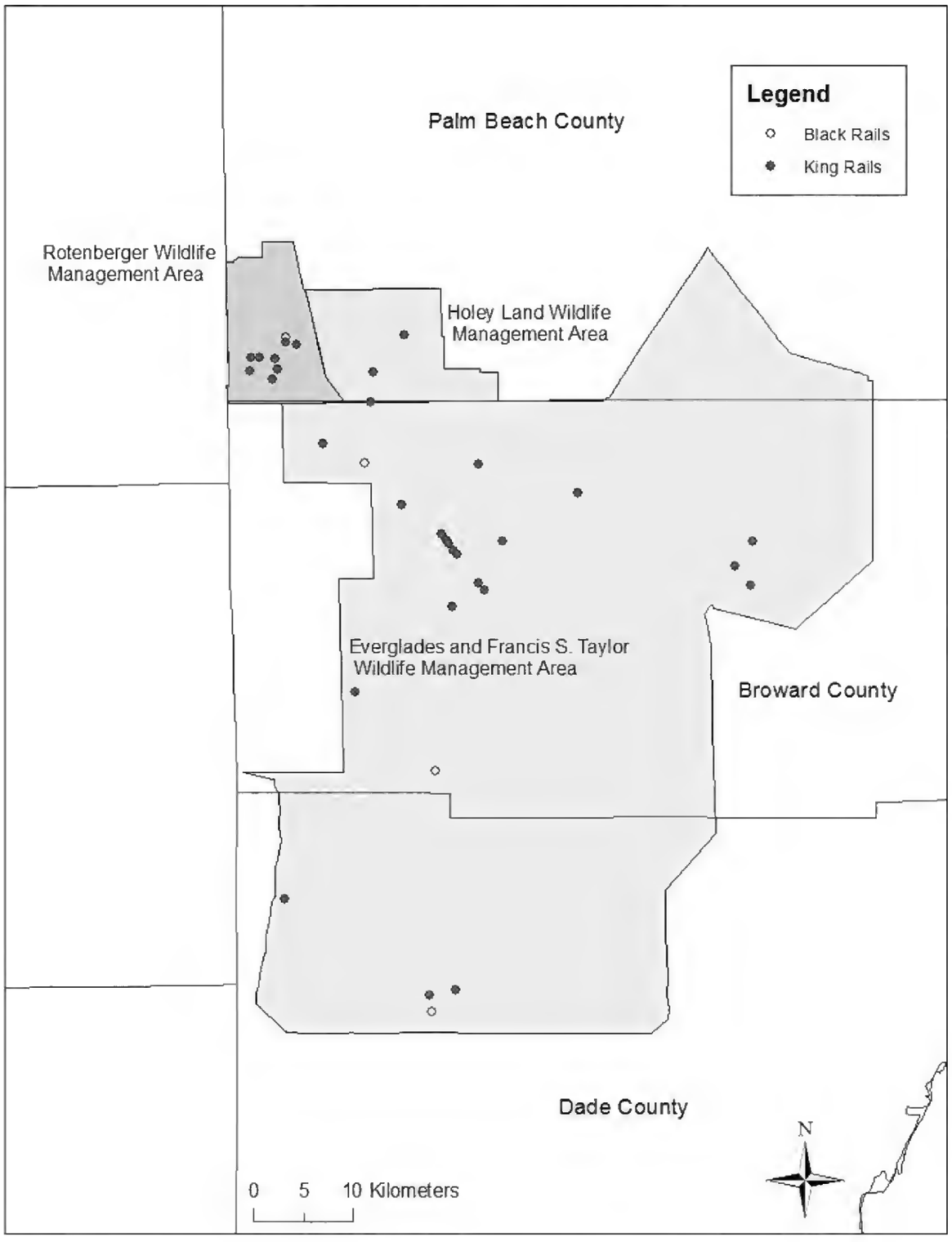

Figure 1. Locations of Black and King rails observed in the Everglades Complex of Wildlife Management Areas between 2008 and 2014 (note that some locations represent multiple birds sighted).

four confirmed observations of Black Rails in the Everglades region of south Florida, two of which were in the EWMA (FWC 2003, FLMNH records). There have been 13 confirmed observations of King Rails in the south Florida Everglades region, all prior to 2008, three of which were in the EWMA (Sykes and Hunter 1978, FWC 2003, FLMNH records).

Table 1. King and Black rail observations 2008-2014; types and numbers detected.

Species	Number observed	Month observed	Type of observation
King Rail	6	March, May, September, October	opportunistically heard
King Rail	1	March	flushed by airboat
King Rail	1	August	found dead
King Rail	13	March, April, May	heard during marshbird callback survey
King Rail	5	March, May	opportunistically seen
King Rail	13	April, May, October	heard during bird survey
King Rail	2	March	flushed by prescribed burn
King Rail	1	July	camera trap
Black Rail	3	March	heard during marshbird callback survey
Black Rail	1	November	opportunistically heard
Black Rail	1	March	flushed by prescribed burn
Black Rail	1	March	opportunistically seen

Since 2008, FWC staff have been recording observations of rare marsh birds throughout the ECWMA (Fig. 1). Between 2008 and 2014, there were four documented observations of Black Rails and 31 observations of King Rails within EWMA. In RWMA, two Black Rails and eight King Rails were documented between 2010 and 2014. Three King Rails were observed in HWMA in 2012. These occurrences were made by both sight and sound observations (Table 1). Methods used to document these rails included callback surveys (Conway 2009), roadkill specimens, incidental observations, bird surveys, and camera traps (Fig. 2). Although difficult to detect and document, the number of observations collected by area staff imply that these rail species are likely fairly common throughout the Everglades ecosystem.

Suitable wetland habitat for rails is already limited. The human population in the State of Florida is estimated to double by 2060. An estimated 7 million acres of rural and natural land will need to be developed to support this population growth (Zwick and Carr 2006). Large tracts of wetland habitat on conservation lands like ECWMA and Everglades National Park will be essential to the persistence of the already declining Black and King rail species.

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We thank the biologists who contributed observations: Joe Bozzo of the South Florida Water Management District; and Dawn Dodds, Erik Eckles, Jennifer Eckles, Jeannette

Figure 2. King Rail caught by a camera trap on a tree island in Everglades and Francis S. Taylor Wildlife Management Area Water Conservation Area 3A North, on 8 July 2010.

Parker, Susanna Toledo, and Rachel Young of the FWC. We are grateful to two anonymous referees whose suggestions improved the manuscript.

Literature Cited

Conway, C. J. 2009. Standardized North American Marsh Bird Monitoring Protocols, version 2009-2. Wildlife Research Report #2009-02. U.S. Geological Survey, Arizona Cooperative Fish and Wildlife Research Unit, Tucson, AZ.

Cooper, T. R. 2008. King Rail Conservation Plan, Version 1. U.S. Fish and Wildlife Service, Fort Snelling, Minnesota.

FWC [Florida Fish and Wildlife Conservation Commission]. 2003. Florida's breeding bird atlas: A Collaborative Study of Florida's Birdlife. <http://www.myfwc.com/bba/>. Accessed 7 April 2015.

FLMNH [Florida Museum of Natural History]. Bird Skin and Skeleton Database]. <http://www.flmnh.ufl.edu/scripts/dbs/birds_pub.asp>. Accessed 13 April 2015.

USDI [U.S. Department of the Interior]. 2011. Federal Register Vol. 76 No. 187 Part IV, Tuesday 27 September 2011, pages 59836–59862.

Sykes, P. W., Jr., and G. S. Hunter. 1978. Bird use of flooded agricultural fields during summer and early fall and some recommendations for management. Florida Field Naturalist 6:36–43.

Zwick P. D., and M. H. Carr. 2006. Florida 2060, A Population Distribution Scenario for the State of Florida. Report to 1000 Friends of Florida. <http://www.1000friendsofflorida.org/PUBS/2060/Florida-2060-Report-Final.pdf>. Accessed 8 March 2016.

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FEEDING BEHAVIOR OF THE LEAST GREBE (*Tachybaptus dominicus*) UPON NEOTROPICAL RANIDS IN COSTA RICA

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Avian predation on amphibians can be considered an important evolutionary force for both taxa, and its documentation helps to elucidate aspects of evolution, ecology, and even conservation (Shea 1987, Wells 2010). But because these interactions are difficult to observe and quantify, the role of amphibians as dietary items of birds is still barely known in the Neotropics (Acosta and Morún 2014). For example, even when grebes (Podicipedidae) have been anecdotally reported to prey on aquatic amphibians (Shea 1987, Stiles and Skutch 1989, Kloskowski et al. 2010), data on habitat selection, diet, and feeding behavior of grebes are primarily from Old World and Nearctic regions (e.g., Shea 1987, Forbes and Sealy 1990, Wiersma et al. 1995, Kloskowski et al. 2010).

In Neotropical areas, such as Costa Rica, both natural and artificial lagoons and ponds provide habitat for waterbirds, including grebes (Stiles and Skutch 1989). The Least Grebe (*Tachybaptus dominicus*) is a widespread waterbird ranging from the southern United States of America to northern Argentina, including the Bahamas and Greater Antilles. In Costa Rica the subspecies *T. d. brachypterus* is distributed from lowlands to 1525 m ASL, but it is most common in the Central Valley and San Vito Region (Stiles and Skutch 1989). Artificial wetlands are also suitable habitat for amphibians, including the common upland frog *Lithobates* (*Rana*) *taylori* (*sensu lato*), which ranges from 1000 to 1900 m ASL (Savage 2002). Here we present evidence that true frogs (Ranidae) are a frequent item in the diet, and document the behavior, of the Least Grebes at a middle elevation site in Costa Rica, because many aspects of the natural history of this species remain unknown (Konter 2014).

During various occasions from July 2014 to November 2014, we photographed predation events on *L. taylori* by Least Grebes in Parque de la Expresión Laguna Doña Ana, Paraíso district of Cartago Province, Costa Rica (9.832806' N, 83.878074' W (WGS84); 1354 m ASL) (Fig. 1).

Laguna Doña Ana is a seasonal pond from August to November that occurs within an 11 ha urban park, and is approximately 1 ha with a maximum depth of 1.2 m (pers. obs.). We observed Least Grebe adults and chicks swimming together in the pond during predation events.

Figure 1. Predatory and feeding behavior of Least Grebes in Laguna Doña Ana. A) Least Grebes killing an adult *L. taylori*. B, C) Least Grebe killing a tadpole of *L. taylori*. D) *L. taylori* dismembered by an adult Least Grebe while juveniles wait to be fed. E) Juvenile Least Grebe ingesting a tadpole delivered by an adult. Photographs: D. Jiménez.

Several times per hour adults made foraging dives, finding tadpole or adult *L. taylori* that were hidden under aquatic vegetation. The grebes captured them after a rapid pursuit, in agreement with what Jenni (1969) described for diving activity of the species in a nearby location (Turrialba, Cartago). Once an amphibian (adult or larva) was captured, the grebe proceeded to hold the prey by the belly and hit it against the water surface until the prey was dead or dying. It appeared that this behavior allowed dismemberment for easier consumption. The adult released the wounded or dead frog, and let it sink into the water, inciting its chicks to dive after the carcass. If chicks were unable to dismantle or ingest the prey by themselves, then an adult recovered the whole carcass, or pieces of it, and continued to manipulate the carcass until pieces of suitable size were produced which were the fed directly to chicks (Fig. 1). Stiles and Skutch (1989) recorded aquatic insects, crustaceans, small fishes, and frogs as prey items of Costa Rican grebes, but none of these were identified to the species level. We determined the frog species was *Lithobates taylori* based on morphology, coloration, and distribution in Costa Rica (Savage 2002). Despite extensive documentation of predation on the genera *Lithobates* and *Rana* by vertebrates (Leighton 2006, Toledo et al. 2007, Wells 2010), to our knowledge, this is the first published record of predation upon *Lithobates* sp. by grebes in Central America and Antilles. Additionally, it is the first record of use of this anuran by adult grebes appearing to teach their chicks to dive and hunt.

In general, grebes are considered primarily fish eaters (Forbes and Sealy 1990, Wiersma et al. 1995, Kloskowski et al. 2010), but there are few native freshwater fishes at intermediate elevations in Costa Rica (Bussing 1998). Because similar grebes (e.g., *Tachybaptus ruficollis*) in Europe prefer ponds with an abundance of small prey (e.g., macroinvertebrates, small fishes, tadpoles and frogs) and prey abundance directly affects their population size (Kloskowski et al. 2010), ranids would offer an abundant food source for Least Grebe around 1300-2000 m in Costa Rica. Unfortunately, a large number of fish and amphibian species have disappeared from urban and suburban areas of the Central Valley of Costa Rica during the last 40 years because of habitat fragmentation (e.g., loss of ponds and temporary wetlands) or enigmatic decline (Acosta-Chaves 2013). Loss of habitat in this region, especially for waterbirds, may be behind an avifaunal decline that has been recently detected (Biamonte et al. 2011).

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Field work in connection with these observations was made possible by José Brenes Alvarado (ICODER), Administrator of Parque de la Expresión Laguna Doña Ana. We are grateful to John Cossel, Oscar Ramírez, Sarah Stiffel, and an anonymous reviewer for comments on this paper.

Literature Cited

Acosta-Chaves, V. 2013. Pérdida de hábitas y biodiversidad desvanecida en la ciudad de Heredia (Costa Rica). Ambientico 232–233:64–74.

Acosta, V., and O. Morún. 2014. Predation of *Craugastor podiciferus* (Anura: Craugastoridae) by *Catharus frantzii* (Passeriformes: Turdidae) in a Neotropical cloud forest. Boletín de la Asociación Herpetológica Española 25:1–2.

Biamonte, E., L. Sandoval, E. Chacón, and G. Barrantes. 2011. Effect of urbanization on the avifauna in a tropical metropolitan area. Landscape Ecology 26:183–194.

Bussing, W. A. 1998. Freshwater Fishes of Costa Rica. Universidad de Costa Rica Press, San José.

Forbes, L. S., and S. G. Sealy. 1990. Foraging roles of male and female Western Grebes during brood rearing. Condor 92:421–426.

Jenni, D. A. 1969. Diving times of the Least Grebe and Masked Duck. Auk 86: 355–356.

Kloskowski, J., M. Nieoczym, M. Polakand, and P. Pitucha. 2010. Habitat selection by breeding waterbirds at ponds with size–structured fish populations. Naturwissenschaften 97:673–682.

Konter, A. 2014. Courtship and aggressive behavior of the Least Grebe in the breeding season. Wilson Journal of Ornithology 126:140–147.

Leighton, D. 2006. Predation of a Columbia Spotted Frog by an American Robin. Wildlife Afield 3:134–135.

Savage, J. M. 2002. The Amphibians and Reptiles of Costa Rica: A Herpetofauna Between Two Continents, Between Two Seas. University of Chicago Press, Chicago, Illinois.

Shea, G. M. 1987. Bibliography of herpetological references in Australian ornithological journals. Smithsonian Herpetological Information Service 73:1–44.

Stiles, F. G., and A. F. Skutch. 1989. A Guide to the Birds of Costa Rica. Cornell University Press, Ithaca, New York.

Toledo, L. F., R. S. Ribeiro, and C. F. Haddad. 2007. Anurans as prey: an exploratory analysis and size relationships between predators and their prey. Journal of Zoology 271:170–177.

Wells, K. D. 2010. The Ecology and Behavior of Amphibians. University of Chicago Press, Chicago, Illinois.

Wiersma, W., T. Piersma, and M. R. Van Eerden. 1995. Food intake of great crested grebes *Podiceps cristatus* wintering on cold water as a function of various cost factors. Ardea 83:339–350.

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NOTES

A FEMALE-FEMALE SAME-SEX PAIR OF FLORIDA SCRUB-JAYS (*Aphelocoma coerulescens*)

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While rare overall, same-sex courtship, bonding, and sexual behaviors are nevertheless widespread across animal taxa (Bagemihl 1999). Such behaviors are seemingly maladaptive because of apparent reproductive barriers. However, some species exhibit persistent high rates of same-sex pairings with successful, though reduced, reproductive output as an alternative to forgoing reproduction entirely (Bailey and Zuk 2009, Young and VanderWerf 2014). The factors regulating same-sex pairings are not always clear, but may include type of breeding system (MacFarlane et al. 2006), degree of parental care (MacFarlane et al. 2010) skewed sex ratios (Young et al. 2008), or social isolation (McGraw and Hill 1999). Same-sex courtship or mate-bonding behaviors have been reported in over 100 bird species both in the wild and in captivity, including in three corvids (Bagemihl 1999, MacFarlane et al. 2010).

Florida Scrub-Jays (*Aphelocoma coerulescens*; hereafter scrub-jays) are cooperatively breeding corvids endemic to central and coastal Florida. This breeding system has been the focus of multiple long-term studies of behavior and physiology (Mumme 1992, Woolfenden and Fitzpatrick 1996, Small and Schoech 2015), primarily conducted at Archbold Biological Station (27° 10'N, 81° 21'W, 38-68 m ASL) in Venus, Florida. There are no previous published records of same-sex behavior in this species. Here, we report our observations of same-sex courtship between two female scrub-jays during the 2014 breeding season. While we did not observe a breeding attempt, we noted repeated courtship and territory defense behaviors typical of male-female breeding pairs; thus, we will refer to these birds as a female-female pair.

During routine population monitoring at Archbold we observed the formation of a new territorial pair of scrub-jays, consisting of a known female breeder (fledged two young in 2013, male mate presumed deceased before 2014 season) and an adult non-breeder of unknown sex from a nearby territory. While jays on site are typically genetically sexed as nestlings, the non-breeder was banded as an adult early in 2014 and genetic results were pending. S. M. Ferguson observed a number of territorial encounters between this pair and birds from neighboring territories from 11 March to 18 March 2014. At 0645 EST on 19 March 2014, E. K. Elderbrock and S. M. Ferguson witnessed a male-specific courtship display as described by Woolfenden and Fitzpatrick (1996), in which the unknown sex bird flew to the ground and presented to the known female by fanning and dragging its tail along the ground, accompanied by 3-5 sec of warble song. The known female adopted a receptive posture, begging and fluttering her wings throughout the display. We did not observe copulation or locate a nest at this time. On 20 March 2014, B. C. Jones witnessed a territorial encounter during which the presumed male of the pair (the unknown-sex bird) gave a rattle call, a sex-specific female vocalization, accompanied by a distinctive head bob (Woolfenden and Fitzpatrick 1996). The bird was positively identified by unique colored leg bands from a distance of less than 10 m during both encounters.

On 28 March 2014, E. K. Elderbrock observed the known female adding twigs to an early platform (Florida Scrub-Jay nests consist of an outer basket, or platform, of twigs lined with scrub palmetto [*Sabal etonia*] fibers) while the unknown-sex bird, now presumed to be her male partner, also picked up twigs nearby but was not seen adding to the platform. By 6 April 2014, construction on the nest had not progressed and the nest site was presumed abandoned. However, S. M. Ferguson discovered another twig platform on 16 May 2014, which was defended only by the known female with flights and vocalizations. On subsequent days the nest was not defended by either bird and construction did not progress. While the female-female pair successfully defended a territory against neighboring pairs throughout the breeding season and expressed male-female typical courtship behaviors, they did not, to our knowledge, complete a nest or lay eggs.

Body mass and size measurements of the unknown sex scrub-jay taken during routine capture procedures were consistent with those of a small adult female (Florida Scrub-Jays exhibit weak sexual dimorphism, with males slightly larger; Woolfenden and Fitzpatrick 1996), and results of genetic testing confirmed the bird to be a female. During the 2015 breeding season both birds paired with known males (sex determined genetically), built nests, and laid fertile eggs as confirmed by hatching or candling (S. M. Ferguson, pers. obs.), though neither successfully fledged young. These observations make unlikely the possibility of a ZZW gynandromorph, as have been reported in other bird species (e.g., Zebra Finch [*Taeniopygia guttata*], Agate et al. 2003; domestic chicken [*Gallus domesticus*], Clinton et al. 2012; White-ruffed Manakin [*Corapipo altera*], DaCosta et al. 2007; and Black-throated Blue Warbler [*Dendroica caerulescens*], Patten 1993). Note too that gynandromorphs are typically infertile (Lin et al. 1995) and usually exhibit intermediate-sex morphology and behavior.

In this scrub-jay pair we witnessed two females express courtship and defense behaviors typical of a male and female pair. Same-sex courtship and mating behaviors are not well understood, but may arise in highly social species under specific conditions (e.g., absence of opposite-sex partners). It may be that such a relationship in Florida Scrub-Jays was facilitated by the behavioral flexibility of their cooperative breeding system, in which adult non-breeders aid breeders (usually their parents) at the nest and in territory defense prior to obtaining territories of their own (Woolfenden and Fitzpatrick 1996). However, this does not explain why a female bird would express male-typical behaviors. Courtship behaviors are often hormonally regulated (Fusani 2008) and the observed female may have experienced transiently abnormal hormone levels or hormone sensitivity, after which it resumed typical female behaviors.

Acknowledgments

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Literature Cited

Agate, R. J., W. Grisham, J. Wade, S. Mann, J. Wingfield, C. Schanen, A. Palotie, and A. P. Arnold. a2003. Neural, not gonadal, origin of brain sex differences in a gynandromorphic finch. Proceedings of the National Academy of Sciences 100:4873–4878.

Bagemihl, B. 1999. Biological Exuberance. 1st ed. St. Martin's Press, New York, New York.

BAILEY, N. W., AND M. ZUK. 2009. Same-sex sexual behavior and evolution. Trends in Ecology & Evolution 24:439–446.

CLINTON, M., D. ZHAO, S. NANDI, AND D. MCBRIDE. 2012. Evidence for avian cell autonomous sex identity (CASI) and implications for the sex-determination process? Chromosome Research 20:177–190.

DACOSTA, J. M., G. M. SPELLMAN, AND J. KLICKA. 2007. Bilateral gynandromorphy in a White-ruffed Manakin (*Corapipo altera*). Wilson Journal of Ornithology 119:289–291.

FUSANI, L. 2008. Testosterone control of male courtship in birds. Hormones and Behavior 54:227–233.

LIN, M., M. H. THORNE, I. C. MARTIN, B. L. SHELDON, AND R. C. JONES. 1995. Development of the gonads in the triploid (ZZW and ZZZ) fowl, *Gallus domesticus*, and comparison with normal diploid males (ZZ) and females (ZW). Reproduction, Fertility and Development 7:1185–1197.

MACFARLANE, G. R., S. P. BLOMBERG, G. KAPLAN, AND L. J. ROGERS. 2006. Same-sex sexual behavior in birds: expression is related to social mating system and state of development at hatching. Behavioral Ecology 18:21–33.

MACFARLANE, G. R., S. P. BLOMBERG, AND P. L. VASEY. 2010. Homosexual behaviour in birds: frequency of expression is related to parental care disparity between the sexes. Animal Behaviour 80:375–390.

MCGRAW, K. J., AND G. E. HILL. 1999. Induced homosexual behaviour in male house finches (*Carpodacus mexicanus*): the "Prisoner Effect." Ethology Ecology & Evolution 11:197–201.

MUMME, R. L. 1992. Do helpers increase reproductive success? An experimental analysis in the Florida scrub jay. Behavioral Ecology and Sociobiology 31:319–328.

PATTEN, M. A. 1993. A probable bilateral gynandromorphic Black-throated Blue Warbler. Wilson Bulletin 105:695–698.

SMALL, T. W., AND S. J. SCHOECH. 2015. Sex differences in the long-term repeatability of the acute stress response in long-lived, free-living Florida scrub-jays (*Aphelocoma coerulescens*). Journal of Comparative Physiology B 185:119–133.

WOOLFENDEN, G. E., AND J. W. FITZPATRICK. 1996. Florida Scrub-Jay (*Aphelocoma coerulescens*). *In* The Birds of North America, No. 228 (A. Poole and F. Gill, Eds.). Academy of Natural Sciences, Philadelphia, and American Ornithologists' Union, Washington, D.C.

YOUNG, L. C., AND E. A. VANDERWERF. 2014. Adaptive value of same-sex pairing in Laysan albatross. Proceedings of the Royal Society B 281:20132473.

YOUNG, L. C., B. J. ZAUN, AND E. A. VANDERWERF. 2008. Successful same-sex pairing in Laysan albatross. Biology Letters 4:323–325.

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INSTANCES OF PARENTAL NEST DEFENSE BEHAVIOR IN A BACHMAN'S SPARROW (*Peucaea aestivalis*) AND A FLORIDA GRASSHOPPER SPARROW (*Ammodramus savannarum floridanus*)

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Here we report instances of parental nest defense behavior in a Bachman's Sparrow (*Peucaea aestivalis*) and a Florida Grasshopper Sparrow (*Ammodramus savannarum floridanus*) at Three Lakes Wildlife Management Area (TLWMA) in Osceola County, Florida. The Florida Grasshopper Sparrow is a critically endangered subspecies endemic to dry prairie habitat of south-central Florida (USFWS 1999). The Bachman's Sparrow, also declining across much of its range (Sauer et al. 2011), is found throughout the southeastern United States in pine-dominated forests and a number of open habitats (Dunning 2006), including dry prairie (Perkins and Vickery 2005).

We discovered and monitored nests of grassland birds as part of a multiyear study examining the role of prescribed fire and predation on reproductive success at TLWMA. In addition to traditional nest monitoring methods we installed motion-activated miniature nest cameras at the entrance of some nests (Cox et al. 2012). We reviewed the recordings from these cameras to identify nest predators, confirm nest fates, and document behaviors at the nest.

During the 2015 breeding season at TLWMA we recorded 14 nest predation events, 13 of Florida Grasshopper Sparrow nests and 1 of a Bachman's Sparrow nest. Of these 14 nests, 6 were preyed upon during daylight, and of those nests, we observed definite nest defense behaviors only at the two reported below. Of the eight nests preyed upon at night, no defensive parental behaviors were recorded.

On 7 June 2015, we recorded an adult male hispid cotton rat (*Sigmodon hispidus*) preying on a Bachman's Sparrow nest that contained three 3- to 4-day-old nestlings. We were unable to identify individual birds, because the nesting pair had not been banded. The rat first arrived at the nest at 1855 EST, when no adult Bachman's Sparrows were visible. The rat inserted its head inside the nest cup and presumably began eating the nestlings until 1859, when an adult Bachman's Sparrow flew at the rat's backside with feet outstretched. The rat immediately fled. The sparrow paused briefly at the nest entrance before rushing away in the same direction as the rat. At 1900 the rat returned and removed a dead nestling from the nest and carried it underneath the camera mostly out of view. At 1902 the rat was presumably attacked another time, as it jumped away suddenly and the vegetation rustled, but a bird was not seen. The rat did not reappear, and there were no other signs of attack by a bird within view of the camera. A Bachman's Sparrow returned to the nest at 1907 for the first time since the initial attack, looked in the nest for 7 s, and then walked away. By 1910 at least one Bachman's Sparrow had removed the two remaining nestlings (both dead) and two fecal sacs from the nest. The adults brought food to the empty nest multiple times before nightfall and again early the next morning, but the nest was left unattended during the night and was abandoned shortly after sunrise.

On 26 June 2015, we recorded a southern black racer (*Coluber constrictor priapus*) approximately 75 cm long preying on a Florida Grasshopper Sparrow nest. At 0839 that

same day, prior to the predation, we directly observed this nest and it contained two nestlings less than one day old and one unhatched egg. The breeding male of this nest was banded, and the breeding female was unbanded. The snake first approached the nest at 1053, immediately flushing the brooding female. The snake quickly entered the nest, removed one nestling, and began swallowing it. While the nestling was still visible in the mouth of the snake, an adult Florida Grasshopper Sparrow attacked the snake, striking it once with its feet and wings. The snake, with the nestling still in its mouth, went out of view of the camera for 30 s before returning to the nest. It then removed a second nestling and began consuming it. The snake was attacked by a sparrow again and moved out of view for approximately 1 min. At 1055 the snake returned and consumed the last of the nest's contents by coiling within the nest (it is unknown whether the egg had hatched by this time). The snake remained at the nest for another 4 min and was attacked by a sparrow several times. The snake frequently struck at the sparrow during these attacks. At 1100 the snake left the vicinity of the nest, and the unbanded female returned and sat in the empty nest. The snake returned to the nest periodically during the next couple of hours, and if the female was present, she assailed it. On two of these occasions, immediately before the snake came into view of the camera, the female fluttered her wings and darted around in front of the nest. The snake was not observed again after 1244. The female and male returned to the empty nest a number of times that day, occasionally bringing food. The female sat in the empty nest intermittently until 1936, when she was seen on camera for the last time.

When successful, parental nest defense can increase reproductive success, but attacking or distracting a predator also increases a bird's risk of injury or death (Montgomerie and Weatherhead 1988). Though rarely observed, nest defense mortalities have been reported in Killdeer (*Charadrius vociferus*; Brunton 1986), Kentish Plover (*Charadrius alexandrinus*; Amat and Masero 2004), and Veery (*Catharus fuscescens*; King 1999). Although nest defense behaviors have not been previously reported in the Florida Grasshopper Sparrow or the Bachman's Sparrow, they have been documented in other sparrow species, including the Clay-colored Sparrow (*Spizella pallida*), Savannah Sparrow (*Passerculus sandwichensis*), and Vesper Sparrow (*Pooecetes gramineus*) in grasslands in Minnesota and North Dakota (Pietz and Granfors 2005) and in the Mountain White-crowned Sparrow (*Zonotrichia leucophrys oriantha*) in subalpine meadows in California (Morton et al. 1993). It is still unclear how frequently these nest defense behaviors are performed by either species in our study. Additional nest camera studies on both species may help reveal the frequency of nest defense and costs to the birds involved. Identifying the sources of adult mortality will inform conservation efforts for these declining songbirds.

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LITERATURE CITED

AMAT, J. A., AND J. A. MASERO. 2004. Predation risk on incubating adults constrains the choice of thermally favourable nest sites in a plover. Animal Behaviour 67:293–300.

Brunton, D. H. 1986. Fatal antipredator behavior of a Killdeer. Wilson Bulletin 98:605–607.

Cox, W. A., M. S. Pruett, T. J. Benson, S. J. Chiavacci, and F. R. Thompson III. 2012. Development of camera technology for monitoring nests. Pages 185–210 *in* Video Surveillance of Nesting Birds (C. A. Ribic, F. R. Thompson III, and P. J. Pietz, Eds.). Studies in Avian Biology, No. 43. University of California Press, Berkeley.

Dunning, J. B. 2006. Bachman's Sparrow (*Peucaea aestivalis*). *In* The Birds of North America Online (A. Poole, Ed.). Cornell Lab of Ornithology, Ithaca, New York. <http://bna.birds.cornell.edu/bna/species/038>.

King, D. I. 1999. Mortality of an adult Veery incurred during the defense of nestlings. Wilson Bulletin 111:576–577.

Montgomerie, R. D., and P. J. Weatherhead. 1988. Risks and rewards of nest defence by parent birds. Quarterly Review of Biology 63:167–187.

Morton, M. L., K. W. Sockman, and L. E. Peterson. 1993. Nest predation in the Mountain White-crowned Sparrow. Condor 95:72–82.

Perkins, D. W., and P. D. Vickery. 2005. Effects of altered hydrology on the breeding ecology of the Florida Grasshopper Sparrow and Bachman's Sparrow. Florida Field Naturalist 33:29–69.

Pietz, P. J., and D. A. Granfors. 2005. Parental nest defense on videotape: more reality than "myth." Auk 122:701–705.

Sauer, J. R., J. E. Hines, J. E. Fallon, K. L. Pardieck, D. J. Ziolkowski Jr., and W. A. Link. 2011. The North American Breeding Bird Survey, results and analysis 1966–2010. Version 12.07.2011. U.S. Geological Survey, Patuxent Wildlife Research Center, Laurel, Maryland.

USFWS [U.S. Fish and Wildlife Service]. 1999. South Florida Multi-species Recovery Plan. U.S. Fish and Wildlife Service Southeast Region, Atlanta, Georgia.

Florida Field Naturalist 44(2):69-79, 2016.

FIELD OBSERVATIONS

Fall Report: August-November 2015.—This report consists of significant bird observations compiled by the Field Observations Committee (FOC). Electronic submissions to the FOC should be in the following format: species, number of individuals, age and sex of the bird(s), color morph if applicable, location (including county), date, observer(s), and significance. Seasons are winter (December-February), spring (March-May), summer (June-July), and fall (August-November). Submit observations to regional compilers within two weeks after the close of each season, or to the state compiler within one month. Addresses of the compilers follow this report.

Sight-only observations are considered "reports" while only those observations supported by verifiable evidence (photographs, video or audio recordings, or specimens) are called "records." Species for which documentation is required by the FOC and by the FOS Records Committee (FOSRC; <fosbirds.org/official-florida-state-bird-list>) are marked here with an asterisk (*). A county designation (in italics) accompanies the first-time listing of each site in this report. Abbreviations in this report are: AFB = Air Force Base, AFR = Air Force Range, EOS = end of season, NERR = National Estuarine Research Reserve, NP = National Park, NS = National Seashore, NSRA = North Shore Restoration Area, NWR = National Wildlife Refuge, SF = State Forest, SP = State Park, STA = Stormwater Treatment Area, STF = sewage treatment facility, WMA=Wildlife Management Area, and n, s, e, w etc., for compass directions. Bold-faced entries denote birds newly reported or verified in Florida, or record numbers. +Photographs or video- or audio-recordings archived by the FOC are identified by a plus (+).

Summary of the Fall Season

Temperatures were well above normal across most of the state in each of the four months of the fall season while precipitation volumes fluctuated monthly. Much of Florida experienced below normal rainfall in October, with many regions recording anywhere from the 2nd to 10th driest monthly record. Fortunately this was followed by a very wet November in each of the geographic extremes of the state: the northeast Florida region, western Panhandle and the greater Miami area.

FOSRC review species listed in this report include one Manx Shearwater specimen collected in Nassau County, two Neotropic Cormorants at Wakodahatchee Wetlands, one Zone-tailed Hawk, a roost of up to 16 Vaux's Swifts, one "Western" Flycatcher, several reports each of Alder and Willow Flycatcher, several reports of Sulphur-bellied Flycatcher, the state's second record of Variegated Flycatcher, a Northern Wheatear, one Mountain Bluebird, and two MacGillivray's Warblers.

Despite this impressive assortment of review species, the season may be best remembered for the Franklin's Gull invasion that hit Florida beginning on 11 October in Jacksonville and persisted throughout the state for the remainder of the season.

Species Accounts

Black-bellied Whistling-Duck: 27 at Jefferson County Recycling Center (*Jefferson*) 26 Sep (M. Smith, K. Seward, L. Most).

Fulvous Whistling-Duck: 1 at Sweetwater Wetlands Park (*Alachua*) 17-29 Nov (S. Burford, D. Shehee et al.); up to 7 at Oil Well Road (*Collier*) 25-29 Nov (R. Kaskan et al.).

Greater White-fronted Goose: 1 at Key West Golf Club (*Monroe*) for the 3rd consecutive year 23 Oct-EOS (C. Goodrich).

SNOW GOOSE: 1 white morph at William E. Dunn Water Reclamation Facility (*Pinellas*) 29 Nov (+S. Aversa et al.).

AMERICAN WIGEON: 1 male at Merritt Island NWR (*Brevard*) 23 Aug (E. Kwater).

MOTTLED DUCK: 28 in a stormwater pond near Orlando International Airport (*Orange*) 24 Sep (L. Malo); 2 engaged in head-bobbing courtship display and copulation at Lake Eola (*Orange*) 2 Oct (L. Malo).

BLUE-WINGED TEAL: 3 at Lake Apopka NSRA (*Orange*) 16 Aug (P. Hueber, K. Hamblett).

CINNAMON TEAL: 1 drake at Gargiulo Tomato Field near Ave Maria (*Collier*) 14-23 Nov (T. Rodriguez et al.).

NORTHERN PINTAIL: 1 at Sweetwater Wetlands Park 24 Oct (P. Hosner).

CANVASBACK: 1 at Oil Well Road 20 November (M. Higgins).

REDHEAD: 1 female at Cockroach Bay Preserve (*Hillsborough*) 6 Sept (E. Kwater).

RING-NECKED DUCK: 1 male at Merritt Island NWR 23 Aug (E. Kwater).

GREATER SCAUP: 2 at Courtney Campbell Causeway (*Pinellas*) 27 Nov (+C. Yilmaz).

LESSER SCAUP: 1 male summered at Cockroach Bay Preserve through 4 Aug (E. Kwater).

SURF SCOTER: 1 at Bayshore Live Oak Park (*Charlotte*) 25 Nov (D. Peacock).

BLACK SCOTER: 31 at Ponce de Leon Inlet (*Volusia*) 27 Oct (M. Brothers); 11 at Sebastian Inlet SP (*Indian River*) 21 Nov (D. Simpson et al.); 1 at Indian Rocks Beach (*Pinellas*) 25 Nov (K. Nelson).

BUFFLEHEAD: 15 at Ben T. Davis Beach (*Pinellas*) 28 Nov (+B. Perry).

COMMON GOLDENEYE: 1 female at a shopping center pond in Sanford (*Seminole*) for the second consecutive fall 25 Nov (J. Dinsmore).

HOODED MERGANSER: 228 at Brighton Bay (*Pinellas*) 29 Nov (M. Burns).

RED-BREASTED MERGANSER: 2 at Paynes Prairie Preserve SP (*Alachua*) 11 Nov (M. Manetz); 1 inland in *Clay* 16 Nov (D. Cusick); 1 at Lake Apopka NSRA 16 Nov (P. Hueber).

RUDDY DUCK: 1 female at Shiloh Marshes, Merritt Island NWR (*Volusia*) 1 Sep (M. Brothers).

GOLDEN PHEASANT: 1 male at a Longwood neighborhood (*Seminole*) late Oct (fide T. Williams).

COMMON LOON: 70 flying west over Pensacola Bay (*Escambia*) 8 Nov (B. Duncan, L. Duncan); 1 at Lake Apopka NSRA 16 Nov (P. Hueber).

AMERICAN FLAMINGO: 2 adults at Gibby Point, Everglades NP (*Monroe*) 13 Aug-EOS (D. Filipiak, m. obs.); 1 hatching-year bird banded with radio transmitter was released there on 20 October (F. Ridgley, M. Davis, +J. Patterson).

CORY'S SHEARWATER: 1 offshore of *Lee* 15 Aug (D. Simpson, D. Peacock et al.); 1 at Playalinda Beach (*Brevard*) 22 Oct (E. Kwater).

GREAT SHEARWATER: 3 in Pensacola Bay Pass (*Escambia*) 2 Aug (J. Pfeiffer); 7 offshore *Collier* and 4 off *Lee* 15 Aug (D. McQuade et al.); 1 ca. 5 mi. off Captiva Pass (*Lee*) 16 Aug (C. Ewell et al.); 2 off *Lee* 19 Sept (T. McQuade et al.); 1 off Destin Pass (*Okaloosa*) 6 Nov (E. Zambello).

SOOTY SHEARWATER: 2 at Fort Pickens (*Escambia*) 15 Aug (B. Duncan, L. Duncan); 1 offshore of *Collier* 15 Aug (+D. Peacock et al.).

*MANX SHEARWATER: 1 specimen collected at Amelia Island SP (*Nassau*) 17 Nov (J. Becker).

AUDUBON'S SHEARWATER: 5 at Fort Pickens 15 Aug (B. Duncan, L. Duncan).

WILSON'S STORM-PETREL: 1 at Fort Zachary Taylor Historic SP, Key West (*Monroe*) 30 Nov (C. Goodrich).

LEACH'S STORM-PETREL: 1 found in poor health at St. Petersburg Beach (*Pinellas*) 3 Aug, died later (+A. Nulph).

WHITE-TAILED TROPICBIRD: 1 adult at Biscayne NP (*Miami-Dade*) 30 Aug (+A. Harper, m. obs.).

WOOD STORK: 1 locally rare in n *Escambia* 29 Oct (J. Callaway).

MAGNIFICENT FRIGATEBIRD: 1 at Gainesville (*Alachua*) 28 Oct (A. Kent), providing the latest fall date and 15th sighting in the area.

MASKED BOOBY: 1 on Second Chance Island (*Collier*) 25 Aug (+K. Laakkonen et al.); 1 near Tarpon Bay Road (*Lee*) 2 Sep (F. Paulsen); 1 at Dog Island (*Franklin*) 28 Oct (+J. Murphy); 1 at Henderson Beach (*Okaloosa*) 11–15 Nov (S. Exley, B. Purdy, W. Greene).

BROWN BOOBY: 1 at T Tower off *Collier* 15 Aug and 19 Sep (+D. McQuade et al.); 3-4 at Paynes Prairie Preserve SP 15 Oct (B. Enneis, L. Holt); 1 adult at Lake Apopka NSRA 19 Oct-EOS (+P. Hueber, L. Mathis, H. Robinson, m. obs.); 2 at Playalinda Beach 22 Oct (E. Kwater); **31** at Boca Chica Key (*Monroe*) 10 Nov (C. Goodrich).

*NEOTROPIC CORMORANT: 2 at Wakodahatchee Wetlands (*Palm Beach*) 13 Sep-2 Oct (T. Keyel et al.).

AMERICAN WHITE PELICAN: 193 over Palm Harbor (*Pinellas*) 16 Oct (J. Wells); 220 at Shell Key (*Pinellas*) 25 Oct (R. Smith).

AMERICAN BITTERN: 1 at Marl Bed Flats Tract (*Sanford*) 24 Aug (L. Malo, C. Greene).

LEAST BITTERN: 1 male at Honeymoon Island SP (*Pinellas*) 28 Aug (E. Kwater, D. Gagne, S. Reardon).

GREAT BLUE HERON: 1 white morph at Sweetwater Wetlands Park 12 Oct-EOS (G. Parks, D. Rohan et al.); 1 white morph at St. Marks NWR (*Wakulla*) 27 Nov (B. Phelan).

BLACK-CROWNED NIGHT-HERON: 1 at Veteran's Park (*Okaloosa*) 12 Aug (W. Greene).

WHITE-FACED IBIS: 1 at west *Pasco* 27-29 Nov (+B. Perry et al.).

ROSEATE SPOONBILL: 1 in *Clay* 7-15 Oct (D. Cusick).

SWALLOW-TAILED KITE: 8 near Hart Springs County Park (*Gilchrist*) 4 Sep (T. Rodriguez).

SNAIL KITE: 1 female at St. Johns River-Lake Monroe confluence, Kratzert Tract (*Volusia*) 1 Sep (L. Malo, C. Greene); 1 at Lake Apopka NSRA 1 Sep (M. Zondervan); 1 female at Starke Lake, Ocoee (*Orange*) 13 Oct (L. Malo).

MISSISSIPPI KITE: 1 in Naples (*Collier*) 3 and 7 Oct (M. Higgins, D. True, +T. Zambon).

NORTHERN HARRIER: 1 adult male at Lake Apopka NSRA 16 Aug (P. Hueber, K. Hamblett).

SHARP-SHINNED HAWK: 1 at Winter Springs (*Seminole*) 24 Aug (L. Malo, C. Greene).

BROAD-WINGED HAWK: 1 adult over ne St. Petersburg 15 Sep (+J. Clayton); 1 adult at Fort De Soto Park (*Pinellas*) 16 Oct (+S. Tavaglione).

SHORT-TAILED HAWK: 1 dark morph at Mead Botanical Garden, Winter Park (*Orange*) 29 Sep (T. Rodriguez); 1 in Mandarin (*Duval*) 1 Oct (K. Eldredge); 1 dark morph at Myakka River SP (*Sarasota*) 15 Oct (T. Rodriguez); **12** in one kettle at Key West Tropical Forest & Botanical Garden, Stock Island (*Monroe*) 3 Nov (C. Goodrich).

SWAINSON'S HAWK: 1 at Gulf Breeze (*Santa Rosa*) 17 Oct (B. Duncan, L. Duncan).

*ZONE-TAILED HAWK: 1 at Marathon (*Monroe*) 8 Nov (C. Goodrich).

RED-TAILED HAWK: 1 juvenile at Honeymoon Island SP 13 Oct (E. Kwater).

KING RAIL: 2 at Ringhaver Park (*Duval*) 1 Nov (B. Richter).

SORA: 1 was early at Sawgrass Lake Park (*Pinellas*) 28 Aug (S. Tavaglione, J. Clayton).

GRAY-HEADED SWAMPHEN: 1 at Lake Apopka NSRA 15 Nov-EOS (+S. Simmons, m. obs.); 2 at Sweetwater Wetlands Park 19 Nov-EOS (A. Kratter et al.); 3 at Lake Trafford (*Collier*) 21 Nov (P. Corradino).

PURPLE GALLINULE: 1 immature was a park first on Lake Maggiore at Boyd Hill Nature Preserve (*Pinellas*) 1 Aug (S. Tavaglione, P. Plage, +J. Clayton et al.); 1 at Westside Industrial Park (*Duval*) 4-6 October (J. Knoll) provided the first verifiable county record in over twenty years; 1 adult and 2 juveniles at Lake Seminole Park (*Pinellas*) 13 Oct (M. Hughes).

BLACK-NECKED STILT: 1 at Lake Apopka NSRA 15 Nov (+P. Hueber, K. Hamblett).

AMERICAN AVOCET: 7 at Fort De Soto Park 4 Aug (E. Plage); 7 at Lake Apopka NSRA 7 Aug (P. Hueber); 4 at South Anclote Island (*Pinellas*) 12 Aug (D. Sauvageau); 11 at Fred Howard Park (*Pinellas*) 10 Sep (+M. Vetricek); 1-4 were at Fort De Soto Park 13-15 Oct (+M. James et al.); 11 at Pine Island (*Hernando*) 3-4 Nov (A. Hansen, B. Hansen

et al.); 3 at Dunedin Causeway (*Pinellas*) 3-9 Nov (+J. Wells); up to 7 at Boca Chica Key 4-24 Nov (C. Goodrich); 1 at Rodman Dam (*Putnam*) 15 Nov (T. Rodriguez).

American Oystercatcher: 1 at Shands Pier (*Clay*) 12 Nov (G. Williams).

Black-bellied Plover: 1 in alternate plumage at Lake Apopka NSRA 15-16 Aug (P. Hueber, K. Hamblett, m. obs.).

American Golden-Plover: 1 at Blumberg Road (*Hendry*) 15 Aug (D. Segal et al.); 1 at Bald Point SP (*Franklin*) 3 Oct (+J. Murphy); 1 in basic plumage at Lake Apopka NSRA 9 Oct (M. Gardler, +P. Hueber et al.); 1 in agricultural fields off CR 305 (*Flagler*) 21 Nov (M. Brothers).

Snowy Plover: 1 adult at Port Canaveral Jetty Park, Cape Canaveral 5-9 Sep (+M. Harris, +J. Eager) provided the first *Brevard* record; 16 at Outback Key (*Pinellas*) 10 Sep (E. Plage).

Solitary Sandpiper: 3 at Fort De Soto Park 10 Aug (R. Smith).

Upland Sandpiper: 6 at Apalachicola (*Franklin*) 18 Aug (J. Murphy); 1 at M&M Dairy (*Duval*) 7-12 Sept (+B. Richter, m. obs.).

Marbled Godwit: 98 at Outback Key 10 Sep (E. Plage); 2 at Little Talbot Island SP (*Duval*) 25 Oct (+K. Dailey).

Red Knot: Nearly 1,000 at Sand Key Park (*Pinellas*) 9 Sep (+C. Yilmaz); 830 at Outback Key 10 Sep (E. Plage).

White-rumped Sandpiper: 1 at Oil Well Road 15 Aug (M. Higgins); 1 at Merritt Island NWR 21 Aug (E. Kwater); 1 at the Okaloosa County Water and STF (*Okaloosa*) 22 Aug (M. Swan); 1 at M&M Dairy 8-9 Oct (D. Foster et al.).

Baird's Sandpiper: 1 at M&M Dairy 12-13 Sept (+K. Dailey) provided the 4th *Duval* report and 1st verifiable county record.

Pectoral Sandpiper: At least 140 in two flocks at Lake Apopka NSRA 2 Aug (J. Dinsmore); 7 at Fort De Soto Park 3 Aug (E. Plage); 1 at Outback Key 25 Aug (+D. Sauvageau); 5 at Fort De Soto Park 6 Sep (B. Ahern); 1 at Honeymoon Island SP 12 Sep (T. Kalbach, E. Kwater); 1 at Fort De Soto Park 10 Oct (+K. Bailey); 2 at Winter Park 29 Oct (E. Kwater).

Dunlin: 1 in breeding plumage at Outback Key 25 Aug (+D. Sauvageau); 2 at Fort De Soto Park 14 Oct (P. Plage); 2 at Sweetwater Wetlands Park 30 Oct-10 Nov (J. Hintermister, D. Segal et al.); 1 at Newnans Lake (*Alachua*) 15 Nov (R. Rowan, P. Polshek).

Stilt Sandpiper: 1 at Gandy Beach (*Pinellas*) 2 Aug (C. Cox); 1 at Lake Apopka NSRA 7 Aug (S. Simmons); 1 at Gandy Beach 16 Aug (L. Cox, +J. Clayton); 1 at South Anclote Key (*Pinellas*) 19 Aug (+D. Sauvageau); 1 at Honeymoon Island SP (*Pinellas*) 27 Sep (J. Wells); 1 at Fort De Soto Park 16 Oct (R. Harrod); 1 at Orlando Wetlands Park 18 Oct (S. Simmons).

Buff-breasted Sandpiper: 2 at Babcock Ranch (*Charlotte*) 27 Aug (D. Peacock); 1 at Mims (*Brevard*) 10 Sep (+S. Fried); 2 at M&M Dairy 7-13 Sept (K. Dailey); 1 at Merritt Island NWR 14 Sep (D. Hartgrove); 4 in sod fields off CR 100 (*Flagler*) 21 Sep (M. Brothers); 1 off CR 305 21 Sep (M. Brothers).

Ruff: 1 at the Okaloosa County Water and STF 4-6 Oct (+D. Asbell, B. Purdy, M. Swan, J. Callaway, B. Callaway, B. Duncan, L. Duncan) provided the 3rd area record; 1 at Dayson Basin 6 Oct (J. Martin) provided the 2nd *Duval* record.

Short-billed Dowitcher: 2 at Lake Apopka NSRA 1-2 Aug (+P. Hueber, K. Hamblett); 570 at Outback Key 10 Sep (E. Plage); 1 at Orlando Wetlands Park 18 Oct (S. Simmons).

Long-billed Dowitcher: 1 at Lake Apopka NSRA 1 Aug (+P. Hueber, K. Hamblett); 1 at Honeymoon Island SP 13 Oct (E. Kwater); 14 in central *Pasco* 30 Nov (D. Gagne, V. Capp).

Wilson's Snipe: 2 at Lake Apopka NSRA 1 Aug (+P. Hueber, K. Hamblett); 1 at Sweetwater Wetlands Park 5 Sep (L. Davis); 8 at M&M Dairy 12 Sept (K. Dailey).

American Woodcock: 1 at Babcock-Webb WMA (*Charlotte*) 26 Oct (S. Wilcox).

WILSON'S PHALAROPE: 1 at South Anclote Key 19 Aug (+D. Sauvageau); 1 at Merritt Island NWR 21 Aug (E. Kwater, M. Harris); 1 at Spirit-of-the-Wild WMA (*Hendry*) 23 Aug (D. Simpson); 1 at Hidden Cypress Preserve (*Lee*) 5 Sep (R. Kaskan).

RED-NECKED PHALAROPE: 3 groups of 17, 15, and 12 at different locations off *Collier* 15 Aug (+D. McQuade et al.); 3 offshore *Lee* 19 Sep (D. McQuade et al.); 300 seen from shore at Canaveral NS (*Volusia*) 22 Sep (M. Brothers).

POMARINE JAEGER: 1 off *Collier* 15 Aug (D. McQuade et al.); 1 off Captiva Pass (*Lee*) 16 Aug (C. Ewell et al.); 73 off the beach at Canaveral NS 19 Nov (M. Brothers).

PARASITIC JAEGER: 1 at Opal Beach (*Escambia*) 17 Sep (C. Holt).

LONG-TAILED JAEGER: 1 juvenile on the beach at Ormond-by-the-Sea (*Volusia*) 3 Sep (M. Brothers); 1 off Black Point Marina, Miami (*Miami-Dade*) 20 Sep (S. Simmons et al.); 1 at Little Talbot Island SP 5 Nov (P. Leary).

BLACK-LEGGED KITTIWAKE: 2 immatures at Lake Worth Municipal Beach (*Palm Beach*) 24 Nov-EOS (+T. Smith).

FRANKLIN'S GULL: Up to 4 at Huguenot Memorial Park (*Duval*) 11 Oct-1 Nov (+K. Dailey); 1+ at Lanark Village (*Franklin*) 16 Oct-21 Nov (J. Murphy); single first-cycle gulls at Ponce de Leon Inlet 29 Oct and 2 Nov (M. Brothers); 1 at Amelia Island SP 31 Oct (K. Dailey); first-cycle gulls at Daytona Beach Shores (*Volusia*) 13 (2), 14 (1), 21 (7), and 28 (1) Oct and 2 (3, and 1 second-cycle), 3 (2), 9 (1), 10 (11), 11 (16), 17 (5, and 2 adults), and 23 (3) Nov (all M. Brothers); 1 at Dunedin Causeway 3 and 19 Nov (+J. Wells); up to 10 at Bonita Beach and Big Hickory Pass (*Lee*) from 9 Nov-3 Dec (+J. Haas, R. Kaskan); 2 at Shands Pier 13 Nov (G. Williams); 1 at Destin (*Okaloosa*) 14–26 Nov (B. Purdy, M. Swan); 1 in St. Augustine (*St. Johns*) 16 Nov (D. Reed); 1 at Fort De Soto Park 16 Nov (E. Plage, J. Clayton); up to 2 at Delnor-Wiggins Pass SP (*Collier*) 16-17 Nov (D. True, T. Zambon); 1 at Sun West Park (*Pasco*) 17-22 Nov (K. Tracey); 1 at Naples Pier (*Collier*) 18 Nov-12 Jan (D. True, T. Zambon); 1 at Bunche Beach (*Lee*) 18 Nov (D. Coleman); 1 at various Sanibel Island locations (*Lee*) 19 Nov-13 Dec (R. Parks, F. Paulsen et al.); 1 at Hudson Beach (*Pinellas*) 20 Nov (+B. Pranty); 1 at Spring Hill freshwater pond (*Hernando*) 22 Nov-EOS (A. Hansen, B. Hansen et al.); 1 at Key Vista Park (*Pasco*) 24 Nov (D. Gagne, V. Capp); 1 at Fort Myers Beach (*Lee*) 25 Nov (D. Johnston).

LESSER BLACK-BACKED GULL: 1 at Sanibel Island 13-25 Aug (F. Paulsen), and 5 there 26 Nov (C. Newman); up to 6 at Destin 16 Aug-14 Nov (M. Swan, B. Purdy) provided the first Aug and Sep records for the area; 197 at Ponce de Leon Inlet 26 Oct (M. Brothers); and **277** there 28 Oct (M. Brothers).

GREAT BLACK-BACKED GULL: 1 at Panama City (*Bay*) 21 Jun (V. Stoll).

BROWN NODDY: 2 singles offshore of *Collier* 15 Aug (D. Peacock, +D. McQuade et al.).

SOOTY TERN: 3 groups of 5, 5, and 1 at different locations off *Collier* 15 Aug (+D. McQuade et al.); 6 groups of 5, 2, 2, 2, 2 and 1 at different locations off *Lee* 15 Aug (+D. McQuade et al.); 4 off *Lee* 19 Sep (+D. McQuade et al.).

BRIDLED TERN: 3 off *Collier* 15 Aug (+D. McQuade et al.); 2 at Gibby Point, Everglades NP 3 Oct (A. Wang).

GULL-BILLED TERN: Only 1 at Huguenot Memorial Park 8 Aug (K. Dailey); 1 on Halifax River at Port Orange (*Volusia*) 1 Sep (M. Brothers).

CASPIAN TERN: 64 at Outback Key 10 Sep (E. Plage).

BLACK TERN: 550 at Cape San Blas (*Gulf*) 4 Aug (E. Thompson); 14 at Lake Apopka NSRA 7 Aug (P. Hueber); 27 at Little Estero Critical Wildlife Area, Fort Myers Beach (*Lee*) 30 Aug (R. Kaskan); 5 at Hardee Lakes Park (*Hardee*) 12 Sep (T. Rodriguez).

ROSEATE TERN: 34 at T Tower off *Collier* 15 Aug (+D. McQuade et al.); 5 groups of 8, 6, 3, 3, and 1 at different locations off *Collier* 15 Aug (+D. McQuade et al.).

COMMON TERN: 180 at Huguenot Memorial Park 17 Sept (K. Dailey); 500 at Ponce de Leon Inlet 13 Oct (M. Brothers), and 1,000 there 23 Oct (M. Brothers); up to 4 at Bonita

Beach 9-19 Nov (+J. Haas et al.); 1 on Indian River Lagoon at Titusville 28 Nov (S. Simmons); 12 were late at Fort De Soto Park 30 Nov (+R. Smith).

SANDWICH TERN: Up to 5 at Shands Pier 18 Aug-10 Oct (S. Raduns); **600** at Fort Zachary Taylor Historic SP 30 Nov (C. Goodrich).

KEY WEST QUAIL-DOVE: 1 at Big Pine Key (*Monroe*) 8 Nov (C. Goodrich et al.).

YELLOW-BILLED CUCKOO: 1 at Fort Zachary Taylor Historic SP 22 Nov (C. Goodrich).

SMOOTH-BILLED ANI: 2 at Loxahatchee NWR (*Palm Beach*) 1 Aug-30 Sep (m. obs.); 1 at Arthur R. Marshall Loxahatchee NWR, Boynton Beach (*Palm Beach*) 26 Aug (J. Eager) and 20 Sep (S. Simmons).

GROOVE-BILLED ANI: 1 at Fort Pickens 15-16 Oct (B. Duncan, L. Duncan, B. Kornegay); 1 at Bald Point SP 17 Oct (+J. Murphy).

BARN OWL: 1 at St. Marks NWR 12 Oct (S. Killeen).

COMMON NIGHTHAWK: 50 over northeast St. Petersburg 13 Sep (J. Clayton, M. Burns).

CHUCK-WILL'S-WIDOW: 1 at Honeymoon Island SP 29 Aug (+T. Kalbach).

CHIMNEY SWIFT: 15,200 at a roost in Gainesville 27 Oct (D. Ewing et al.); 8 at Gainesville 11 Nov (S. Ewing).

*VAUX'S SWIFT: Up to 14 at Dauer Hall on the University of Florida campus in Gainesville 15 Nov-EOS (S. Ewing et al.).

BUFF-BELLIED HUMMINGBIRD: 1 at Gulf Breeze 16 Nov (D. Stangeland).

BLACK-CHINNED HUMMINGBIRD: 1 east of Brooksville (*Hernando*) 30 Aug-18 Oct (+S. Mann, J. Mann).

RUFOUS HUMMINGBIRD: 1 at Newberry (*Alachua*) 9 Aug (E. Gravely).

HAIRY WOODPECKER: 2 at Highlands Hammock SP (*Highlands*) 12 Oct (T. Rodriguez); 1 at Miccosukee (*Leon*) 20 Nov (B. Phelan).

CRESTED CARACARA: 1 at Evinston (*Alachua*) 2 Sep (J. Menoski); 1 at Alligator Point (*Franklin*) 13 Sep-29 Oct (M. Forehand); 1 at the Kilbee Tract, Little Big Econ SF (*Seminole*) 23 Sep (J. Dinsmore).

EASTERN WOOD-PEWEE: 5 at A. L. Anderson Park (*Pinellas*) 29 Aug (+T. Mast); 5 at Honeymoon Island SP 3 Oct (T. Kalbach).

YELLOW-BELLIED FLYCATCHER: 1 (not verified) at Fort De Soto Park 12 Sep (C. Flanders, B. Woodard); 1 at Gulf Breeze 27 Sep (B. Duncan, L. Duncan).

ACADIAN FLYCATCHER: 3 at Charles "Sonny" McCoy Indigenous Park, Key West (*Monroe*) 24 Oct (C. Goodrich).

*ALDER FLYCATCHER: Up to 3 at Paynes Prairie Preserve SP 18 Aug-1 Oct (M. Manetz, John Hintermister et al.); 1 at Hillsborough River SP (*Pinellas*) 23-29 Aug (B. Ahern, C. Cox, +C. Fisher); 1 calling at Lake Apopka NSRA 5 Sep (+S. Simmons); 1 at n St. Petersburg 7 Sep (+J. Clayton, details to FOSRC); 1 at Honeymoon Island SP 30 Sept (E. Kwater).

*WILLOW FLYCATCHER: 1 calling at Aripeka Sandhills Preserve (*Pinellas*) 23 Sep (D. Gagne, K. Nelson); 1 giving a steady "whit" call at Lake Apopka NSRA 26 Sep (P. Hueber et al., details to FOSRC); 1 at Reddie Point Preserve (*Duval*) 4 Oct (K. Dailey, D. Foster); 1 at Central Park, Ormond Beach (*Volusia*) 10 Oct (M. Brothers, details to FOSRC).

"TRAILL'S" FLYCATCHER: 2 at Lake Apopka (*Lake*) 17 Aug (J. Eager); 1 at Lake Apopka 24 Aug (T. Rodriguez).

LEAST FLYCATCHER: Up to 2 at Paynes Prairie Preserve SP 7 Sep-EOS (M. Manetz, A. Zions); 1 east of Brooksville 3 Oct (+S. Mann); 1 at Mead Botanical Garden 5 Oct (T. Rodriguez); 1 at Fort De Soto Park 8-9 Oct (E. Plage, +J. Gibson et al.).

WESTERN (CORDILLERAN/PACIFIC-SLOPE) FLYCATCHER: 1 at Fort Pickens 1-2 Oct (J. Callaway, +B. Callaway, B. Duncan, L. Duncan), photo to FOSRC.

EASTERN PHOEBE: 1 was very early at Fort Pickens 19 Sep (D. Stangeland).

VERMILION FLYCATCHER: 1 at Gainesville 9-13 Oct (A. Zions, H. Adams et al.); up to 3 at Fort Pickens 14 Oct-29 Nov (J. Callaway, B. Callaway, D. Timmons, S. Coster, C.

Coster); 1 immature male at Orlando Wetlands Park 18 Oct (B. Rohman, S. Simmons, J. Eager); 1 adult male and 1 first-year male at St. Marks NWR 19-20 Oct (+M. Smith, B. Phelan); 2 at International Paper Wetlands (*Escambia*) 8-15 Nov (J. Callaway, B. Callaway).

ASH-THROATED FLYCATCHER: 1 at Bald Point SP 29 Oct (+J. Murphy); 1 at Naval Live Oaks (*Santa Rosa*) 4 Nov (J. Callaway, B. Callaway); 1 at Bill Baggs Cape Florida SP (*Miami-Dade*) 11-15 Nov (+N. Salino, m. obs.); 1 at Lake Apopka NSRA 20 Nov (T. Rodriguez); 1 at e *Pasco* 22-30 Nov (+K. Tracey); 1 at Hammocks Community (*Miami-Dade*) 27 Nov (J. Boyd).

GREAT CRESTED FLYCATCHER: 1 at Paynes Prairie Preserve SP 30 Sep (T. Anderson).

*SULPHUR-BELLIED FLYCATCHER: 1 at A. D. Barnes Park (*Miami-Dade*) 17 Sep (+S. Juan); 1 at Fort Pickens 18 Sep (J. Callaway, +B. Callaway); 1 at Evergreen Cemetery, Fort Lauderdale (*Broward*) 3 Oct (+D. Hall); 1 at Charles "Sonny" McCoy Indigenous Park (*Monroe*) 7 Oct (+A. Wang); 1 at Key Largo State Botanical Site (*Monroe*) 11 Oct (B. White).

*VARIEGATED FLYCATCHER: 1 at Evergreen Cemetery, Fort Lauderdale 24-31 Oct provided the 2nd state record (R. Titus, +T. Mitchell, m. obs.).

TROPICAL KINGBIRD: 1 at Loxahatchee and University Roads (*Broward*) 10 Nov-15 Dec (+B. Pickholtz et al.); 1 at S-334 water tower, Tamiami Trail (*Miami-Dade*) 17 Nov (L. Manfredi).

TROPICAL/COUCH'S KINGBIRD: 1 at Lake Apopka NSRA 19-20 Nov (+J. Stefancic).

WESTERN KINGBIRD: 1 at Gainesville 5-9 Oct (B. Ewing et al.); 1 at Dunedin 10 Oct (+T. Kalbach); 1 at Lake Marian boat ramp, Kenansville (*Osceola*) 3 Nov (J. Eager); 1 at Lithia (*Hillsborough*) 11 Nov (+C. Fredricks); 1 at Hague (*Alachua*) 13-29 Nov (S. Goodman, R. Rowan et al.); 1-2 at Fort De Soto Park 29-30 Nov (R. Steele, E. Plage, +R. Smith).

EASTERN KINGBIRD: 32 at Fort De Soto Park 14 Sep (D. Sauvageau); 1 at Gainesville 5-8 Oct (R. Rowan, R. Stanton et al.).

GRAY KINGBIRD: 19 at Honeymoon Island SP 30 Aug (J. Wells); 1 at Merritt Island NWR 27 Sep (T. Rodriguez); 1 was very late at Fort De Soto Park 26 Nov (+P. Hueber, K. Hamblett).

SCISSOR-TAILED FLYCATCHER: 1 at St. George Island (*Franklin*) 10 Oct and 23 Nov (S. Killeen, A. Prather); 1 in western *Nassau* 14 Oct (T. Crane); 1 at Orlando Wetlands Park 18 Oct (B. Rohman, S. Simmons, J. Eager); 1 at Lower Suwannee NWR (*Levy*) 28 Oct (L. Felker); 1 adult male at Joe Overstreet Landing, Kenansville (*Osceola*) 3 Nov (J. Eager); 2 at Fort De Soto Park 17 Nov (+B. Lane) with one remaining through 28 Nov; up to 4 at Colding Loop Road (*Pinellas*) 10-28 Nov (+W. Meehan, B. Jenks); 1 at St. Marks NWR 25-27 Nov (B. Phelan).

BELL'S VIREO: 1 at Mead Botanical Garden 27 Sep-4 Oct (+P. Hueber, m. obs.); 1 at Fort Zachary Taylor Historic SP 18 Oct (C. Goodrich); 1 at Joe's Creek Greenway (*Pinellas*) 21 Nov-EOS (+L. Margeson, m. obs.); 1 at Aripeka Sandhills Preserve 11 Oct (D. Gagne, V. Capp); 1 at St. George Island SP 11 Oct (J. Cavanagh).

WARBLING VIREO: 1 on Bronco Road (*Charlotte*) 17 Oct (D. Peacock).

PHILADELPHIA VIREO: 1 at Kiwanis Park (*Charlotte*) 7 Sept (D. Peacock et al.); 1 at Dunedin Hammock Park 4 Oct (J. McGinity); 1 at Fort De Soto Park 7 Oct (E. Plage); 1 at St. George Island SP 7 Oct (J. Murphy); 1 at Paynes Prairie Preserve SP 16 Oct (J. Killian); 1 at Fort Zachary Taylor Historic SP 18 and 21 Oct (C. Goodrich).

BLACK-WHISKERED VIREO: 1 at Fort De Soto Park 13 Aug (E. Plage); 1 at Shell Island Road (*Collier*) 21 Aug (K. Laakkonen).

BLUE JAY: 1 at Honeymoon Island SP 30 Sept (E. Kwater).

NORTHERN ROUGH-WINGED SWALLOW: 1 at Fort De Soto Park 27-28 Nov (E. Plage, W. Tallyn).

CLIFF SWALLOW: 2 at Central Winds Park, Winter Springs (*Seminole*) 7 Aug (S. Simmons).

CAVE SWALLOW: 1 at Auton/Singletary Roads (*Pasco*) 4 Sep (D. Gagne, S. Reardon); 1-8 at Fort De Soto Park 24-28 Nov (R. Smith, +S. Tavaglione et al.).

BARN SWALLOW: Up to 5 at Fort De Soto Park 25 Nov (B. Perry).

BROWN CREEPER: 1 was very early at Miccosukee 7 Sep (B. Phelan).

WINTER WREN: 1 at O'Leno SP (*Alachua*) 21 Oct (J. Hintermister, P. Laipis).

GOLDEN-CROWNED KINGLET: 2 at St. George Island SP 18 Oct (S. Killeen); 1 at Cross Creek (*Alachua*) 31 Oct (D. Segal, D. Peppar, F. Lee); 1 at Tillie K. Fowler Regional Park (*Duval*) 11 Nov (B. Richter); 1 at Honeymoon Island SP 15 Nov (J. McGinity).

*NORTHERN WHEATEAR: 1 at MM 73 Overseas Highway, Lower Matecumbe Key (*Monroe*) 27 Oct-6 November (S. Priestnall, +C. Sanchez, m. obs.); the species occurred at a nearby location during the same timeframe in 2014.

*MOUNTAIN BLUEBIRD: 1 at Oasis Visitor Center, Big Cypress National Preserve (*Collier*) 10-19 Nov (+C. Sanchez, m. obs.).

GRAY-CHEEKED THRUSH: 1 at Altamonte Springs (*Seminole*) 4 Nov (G. Bretz).

SWAINSON'S THRUSH: 1 was very early at Sawgrass Lake Park 1 Sep (M. Burns).

WOOD THRUSH: 1 at Altamonte Springs 2-4 Nov (G. Bretz).

AMERICAN ROBIN: 1 adult at Boyd Hill Nature Preserve 29 Aug-5 Sep (E. Plage, +S. Tavaglione et al.); 10 were there 1 Sep (C. Fisher).

GRAY CATBIRD: 1 at Fort De Soto Park 12 Sep (+T. Doebel).

AMERICAN PIPIT: 1 at Boca Chica Key (*Monroe*) where rare in lower Keys 14 Nov (C. Goodrich).

CEDAR WAXWING: 1 at Gainesville on 11 Nov (G. Parks); 80 at Micanopy (*Alachua*) on 27 Nov (D. Segal); 13 over Hacienda Village (*Pasco*) 29 Nov (D. Gagne).

OVENBIRD: **100** at Fort Zachary Taylor Historic SP 24 Oct (C. Goodrich).

NORTHERN WATERTHRUSH: 1 at Florida Botanical Gardens (*Pinellas*) 29 Nov (+P. Hosner).

GOLDEN-WINGED WARBLER: 1 at Dunedin Hammock 7 Sep (J. McGinity); 5 in *Alachua* 8-19 Sep (R. Rowan, M. Manetz et al.); 1 at Sawgrass Lake Park 9-10 Sep (P. Plage, J. Clayton); 1 at Sand Key Park 9 Sep (C. Yilmaz); 2 at Sawgrass Lake Park 13 Sep (J. Clayton et al.); 1 at Palm Harbor 13 Sep (J. Wells); 1 at Reddie Point Preserve 7 Oct (L. Greene); 1 at Sorrento (*Lake*) 15 Oct (C. Pierce).

BLUE-WINGED WARBLER: 14 reported in *Pinellas* with the earliest at Dunedin Hammock Park 23 Aug 2015 (+T. Kalbach); 1 at Fort De Soto Park 26 Aug (E. Plage); 2 at John Chesnut Park (*Pinellas*) 30 Aug (T. Mast, M. Vetricek); 1 at Reddie Point Preserve 7 Sept (D. Foster); 1 at Honeymoon Island SP 9 Sept (E. Kwater) and 2 there on 12 Sept (E. Kwater, T. Kalbach); 1 at Brandon (*Hillsborough*) 3 Oct (E. Kwater).

GOLDEN-WINGED WARBLER X BLUE-WINGED WARBLER: 1 "Brewster's" at Fort Zachary Taylor Historic SP 21 Oct (C. Goodrich); 1 "Lawrence's" 1 at Gainesville 24 Oct (T. Neal).

BLACK-AND-WHITE WARBLER: 12 at Sawgrass Lake Park 28 Aug-1 Sep (J. Clayton).

PROTHONOTARY WARBLER: 1 at Possum Branch Preserve 25 Oct (J. Wells) provided a new late date for *Pinellas*.

SWAINSON'S WARBLER: 1 at Hathaway Park (*Charlotte*) 12 Aug (D. Peacock); 1 at Boyd Hill Nature Preserve 27-29 Aug (E. Haney, +D. Goodwin, m. obs.); 1 at Bonner Park (*Pinellas*) 13 Sep (S. Aversa); 1 at Merritt Island NWR 20 Sept (E. Kwater).

TENNESSEE WARBLER: 3 at Buschman Park, Port Orange (*Volusia*) 13 Sep (T. Yeatts); 27 at Fort De Soto Park 13 Oct (E. Plage).

NASHVILLE WARBLER: 1 at Honeymoon Island SP 22 Sep (+M. Vetricek); 1 at Fort De Soto Park 30 Sep (+D. Sauvageau); 1 at St. George Island SP 1 Oct (J. Cavanagh); 1 at Honeymoon Island SP 4 Oct (E. Kwater, T. Kalbach); 1 at Fort De Soto Park 6-7 Oct (+E. Plage et al.); 1 at Honeymoon Island SP 10 Oct (T.Kalbach et al.); 1 at Reddie Point Preserve 18 Oct (M. Chappell); 1 at Lake Seminole Park 20 Nov (+E. Plage); up to 2 at Gainesville 21 Nov-EOS (T. Anderson).

*MACGILLIVRAY'S WARBLER: 1 at Fort Zachary Taylor Historic SP 21 Oct (C. Goodrich); 1 at Boca Chica Key 14 Nov (C. Goodrich).

MACGILLIVRAY'S/MOURNING WARBLER: 1 hatching-year banded at Cape Florida Banding Station at Bill Baggs Cape Florida SP (+M. Davis et al.); information sent to FOSRC.

MOURNING WARBLER: 1 at Fort Zachary Taylor Historic SP 19 Oct (C. Goodrich).

KENTUCKY WARBLER: 1 at Sawgrass Lake Park 3 Aug (+S. Tavaglione et al.); 1 at Fort De Soto Park 4 Aug (E. Plage); 2 at Sawgrass Lake Park 4 Aug (J. Clayton); 1 at Central Winds Park 15 Sep (S. Simmons).

AMERICAN REDSTART: 1 at Dunedin Hammock 4 Aug (S. Aversa).

CAPE MAY WARBLER: At least 10 at Buschman Park 13 Sep (T. Yeatts); 1 adult male at Fort De Soto Park 16-18 Sep (R. Smith et al.); 1 immature at Fort De Soto Park 7 Oct (+J. Gibson, J. Clayton); 1 at Gainesville 10 Oct (S. Ewing); 1 elsewhere at Gainesville 13 Oct (A. Kratter); 2 at Gulf Breeze 12 Nov (B. Duncan) were the latest locally by ten days.

CERULEAN WARBLER: 8 in *Escambia*, *Santa Rosa* and *Okaloosa* 1 Aug-12 Sep (m. obs.); 1 at Sawgrass Lake Park 2-3 Aug provided *Pinellas* with its earliest fall record (+S. Tavaglione, J. Clayton); 1 at Dunedin Hammock Park 2 Aug (T. Kalbach); 2 at Sawgrass Lake Park 4 Aug (S. Tavaglione); 1 on Fort George Island (*Duval*) 8 Aug (K. Dailey, M. Dailey); 6 at various *Pinellas* sites 28 Aug (fide R. Smith); 1 female at Sawgrass Lake Park 12 Sep (R. Harrod); 5 in *Alachua* 27 Aug-13 Sep (A. Kratter, S. Ewing et al.); 1 female at Honeymoon Island SP 12 Sept (E. Kwater, T. Kalbach); 1 at Dunedin Hammock Park 13 Sep (T. Kalbach).

MAGNOLIA WARBLER: 1 was very late at Florida Botanical Gardens 28 Nov (T. Young).

BAY-BREASTED WARBLER: 1 was early at Sawgrass Lake Park 27 Sep (S. Tavaglione); 1 at Honeymoon Island SP 3 and 19 Oct (E. Kwater); 1 at Reddie Point Preserve 15 Oct (D. Foster); 1 at Brandon 30 Oct (E. Kwater).

BLACKBURNIAN WARBLER: 3 at north St. Petersburg 13 Aug (+J. Clayton); 12 at Sawgrass Lake Park 28 Aug (J. Clayton); 6 at A. L. Anderson Park 29 Aug (+T. Mast); 15 at Honeymoon Island SP 12 Sept (E. Kwater, T. Kalbach); 20+ at Buschman Park 13 Sep (T. Yeatts); 40 at Sawgrass Lake Park 13 Sep (E. Haney, M. Burns et al.); 1 female at Altamonte Springs 2 Nov (G. Bretz).

YELLOW WARBLER: 1 with "very greenish plumage" at Boca Chica Key 24 Nov (C. Goodrich).

CHESTNUT-SIDED WARBLER: 1 was late at Sawgrass Lake Park 2 Nov (+J. Clayton).

BLACKPOLL WARBLER: 1 at Paynes Prairie Preserve SP 15 Oct (M. O'Sullivan, J. Hintermister); 1 in Gulf Breeze 3 Nov (L. Duncan); 1 at Ortega docks (*Duval*) 13 Nov (G. Williams).

BLACK-THROATED BLUE WARBLER: **400** at Fort Zachary Taylor Historic SP 24 Oct (C. Goodrich).

PALM WARBLER: 1 in *Pinellas* 15 Sep (T. Mast).

TOWNSEND'S WARBLER: 1 male at Spanish River Park (*Palm Beach*) 20 Sep (+L. Matheus).

BLACK-THROATED GREEN WARBLER: 1 female at Altamonte Springs 25 Oct-2 Nov (G. Bretz).

CANADA WARBLER: 1 at Gainesville 8 Sep (R. Robinson); 1 at Hathaway Park 9 Sept (D. Peacock); 1 at Cedar Key (*Levy*) 13 Sep (S. Flamand, J. Killian).

WILSON'S WARBLER: 1 male at Fort De Soto Park 24 Sep (E. Plage); 1 at Paynes Prairie Preserve SP 3-5 Oct (M. O'Sullivan, M. Manetz et al.); 1 at Reddie Point Preserve 18-24 Oct (A. Higginbotham); 1 in Eagle Harbor (*Clay*) 22 Oct (G. Williams); 1 at Paynes Prairie Preserve SP 14 Nov (A. Zions).

YELLOW-BREASTED CHAT: 1 was late at St. Marks NWR 30 Nov (+D. Bryan).

SILVER-BEAKED TANAGER: 1 at Boyd Hill Nature Preserve 29-30 Aug (+J. Clayton et al.).

WESTERN SPINDALIS: 1 male at Markham Park (*Broward*) 26 Nov-EOS (+D. Hall, m. obs.).

CLAY-COLORED SPARROW: 1 at a n St. Petersburg residence 20-21 Sep (+J. Clayton, m. obs.); 1 at a different n St. Petersburg residence 22 Sep (+J. Gibson); 1 at Honeymoon Island SP 26 Sep (+T. Kalbach); 2 at Honeymoon Island SP 10 Oct (+T. Kalbach et al.);

1 at Fort De Soto Park 12 Oct (+P. Brannon); 3 at Fort Pickens 15 Oct (B. Duncan, L. Duncan).

Field Sparrow: 1 at Brooker Creek Preserve 28 Nov (+T. Mast).

Vesper Sparrow: 1 at Hague 21 Oct (S. Ewing, D. Ewing).

Lark Sparrow: 1 at South Dade agricultural fields (*Miami-Dade*) 22 Aug (A. Harper); 1 at Bald Point SP 6 Sep (+J. Murphy); 1 at Honeymoon Island SP 19-21 Sep (S. Reardon, +M. Vetricek); 1 at Nine Mile Pond, Everglades NP 9 Oct (B. Showler); 1 at Eastport Wastelands (*Duval*) 15 Nov-EOS (+M. Chappell).

Savannah Sparrow: 1 at Paynes Prairie Preserve SP 2 Oct (G. Parks).

Grasshopper Sparrow: 1 at Watermelon Pond Wildlife and Environmental Area (*Alachua*) 23 Oct (R. Rowan).

Le Conte's Sparrow: 1 at Eastport Wastelands 21 Nov (K. Dailey, M. Dailey).

Seaside Sparrow: Rare for *Pinellas* was 1 at Honeymoon Island SP 20 Nov (E. Plage).

Song Sparrow: 1 at Possum Branch Preserve 17 Oct-EOS (+J. Clayton, J. Wells et al.) provided the earliest fall record for *Pinellas*; 1 at Sweetwater Wetlands Park 23 Oct (D. Rohan).

Lincoln's Sparrow: 1 at Paynes Prairie Preserve SP 11 Oct (F. Goodwin); 1 in Gulf Breeze 12-14 Oct (B. Duncan, L. Duncan); 1 at Veteran's Memorial Park (*Escambia*) 18 Oct (M. Swan); 1 at Lake Seminole Park 31 Oct (+S. Tavaglione).

Swamp Sparrow: 1 at Paynes Prairie Preserve SP 10 Oct (L. Davis).

White-crowned Sparrow: 1 at Paynes Prairie Preserve SP 17 Oct (M. Bruce).

Dark-eyed Junco: 1 in *Clay* 16 Nov (D. Cusick).

Summer Tanager: 1 at Brooker Creek Preserve 15 Nov (+M. James, P. Brannon); 1 male at north St. Petersburg 19 Nov (J. Clayton); 1 in Gulf Breeze 26 Nov (B. Duncan, S. Duncan).

Scarlet Tanager: 13 at Honeymoon Island SP 7 Oct (E. Kwater, S. Reardon).

Western Tanager: 1 adult female at A. D. Barnes Park 18 Sep (J. Barros et al.); 1 at Fort Pickens 10-11 Oct (B. Callaway, D. Stangeland); 1 at Mangonia Park (*Palm Beach*) 17 Nov (C. Weber).

Rose-breasted Grosbeak: 1 at Honeymoon Island SP 3 Oct (T. Kalbach); 1 was late at Lake Seminole Park 1 Nov (+J. Clayton); 1 male at Altamonte Springs 2 Nov (G. Bretz).

Blue Grosbeak: 2 at Hague 27 Nov-EOS (J. Hintermister et al.).

Painted Bunting: 1 immature female at Spring Lake Hills (*Seminole*) 12 Aug (P. Hueber); 3 (2 adult males, 1 female-plumaged) at Lake Apopka NSRA 16 Aug (P. Hueber, K. Hamblett).

Dickcissel: 1 at Reddie Point Preserve 7 Sept (K. Dailey, M. Dailey); 1 pre-dawn at Gainesville 14 Sep (M. Manetz); 1 at Hague 28 Nov (A. Kratter, A. Zions).

Bobolink: 2 at Lake Apopka NSRA 15 Aug (P. Hueber, K. Hamblett).

Eastern Meadowlark: 1 at Sawgrass Lake Park 28 Aug (J. Clayton).

Yellow-headed Blackbird: 1 at Eglin AFB (*Okaloosa*) 27 Aug (M. Swan); 1 at Fort Pickens 12 Sep (B. Duncan, L. Duncan et al.); 1 at Gainesville 2 Oct (T. Kent); 1 at Sweetwater Wetlands Park 6 Nov (J. Mays); 1 at Seven Springs (*Pasco*) 19 Nov (fide K. Tracey); 1 at Hague 27-28 Nov (J. Hintermister, M. O'Sullivan, A. Zions).

Brewer's Blackbird: 1 female at Bayport (*Hernando*) 5 Nov-EOS (J. McKay), presumably the same bird wintering for the 5th year.

Shiny Cowbird: 1 male in north St. Petersburg 9-19 Aug (+J. Clayton).

Bronzed Cowbird: 3 at Cedar Key (*Levy*) 20 Aug (J. Dinsmore); 1 at Hague 30 Oct-15 Nov (S. Goodman et al.); 1 at a Ruskin (*Hillsborough*) residence 21 Nov (fide R. Smith).

Orchard Oriole: 2 at Fort De Soto Park 13 Aug (E. Plage); 1 female at Clearwater (*Pinellas*) 16 Aug (T. Kalbach).

Baltimore Oriole: 1 was early at Honeymoon Island SP 28 Aug (E. Kwater, D. Gagne).

Pine Siskin: 1 calling overhead at Hacienda Village 21 Nov (D. Gagne); 2 at Bald Point SP 28 Nov (J. Murphy).

AMERICAN GOLDFINCH: 2 at High Springs 26-30 Aug (D. Knisely); 1 at Gainesville 29 Aug (R. Robinson).
YELLOW-CROWNED BISHOP: 1 female on private property in mid-*Pinellas* 26 Sep (+J. Fisher).

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STATUS AND DISTRIBUTION IN FLORIDA OF TROPICAL KINGBIRD (*Tyrannus melancholicus*) AND COUCH'S KINGBIRD (*Tyrannus couchii*)

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Authors' note, 11 July 2016: the female Tropical Kingbird at St. Armands Key, Sarasota has returned (for at least her fourth year) and is brooding nestlings as of this date.

Abstract.—In 1983, the American Ornithologists' Union recognized Couch's Kingbird (*Tyrannus couchii*) as a species distinct from Tropical Kingbird (*T. melancholicus*) based on their sympatric breeding distributions. The two species are virtually identical and generally cannot be distinguished in the field unless vocalizations are heard. From 1979 through mid-2016, 56 records of Tropical/Couch's kingbirds were obtained in Florida, including 14 records that can be specifically identified as Tropical Kingbirds based on specimen measurements, recorded vocalizations, or published sonograms. In contrast, no verifiable evidence exists to support the presence of Couch's Kingbird, although we consider the descriptions of two vocalizing individuals to be credible. Records of Tropical/Couch's kingbirds in Florida have increased dramatically by decade, with the increase most pronounced at three well-birded sites. Successful breeding in Sarasota County in four successive years (2013-2016), presumably between the same female Tropical Kingbird and one or more male Gray Kingbirds (*T. dominicensis*), furnishes the first known breeding records of Tropical Kingbird east of the Mississippi River, as well as the first known hybridization events in Gray Kingbird anywhere. While the available evidence

suggests that most or all records of Tropical/Couch's kingbirds in Florida refer to Tropical Kingbird, the occurrence of Couch's Kingbird should not be summarily dismissed.

In 1983, the American Ornithologists' Union (AOU 1983) recognized Couch's Kingbird (*Tyrannus couchii*) as a species distinct from Tropical Kingbird (*T. melancholicus*; Figs. 1-2) based on their sympatric breeding distributions. The two species are best distinguished by differences in vocalizations and measurements (Traylor 1979). Couch's Kingbird is endemic to lowlands of extreme southern Texas, eastern Mexico, Guatemala, and Belize (Brush 1999). Tropical Kingbird is widespread in the Neotropics from southeastern Arizona and southern Texas to southern South America, and on Trinidad and Tobago (Stouffer and Chesser 1998). Both species have occurred in the United States outside their breeding ranges, with records of Couch's Kingbird in California, Arizona, New Mexico, Louisiana, and New York, and with records of Tropical Kingbird along the Pacific coast north to British Columbia and along the Atlantic coast north to Maine (Mlodinow 1998, Stouffer and Chesser 1998, S. G. Mlodinow in litt.). The first record of this species-pair in Florida was of a silent individual photographed at Hypoluxo Island, Palm Beach County, 12-15 May 1979 (Ayers et al. 1980). The occurrence of Tropical Kingbird, including four breeding records (e.g., Wilson et al. 2015, this paper), is supported by considerable verifiable evidence, whereas the occurrence of Couch's Kingbird in the state remains unproven. Here we summarize the status and distribution of Tropical Kingbird and Couch's Kingbird in Florida based largely on verifiable records.

Methods

We define a record as an observation supported by archived, extant verifiable evidence such as a photograph, published sonogram, audio or video recording, or specimen. Sightings that lack such evidence are referred to as reports. In this paper, we concentrate nearly exclusively on records of kingbirds (Table 1). We compiled kingbird observations from BP's personal archive (BPA catalog numbers), files of the Florida Ornithological Society Records Committee (FOSRC catalog numbers), seasonal bird reports published by the FOS Field Observations Committee (through the Fall 2014 report), and three online sources: eBird (Sullivan et al. 2009), the Miami Bird Board <tropicalaudubon.org/tasboard/tasbb.html>, and the BRDBRAIN listserver <listserv.admin.usf.edu/listserv/wa.exe?A0=BRDBRAIN>. Even though kingbirds with very large bills are probably safely assignable to Tropical Kingbird (P. Pyle in litt.), and adults of both species can occasionally be distinguished in the field from close examination of their primary formulae (Traylor 1979, Pyle 1997), we limit identification to the species level only when a specimen or a recording/sonogram of species-specific vocalizations exists. We use Greenlaw et al. (2014) for regional boundaries and for defining seasonality by months. Our cut-off date for including records was 31 May 2016.

Results

We compiled 56 records of Tropical/Couch's kingbirds in Florida between May 1979 and May 2016 (Table 1). Based on specimen measurements or on vocalizations captured in audio or video recordings or published as sonograms, 14 of these records can be assigned to Tropical Kingbirds. Another 15 individuals photographed were identified as Tropical Kingbirds based on vocalizations that were heard but that were not audio recorded. Two other individuals photographed were

Table 1. Records of Tropical/Couch's kingbirds in Florida (n = 56), arranged alphabetically by county and location. Fourteen records (25%) refer to Tropical Kingbirds based on specimen measurements, recorded vocalizations, or published sonogram. Other records are listed here as "Tropical Kingbird" (n = 15; 27%) or "Couch's Kingbird" (n = 2; 3%) if vocalizations were described but were not recorded, or as Tropical/Couch's kingbird for silent individuals (n = 25; 45%). Previously unpublished records were obtained from posts to the Miami Bird Board or eBird. Only a sample of archived evidence (BPA files) is provided for some records. FOSRC catalog numbers are provided for all records that were accepted by the committee; FOSRC ceased reviewing records of Tropical Kingbirds in August 2013 (Greenlaw 2015). Other abbreviations used are CBC = Christmas Bird Count, NERR = National Estuarine Research Reserve, NSRA = North Shore Restoration Area, NWR = National Wildlife Refuge, PSGHA = Public Small Game Hunting Area, WEA = Wildlife and Environmental Area, and WMA = Wildlife Management Area.

No.	Species	Date	County	Location	Evidence	Comments	Reference(s)
1	"Tropical Kingbird"	11 Oct 1999	Broward	Hugh Taylor Birch State Park	BPA 8727, W. George; FOSRC 2000-402	Calls heard; accepted by FOSRC.	Pranty 2000, Bowman 2004
2	Tropical/Couch's kingbird	29 Oct 2012	Broward	Water Conservation Area 3, S151	BPA 4645a-c, K. Donnelly; FOSRC 2012-919	Silent; accepted by FOSRC.	Pranty 2013b, Greenlaw 2015
3	Tropical Kingbird	1 Feb-3 Mar 1996	Broward/ Palm Beach	county line west of US-27	BPA 6114a-b, 21 Feb 1996, A. Smith; UCF 2082, 3 Mar 1996, B. H. Anderson	Specimen; first Florida record; misidentified in the field as Couch's Kingbird; no FOSRC review.	Anderson 1996, Pranty 1996, West 1996, Greenlaw et al. 2014
4	Tropical/Couch's kingbird	4 Jun 2013	Collier	Naples	BPA 7672a-b, M. Higgins; FOSRC 2013-965	Silent; accepted by FOSRC.	Ahern 2014a, Greenlaw 2015
5	"Tropical Kingbird"	7 Jan-10 Feb 2005	Franklin	Apalachicola	BPA 8743, [date?], R. Cassidy; FOSRC 2006-591	Video reportedly includes calls, but no calls are audible in the BPA segments; accepted by FOSRC.	Greenlaw and Kratter 2007

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No.	Species	Date	County	Location	Evidence	Comments	Reference(s)
6	Tropical/Couch's kingbird	27 Dec 2005-8 Jan 2006	Franklin	Apalachicola	BPA 3215a-b, 8 Jan 2006, fide S. McCool	Silent; no FOSRC review.	Pranty 2006b
7	Tropical Kingbird	9-10 Oct 2012	Franklin	Bald Point State Park	BPA 5012a-b, 9 Oct, J. Murphy; FOSRC 2012-915	Video includes calls; accepted by FOSRC.	Pranty 2013b; Greenlaw 2015
8	Tropical/Couch's kingbird	8 May 1999	Franklin	Dr. Julian G. Bruce St. George Island State Park	BPA 4260a-c, J. Cavanagh	Silent; no FOSRC review.	Pranty 1999b
9	Tropical Kingbird	15 Feb-6 Mar 2010	Hendry	Stormwater Treatment Area 5	BPA 2227, 6 Mar (listed as 15 Feb; Pranty 2010b:), B. & E. Marr; FOSRC 2010-811	Video includes calls; accepted by FOSRC.	Pranty 2010b, c; Kratter 2012a
10	"Tropical Kingbird"	29 Dec 2012-13 Apr 2013	Hendry	Stormwater Treatment Area 5	BPA 8698, 16 Feb 2013, D. Pavlik	Calls heard; no FOSRC review.	Pranty 2013c
11	"Tropical Kingbird"	29 Dec 2013-1 Feb 2014	Hendry	Stormwater Treatment Area 5	BPA 5756a-c, 29 Dec 2013, fide M. England	Calls heard; no FOSRC review.	Ahern 2014c
12	"Tropical Kingbird"	22 Nov 2014-28 Mar 2015	Hendry	Stormwater Treatment Area 5	BPA 8800a-b, 22 Nov 2014, B. Pickholz	Two birds; calls heard; no FOSRC review.	eBird, this paper

Table 1. (Continued) Records of Tropical/Couch's kingbirds in Florida (n = 56), arranged alphabetically by county and location. Fourteen records (25%) refer to Tropical Kingbirds based on specimen measurements, recorded vocalizations, or published sonogram. Other records are listed here as "Tropical Kingbird" (n = 15; 27%) or "Couch's Kingbird" (n = 2; 3%) if vocalizations were described but were not recorded, or as Tropical/Couch's kingbird for silent individuals (n = 25; 45%). Previously unpublished records were obtained from posts to the Miami Bird Board or eBird. Only a sample of archived evidence (BPA files) is provided for some records. FOSRC catalog numbers are provided for all records that were accepted by the committee; FOSRC ceased reviewing records of Tropical Kingbirds in August 2013 (Greenlaw 2015). Other abbreviations used are CBC = Christmas Bird Count, NERR = National Estuarine Research Reserve, NSRA = North Shore Restoration Area, NWR = National Wildlife Refuge, PSGHA = Public Small Game Hunting Area, WEA = Wildlife and Environmental Area, and WMA = Wildlife Management Area.

No.	Species	Date	County	Location	Evidence	Comments	Reference(s)
13	"Tropical Kingbird"	14 Nov 2015-16 Apr 2016	Hendry	Stormwater Treatment Area 5	BPA 8800a-b, 22 Nov 2014, B. Pickholz	Two (possibly three) birds; calls heard; no FOSRC review.	eBird, this paper
14	"Tropical Kingbird"	4-10 Jun 2011	Hillsborough	Cockroach Bay	BPA 1321a-d, 5 Jun 2011, B. Pranty; FOSRC 2011-856	Calls heard; accepted by FOSRC.	Pranty 2012a, Kratter 2012b
15	Tropical Kingbird	18 Oct 1999	Miami-Dade	Coral Gables	BPA 8760, M. Wheeler; FOSRC 2000-416	Video includes calls; accepted by FOSRC.	Pranty 2000, Bowman 2000
16	Tropical/Couch's kingbird	8 May 2007	Miami-Dade	Everglades NP, Mahogany Hammock	BPA 8704, E. Leite; FOSRC 2007-640	Silent; accepted by FOSRC.	Kratter 2008:100
17	"Tropical Kingbird"	4-13 Apr 2013	Miami-Dade	Everglades and Francis S. Taylor WMA	BPA 8711a-c, 7 Apr 2013, J. Bouton; FOSRC 2013-964	Calls heard; accepted by FOSRC.	Greenlaw 2015
18	Tropical/Couch's kingbird	14-15 Oct 2011	Miami-Dade	Frog Pond WMA, Aerojet Road	BPA 2352, D. Irving	Silent; no FOSRC review.	Pranty 2012b
19	Tropical Kingbird	7 Nov 2012-2 Apr 2013	Miami-Dade	Frog Pond WMA, Aerojet Road	BPA 8723, 7 Nov 2012, L. Manfredi; FOSRC 2013-963	Video includes calls; accepted by FOSRC.	Pranty 2013a, b, c; Greenlaw 2015

Table 1. (Continued) Records of Tropical/Couch's kingbirds in Florida (n = 56), arranged alphabetically by county and location. Fourteen records (25%) refer to Tropical Kingbirds based on specimen measurements, recorded vocalizations, or published sonogram. Other records are listed here as "Tropical Kingbird" (n = 15; 27%) or "Couch's Kingbird" (n = 2; 3%) if vocalizations were described but were not recorded, or as Tropical/Couch's kingbird for silent individuals (n = 25; 45%). Previously unpublished records were obtained from posts to the Miami Bird Board or eBird. Only a sample of archived evidence (BPA files) is provided for some records. FOSRC catalog numbers are provided for all records that were accepted by the committee; FOSRC ceased reviewing records of Tropical Kingbirds in August 2013 (Greenlaw 2015). Other abbreviations used are CBC = Christmas Bird Count, NERR = National Estuarine Research Reserve, NSRA = North Shore Restoration Area, NWR = National Wildlife Refuge, PSGHA = Public Small Game Hunting Area, WEA = Wildlife and Environmental Area, and WMA = Wildlife Management Area.

No.	Species	Date	County	Location	Evidence	Comments	Reference(s)
20	Tropical Kingbird	13 Nov 2014-8 Mar 2015	Miami-Dade	Frog Pond/L-31 N Transition Lands property	BPA 8715, 15 Nov 2014, M. Vasi	Video includes calls; no FOSRC review.	Ahern 2015b, this paper
21	Tropical Kingbird	2-19 Mar 2016	Miami-Dade	Frog Pond/L-31 N Transition Lands property	BPA 8887, 2 Mar 2016, S, Runyon.	Calls heard; no FOSRC review.	eBird, this paper
22	Tropical Kingbird	2 Nov 2008-10 Apr 2009	Miami-Dade	Homestead, "Dump Marsh"	BPA 3384, 2 Nov 2008, L. Manfredi; FOSRC 2008-704	Bird 1; audio includes calls; accepted by FOSRC.	Pranty 2009b, c, d; Kratter 2010b
23	"Tropical Kingbird"	8-15 Nov 2008	Miami-Dade	Homestead, "Dump Marsh"	BPA 8720 (both birds together), 9 Nov 2008, J. Patterson; FOSRC 2008-705	Bird 2; calls heard; accepted by FOSRC.	Pranty 2009b, Kratter 2010b
24	"Tropical Kingbird"	18 Jul 2009	Miami-Dade	Homestead, SW 112th Avenue and SW 316th Street	BPA 3064a-b, T. Mitchell; FOSRC 2009-763	Calls heard; accepted by FOSRC.	Pranty 2010a, Kratter 2010b
25	Tropical/Couch's kingbird	11 Mar 2011	Miami-Dade	Homestead, west end of SW 232nd Street	BPA 6933a-b, B. Roberts	Silent; no FOSRC review.	This paper

Table 1. (Continued) Records of Tropical/Couch's kingbirds in Florida (n = 56), arranged alphabetically by county and location. Fourteen records (25%) refer to Tropical Kingbirds based on specimen measurements, recorded vocalizations, or published sonogram. Other records are listed here as "Tropical Kingbird" (n = 15; 27%) or "Couch's Kingbird" (n = 2; 3%) if vocalizations were described but were not recorded, or as Tropical/Couch's kingbird for silent individuals (n = 25; 45%). Previously unpublished records were obtained from posts to the Miami Bird Board or eBird. Only a sample of archived evidence (BPA files) is provided for some records. FOSRC catalog numbers are provided for all records that were accepted by the committee; FOSRC ceased reviewing records of Tropical Kingbirds in August 2013 (Greenlaw 2015). Other abbreviations used are CBC = Christmas Bird Count, NERR = National Estuarine Research Reserve, NSRA = North Shore Restoration Area, NWR = National Wildlife Refuge, PSGHA = Public Small Game Hunting Area, WEA = Wildlife and Environmental Area, and WMA = Wildlife Management Area.

No.	Species	Date	County	Location	Evidence	Comments	Reference(s)
26	"Tropical Kingbird"	18 Nov 2012-14 Mar 2013	Miami-Dade	Rocky Glades PSGHA	BPA 8702, 18 Nov 2012, C. Sanchez; FOSRC 2013-966	Calls heard; accepted by FOSRC as Tropical/Couch's Kingbird; Greenlaw (2015) did not mention calls and listed the date solely as 22 Nov 2012.	Pranty 2013b, c, d; Greenlaw 2015
27	Tropical/Couch's kingbird	22 Dec 2013	Miami-Dade	US-41, 2.0 km west of Krome Avenue	BPA 7603a-c, D. Bernstein	silent; no FOSRC review.	This paper
28	Tropical/Couch's kingbird	22 Nov 2014	Miami-Dade	US-41, 2.1 km west of Krome Avenue	BPA 8726, L. Manfredi	silent; no FOSRC review.	This paper
29	"Tropical Kingbird"	13 Oct 2010	Miami-Dade	Virginia Key	BPA 1368, R. Diaz; FOSRC 2010-821	Calls heard; accepted by FOSRC.	Pranty 2011a, Kratter 2012b
30	Tropical/Couch's kingbird	12 Nov 2003-28 Apr 2004	Orange	Lake Apopka NSRA	BPA 1369a-b, 17 Nov 2003, J. Peterson	Silent; no FOSRC review.	Pranty 2004a, b, c
31	Tropical/Couch's kingbird	19-20 Nov 2015	Orange	Lake Apopka NSRA	BPA 8889, 20 Nov 2015, J. Stefancic	Silent; no FOSRC review	eBird

Table 1. (Continued) Records of Tropical/Couch's kingbirds in Florida (*n* = 56), arranged alphabetically by county and location. Fourteen records (25%) refer to Tropical Kingbirds based on specimen measurements, recorded vocalizations, or published sonogram. Other records are listed here as "Tropical Kingbird" (*n* = 15; 27%) or "Couch's Kingbird" (*n* = 2; 3%) if vocalizations were described but were not recorded, or as Tropical/Couch's kingbird for silent individuals (*n* = 25; 45%). Previously unpublished records were obtained from posts to the Miami Bird Board or eBird. Only a sample of archived evidence (BPA files) is provided for some records. FOSRC catalog numbers are provided for all records that were accepted by the committee; FOSRC ceased reviewing records of Tropical Kingbirds in August 2013 (Greenlaw 2015). Other abbreviations used are CBC = Christmas Bird Count, NERR = National Estuarine Research Reserve, NSRA = North Shore Restoration Area, NWR = National Wildlife Refuge, PSGHA = Public Small Game Hunting Area, WEA = Wildlife and Environmental Area, and WMA = Wildlife Management Area.

No.	Species	Date	County	Location	Evidence	Comments	Reference(s)
32	Tropical/Couch's kingbird	30 Dec 2007	Osceola	Kissimmee Valley CBC circle	BPA 5277, L. Rosen	Silent; no FOSRC review.	Pranty 2008
33	"Couch's Kingbird"	17-21 Dec 1985	Palm Beach	Arthur R. Marshall Loxahatchee NWR	FOSRC 1986-092, ? Dec 1986, H. Langridge.	Calls heard, accepted by FOSRC.	Dowling 1989
34	Tropical/Couch's kingbird	9-14 Mar 2013	Palm Beach	Belle Glade Marina	BPA 6997a-b, 9 Mar 2013, B. Hope	Silent; no FOSRC review.	eBird, this paper
35	Tropical/Couch's kingbird	10-31 Jan 2016	Palm Beach	Belle Glade Marina	BPA 8891a-b, 16 Jan 2016, M. Berney.	Silent; no FOSRC review.	eBird, this paper
36	Tropical/Couch's kingbird	12 May 1979	Palm Beach	Hypoluxo Island	BPA 8750, B. H. Atherton	Silent; first Florida record; no FOSRC review.	Ayers et al. 1980
37	Tropical/Couch's kingbird	21 Sep 2014	Palm Beach	Lake Worth, Bryant Park	BPA 8650a-b, C. Callaghan	Silent; no FOSRC review.	This paper
38	Tropical/Couch's kingbird	15 Jan 2013	Palm Beach	Stormwater Treatment Area 1E	BPA 8709a-b, G. Kent	Silent; no FOSRC review.	This paper
39	Tropical Kingbird	9-12 May 1998	Pinellas	Fort De Soto Park	BPA 4265a-c, 12 May 1998, K. Tracey	Sonogram of calls published; no FOSRC review.	Pranty 1998, Snyder and Hopkins 2000

Table 1. (Continued) Records of Tropical/Couch's kingbirds in Florida (n = 56), arranged alphabetically by county and location. Fourteen records (25%) refer to Tropical Kingbirds based on specimen measurements, recorded vocalizations, or published sonogram. Other records are listed here as "Tropical Kingbird" (n = 15; 27%) or "Couch's Kingbird" (n = 2; 3%) if vocalizations were described but were not recorded, or as Tropical/Couch's kingbird for silent individuals (n = 25; 45%). Previously unpublished records were obtained from posts to the Miami Bird Board or eBird. Only a sample of archived evidence (BPA files) is provided for some records. FOSRC catalog numbers are provided for all records that were accepted by the committee; FOSRC ceased reviewing records of Tropical Kingbirds in August 2013 (Greenlaw 2015). Other abbreviations used are CBC = Christmas Bird Count, NERR = National Estuarine Research Reserve, NSRA = North Shore Restoration Area, NWR = National Wildlife Refuge, PSGHA = Public Small Game Hunting Area, WEA = Wildlife and Environmental Area, and WMA = Wildlife Management Area.

No.	Species	Date	County	Location	Evidence	Comments	Reference(s)
40	Tropical/Couch's kingbird	18 Aug 2005	Pinellas	Fort De Soto Park	BPA 3216a-c, L. Atherton	Silent; no FOSRC review.	Pranty 2006a
41	"Tropical Kingbird"	28 Sep 2007	Pinellas	Fort De Soto Park	BPA 8707a-b, L. Atherton; FOSRC 2008-658	Calls heard; accepted by FOSRC; Kratter (2010a) listed date as 29 Sep 2007.	Kratter 2010a
42	Tropical/Couch's kingbird	16 Jul 2008	Pinellas	Fort De Soto Park	BPA 8708a-b, L. Atherton; FOSRC 2008-693	Silent; accepted by FOSRC.	Pranty 2009a, Kratter 2010a
43	Tropical/Couch's kingbird	17 Apr 2011	Pinellas	Fort De Soto Park	BPA 2679a-c, J. Daly; FOSRC 2011-849	Silent; accepted by FOSRC; Kratter (2012b:91) listed date as 16 Apr 2011.	Pranty 2011b, Kratter 2012b
44	Tropical/Couch's kingbird	17 Aug 2014	Pinellas	Fort De Soto Park	BPA 8661, N. & T. Ploger	Silent; no FOSRC review.	eBird, this paper
45	Tropical/Couch's kingbird	25 May 2016	Pinellas	Fort De Soto Park	BPA 8909a-b, J. Clayton	Silent; no FOSRC review.	eBird, this paper
46	Tropical/Couch's kingbird	27 Jun 2012	St. Johns	Guana Tolomato Matanzas NERR	BPA 3376a-d, D. Reed; FOSRC 2012-899	Silent; accepted by FOSRC.	Pranty 2013a, Greenlaw 2014

Table 1. (Continued) Records of Tropical/Couch's kingbirds in Florida (*n* = 56), arranged alphabetically by county and location. Fourteen records (25%) refer to Tropical Kingbirds based on specimen measurements, recorded vocalizations, or published sonogram. Other records are listed here as "Tropical Kingbird" (*n* = 15; 27%) or "Couch's Kingbird" (*n* = 2; 3%) if vocalizations were described but were not recorded, or as Tropical/Couch's kingbird for silent individuals (*n* = 25; 45%). Previously unpublished records were obtained from posts to the Miami Bird Board or eBird. Only a sample of archived evidence (BPA files) is provided for some records. FOSRC catalog numbers are provided for all records that were accepted by the committee; FOSRC ceased reviewing records of Tropical Kingbirds in August 2013 (Greenlaw 2015). Other abbreviations used are CBC = Christmas Bird Count, NERR = National Estuarine Research Reserve, NSRA = North Shore Restoration Area, NWR = National Wildlife Refuge, PSGHA = Public Small Game Hunting Area, WEA = Wildlife and Environmental Area, and WMA = Wildlife Management Area.

No.	Species	Date	County	Location	Evidence	Comments	Reference(s)
47	"Tropical Kingbird"	16 May 2000	Santa Rosa	Gulf Breeze	BPA 8777, R. A. Duncan; FOSRC 2000-425	Calls heard; accepted by FOSRC.	Bowman 2004
48	Tropical Kingbird	3 May-28 Sep 2013	Sarasota	St. Armands Key	BPA 7106, 30 May 2013, V. Ponzo; BPA 7682a-c, 17 Jun 2013, C. Herzog; FOSRC 2013-955	Female; first breeding record; four nestlings fledged; audio includes call notes; accepted by FOSRC.	Ahern 2014a, b, 2015a; Pranty 2013d, Greenlaw 2015
49	Tropical Kingbird	23 Jun-14 Sep 2013	Sarasota	St. Armands Key	BPA 8790, 29 Jun 2013, C. Herzog; FOSRC 2013-968	Male; video includes dawn-song; accepted by FOSRC.	Ahern 2014a, b, Greenlaw 2015
50	Tropical Kingbird	24 Apr-30 Aug 2014	Sarasota	St. Armands Key	Fig. 1; BPA 8718c, 4 Jul 2014, C. Herzog; FOSRC 2014-998	Second breeding record; three nestlings fledged; video includes calls; accepted by FOSRC.	Ahern 2014d, 2015a, S. Wilson in litt.
51	Tropical Kingbird	20 Apr-14 Sep 2015	Sarasota	St. Armands Key	Fig. 2; BPA 8971a, 15 Jul 2015, C. Herzog	Third breeding record; two nestlings fledged; no FOSRC review.	S. Wilson in litt., this paper

Table 1. (Continued) Records of Tropical/Couch's kingbirds in Florida (n = 56), arranged alphabetically by county and location. Fourteen records (25%) refer to Tropical Kingbirds based on specimen measurements, recorded vocalizations, or published sonogram. Other records are listed here as "Tropical Kingbird" (n = 15; 27%) or "Couch's Kingbird" (n = 2; 3%) if vocalizations were described but were not recorded, or as Tropical/Couch's kingbird for silent individuals (n = 25; 45%). Previously unpublished records were obtained from posts to the Miami Bird Board or eBird. Only a sample of archived evidence (BPA files) is provided for some records. FOSRC catalog numbers are provided for all records that were accepted by the committee; FOSRC ceased reviewing records of Tropical Kingbirds in August 2013 (Greenlaw 2015). Other abbreviations used are CBC = Christmas Bird Count, NERR = National Estuarine Research Reserve, NSRA = North Shore Restoration Area, NWR = National Wildlife Refuge, PSGHA = Public Small Game Hunting Area, WEA = Wildlife and Environmental Area, and WMA = Wildlife Management Area.

No.	Species	Date	County	Location	Evidence	Comments	Reference(s)
52	Tropical Kingbird	24 Apr 2016 ff	Sarasota	St. Armands Key	BPA 8973, 8 May 2016, C. Herzog	Fourth breeding record; no FOSRC review.	S. Wilson in litt., this paper
53	Tropical/Couch's kingbird	14 Jun 2009	Taylor	Big Bend WMA, Hickory Mound	BPA 8703, S. Parker; FOSRC 2009-760	Silent; accepted by FOSRC.	Pranty 2010a, Kratter 2010b
54	"Couch's Kingbird"	26-27 Sep 1986	Wakulla	St. Marks NWR	BPA 8660, J. Cavanagh; FOSRC 1986-106	Calls heard; accepted by FOSRC.	Drennan 1987, Dowling 1989
55	"Tropical Kingbird"	11 Nov 2001-19 Apr 2002	Wakulla	St. Marks NWR	BPA 5431, 18 Nov 2001, E. Hawkins; FOSRC 2002-484	Calls heard; accepted by FOSRC.	Pranty 2002b, c, d; Bowman 2004
56	Tropical/Couch's kingbird	7 Dec 2002	Wakulla	St. Marks NWR	BPA 1814a-b, T. Curtis	Silent; "again wintered;" no FOSRC review.	Pranty 2003:68

identified as Couch's Kingbirds based on vocalizations that were heard but not recorded. The remaining 25 records refer to silent individuals that we do not assign to species (Table 1). Of these 56 records, 53 refer to single individuals and three refer to duos, in Hendry, Miami-Dade, and Sarasota counties (Table 1).

Records of Tropical/Couch's kingbirds in Florida have occurred by years as follows: 1979 (1), 1985 (1), 1986 (1), 1996 (1), 1998 (1), 1999 (3), 2000 (1), 2001 (1), 2002 (1), 2003 (1), 2005 (3), 2007 (3), 2008 (3), 2009 (2), 2010 (2), 2011 (4), 2012 (6), 2013 (8), 2014 (7), 2015 (3), and the first half of 2016 (3). Records have increased dramatically by decade (Figure 4), with one record during the 1970s, two during the 1980s, five during the 1990s, 15 during the 2000s, and 33 during 2010-mid-2016. Six records appear to represent kingbirds that wintered at the same location over two or more years (Table 1, records #5-6, 10-13, 18-19, 20-21, 27,-28, and 55-56). Four records (Table 1, #48, 50-52) refer to presumably the same female Tropical Kingbird that bred in Sarasota County during 2013-2016.

Geographically, Tropical/Couch's kingbirds have been reported statewide, but there is as yet no record from the Florida Keys (Table 1, Fig. 3). Kingbird records are strictly coastal in the Panhandle and the northern third of the peninsula; inland records are frequent only in the southern peninsular third. Except for one record in St. Johns County, there is no Florida record from along the Atlantic coast north of Palm Beach County (Fig. 3).

Tropical Kingbird records.—To date, 14 kingbirds in Florida can be identified specifically as Tropical Kingbirds based on specimen evidence, archived audio/video files, or published sonograms (Table 1). An additional 15 kingbirds photographed in the state have been identified as Tropical Kingbirds based on vocalizations heard. Although the first record of Tropical/Couch's kingbird in Florida was obtained in May 1979 at Hypoluxo Island, Palm Beach County (Ayers et al. 1980), it was not until nearly 17 years later that Tropical Kingbird was verified in the state. On 3 March 1996, Bruce Anderson salvaged a specimen along the Broward/Palm Beach county line (UCF 2082), providing the first Florida record (*contra* Greenlaw et al. 2014). Although this individual had been "identified" in the field as a Couch's Kingbird based on vocalizations reportedly heard (Pranty 1996, West 1996), mensural data proved it to be a Tropical Kingbird (Anderson 1996). Subsequently, 13 additional Tropical Kingbirds have been verified in Florida, all based on recorded vocalizations (e.g., Snyder and Hopkins 2000), and with four instances of confirmed breeding (below).

Breeding records.—Four Tropical Kingbird records in Florida represent instances of successful breeding, in each case apparently

representing a hybridization event between the same female Tropical Kingbird and one or more male Gray Kingbirds (*Tyrannus dominicensis*). These "extraordinary" (Greenlaw et al. 2014) events represent the first through fourth breeding records of Tropical Kingbird east of the Mississippi River (Stouffer and Chesser 1998, Greenlaw et al. 2014), along with the first known hybridization events anywhere involving Gray Kingbird (Smith and Jackson 2002). Wilson et al. (2015) document the first breeding record in Florida (the date for their Figure 2 should be 4 July 2013, C. Herzog, in litt.), while we summarize all four records.

On 3 May 2013, a Tropical Kingbird (Figs. 1-2) sexed as a female based on behavior, was discovered at St. Armands Key (also known as Lido Key; Wilson et al. 2015), Sarasota County; it remained through 28 September 2013 (Pranty 2013d; Ahern 2014a, b; Wilson et al. 2015). The kingbird built two nests in a live oak (*Quercus virginianus*) planted in a commercial parking lot; the first nest was discovered on 5 May, and the second was discovered "[a]round mid-month May" (Wilson et al. 2015:4). Four nestlings from the second nest were banded and two were bled for DNA analysis by Shane Pruett and Greg Schrott of Archbold Biological Station, on 22 June. The nestlings fledged on 27-28 June, with one juvenile remaining in the area until 1 August 2013 (Wilson et al. 2015). Genetic analyses of the nestlings' blood failed to determine the paternity of the brood due to insufficient reference material (Wilson et al. 2015). The male parent of the kingbird brood was thought to be a Gray Kingbird—at least one breeding pair was present nearby (Wilson et al. 2015). A second adult Tropical Kingbird, a male based on recorded dawn song, appeared on 23 June 2013 (Table 1) but was believed to be absent earlier. Although this male often accompanied the breeding female, it was never observed to feed the nestlings and was not considered to be the male parent of the brood (Wilson et al. 2015).

Juvenile Tropical and Couch's kingbirds resemble adults except for generally paler plumage (Stouffer and Chesser 1998, Brush 1999). Juvenile Gray Kingbirds resembles adults except for cinnamon-edged wing and upper tail coverts (Smith and Jackson 2002). The Gray Kingbird-like plumage of the Sarasota County fledgling kingbirds—wholly whitish below except for diffuse pale gray breast bands and pale yellow undertail coverts (e.g., Figs. 1-2)—was atypical for either *T. melancholicus* or *T. couchii* and was strongly supportive of a Tropical Kingbird x Gray Kingbird pairing. Furthermore, vocalizations heard from the fledglings in mid-July 2013 were described as "a subtly two-part *pe-cheer*' typical of Gray Kingbird" (Wilson et al. 2015:6).

The 2013 Sarasota County breeding event was repeated by presumably the same female in 2014 (Fig. 1; Wilson et al. 2015). The

female was first observed on 24 April and eventually built seven nests in three live oaks growing in the same parking lot that supported the 2013 nests. Three nestlings (of four eggs laid) fledged by 4 July 2014 (Fig. 1, Wilson et al. 2015). As no other Tropical Kingbird was observed at St. Armands Key during 2014, the male parent of the brood presumably was a Gray Kingbird; the fledglings again displayed wholly whitish underparts except for pale yellow undertail coverts (Fig. 1). The female was last seen on 30 August 2014 (S. Wilson in litt.).

In 2015, presumably the same female Tropical Kingbird returned to St. Armands Key and again bred. She was first seen on 20 April and built several nests in oaks growing in the same parking lot. A nest with three eggs was later depredated or deserted. A subsequent nest was successful, with two nestlings fledging by 15 July 2015 (Fig. 2). The female Tropical Kingbird remained to 14 September 2015 (S. Wilson in litt.).

Again, in 2016, presumably the same female Tropical Kingbird returned to St. Armands Key and built multiple nests. The first clutch of eggs was lost during Tropical Storm *Colin*, 6-7 June 2016, probably within days of hatching. A replacement clutch of four eggs hatched on 10 July 2016 (C. Herzog in litt., S. Wilson in litt.) and the nestlings are being brooded as this paper goes to press.

Couch's Kingbird reports.—At least five Couch's Kingbird reports (all of singles) exist from Florida (FOSRC 1984-285, Anderson 1996, Pranty 1996, West 1996, Pranty 2001) based on vocalizations heard. But diagnostic call-notes were described for only two of these reports, which we include here. The call-notes of a Couch's Kingbird at Arthur R. Marshall Loxahatchee National Wildlife Refuge, Palm Beach County, 17-21 December 1985 (FOSRC 1986-92, Ogden 1986, Dowling 1989), were described by Paul Sykes as, "3-syllable notes . . . *KIP-KIP-KIP* and . . . [a] longer shrilled *bree-r*, *bree-r* . . ." The calls of the second FOSRC-accepted Couch's Kingbird, at St. Marks National Wildlife Refuge, Wakulla County, on 26 September 1986 (FOSRC 1986-106), were described by Jim Cavanagh as ". . . single notes (*'pick'*) . . . repeated at rather short intervals but notes were not run together."

Discussion

The distribution in Florida of Tropical/Couch's kingbird records (Fig. 3, Table 1) suggests that birds originate from two regions. Kingbirds found in the southern third of the peninsula represent wintering individuals in 46% (14 of 30) of the cases. These individuals, presumably all or nearly all Tropical Kingbirds, may have originated in the southwestern U.S. and then migrated eastward along the Gulf coast during fall to spend the winter in the southern peninsula (e.g., Stedman

and Lohrer 1976). Such a pattern is shown by several other western-breeding species—including other tyrannids—such as Swainson's Hawk (*Buteo swainsoni*), Rufous Hummingbird (*Selasphorus rufus*), Ash-throated Flycatcher (*Myiarchus cinerascens*), Vermilion Flycatcher (*Pyrocephalus rubinus*), Western Kingbird (*Tyrannus verticalis*), and Scissor-tailed Flycatcher (*T. forficatus*). The wintering distribution of Tropical/Couch's kingbirds north of Lake Okeechobee is curious, with records along the eastern Panhandle coast and inland in the central peninsula, but nowhere else along the Gulf coast (Fig. 3). Winter temperatures in the peninsular interior north of the Orlando area may be too low to support wintering kingbirds—no kingbird roost has ever been found during winter at Paynes Prairie Preserve State Park, Alachua County, for example, despite the abundance of presumably ideal habitat (AWK pers. obs.).

Some Tropical Kingbirds in Florida could represent austral migrants (Chesser 1995, Jahn et al. 2010). Austral migrants, which breed in temperate South America and migrate north to winter in more tropical zones, may reach North America by overshooting their wintering grounds and arriving during the boreal spring, or by undergoing "reverse migration" after the austral winter and arriving during the boreal fall (Monroe and Barron 1980, Mlodinow and Irons 2008). Notable austral migrants that have been recorded in North America include Crowned Slaty Flycatcher (*Griseotyrannus aurantioatrocristatus*) in Louisiana in June 2008 (Conover and Myers 2009); Variegated Flycatchers (*Empidonomus variegatus*) in Maine in November 1977, Tennessee in May 1984, Ontario in October-November 1993, Washington in September 2008, and Florida in June 2013 and October-November 2015 (Mlodinow and Irons 2008, Pranty et al. 2008, Greenlaw 2015, BP & VP pers. obs.); and likely a good proportion of the Fork-tailed Flycatchers (*Tyrannus savanna*) that have reached North America, mostly during the boreal fall (McCaskie and Patten 1994). Field identification of austral migrant Tropical Kingbirds (subspecies *T. m. melancholicus* and *T. m. despotes*) would not be possible, as subspecies differ only slightly in color of the upperparts, whiteness of the throat, and measurements (Fitzpatrick 2004).

In contrast to their status in southern Florida, a substantial majority (77%; 21 of 27) of the Tropical/Couch's kingbird records from the Panhandle south through the central peninsula do not represent wintering individuals (Fig. 3); dates of these individuals range from 17 April to 20 November (Table 1). Kingbirds observed during April-May and September-October could represent individuals returning to or heading from their breeding grounds, respectively. However, kingbirds found in Florida during June-August do not fit a typical migration pattern for western-breeding species that winter in the state. Instead,

these individuals may better represent post-breeding or post-natal dispersers from the Yucatan Peninsula, Mexico, where both species are common permanent residents (Howell and Webb 1995). Excluding the breeding female Tropical Kingbird in Sarasota County, eight Tropical/Couch's kingbirds have been recorded in Florida during June, July, or August. Seven (87%) of these records—from Collier, Miami-Dade, Pinellas (three), St. Johns, and Taylor counties—represented single-day observations, suggesting continued movement of the birds. The eighth record referred to a Tropical Kingbird that spent at least seven days in Hillsborough County (Table 1). The open, human-altered habitats of the Hillsborough, Pinellas, and Sarasota county kingbird records (BP and VP pers. obs.) are a better match for Tropical Kingbird rather than for Couch's Kingbird, which prefers to feed inside tree canopies (Mlodinow 1998).

There has been a clear increase in vagrancy to Florida by Tropical/Couch's kingbirds over the past several decades (Fig. 4). Three sites that have been birded consistently since the 1960s or 1970s support this contention. Referring to a kingbird at Gulf Breeze, Santa Rosa County, on 25 June 2001—the sixth report from that location and with all but the first occurring since 1992—Bob Duncan (in Pranty 2002a:16) asked, "What's going on? This area has had almost daily coverage for over 30 years. [The kingbirds] could not possibly have been overlooked in the past." Similarly, the seven kingbird records from Fort De Soto Park, Pinellas County—arguably the most popular birding site in Florida since the mid-1970s—have all occurred since 1998 (Table 1, Smith 2011). Finally, the six kingbird records from in or near the eastern portion of Everglades National Park, Miami-Dade County, have all occurred since 2007 (Table 1). Whether this increase in kingbird vagrancy to Florida is the result of population increases in

Figure 1; opposite, top. Female Tropical Kingbird feeding fledglings at St. Armands Key, Sarasota County, Florida, 4 July 2014. Photograph by Claire Herzog. This female is presumed to represent the same individual that bred successfully at the same location in 2013 (see Wilson et al. 2015), 2015 (Figure 2), and 2016. During all four years, the male parent of the broods was presumed to be one or more Gray Kingbirds. Tropical Kingbird x Gray Kingbird hybridization seems to be confirmed by the plumage of the fledglings, which in each year was entirely whitish below, with diffuse pale gray breast bands and pale yellow undertail coverts.

Figure 2; opposite, bottom. Female Tropical Kingbird feeding fledglings at St. Armands Key, Sarasota County, Florida, 15 July 2015. Photograph by Claire Herzog. As in 2013 and 2014, the plumage of the fledglings suggests that the male parent was a Gray Kingbird. For photographs documenting the 2013 breeding record, see Wilson et al. (2014).

Figure 3. Distribution in Florida of Tropical/Couch's kingbird records, 1986-mid-2016 (n = 56). Fourteen records pertain to Tropical Kingbirds, 15 others to presumed Tropical Kingbirds, two to purported Couch's Kingbirds, and 25 were not assigned to species. Winter records (December-February; n = 19) are represented by stars, non-winter and non-breeding records (March-November; n = 33) are represented by circles, and the four successful Tropical Kingbird breeding records in Sarasota County are represented by the open circle.

the southwestern United States or Mexico, climatic changes associated with a warming planet, or other causes must for now remain conjectural.

The 56 archived records of Tropical/Couch's kingbirds in Florida (Table 1) represent a great increase from the 15 records of Tropical Kingbird cited by Greenlaw et al. (2014). The discrepancy between 15 records vs. 56 is explained as follows: 1) Greenlaw et al. (2014) is based largely on observations reviewed by FOSRC, which until recently reviewed only observations submitted directly to it. Also, FOSRC formed in 1981, and the committee has never reviewed records that

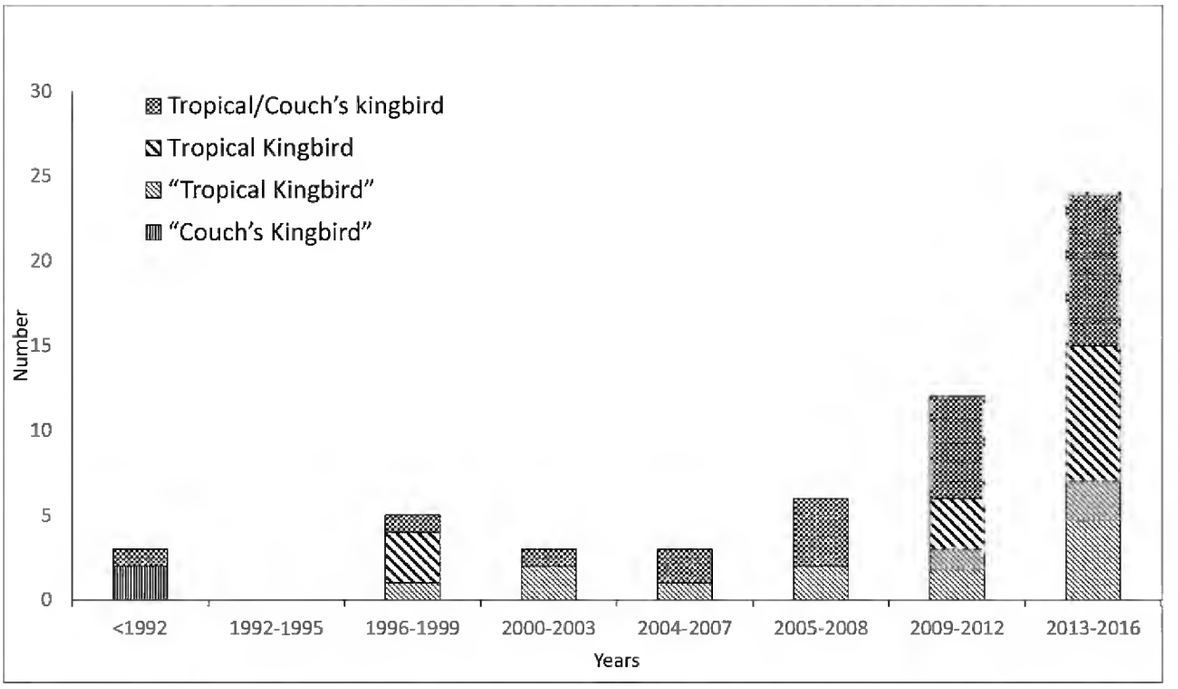

Figure 4. The number of Tropical/Couch's kingbird records in Florida, graphed by four-year periods. See Table 1 for the definition of the categories.

pre-date it. In contrast, we reviewed all records available to us. 2) Greenlaw et al. (2014) ended their review of records in December 2011, whereas our review extended an additional 53 months.

The status of Couch's Kingbird in Florida remains a conundrum given the lack of verifiable evidence. Five individuals have been reported in Florida (Dowling 1989; Pranty 1996, 2001; West 1996; Greenlaw et al. 2014, this paper) but archived descriptions are known for only two of these (see above). Given the relative proximity of Florida to Couch's Kingbird breeding grounds in southern Texas and the Yucatan Peninsula, Mexico (Brush 1999), coupled with known vagrancy of the species to Louisiana (three specimen records, Brush 1999; plus other, more recent records, e.g., Dittmann and Cardiff 2014), it seems logical to conclude that Couch's Kingbirds must stray to the state at least occasionally. Thus, observers should keep an open mind about the possibility of encountering Couch's Kingbird in Florida, and be prepared to obtain audio/video recordings of their vocalizations.

Additional records of Tropical/Couch's kingbirds in Florida beyond what we have archived (Table 1) likely exist. FOS Field Observations Committee reports state that kingbirds were photographed at Dry Tortugas National Park, Monroe County, on 5 May 1993 (Pranty 1993) and at St. Marks National Wildlife Refuge, Wakulla County, on 20 June 1998 (Pranty 1999a). In the former case, the photographs could no longer be located (J. Stevenson in litt.), and in the latter case, we were unable to locate the observer. Also, when one considers the

literally thousands of flickr accounts and Facebook pages that feature birds photographed in Florida, it seems inevitable that additional kingbird records must exist from the state. Ornithologists who study the status and distribution of birds today have to examine a much greater number of sources compared to even 20 years ago. As a result, it will be increasingly difficult to compile "complete" lists of rare birds documented from a particular region, especially one as large and as frequently birded as is Florida.

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Literature Cited

Ahern, B. 2014a. Field observations summer report: June-July 2013. Florida Field Naturalist 42:36-42.

Ahern, B. 2014b. Field observations fall report: August-November 2013. Florida Field Naturalist 42:73-88.

Ahern, B. 2014c. Field observations winter report: December 2013-February 2014. Florida Field Naturalist 42:124-137.

Ahern, B. 2014d. Field observations spring report: March-May 2014. Florida Field Naturalist 42:172-184.

Ahern, B. 2015a. Field observations summer report: June-July 2014. Florida Field Naturalist 43:37-44.

Ahern, B. 2015b. Field observations fall report: August-November 2014. Florida Field Naturalist 43:86-101.

AOU [American Ornithologists' Union]. 1983. Check-list of North American Birds, 6th Ed. American Ornithologists' Union, Washington, D.C.

Anderson, B. H. 1996. Twelfth report of the Florida Ornithological Society Records Committee: 1994 & 1995. Florida Field Naturalist 24:122-134.

Ayers, A. Y., P. W. Sykes, Jr., and W. J. Sykes. 1980. Two more records of the Tropical Kingbird for Florida. Florida Field Naturalist 8:25-26.

Bowman, R. 2000. Thirteenth report of the Florida Ornithological Society Records Committee: 1996, 1997, 1998, 1999, and 2000. Florida Field Naturalist 28:138-160.

Bowman, R. 2004. Fourteenth report of the Florida Ornithological Society Records Committee: 2001-2002. Florida Field Naturalist 32:7-33.

Brush, T. 1999. Couch's Kingbird (*Tyrannus couchii*). The Birds of North America Online (A. Poole, Ed.). Cornell Lab of Ornithology, Ithaca, New York. <bna.birds.cornell.edu/bna/species/437>.

Chesser, R. T. 1995. Biogeographic, Ecological, and Evolutionary Aspects of South American Austral Migration, with Special Reference to the Family Tyrannidae. Ph.D. dissertation, Louisiana State University, Baton Rouge.

Conover, P. E., and B. M. Myers. 2009. First record of the Crowned Slaty Flycatcher (*Empidonomus aurantioatrocristatus*) from North America. North American Birds 62:638-649.

DITTMANN, D. L., AND S. W. CARDIFF. 2014. 2014 annual report of the Louisiana Bird Records Committee. <losbird.org/lbrc/LBRC%20Newsletter%202014.pdf>.

DOWLING, H. P. 1989. [Fourth] FOS Records Committee report. Florida Field Naturalist 17:51-52.

DRENNAN, S. R. 1987. Regional reports pictorial highlights—Fall 1986. American Birds 41:41-42.

FITZPATRICK, J. W. 2004. Family Tyrannidae (tyrant-flycatchers). Pages 170-462 *in* Handbook of the Birds of the World, Vol. 9. Cotingas to Pipits and Wagtails. (J. del Hoyo et al., Eds.). Lynx Edicions, Barcelona.

GREENLAW, J. S. 2014. Twenty-second report of the Florida Ornithological Society Records Committee: 2012. Florida Field Naturalist 42:153-171.

GREENLAW, J. S. 2015. Twenty-third report of the Florida Ornithological Society Records Committee: 2013. Florida Field Naturalist 43:19-36.

GREENLAW, J. S., AND A. W. KRATTER. 2007. Sixteenth report of the Florida Ornithological Society Records Committee: 2006. Florida Field Naturalist 35:49-59.

GREENLAW, J. S., B. PRANTY, AND R. BOWMAN. 2014. The Robertson and Woolfenden Florida Bird Species: An Annotated List. Special Publication No. 8. Florida Ornithological Society, Gainesville.

HOWELL, S. N. G., AND S. WEBB. 1995. A Guide to the Birds of Mexico and Northern Central America. Oxford University Press, New York.

JAHN, A. E., D. J. LEVEY, J. A. HOSTETLER, AND A. M. MAMANI. 2010. Determinants of partial bird migration in the Amazon Basin. Journal of Animal Ecology 79:983-992.

KRATTER, A. W. 2008. Seventeenth report of the Florida Ornithological Society Records Committee: 2007. Florida Field Naturalist 36:94-111.

KRATTER, A. W. 2010a. Eighteenth report of the Florida Ornithological Society Records Committee: 2008. Florida Field Naturalist 38:15-31.

KRATTER, A. W. 2010b. Nineteenth report of the Florida Ornithological Society Records Committee: 2009. Florida Field Naturalist 38:150-174.

KRATTER, A. W. 2012a. Twentieth report of the Florida Ornithological Society Records Committee: 2010. Florida Field Naturalist 40:13-26.

KRATTER, A. W. 2012b. Twenty-first report of the Florida Ornithological Society Records Committee: 2011. Florida Field Naturalist 40:85-100.

MCCASKIE, G., AND M. A. PATTEN. 1994. Status of the Fork-tailed Flycatcher (*Tyrannus savana*) in the United States. Western Birds 25:113-127.

MLODINOW, S. G. 1998. The Tropical Kingbird north of Mexico. Field Notes 52:6-11.

MLODINOW, S. G., AND D. S. IRONS. 2008. First record of the Variegated Flycatcher in western North America. Western Birds 40:47-50.

MONROE, B. L., JR., AND A. BARRON. 1980. The Fork-tailed Flycatcher in North America. American Birds 34:842-845.

OGDEN, J. C. 1986. Florida region [winter 1985-1986 seasonal report]. American Birds 40:272-274.

PRANTY, B. 1993. Field observations spring report: March-May 1993. Florida Field Naturalist 21:121-128.

PRANTY, B. 1996. Field observations winter report: December 1995-February 1996. Florida Field Naturalist 24:83-92.

PRANTY, B. 1998. Field observations spring report: March-May 1998. Florida Field Naturalist 26:128-137.

PRANTY, B. 1999a. Field observations summer report: June-July 1998. Florida Field Naturalist 27:25-30.

PRANTY, B. 1999b. Field observations spring report: March-May 1999. Florida Field Naturalist 27:182-193.

PRANTY, B. 2000. Field observations fall report: August-November 1999. Florida Field Naturalist 28:78-90.

PRANTY, B. 2001. Field observations winter report: December 2000-February 2001. Florida Field Naturalist 29:100-112.
PRANTY, B. 2002a. Field observations summer report: June-July 2001. Florida Field Naturalist 30:11-19.
PRANTY, B. 2002b. Field observations fall report: August-November 2001. Florida Field Naturalist 30:65-76.
PRANTY, B. 2002c. Field observations winter report: December 2001-February 2002. Florida Field Naturalist 30:100-112.
PRANTY, B. 2002d. Field observations spring report: March-May 2002. Florida Field Naturalist 30:143-150.
PRANTY, B. 2003. Field observations winter report: December 2002-February 2003. Florida Field Naturalist 31:63-73.
PRANTY, B. 2004a. Field observations fall report: August-November 2003. Florida Field Naturalist 32:63-74.
PRANTY, B. 2004b. Field observations winter report: December 2003-February 2004. Florida Field Naturalist 32:117-127.
PRANTY, B. 2004c. Field observations spring report: March-May 2004. Florida Field Naturalist 32:153-162.
PRANTY, B. 2006a. Field observations fall report: August-November 2005. Florida Field Naturalist 34:55-68.
PRANTY, B. 2006b. Field observations winter report: December 2005-February 2006. Florida Field Naturalist 34:103-112.
PRANTY, B. 2008. Field observations winter report: December 2007-February 2008. Florida Field Naturalist 36:70-80.
PRANTY, B. 2009a. Field observations summer report: June-July 2008. Florida Field Naturalist 37:22-30.
PRANTY, B. 2009b. Field observations fall report: August-November 2008. Florida Field Naturalist 37:58-71.
PRANTY, B. 2009c. Field observations winter report: December 2008-February 2009. Florida Field Naturalist 37:98-110.
PRANTY, B. 2009d. Field observations spring report: March-May 2009. Florida Field Naturalist 37:155-168.
PRANTY, B. 2010a. Field observations summer report: June-July 2009. Florida Field Naturalist 38:32-40.
PRANTY, B. 2010b. Field observations winter report: December 2009-February 2010. Florida Field Naturalist 38:119-131.
PRANTY, B. 2010c. Field observations spring report: March-May 2010. Florida Field Naturalist 38:119-131.
PRANTY, B. 2011a. Field observations fall report: August-November 2010. Florida Field Naturalist 39:57-71.
PRANTY, B. 2011b. Field observations winter report: December 2010-February 2011. Florida Field Naturalist 39:142-154.
PRANTY, B. 2012a. Field observations summer report: June-July 2011. Florida Field Naturalist 40:27-37.
PRANTY, B. 2012b. Field observations fall report: August-November 2011. Florida Field Naturalist 40:59-72.
PRANTY, B. 2013a. Field observations summer report: June-July 2012. Florida Field Naturalist 41:16-25.
PRANTY, B. 2013b. Field observations fall report: August-November 2012. Florida Field Naturalist 41:54-67.
PRANTY, B. 2013c. Field observations winter report: December 2012-February 2013. Florida Field Naturalist 41:90-103.

PRANTY, B. 2013d. Field observations spring report: March-May 2013. Florida Field Naturalist 41:130-142.

PYLE, P. 1997. Identification Guide to North American Birds, Part II: Columbidae to Ploceidae. Slate Creek Press, Bolinas, California.

SMITH, R. 2011. A Birder's Guide to Pinellas County (Florida). Precision Litho, Clearwater, Florida.

SMITH, G. A., AND J. A. JACKSON. 2002. Gray Kingbird (*Tyrannus dominicensis*). The Birds of North America Online (A. Poole, Ed.). Cornell Lab of Ornithology, Ithaca, New York. <bna.birds.cornell.edu/bna/species/668>.

SNYDER, L. F., AND L. A. HOPKINS. 2000. A record of Tropical Kingbird (*Tyrannus melancholicus*) in Florida. Florida Field Naturalist 28:182-185.

STEDMAN, S. J., AND F. E. LOHRER. 1976. A Tropical Kingbird sighting from the Florida Panhandle. Florida Field Naturalist 4:40-41.

STOUFFER, P. C., AND R. T. CHESSER. 1998. Tropical Kingbird (*Tyrannus melancholicus*). The Birds of North America Online (A. Poole, Ed.). Cornell Lab of Ornithology, Ithaca, New York. <bna.birds.cornell.edu/bna/species/358>.

SULLIVAN, B. L., C. L. WOOD, M. J. ILIFF, R. E. BONNEY, D. FINK, AND S. KELLING. 2009. eBird: a citizen-based bird observation network in the biological sciences. Biological Conservation 142:2282-2292.

TRAYLOR, M. A., JR. 1979. Two sibling species of *Tyrannus* (Tyrannidae). Auk 96:221-233.

WEST, R. L. 1996. Florida region [winter 1995-1996 report]. Field Notes 50:162-164.

WILSON, S., R. E. PEIPERT, J. GINAVEN, AND B. ROSSHEIM. 2015. Nesting and hybridization of a Tropical Kingbird (*Tyrannus melancholicus*) and Gray Kingbird (*T. dominicensis*) in Sarasota, Florida. Florida Field Naturalist 43:1-11.

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RECENT OBSERVATION OF A FOX SQUIRREL (*Sciurus niger*) IN A COASTAL SALT MARSH

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The fox squirrel (*Sciurus niger*) is a tree squirrel widely distributed throughout much of its native range east of the Rocky Mountains (Hall 1981, Koprowski 1994). In the southeastern United States (hereafter, Southeast), six subspecies (*S. n. cinereus, S. n. vulpinus, S. n. niger, S. n. shermani, S. n. avicennia, and S. n. bachmani*) of fox squirrel are collectively known as southeastern fox squirrels, grouped together because of their similarities in morphology and habitat use (Loeb and Moncrief 1993). Today, southeastern fox squirrels are said to be declining because ≥ 97% of native pine forests within their historic range have been lost and what remains is highly fragmented and degraded (Frost 1993). Due to the loss of habitat and declining populations, the State of Florida lists the Sherman's fox squirrel (*S. n. shermani*) as a species of special concern and the Big Cypress fox squirrel (*S. n. avicennia*) as state threatened (Humphrey and Jodice 1992, Loeb and Moncrief 1993).

Throughout their range, fox squirrels are considered to be obligates of mature forests. In the Southeast, mature pines (*Pinus* sp.), oaks (*Quercus* sp.) and other hardwood species provide seasonal sources of food (Weigl et al. 1989, Steele and Koprowski 2001, Perkins et al. 2008), refuge, and hold approximately 80% of fox squirrel nests (Kantola and Humphrey 1990, Conner and Godbois 2003). Although fox squirrels favor areas with open trees canopies, they prefer to remain in close proximity to trees, especially when foraging so they can consume bulky food items near cover where they have reduced vulnerability to predators (Weigl et al. 1989). Fox squirrels tend to avoid closed canopy forests (Conner et al. 1999), possibly because of the loss of major seasonal food sources (Weigl et al. 1989), competition with gray squirrels (Edwards et al. 1998), or because of increased risk of predation (Moore 1957, Wooding 1997).

Southeastern fox squirrels are typically considered to be upland species occurring in sandhill communities (Weigl et al. 1989), but are adaptable to land use change (e.g., low-intensity development, golf courses) (Jodice and Humphrey 1992, Lee et al. 2001, Ditgen et al. 2007) when vegetation structure is similar to the open pine-savannas, and supplemental food is available (McCleery et al. 2007). Southeastern fox squirrels also regularly occur in mesic sites such as the mesic flatwoods land cover type (FNAL 2010) when mature pine canopies are non-overlapping (University of Florida, unpublished data). In southwestern Florida, the Big Cypress fox squirrel (*S. n. avicennia*) occurs in the wet pine and cypress forests where they are seasonally restricted to the tree canopies during periods of inundation (Kellam et al. 2016). Regardless of where fox squirrels occur throughout their range, they are heavily dependent on close access to mature trees.

On 07 Mar 2013, we detected a Sherman's fox squirrel in a floating camera-trap (McCleery et al. 2014) within the salt marsh land cover type (FNAI 2010) at 17 R 298802 m E 3231090 m N (Fig. 1) at the Cedar Key National Wildlife Refuge in Levy County, Florida. The observation was at 1315 hours EST, between high tide (1127 hours) and low tide (1626 hours). The camera-trap was located approximately 40 m from the open water of the Gulf of Mexico in an area void of any trees or other woody vegetation. It is unclear how the squirrel accessed this area, but we believe it likely traveled along exposed mudflats or swam either: 1) between small islands comprised of scrubby flatwoods,

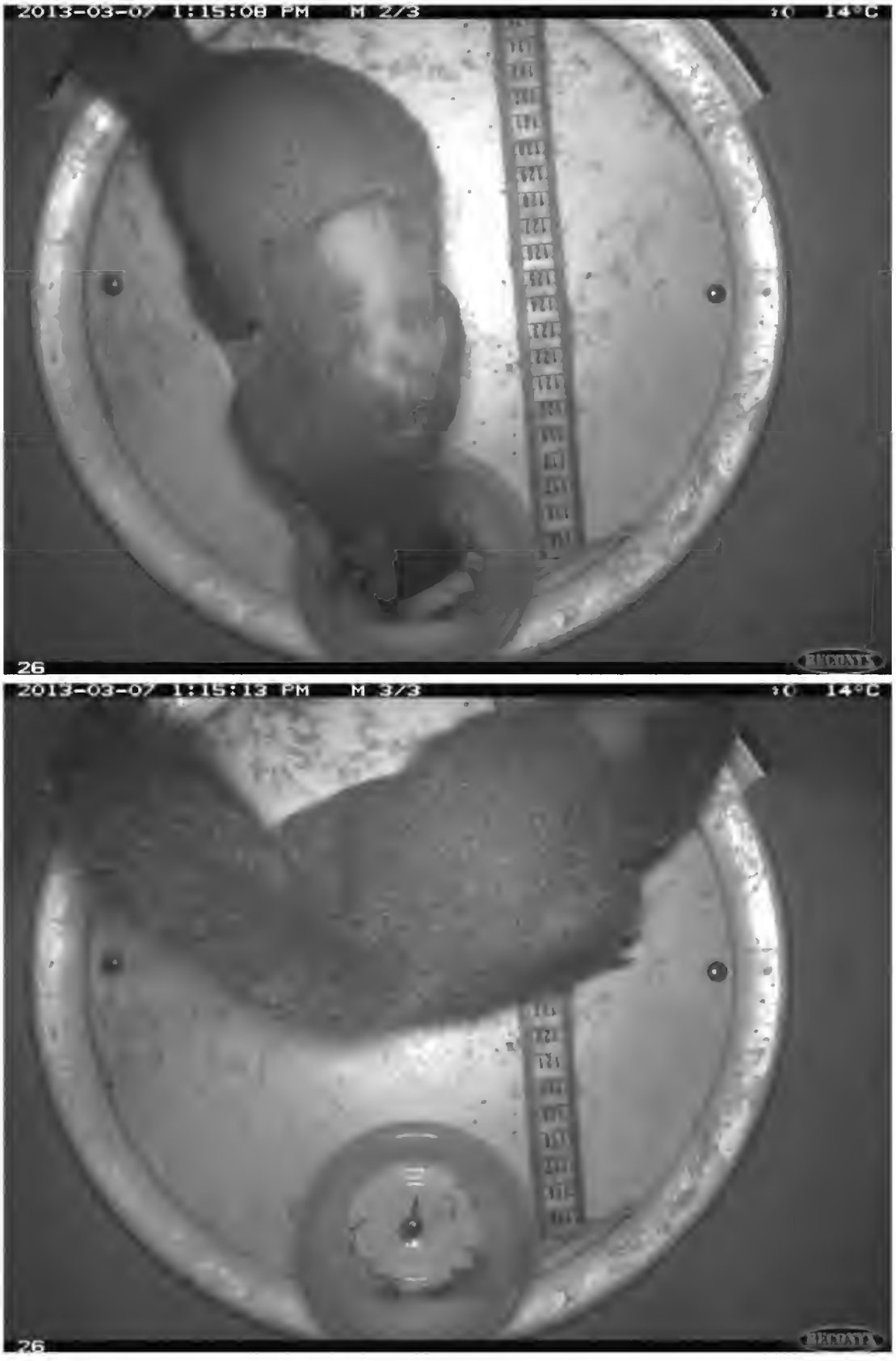

Figure 1. Camera-trap photographs of a Sherman's fox squirrel (*Sciurus niger shermani*) observed at Cedar Key National Wildlife Refuge in Levy County, Florida. The squirrel can be seen entering the bucket trap and is identifiable by its dark head and white ears (top image). In the bottom image the fox squirrel exits the bucket trap and can be identified by its long, bushy tail. The area without hair is likely a result of molting or notoedric mange.

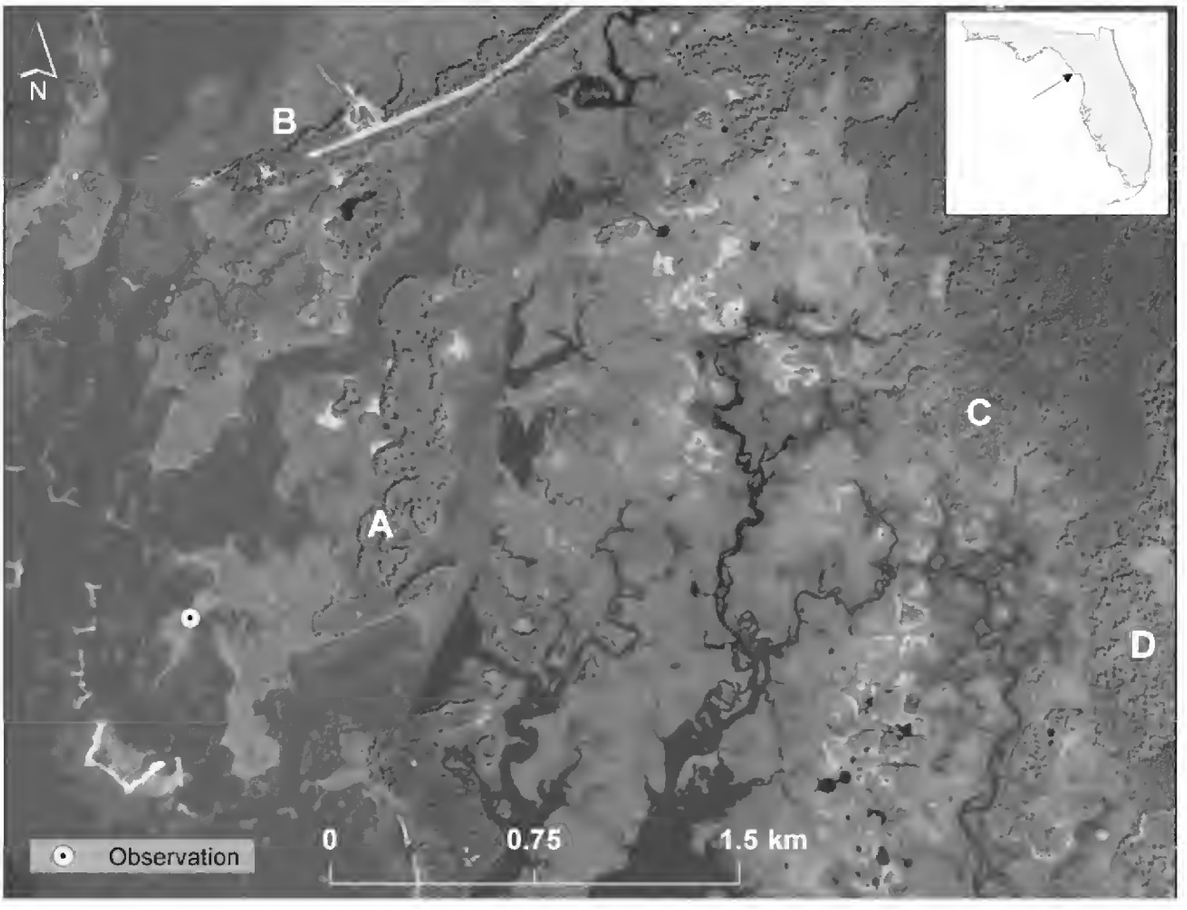

Figure 2. Location of the Sherman's fox squirrel (*Sciurus niger shermani*) detected at a floating camera-trap located in the coastal salt marsh land cover type at the Cedar Key National Wildlife Refuge in Levy County, Florida (inset). Probable dispersal routes include moving along exposed mudflats or swimming to the camera-trap: between several small islands (e.g., A); from a roadway (B) to the north, or; from a hydric hardwood forest (C) or mesic flatwoods (D) located to the east on mainland Florida.

with the nearest island occurring 450 m to the east; 2) from a roadway with a corridor connecting to the mainland 1.7 km to the north; or 3) from the east where the mainland's nearest tree line is between 2.7 km (hydric hammock land cover type where fox squirrels are unlikely to occur) to 3.3 km (mesic flatwoods where fox squirrels commonly occur) (University of Florida, unpublished data) (Fig. 2). Regardless of how the fox squirrel ended up at the camera-trap, the individual would have moved through at least 0.45 km and upwards of 1.45 km of treeless coastal salt marsh. To our knowledge this is the only observation of a fox squirrel anywhere in its range within a coastal salt marsh and at such a great distance from tree cover, making this a very unusual observation.

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Literature Cited

Conner, L. M., and I. A. Godbois. 2003. Habitat associated with daytime refugia of fox squirrels in a longleaf pine forest. American Midland Naturalist 150:123-129.

CONNER, L. M., J. L. LANDERS, AND W. K. MICHENER. 1999. Fox squirrel and gray squirrel associations within minimally disturbed longleaf pine forests. Proceedings of the Annual Conference of the Southeastern Association of Fish and Wildlife Agencies 53:364-374.

DITGEN, R. S., J. D. SHEPHERD, AND S. R. HUMPHREY. 2007. Big Cypress fox squirrel (*Sciurus niger avicennia*) diet, activity and habitat use on a golf course in southwest Florida. American Midland Naturalist 158:403-414.

EDWARDS, J. W., D. G. HECKEL, AND D. C. GUYNN JR. 1998. Niche overlap in sympatric populations of fox and gray squirrels. Journal of Wildlife Management 61:354-363.

FNAI [FLORIDA NATURAL AREAS INVENTORY]. 2010. Guide to the Natural Communities of Florida: 2010 Ed. Florida Natural Areas Inventory, Tallahassee.

FROST, C. 1993. Four centuries of changing landscape patterns in the longleaf pine ecosystem. Pages 17-37 *in* The Longleaf Pine Ecosystem: Ecology, Restoration, and Management (S. M. Hermann, Ed.). Proceedings of the 18th Tall Timbers Fire Ecology Conference, Tall Timbers Research Station, Tallahassee, Florida.

HALL, E. R. 1981. The Mammals of North America. 2nd Ed. John Wiley and Sons, New York.

HUMPHREY, S. R., AND P. G. JODICE. 1992. Big Cypress fox squirrel. Pages 224-233 *in* Rare and Endangered Biota of Florida: Mammals (S. R. Humphrey, Ed.). University Press of Florida, Gainesville.

JODICE, P. G., AND S. R. HUMPHREY. 1992. Activity and diet of an urban population of Big Cypress fox squirrels. Journal of Wildlife Management 54:685-692.

KANTOLA, A. T., AND S. R. HUMPHREY. 1990. Habitat use by Sherman's fox squirrel (*Sciurus niger shermani*) in Florida. Journal of Mammalogy 71:411-419.

KELLAM, J. O., D. K. JANSEN, A. T. JOHNSON, R. W. ARWOOD, M. J. MERRICK, AND J. L. KOPROWSKI. 2016. Big Cypress fox squirrel (*Sciurus niger avicennia*) ecology and habitat use in a cypress dome swamp-pine forest mosaic. Journal of Mammalogy 97:200-210.

KOPROWSKI, J. L. 1994. *Sciurus niger*. Mammalian Species 479:1-9. American Society of Mammalogists, Oxford University Press.

LEE, J. C., D. A. OSBORN, AND K. V. MILLER. 2001. Foods eaten by a high-density population of Southern Fox Squirrels. Florida Field Naturalist 29:29-31.

LOEB, S. C., AND N. D. MONCRIEF. 1993. The biology of fox squirrels (*Sciurus niger*) in the southeast: a review. Pages 1-19 *in* Proceedings of the Second Symposium on Southeast Fox Squirrel, *Sciurus niger* (J. W. Edwards and P. A. Tappe, Eds.). Special Publication 1,Virginia Museum of Natural History, Martinsville.

MCCLEERY, R. A., C. L. ZWEIG, M. A. DESA, R. HUNT, W. M. KITCHENS, AND H. F. PERCIVAL. 2014. A novel method for camera-trapping small mammals. Wildlife Society Bulletin 38:887-891.

MCCLEERY, R. A., R. R. LOPEZ, N. J. SILVY, AND S. N. KAHLICK. 2007. Habitat use of fox squirrels in an urban environment. Journal of Wildlife Management 71:1149-1157.

MOORE, J. C. 1957. The Natural History of the Fox Squirrel, *Sciurus niger shermani*. Bulletin of the American Museum of Natural History 113:1-71.

PERKINS, M. W., L. M. CONNER, AND M. B. HOWZE. 2008. The importance of hardwood trees in the longleaf pine forest ecosystem for Sherman's fox squirrels. Forest Ecology and Management 255:1618-1625.

STEELE, M. A., AND J. L. KOPROWSKI. 2001. North American Tree Squirrels. Smithsonian Institution Press, Washington D.C.

WEIGL, P. D., M. A. STEELE, L. J. SHERMAN, J. C. HA, AND T. S. SHARPE. 1989. The Ecology of the Fox Squirrel (*Sciurus niger*) in North Carolina: Implications for Survival in the Southeast. Bulletin of the Tall Timbers Research Station 24:1-93.

WOODING, J. B. 1997. Distribution and Population Ecology of the Fox Squirrel in Florida. Ph.D. dissertation, University of Florida, Gainesville.

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PREDATION OF A FLORIDA GRASSHOPPER SPARROW (*Ammodramus savannarum floridanus*) FLEDGLING BY A CORN SNAKE (*Pantherophis guttatus*)

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We report an observation of a Florida Grasshopper Sparrow (*Ammodramus savannarum floridanus)* fledgling consumed by a corn snake (*Pantherophis guttatus)* at Three Lakes Wildlife Management Area, in Osceola County. The Florida Grasshopper Sparrow is a critically endangered subspecies dependent on the dry prairie habitat of south-central Florida (Pranty and Tucker 2006). Snakes are frequent predators of Florida Grasshopper Sparrow nests (Hewett Ragheb and Miller, unpubl. data), but little is known regarding the causes of mortality of Florida Grasshopper Sparrows during the post-fledging period.

We regularly visited the territories of color-banded males to document reproductive behaviors and search for nests as part of an ongoing demographic study of the Three Lakes population. On 8 May 2015 we observed a pair of adult Florida Grasshopper Sparrows carrying food to a single location and disposing of fecal sacs, but we did not locate a nest. On 9 May 2015 we returned to that territory and over a 2-h period observed two adults carrying food to three locations. We concluded that the nestlings had fledged since the previous day's visit and that the adults were tending at least two fledglings.

As we prepared to leave the area, one of the adults replaced its typical and infrequent chip alarm notes with more persistent and agitated chip notes. The adult's vocalizations were accompanied by targeted and repeated fluttering flights to the ground. Investigation revealed a corn snake (*Pantherophis guttatus*) on the ground near the agitated adult sparrow. The snake was approximately 1 m long and had an externally visible bulge that we could see moving posteriorly toward its stomach, indicating a recently swallowed food item. We captured the snake by hand and gently palpated it, causing it to regurgitate its stomach contents. The entire meal consisted of a single Florida Grasshopper Sparrow fledgling (Fig. 1). Based on its size, lack of complete flight feather unsheathing, and visible gape, we assessed the bird to be recently fledged and likely 7-10 days post-hatching. We released the snake unharmed near a depression pond approximately 300 m from the location of the incident in an area known to be unoccupied by Florida Grasshopper Sparrows. The regurgitated fledgling was cleaned and prepared as a round skin for accession to the University of Florida Natural History Museum, Gainesville.

Corn snakes are documented predators of Florida Grasshopper Sparrows, both on adults during the nonbreeding season (Dean 2001) and on eggs, nestlings, and adults during the breeding season (Hewett Ragheb and Miller, unpubl. data). Snakes are documented predators of migratory Grasshopper Sparrow (subspecies not specified) fledglings in grasslands managed using fire and cattle grazing in Iowa (Hovick et al. 2011). However, until this report, snake predation on Florida Grasshopper Sparrow fledglings had not been confirmed.

Little published information exists on the causes of mortality in other *Ammodramus* species during the post-fledging period, but predation caused 49% of mortalities on Grasshopper Sparrow fledglings in Iowa (Hovick et al. 2011). In some passerines,

Figure 1. Corn snake regurgitating a Florida Grasshopper Sparrow fledgling at Three Lakes Wildlife Management Area, Osceola County, Florida, 09 May 2015. Photo by Lindsay M. Wagner.

mortality during the post-fledging period has been found to be highest in the three weeks immediately after fledging (Cox et al. 2014), highlighting the need to understand this critical period in avian life cycles. Increasing knowledge of Florida Grasshopper Sparrow predators across all life stages is important for informing future conservation of this federally endangered subspecies.

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Literature Cited

Cox, W. A., F. R. Thompson III, A. S. Cox, and J. Faaborg. 2014. Post-fledging survival in passerine birds and the value of post-fledging studies to conservation. Journal of Wildlife Management 78:183-193.

Dean, T. F. 2001. Non-breeding season ecology of Florida Grasshopper Sparrows and Bachman's Sparrows in central Florida dry prairies. M.S. thesis, University of Massachusetts, Amherst.

Hovick, T. J., J. R. Miller, R. R. Koford, D. M. Engle, and D. M. Debinski. 2011. Post-fledging survival of Grasshopper Sparrows in grasslands managed by fire and grazing. Condor 113:429-437.

Pranty, B., and J. W. Tucker, Jr. 2006. Ecology and management of the Florida Grasshopper Sparrow. Pages 188-200 *in* Land of Fire and Water: The Florida Dry Prairie Ecosystem. Proceedings of the Florida Dry Prairie Conference (R. F. Noss, Ed.). E. O. Painter, DeLeon Springs, Florida.

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GREAT BLUE HERON (*Ardea herodias*) CAPTURES AND KILLS HORNED GREBE (*Podiceps auritus*)

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At approximately 0739 CST on 17 January 2016 at the Maxwell-Gunter Recreation Area near the Mid-Bay Bridge on Chocktawhatchee Bay in Niceville, Okaloosa County, Florida, I observed a mature adult Great Blue Heron (*Ardea herodias*) flying toward me from the direction of the Mid-Bay Bridge with a still-living Horned Grebe (*Podiceps auritus*) in its bill. The heron alighted on the beach at the water line about 30 m in front of me. Its mandibles were grasping the neck of the Horned Grebe just below the head. The heron alternately shook and dipped the grebe into the water as the grebe flapped its wings and kicked its legs in a futile attempt to escape. This behavior is consistent with other similar observations of Great Blue Heron and grebe interactions. (Stolen 2001, Rivers 2006). I documented this event with both video and still images between 0740 and 0749 (Fig. 1a.). At 0746, the heron flew a short distance along the beach but quickly landed after approximately 30 m. It was then that I saw a second Great Blue Heron farther down the beach, approximately 80 m distant. After another 2 min 19 s (0748), the first heron once again took flight toward the second heron, which flew away toward open water. The first heron, with the grebe still in its mandibles, landed close to the second heron's former location. Images taken during this latter portion of the encounter appear to show that the grebe was dead. The last dunking was at 0745 and the grebe appeared motionless after that time. (R. Bayer pers. comm.) suspects that this flight of the Great Blue Heron with the Horned Grebe toward the other heron may have been related to the defense of its feeding territory since Great Blue Heron adults defend their feeding areas. In a **Supplanting Flight**, with its feathers erect and while calling, a heron flies at another bird. The attacker lands on the spot vacated by its opponent. (Kushlan 2011). Though I did not observe erect feathers or hear a call (calling would have been muffled with the grebe in its mandibles), I believe it is possible that the Great Blue Heron that I observed was defending a feeding territory.

Though I did not witness the capture of the Horned Grebe, I believe one of the possibilities was an ambush attack from the ledge of a bridge abutment of the Mid-Bay Bridge on the unsuspecting grebe as it swam within range of the Great Blue Heron's attack. The ledges are approximately 1 m above the water surface of Chocktawhatchee Bay, thus too high for an **Upright stand and wait** attack typical of the Great Blue Heron (Kushlan 1976). Great Blue Herons may launch themselves into the water from perches, either by **Diving** head first or by **Jumping** feet first to seize prey (Kushlan 2011). I observed and photographed a Great Blue Heron perched on such an abutment less than 100 m from the landing location six minutes before this event (Fig. 1b.) Whether this was the same heron that captured of the Horned Grebe is unknown, as the majority of the ledge perching locations on the Mid-Bay Bridge were hidden from my view. However, I feel it unlikely that two mature male Great Blue Herons would be found in such close proximity given their propensity to aggressively defend their territories (R. Bayer pers. comm.).

Although not a frequently documented occurrence, Great Blue Herons have previously been observed preying on at least three different species of grebes (Family Podicipedidae).

Figure 1a

Figure 1b

Figure 1c

I believe the encounter I describe here is unique since it was documented with numerous still images and video. These grebe predations had three different outcomes. Bayer (1978) reported a Great Blue Heron capturing a Horned Grebe, which escaped after less than one minute. A Pied-Billed Grebe (*Podilymnus podiceps*) was captured, escaped, and recaptured by a Great Blue Heron, then swallowed while still alive about 10 min after initial capture (Stolen 2001). An Eared Grebe (*Podiceps nigricollis*) was captured and killed by a Great Blue Heron but later abandoned after a 15-min unsuccessful attempt by the heron to swallow the prey (Rivers 2006).

The three grebe species referenced in the previous paragraph are essentially the same size though individuals would of course vary in size. During this timeframe, the Horned Grebe would have completed its fall migration to this Florida location by early to mid-November and thus, would have had plenty of time to regain any weight lost during migration (Stedman 2000). In this instance, whether the Great Blue Heron attempted to ingest the Horned Grebe is unknown, as I did not watch the Great Blue Heron after it flew toward the second heron. However, 1 h and 25 min later, a dead Horned Grebe was found on the water line of the beach near the last known location of the Great Blue Heron (Fig. 1c). I believe that this was most likely the Horned Grebe that had been captured by the Great Blue Heron.

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Literature Cited

Bayer, R. D. 1978. Great Blue Heron attacks Horned Grebe. Bird-Banding 50:264-265.

Kushlan, J. A. 1976. Feeding behavior of North American herons. Auk 93:86-94.

Kushlan, J. A. 2011. The Terminology of Courtship, Nesting, Feeding and Maintenance in Herons [online]. <www.HeronConservation.org>.

RIVERS, J. W., AND M. J. KUEHN 2006. Predation of Eared Grebe by Great Blue Heron. Wilson Journal of Ornithology 118:112–113.

STEDMAN, S. J. 2000. Horned Grebe (*Podiceps auritus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/505doi:10.2173/bna.505

STOLEN, E. D. 2001. Great Blue Heron eating a Pied-Billed Grebe. Florida Field Naturalist 29:87.

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TWENTY-FIFTH REPORT OF THE FLORIDA ORNITHOLOGICAL SOCIETY RECORDS COMMITTEE: 2015

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Abstract.—The Florida Ornithological Society Records Committee held its annual summer meeting in Gainesville on 8 August 2015. As Old Business, the Committee revisited five (two unresolved, and three tabled) old reports, and resolved four of them. The previously unresolved reports of a Black-crested Titmouse in Sarasota County and a song-identified Western Meadowlark in Escambia County were not accepted. Two of the three tabled reports, one of which had been re-opened for review in 2014, were accepted. These were a re-assessment of "Cayenne" (Sandwich) Tern accepted as that taxon, and acceptance of Lesser Goldfinch, which added a new species to the list. The third tabled item, a report of an Elegant Tern submitted in 2013, represented two different individuals and both were accepted. Forty-four new reports were evaluated by the committee this year. Of these reports, 40 were accepted (35 [87%] of which were records verified by specimens, diagnostic photographs, or sound recordings), 3 not accepted, and 1 unresolved. Two new species were added to the official Florida birdlist ("Western" Flycatcher, Lesser Goldfinch) and one (Budgerigar) was delisted under our disestablishment rule based on extirpation in its range in Florida. This brings the total number of species on our state list to 521. Two free-flying, exotic species were added to the committee's new log of verifiable avian exotics known in Florida.

The twenty-fifth report of the Florida Ornithological Society Records Committee (FOSRC) summarizes decisions made by the committee for the submission year ending in August 2015. Committee activity and operations are guided by our "Rules and Procedures," which are found on the Florida Ornithological Society website under the Records tab at http://www.fosbirds.org/. The rules and procedures were last changed in 2012 (Greenlaw 2014). Recent reports (e.g., Greenlaw 2016) summarized applicable portions of these guidelines that continued to apply to our meetings through 2015.

At its annual meeting on 8 August 2015 in Gainesville, the FOSRC attended to two unresolved and three tabled old reports. Two of these (2012-912, 2013-979) involved a re-appraisal of yellow-billed *Thalasseus* terns in Sarasota County; 2013-979 was re-opened for review last year and immediately tabled for consideration in relation to 2013-912. Another record (2014-1042) was the Lesser Goldfinch, which was tabled pending information on plumage and molt. The remaining two reports (2014-1010, 2014-1033) were unresolved and were revisited this year. The results of the committee's evaluations are covered below in appropriate sections. Forty-four new reports were

considered this year. Ten of these were sent out to committee members individually before the meeting for an email vote; all were accepted unanimously. Among the 44 new reports, 40 were accepted, 34 (87%) of which were records verified by specimens, diagnostic photographs, or sound recordings. Three others were not accepted and one remained unresolved. As in the past several years, our acceptance rate is high chiefly because of supporting, diagnostic digital photographs made available by observers. Two new species were added to the official list of Florida's birds ("Western" Flycatcher, Lesser Goldfinch) and one (Budgerigar) was delisted under our new disestablishment rule (extirpation in its previously accepted Florida range), thus bringing the total number of species on our list to 521.

All documentation reviewed by the FOSRC is archived in the Ornithology Division of the Florida Museum of Natural History (FLMNH), University of Florida, Gainesville, Florida. Observers of review-listed species in Florida, and of birds that may be new to the State List, should submit reports to the FOSRC, either by using the online form or by requesting a form directly from the managing Secretary of the Committee (see www.fosbirds/org/). A report to the managing Secretary that includes the basic information on field observations of a review listed or new species (who, where, when, and diagnostic description based on what the observer saw), together with any photographs provided as attachments, also is acceptable. We request that photographs not be sent without a detailed description of the bird, as photographs are not always diagnostic for varying reasons.

This report was prepared on behalf of all members of the FOSRC serving during the 2014-15 reporting year. The members serving during these reviews and their last year of tenure on the Committee were Jon Greenlaw (2015), Ed Kwater (2016), Michael Brothers (2017), Rafael Galvez (2018), Dave Goodwin (2019), Andy Kratter (2020), and Cameron Cox (2021). See the FOS website (above) for a list of the current members of the FOSRC and their addresses.

Submitters of reports (only those reports that are accepted include initials of the submitter here): Brian Ahern (BA), Danny Arnette (DA), Mark Berney (MBe), Michael Brothers (MBr), Jennifer Burris (JB), Cameron Cox (CC), Michelle Davis (MD), Gail Deterra (GD), Diana Doyle (DD), Lucy Duncan (LD), Jim Eager (JE), Carl Edwards (CE), Gil Ewing (GE), Mitch Fox (MF), Rafael Galvez (RGa), Richard Greenspun (RGr), David Goodwin (DG), Erik Haney (EH), Alexander Harper (AH), Frank Izaguirre (FI), Rick Kittinger (RK), Andy Kratter (AKr), Doris & Patrick Leary (D&PL), Todd Legath (TL), Trey Mitchell (TM), Russ & Sue Neshek (R&SN), Chris Newton (CN), Robin Potvin (RP), Bill Pranty (BP), Leslie Pernas-Gis (LP-G), Diane Reed (DR), Kerry Ross (KR), Bonnie Samuelson (BS), Carlos Sanchez (CS), Elliot Schunke (ES), David Simpson (DS), Malcolm Mark Swan (MMS), Joe Thomassen (JT), Graham Williams (GW), and Stu Wilson (SW).

Committee News, Formats, and Terminology

Committee news.—During 2015, the FOSRC met once on 8 August at the Florida Museum of Natural History, Gainesville. Jon Greenlaw, managing Secretary at the meeting, completed his seventh year on the committee and was due to cycle off in October. He was replaced by Elliot Schunke (Tallahassee), who brings good experience and a critical perspective to the committee.

No species were removed from the Review List this year, pending consideration of suitable guidelines to use in the future. The committee's Rules provide no guidance on this matter, and we have used 10 and 15 accepted reports as thresholds for removal in our past practices. Andrew Kratter's report, which suggested policy changes concerning Review List species, was submitted this year and approved. As the incoming committee chair, he will implement the policies beginning this coming review year (2016).

Formats and terminology.—We followed the current nomenclature and sequence used in the American Ornithologists' Union check-list (AOU 1998) and its supplements through July 2014 (http://checklist.aou.org) in the species accounts. Within accounts with more than one submission for a species, each report is introduced sequentially by catalog number. The initials following the catalog number refer to one or more contributors who supplied information to the committee on accepted reports (see list above). We employ the terminology for age of birds outlined by Kratter (2012). We normally do not review subspecies, but we have accepted submissions on distinctive, field-identifiable subspecies whose taxonomic rank may be reevaluated by the AOU in the future. Our use of the words "report" and "record" to describe occurrences of species in Florida follow Robertson and Woolfenden (1992), a distinction that has been followed by subsequent major reviews of the Florida avifauna, and by the FOS Field Observations Committee. All submissions to the committee are characterized as reports. Among them, only submissions that are approved because they are independently verifiable (specimen, diagnostic photograph, or an audio or video file) are regarded as "records." Accepted reports that are not independently verifiable are special only in the sense that the non-verifiable documentation is deemed to be fully supportive of the identification once a species has passed the higher bar to be included on the Florida List of birds. In past practice, additions to Florida's state list represent verifiable records. After this initial hurdle has been met, reports are considered based on available physical evidence and circumstance (provenance not an issue). For each accepted species below, I provide a review of its status in Florida chiefly based on FOSRC data through August 2015.

Abbreviations used here in the species accounts are AOU (American Ornithologists' Union), FLMNH (Florida Museum of Natural History, Gainesville), FOSRC (Florida Ornithological Society Records Committee), nm (nautical miles), NP (National Park), NWR (National Wildlife Refuge), SP (State Park), TTRS (Tall Timbers Research Station, Tallahassee), UF (University of Florida, Gainesville).

SUBMISSIONS ACCEPTED

COMMON MERGANSER, *Mergus merganser*

FOSRC 2015-1057 (MBr). A hen-plumaged merganser was found and photographed on 2 December 2014 in the Halifax River south of Dunlawton Avenue, Port Orange, Volusia County. It was present until at least 17 January 2015 (B. Pranty, in litt.).

This occurrence represents the eighth record of the species in Florida. Among these, an early specimen was taken in December 1953 (Greenlaw et al. 2014), and another individual was shot in Pasco County in 1968 and preserved as a privately owned mount (documented by a photograph of the mount, which is now lost). Six of these records occurred since 2008 and verified by one or more photographs, indicating that they may be increasing in our region.

YELLOW-NOSED ALBATROSS, *Thalassarche chlororhynchos*

FOSRC 2015-1047 (TL, MF). This albatross was encountered and photographed on 9 November 2014 about 24 km (13 nm) southwest of Clearwater, Pinellas County, in the Gulf of Mexico. The captain (TL) of the fishing vessel "Super Queen" spotted the bird and mate MF photographed it. The bird displayed the typical dark bill with a longitudinal, yellow culmen stripe. It approached the boat and associated with a group of gulls before flying off over open water.

This is the fifth record from Florida. Two were photographed in 2000 and 2009 and accepted by the committee. A specimen in the Archbold Biological Station's collection, was obtained in 1992 on Key Largo, Monroe County (Hoffman 1994). A photograph in the Tall Timbers Research Station archives of another bird encountered in 1983 in the northeastern Gulf of Mexico represents the earliest record (Greenlaw et al. 2014).

RED-BILLED TROPICBIRD, *Phaethon aethereus*

FOSRC 2015-1066 (BP). An adult tropicbird was observed during a pelagic trip on 16 April 2015 off Boynton Inlet at about 5 mi (8 km; 4 nm), Palm Beach County. The bird was photographed.

FOSRC 2015-1067 (DD). Another adult was encountered on 6 May 2015 during a boat excursion between Marco Island and Key West in Monroe County waters. Its location was estimated at about 20 mi (32 km; 17 nm) north of Key West in the Gulf of Mexico. A photograph of the bird flying away supported identification as *Phaethon*, and the description was diagnostic for the species.

Including the two birds detailed here, 12 reports have been accepted for Florida since 1995. Seven are records supported by diagnostic photographs and two specimens. Two earlier specimens are known from 1975 and 1979 (Robertson and Woolfenden 1992). This corrects the report of 14 "records" from Florida (through 2012; Greenlaw et al. 2014) to 11 through 2015.

NEOTROPIC CORMORANT, *Phalacrocorax brasilianus*

FOSRC 2015-1085 (MBe). This and the following two accounts continue the saga of *P. brasilianus* at Wakodahatchee Wetlands, Delray Beach, Palm Beach County.

This bird was an adult male known to be present in the wetlands this year from 19 October 2014 through 1 February 2015. Sex was determined by the bird's use of a species-typical wing-waving display and territorial behavior. It was distinctively and uniquely marked as an individual by a small, white crescent-shaped patch on its foreneck, and was present in two previous seasons (2013-970, 2014-1036). This year it paired with a Double-crested Cormorant (*P. auritus*) that showed no evidence of hybrid features. Incubation continued at the mixed pair nest for a time, but the nest did not produce young.

FOSRC 2015-1086 (MBe). This individual, also a male (verified by copulation and territorial behavior), was present this year from 1 November 2014 through 18 January 2015. It ultimately paired with a well-marked *P. auritus*, and fledged three hybrid offspring.

FOSRC 2015-1087 (MBe). The third individual at the wetlands was an adult female found at the wetlands from 6 December 2014 through 1 February 2015. She was probably present there as early as 19 October when three adults first were observed. She paired with a well-marked *P. auritus*, and copulation was observed on several occasions. The pair successfully fledged three hybrid young. To date, no pure *P. brasilianus* pairing has been observed at the wetlands.

Including these three birds, the committee has accepted 22 records of the species in Florida since the first in April 2007 in the Florida Keys. At least in one or two cases, affirmed records in two or three different years may have represented the same individual.

Razorbill, *Alca torda*

FOSRC 2015-1065 (DR). This alcid was found on 14 March 2015 as a carcass on the Atlantic Ocean beach at the North Beach Access of the Guana Tolomato Matanzas National Estuarine Research Reserve north of St. Augustine, St. Johns County.

The species seems to have resumed its usual rarity status in Florida following its major invasion of the state's marine waters during the 2012-13 winter. No evidence of an "echo" effect arose following this historic avian event. Nine reports accepted by FOSRC accumulated before the incursion; this is the first since then. We can only speculate about the numbers that visited Florida during the incursion winter. Although 21 geographically representative reports were affirmed by the committee during that period, nearly 450 individuals were tallied in a few hours during a Christmas Bird Count as they passed the coast near Miami in mid-December 2012 (R. Galvez in Greenlaw 2016). No comprehensive account of this notable invasion event has been published from the perspective of Florida after it unfolded.

Little Gull, *Hydrocoloeus minutus*

FOSRC 2015-1055 (D&PL). This small gull was observed and photographed standing and in flight on 28 October 2014 at the west tip of Bird Island in lower Nassau Sound and vicinity, Duval County. It was a first-cycle bird in transitional juvenal and formative plumages, still with a black hindneck collar and mostly white back and scapulars, and a bold, black pattern on the wings above.

The species is accidental or casual in Florida. Only two previous reports (both records) are known: one based on a specimen taken in December 1958 in Escambia County, and a photographed individual encountered in December 1990 in Seminole County (Greenlaw et al. 2014).

California Gull, *Larus californicus*

FOSRC 2015-1072 (MBr). This adult gull was observed and photographed on 26 February 2015 at Daytona Beach Shores, Volusia County.

FOSRC 2015-1078 (MBr). This first-cycle gull was observed and photographed

on 7 January 2015 on the beach at Daytona Beach Shores. In both these cases, identification was based on field characters of the body and extended wings documented in an excellent series of photographs.

Including the two birds documented here, 13 reports (all photographic records) have been accepted from Florida. Eight of these were from Volusia County, and were associated with one or more large landfills in the area.

THAYER'S GULL, *Larus thayeri*

FOSRC 2015-1061 (MBr). This first-cycle gull was observed and well photographed on 9 December 2014 on the Atlantic beach at Frank Rendon Park, Daytona Beach Shores, Volusia County.

FOSRC 2015-1079 (MBr). Another first-cycle bird was observed and photographed on 25 February 2015 on the beach at Daytona Beach Shores.

FOSRC 2015-1080 (MBr). This gull, in its second-cycle plumage, was observed and photographed on 27 January 2015 on the Atlantic beach in Daytona Beach Shores.

FOSRC 2015-1081 (MBr). This first adult gull for the season was observed and photographed on 22 January 2015 on the beach at Daytona Beach Shores. In this case, and in the three others above, photographs documented body and extended wing characters important for diagnosing this species in the field.

Including the four birds documented here, 14 reports have been accepted by the Records Committee for Florida since 1985. Eleven of these are records. The earliest record is a specimen taken in 1983 (Robertson and Woolfenden 1992). Since 2008, this species has been found annually with the exception of 2010. This season's four records from one locality is notable.

"CAYENNE" (SANDWICH) TERN, *Thalasseus sandvicensis eurygnathus*

FOSRC 2012-912 (SW, MBr). This old report was initially tabled before it was assessed as an unidentified yellow-billed *Thalasseus* tern or an odd "Cabot's" Tern (North American populations of Sandwich Tern) and not accepted in 2013. Recently, we received new information on morphological and plumage variation in American *Thalasseus* terns in Texas (www.pbase.com/mbb/), and input from a research biologist on "Cayenne" Terns (Adrian J. Delnevo, in litt. to MBr), which caused the committee to reopen the report (2014) for re-assessment in relation to one or more orange-billed terns reported from the same area (see below). The yellow-billed tern was discovered and photographed by SW on 10 August 2012 on the south half of Longboat Key, 2-3 mi (3-5 km; 1.6-2.7 nm) north of New Pass on a Gulf of Mexico beach, Sarasota County. Again, on 23 October 2012, what may have been the same bird was photographed by MBr on Siesta Beach in the same county. Key features were the fully yellow beak with a distinctive greenish tint, bill shape (no downward curvature, heavier) that conforms to that of a "Cayenne" Tern but not to that of an Elegant Tern, and all-dark legs. Dr. Delveno noted that if he had seen the Florida bird in a "Cayenne" Tern colony on Aruba, he "would probably not look at it twice."

This added information and new photographs of apparently the same bird at a nearby location in October swayed the committee to accept Florida's first record of this West Indian and South American taxon. Without genetic evidence on population structure, and more information on plumage- and soft-part variation within and among populations, it remains unclear whether the yellow-billed "Cayenne" Terns and North American Sandwich (Cabot's) Terns are best treated as one (current view) or two species. The acceptance here of occurrence in Florida does not change the formal count of species on the Florida birdlist.

ELEGANT TERN, *Thalasseus elegans*

FOSRC 2013-979 (SW, BS). In 2012, the records committee received two reports (4 and 22 October) of single, orange-billed *Thalasseus* terns from coastal Sarasota County that may have represented the same or different individuals. We received new information (with excellent photographs) in 2015 based on observations made on 23 October 2012; we assumed that this information represented the bird photographed the day before. As a result, we finally were able to re-evaluate two earlier reports that had come to us. This assessment supported the conclusion that two different terns were verifiably documented on 4 and 23 October 2012. The orange-billed tern photographed on 22 October could not be definitely assigned to either of these two different individuals and may have involved still another bird. The report cataloged here as 2013-979 was restricted to the bird photographed by BS on 4 October. The individual documented on 23 October is reported below as 2015-1089.

FOSRC 2015-1060 (RGr). This tern was discovered and photographed on 27 October 2014 on Siesta Beach, Sarasota County. It was an adult in non-breeding (basic) plumage.

FOSRC 2015-1071 (R&SN). Another orange-billed tern judged to be this species was observed and photographed on 15 April 2015 on Pigeon Key south of Marathon, Monroe County.

FOSRC 2015-1089 (MBr). Until the current meeting, this orange-billed tern, observed and photographed at Siesta Beach on 23 October 2012, was considered to be the same individual seen at this location or nearby on 4 and 22 October. As noted above (2013-979), the committee concluded that the birds photographed on 4 and 23 October were different individuals. Consequently, the bird represented by photographs taken by MBr on the 23rd is treated here separately in this report.

The orange-billed terns in the above accounts appeared to be typical representatives of Elegant Terns. We detected no evidence of apparent hybridization or intermediacy with Sandwich Terns ("Cabot's" Tern) in North American populations (e.g., see www.pbase.com/mbb). Bill shape and color, relative body size, length of legs, and bushiness of the crest were compared directly with Sandwich Terns in the same photographs. The committee understood that hybrids resulting from backcrossing may be cryptic, but as a records committee, we treated the issue operationally from a phenotypic perspective. Before October 2012, four reports (all records) were accepted by the committee between October 1999 and May 2012. The first three of these (1999-2002) from Pinellas and Hillsborough counties included the first individual of the species ever documented in Florida and may have been the same individual. A group of three birds in Lee County, found in April 2013, represents the only other record to date, apart from the four discussed here.

INCA DOVE, *Columbina inca*

FOSRC 2015-1074 (JT). This dove was found and photographed on 1 May 2015 near the North Pavilion in Big Lagoon SP, Pensacola, Escambia County.

The committee has now accepted four Florida records of Inca Dove, including this one. Another report is unresolved (see below). All reports are from northern Florida since 2011, mostly from the Panhandle.

FLAMMULATED OWL, *Psiloscops flammeolus*

FOSRC 2015-1082 (AKr). This hatch-year, female owl was found in a bucket in a suburban yard in Miami on 10 December 2014, and died in captivity on 13 December at Pelican Harbor Seabird Station, 10321 NW 29th Avenue, Miami, Miami-Dade County. Identification was verified from the specimen (UF 50809; photograph archived) deposited in the Florida Museum of Natural History in

Gainesville.

This is the third record (and first specimen) of the species from Florida. The first was discovered in November 2001 in Santa Rosa County.

LONG-EARED OWL, *Asio otus*

FOSRC 2015-1083 (DA, AKr). This owl, a female, was found dead entangled on barbed wire fencing on 13 December 2014 on a farm north of Karick Lake, Okaloosa County. Identification was verified from the specimen (UF 50809; photograph archived) deposited in the Florida Museum of Natural History in Gainesville.

Including this individual, eight reports (seven records) have been accepted by FOSRC from Florida since 1995. Only one earlier record is known in the state from December 1992 (specimen; Greenlaw et al. 2014).

ANNA'S HUMMINGBIRD, *Calypte anna*

FOSRC 2015-1056 (FB). An adult female of this hummingbird was banded and photographed on 22 November 2014 at a residence on Tommy Street, Pensacola, Escambia County.

This individual brings the number of records (all photographed) in Florida to three, beginning in January-early February 1988. All occurred in Escambia, Walton, and Leon counties in the Panhandle.

BUDGERIGAR, *Melopsittacus undulatus*

FOSRC 2015-1049 (BP). This account records the committee's approval to remove *Melopsittacus undulatus* from the Florida list. It also briefly reviews the history of this Australian parakeet in the state and summarizes details on its final demise from its former stronghold along the central, peninsular Gulf coast. BP (Pranty 2015a) recommended that the committee recognize the extirpation of the species from its range in Florida by applying its new rule (de-listing based on extirpation) to declare it "disestablished." For historical purposes, the name Budgerigar will remain on the list as a special status species (annotated as "d" for disestablished), but it will not be counted in the total number of species currently recognized on the state's formal birdlist. Extinct, native species previously known from Florida are still counted, but disestablished, exotic species are not.

The following summary of the species' history in Florida is based upon the accounts by Pranty (2001, 2015a, 2015b). The species has been present along the central Gulf coast from the 1950s. Its maximum established range in the late 1970s, reportedly derived mostly from intentional releases of thousands of individuals, extended from Hudson, Pasco County, to Venice, Sarasota County. The overall pattern of occurrence in the state along both coasts primarily, plus scattered individuals in larger human population centers in the peninsular interior, included areas where escapes and local groups of birds failed to become established outside of its putative range on the gulf coast. Presence in most areas was transitory. In its apparent, established range, the parakeets were almost strictly coastal or subcoastal (within 5-10 km of the Gulf of Mexico). This distribution correlated with dense populations of Floridians who had settled on or near the coast, and who in the beginning often supported the birds with abundant food at feeding stations and with nest boxes. The decline of the species began in the 1980s and continued until its final disappearance over three decades later, documented chiefly by local, annual Christmas Bird Counts. The two last flocks were in residential subdivisions in Pasco and Hernando counties within about 15 km of one another. These flocks persisted in diminishing numbers from the mid-1990s until, twenty years later, BP announced that the final survivors in the two localities had "died out within days of each other" in April 2015 (Pranty 2015a). None have been reported since then in the area.

A comment on the apparent inevitability of this population's trajectory is worth making. In hindsight, it seems clear that the chief factors in the failure of this population 'experiment' were a combination of the rise and fall of human interest and support, and an annual deficit of surviving Budgerigars after support waned. Multiple unknown proximate factors probably prevailed as cumulative mortality (unbalanced by recruitment) winnowed the populations (Pranty 2015a, 2015b). But, underlying at least some of the factors (e.g., disease, competition for artificial nest sites) was the likely unmitigated challenge of living in Florida outside of the climatic and biotic milieu in which the species evolved. Its native range in Australia is confined to arid and semi-arid woodlands and grasslands where it is nomadic in the center of the continent (Simpson and Day 2010). The gulf coast of Florida from Hudson southward is essentially a rainfall-seasonal, subtropical, marine environment with no grasslands. Cairn's, Queensland, and Darwin, Northern Territory, which offer similar urbanized, wet-dry season humid climates and settings in Australia, are not occupied by Budgerigars, even though in each case the species' range enters the drier, more open peripheries of these humid regions and abruptly reaches limits (Forshaw 2010). Under the circumstances, perhaps we should have anticipated the eventual outcome in this case.

Western Wood-Pewee, *Contopus sordidulus*

FOSRC 2015-1059 (BA, CC, DG, EH, DS). This pewee was discovered on 1 October 2014 and was still present the next day at Alafia River SP in southeastern Hillsborough County. Ordinarily, the species is regarded as difficult to identify, but in this case, observers heard the bird's distinctive hoarse call, and studied it closely. Important plumage and bill color differences emphasized as useful in a recent article (Lee et al. 2008) on field identification of this pewee relative to Eastern Wood-Pewee (*C. virens*) were noted by the observers and were visible in photographs.

No issues arose on the identification of the pewee. This is only the second record of the species for Florida. The first based on a sound recording was from Highlands County in June 1995. An earlier report from Wakulla County in October 1986 was initially accepted by FOSRC, but later reevaluations of the evidence discounted the identification (see Greenlaw et al. 2014).

Alder Flycatcher, *Empidonax alnorum*

FOSRC 2015-1048 (MMS). This flycatcher was found on 20 September 2014 near Wright, Okaloosa County. The bird's diagnostic call was well described and circumstances of the sight observation were detailed. The description provided information that supported identification in the "Traill's" flycatcher group.

FOSRC 2015-1050 (GW). This individual was observed on 3 September 2014 when it was discovered along La Chua Trail in Paynes Prairie Preserve SP, Alachua County. Photographs documented a "Traill's" flycatcher-type *Empidonax*, and described calls were indicative of *E. alnorum*. A voice recording by GW posted to xeno-canto.org verified the identification.

This species and Willow Flycatcher (*E. traillii*), both poorly known in Florida, were initially placed on the committee's Review List to obtain vocally-documented information to seek better understanding of their timing of occurrence and transient distribution in the state. Including these two individuals, nine reports supported by described calls or voice recordings are known from Florida. All except one (Okaloosa County) were found in Alachua and Miami-Dade counties. One other individual that was voice-recorded remains from its discovery in mid-August 2015 to be evaluated by the committee.

"WESTERN" FLYCATCHER, *Empidonax difficilis/E. occidentalis*

FOSRC 2015-1063 (ES). This individual was regarded as either a Cordilleran Flycatcher (*E. difficilis*; central Rocky Mountains south into northern Mexico) or a Pacific-slope Flycatcher (*E. occidentalis*; southwestern Alberta and western British Columbia south through coast ranges of California and Sierra Nevada Mountains to northern Baja California). Collectively they represent a pair of closely related, cryptic species that are indistinguishable from one another except by some calls of the males. It was found and photographed on 8 January 2015 at a residence on Chocksacka Nene, Tallahassee, Leon County. ES initially identified the bird based on photographs that illustrated key supportive, group plumage features; these photographs allowed separation of the two-species group from its most challenging look-alike, Yellow-bellied Flycatcher (*E. flaviventris*), and other western species in the genus. The former is expected in the East, but the others are not. A consensus on the identification of this challenging individual was reached by convergence of supportive evidence from different sources and independent evaluations by both ES and P. Pyle, the latter having experience with taxa in the west and with specimens. Photographs of the Florida bird permitted assessment of exposed primary tip distribution on the folded wing (Heindel and Pyle 1999) and length of the buffy fringing on the outer secondaries in the closed wing (Baumann et al. 2014), and of other aspects of color and pattern (e.g., eye-ring shape). This is the first record of a bird of this species pair from Florida, and thus enters the Florida birdlist as this group taxon.

SULPHUR-BELLIED FLYCATCHER, *Myiodynastes luteiventris*

FOSRC 2015-1052 (RGa, KR). This flycatcher was discovered on 17 September 2014 and provides the first record for the Florida Keys. It was in a West Indian hardwood hammock in Long Key SP, Monroe County. RGa provided a timely sketch and KR photographed it.

FOSRC 2015-1054 (FI, CS, TM). This individual was found and photographed on 4 October 2014 in Matheson Hammock Park, south Miami, Miami-Dade County. It was seen in semi-open parklike hammock vegetation where it stayed in the canopy, and was gone by the next day.

Including the two individuals just described, 12 reports (all except one verifiable) have been accepted by the committee since October 1995. Ten of these reports were of birds encountered in the peninsula from Pinellas County south, while two were from the Panhandle. JSG suspects that the birds are arriving in Florida following a Gulf crossing from Mexico. Two earlier reports of *Myiodynastes*-type flycatchers in Florida were not identified to species and were regarded as "unverified" (Robertson and Woolfenden 1992).

YELLOW-GREEN VIREO, *Vireo flavoviridis*

FOSRC 2015-1058 (AH). This tropical vireo was discovered on 24 September 2014 in Long Key SP, Layton, Monroe County. The bird was well observed in a tropical hardwood hammock, apparently remaining for one day.

FOSRC 2015-1076 (LD). This individual was closely observed on 27 May 2015, after it was only heard on the 26th, in a treed suburban neighborhood on Fairpoint Drive, Gulf Breeze, Santa Rosa County. LD reported the present bird as the seventh occurrence for the three westernmost counties of the Panhandle, and the third in her suburban yard.

Including the occurrences here, twelve reports (three records) have been accepted by the committee since 1984. An earlier specimen from May 1958, not included in the preceding count, also was from Gulf Breeze.

BAHAMA SWALLOW, *Tachycineta cyaneoviridis*

FOSRC 2015-1069 (KR, RGa). Three Bahama Swallows, representing adult and immature ages, were observed and photographed on 26 October 2014 over the Curry Hammock hawk-watch station north of Marathon, Monroe County.

FOSRC 2015-1088 (RGa, KW). On the same day 134 km north of Curry Hammock, an individual of this species also was discovered and photographed by a United Kingdom resident in Bill Baggs Cape Florida SP, Key Biscayne, Miami-Dade County. After the observation date, a copy of the photograph and occurrence details came to RGa, who reported the event to the committee.

Including the two occurrences reported here, six reports (two records) have been accepted by the committee since 1983, but these are the first since 1988. In addition, an early specimen is known from the Dry Tortugas, where it was obtained in April 1890. Another specimen not examined by the committee, was found dead in April 1992 in Cutler Ridge, Miami-Dade County (Greenlaw et al. 2014), where at least one individual spent one or more summers in a Cave Swallow (*Petrochelidon fulva*) colony at this location (Smith and Smith 1990). A published photograph (Smith and Smith 1990), also not examined by the committee, of a bird found on Big Pine Key, Monroe County, in July 1986, represents another record (Greenlaw et al. 2014). An unresolved report of a Bahama Swallow (see below, FOSRC 2015-1053), observed just one day (25 October) before the observations of *T. cyaneoviridis* passing over Curry Hammock at Long Pine Key SP (18 km northeast of Curry Hammock) and over Key Biscayne, probably were of this species and part of the same regional, off-course movement.

NORTHERN WHEATEAR, *Oenanthe oenanthe*

FOSRC 2015-1068 (JB, RGa). This wheatear was discovered on 24 October 2014 in Long Key SP, Layton, Monroe County. The discovery by a non-birder (JB) from Europe, and photographs by an anonymous park ranger, together with details came to RGa. The individual was not seen again.

Details of reports of the species in Florida through 1994 were re-evaluated by Smith and Woolfenden (1995), and four records were accepted. The four were of two specimens and archival photographs of two other individuals. The earliest record is from November 1955 in Collier County. Seven reports (five records) of this species in Florida have been accepted by the committee, beginning with one of the two specimens (September 1982, Franklin County). Of these, five represent post-1994 occurrences; so altogether, nine reports (seven records) are now known from Florida since 1955 when the earliest specimen was taken. These occurrences are distributed from Gulf County on the panhandle to Monroe County (three cases) in the Florida Keys. Most (seven) reports are from the peninsula and Keys.

KIRTLAND'S WARBLER, *Setophaga kirtlandii*

FOSRC 2015-1073 (MD, CE). This wood-warbler was observed and video-recorded on 7 May 2015 in Lantana Nature Preserve, 206 North Atlantic Drive, South Palm Beach, Palm Beach County. It appeared here on an apparent one-day stopover on its way northwest from its Bahamian wintering grounds to its breeding grounds in Michigan.

This record, together with seven others (photographs) accepted by FOSRC, constitute the recent verifiable evidence for the species in Florida. Also, a specimen taken in Palm Beach County in late April 1896 established the state's original record (Robertson and Woolfenden 1992). Two sight reports were affirmed by FOSRC from April 1982 and April 1993.

BLACK-FACED GRASSQUIT, *Tiaris bicolor*

FOSRC 2015-1062 (GE). This hen-plumaged bird was discovered and photographed on 23 February 2015 in Bahia Honda SP on Bahia Honda Key, Monroe County.

The species occurs on islands in the West Indies; the populations nearest to Florida are in the Bahamas. It is very rare in Cuba, where it is a local resident on an island off the north-central coast (Garrido and Kirkconnell 2000). Unlike *T. olivacea* with which it is sometimes confused in avicultural circles, it is rarely kept in captivity (Greenlaw 2016; L. Manfredi, in litt.). Its occurrence in this case opposite nearby sources in the Bahamas, and away from urbanized human population centers, is regarded as natural vagrancy. Six reports (five records), including the present bird, have been accepted by FOSRC. Three specimens also are known from Florida, the earliest from January 1871 in Miami, Miami-Dade County Greenlaw et al. 2014).

"OREGON" JUNCO, *Junco hyemalis oreganus* group

FOSRC 2015-1045 (BP). This junco was found at a remote offshore location on 30 June 2014 at North Anclote Bar, Anclote Keys Preserve SP, Pasco County. The bird was studied closely by three birders. It showed no evidence of intermediacy with members of geographic neighbors in the Dark-eyed Junco complex (Pranty et al. 2015).

FOSRC 2015-1084 (RK).This individual was observed and photographed on 4 July 2015 on Mandalay Road, Lamont, Taylor County.

The typical form of "Oregon" Junco is widespread in the northwestern Pacific states in mountainous habitats northward in the Rocky Mountains to its contact with the eastern group. Late June and early July records seem unlikely, but June records of several other species even earlier in the month suggest some eastward movement of passerines during this period (Pranty et al. 2015). These two individuals constitute the first and second records of the taxon in Florida. Stevenson and Anderson (1994) review unverified reports of western juncos in the state from this complex, but no archived material exists that describes them.

LAZULI BUNTING, *Passerina amoena*

FOSRC 2015-1070 (RP). This male in non-breeding plumage was observed and initially photographed on 28 December 2014 in a residential yard on Fishermans Wharf Drive, Stuart, Martin County. It wintered at the location and was last reported on 15 April 2015.

P. amoena is regarded as a very rare, out-of-area migrant and winter resident in Florida, where it was first encountered in 1977 (Greenlaw et al. 2014). Including this bird, 15 reports (11 records) of occurrences in the state have been accepted by the records committee.

BULLOCK'S ORIOLE, *Icterus bullockii*

FOSRC 2015-1064 (DG, JE, CN). This adult oriole was observed and photographed initially on 25 January 2015 at the public boat ramp on Lake Marian, Kenansville, Osceola County. It was refound several times at the same location on later unspecified dates.

This species often has been confused with *I. galbula* in the past (Greenlaw et al. 2014), so the committee has kept it on its Review List since the "Northern Oriole" was split into two species-level taxa. Critical reviews of specimens (Pranty et al. 2005; FOSRC) and reports have resulted in the affirmation of 20 reports (15 records) for Florida; the earliest is a record from Miami-Dade County in 1957 (Greenlaw et al. 2014).

LESSER GOLDFINCH, *Spinus psaltria*

FOSRC 2015-1042 (LP-G). This goldfinch, a green-backed and green-eared male, appeared at a residential feeder on 15 July 2014 on Crescent Drive, Melbourne, Brevard County. It re-appeared at the same location on 18 July. It was photographed and correctly identified, but several issues caused the committee to table the report in 2014 until they could be resolved. P. Pyle reviewed the photographs and commented that molt was within the range of variation of the species, and that he could detect no unusual feather wear that might suggest earlier captivity. Moreover, Maine had reported its third record of the species for early August (2015). An earlier record in this state was found in early July (L. Bevier, in litt.). Thus, the timing of occurrence of the Florida bird in mid-July was not unusual. Bevier speculated that some mid-summer appearances in the eastern United States may result from drought-induced wandering in the Southwest. This occurrence is the first of the species known from Florida.

SUBMISSIONS NOT ACCEPTED

COMMON MERGANSER, *Mergus merganser*

FOSRC 2015-1075. Bird observed on 2 Jun 2015 off Celadon Beach Resort, Panama City Beach, Bay County. Insufficient details.

BAHAMA SWALLOW, *Tachycineta cyaneoviridis*

FOSRC 2015-1046. Two individuals observed separately over beach on 3 July 2014, north of the jetty at St. Augustine Inlet, St. Johns County. Sightings seem credible but insufficient details were provided.

BLACK-CRESTED TITMOUSE, *Baeolophus atricristatus*

FOSRC 2014-1010. Observed in a residential backyard on 5 March 2013 on Poplar Street, Sarasota, Sarasota County. About six weeks later, apparently the same bird returned to the same yard, but it was not verified. Based on the description, the identification was not an issue. In early October 2013, another observer independently observed the species six kilometers east on St. Armand's Key, Sarasota County (2014-1011). The St. Armand's Key bird was not accepted previously (Greenlaw 2016), while the current (original) report (probably the same bird) was left unresolved until now. Given the final disposition, both reports were not accepted because they were unverifiable (by past practice, required by the committee for Florida listing; see above) and because their provenance was an issue. No evidence for distant dispersal or vagrancy is known for the species, which is separated from Florida by the Gulf of Mexico or a long circum-Gulf northern route from which no previous records are known.

RED-LEGGED THRUSH, *Turdus plumbeus*

FOSRC 2015-1051. This report came to the committee third-hand through a friend of a friend of the original observer, who lived in Homestead just before Hurricane Andrew in 1992. A brief but specific narrative without date of observation, including a succinct description, by the original observer was our only connection to the occurrence event. The observer's home was destroyed in the hurricane, and the friend never heard from the observer again. The report was sufficiently intriguing that we felt the report should be available for historical purposes. As expected, the brevity of the sight report, and its indirect origin led to non-acceptance.

WESTERN MEADOWLARK, *Sturnella neglecta*

FOSRC 2015-1033. This bird was observed on 9 December 2013 in a grazed pasture on van Pelt Dairy farmland near the intersection of Pelt Road and SR-97, Escambia County. It was thought to be this species based on songs that were of the type sung by *S. neglecta*. Committee members were wary of the possibility of misidentification by voice, as some individuals of this species and *S. magna* do mimic the other's song (e.g., Lanyon 1957). Available details on plumage color and pattern details were insufficient.

SUBMISSIONS UNRESOLVED

INCA DOVE, *Columbina inca*

FOSRC 2015-1077. Five doves of this species were reported for 26 May 2015 near Jay, Santa Rosa County. The description was diagnostic but few supporting details, especially on two doves that were observed copulating under pre-sunrise lighting conditions, led to two dissenting ballots.

BAHAMA SWALLOW, *Tachycineta cyaneoviridis*

FOSRC 2015-1053. A single swallow of this species was observed as closely as 50 ft (15 m), and was viewable for about 20 s on 25 October 2014 in Long Key SP, Monroe County. The description mentioned bright white underparts extending "well onto the cheeks," greenish tone above, and a "long deeply forked tail" that was judged to be longer than the tail of a Violet-green Swallow. The observers discounted the latter species based on the deep tail fork, but they did not notice the color of the wing lining. Contrary to a skeptical view on the committee, the white on the throat of Bahama Swallows extends onto the "cheek" (or "face") (Proctor and Lynch 1993:64) to just under the eye (Sibley 2014). The presence of verifiable Bahama Swallows in the area the next day on Curry Hammock (see above) and on Key Biscayne supports the likelihood that this individual was correctly identified.

EXOTIC SPECIES LOG

This year, the committee implemented the beginning of an exotic species log, which has been specified in its Rules as an obligation but never undertaken until now. Until recently, we have not had a list of verifiable exotic species found free-flying in the wild in Florida to use as a baseline for a continuing log. In 2014, the committee agreed to employ the vetted list entitled "Appendix B, Part I: Verifiable, Non-established Exotics," in Greenlaw et al. (2014:274-323), compiled from a review of the literature and examination of photographs by Bill Pranty, as our baseline list for the exotics log. Our rules specify that we examine the evidence for potential new additions and to maintain the list by adding unlisted species when the evidence is verifiable and supportive.

This year, we added Magpie Goose (*Anseranas semipalmata*; lowland south-central New Guinea and coastal northeastern Australia: 19 July 2014, Volusia County) and Blue-winged Goose (*Cyanochen cyanoptera*; highlands of Ethiopia: 16 April 2015, Martin County). Both

were photographed in the wild. New additions are reviewed informally and are not assigned a catalog number. The two species here increase the 2012 total in the Appendix to 127 species.

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LITERATURE CITED

AOU [AMERICAN ORNITHOLOGISTS' UNION]. 1998. Check-list of North American Birds, 7th Ed. American Ornithologists' Union, Washington, D.C.

BAUMANN, M. J., S. C. GALEN, N. D. PEDERSON, AND C. C. WITT. 2014. Simple technique for distinguishing Yellow-bellied Flycatchers from Cordilleran and Pacific-slope flycatchers. Journal of Field Ornithology 85:391-396.

FORSHAW, J. M. 2010. Parrots of the World. Princeton University Press, Princeton, New Jersey.

GARRIDO, O. H., AND A. KIRKCONNELL. 2000. Field Guide to the Birds of Cuba. Comstock Publishing Associates of Cornell University Press, Ithaca, New York.

GREENLAW, J. S. 2014. Twenty-second report of the Florida Ornithological Society Records Committee: 2012. Florida Field Naturalist 42:153-171.

GREENLAW, J. S. 2016. Twenty-fourth report of the Florida Ornithological Society Records Committee: 2014. Florida Field Naturalist 44:28-43.

GREENLAW, J. S., B. PRANTY, AND R. BOWMAN. 2014. The Robertson and Woolfenden Florida Bird Species: An Annotated List. Special Publication No. 8, Florida Ornithological Society, Gainesville.

HEINDEL, M., AND P. PYLE. 1999. Identification of Yellow-bellied and "Western" flycatchers. Birders Journal 8:78-87.

HOFFMAN, W. 1994. Yellow-nosed Albatross specimen from Key Largo. Florida Field Naturalist 22:75-77.

LANYON, W. E. 1957. The Comparative Biology of the Meadowlarks (*Sturnella*) in Wisconsin. Publications of the Nuttall Ornithological Club No. 1.

LEE, C.-Y., A. BIRCH, AND T. L. EUBANKS. 2008. Field identification of Western & Eastern wood-pewees. Birding 40:34-40.

PRANTY, B. 2001. The Budgerigar in Florida: Rise and fall of an exotic psittacid. North American Birds 55:389-397.

PRANTY, B. 2015a. The disappearance of the Budgerigar from the ABA area. Birding 47:28-34.

PRANTY, B. 2015b. Extirpation of the Budgerigar (*Melopsittacus undulatus*) from Florida. Florida Field Naturalist 43:105-113.

PRANTY, B., A. W. KRATTER, AND R. BOWMAN. 2005. Records of the Bullock's Oriole in Florida. Florida Field Naturalist 33:41-46.

PRANTY, B., D. GAGNE, AND G. A. DETERRA. 2015. Oregon Junco (*Junco hyemalis oreganus* group) in Pasco County: First Florida record, and first summer record of any *Junco* in Florida. Florida Field Naturalist 43:173-178.

PROCTOR, N. S., AND P. J. LYNCH. 1993. Manual of Ornithology: Avian Structure and Function. Yale University Press, New Haven, Connecticut.

ROBERTSON, W. B., JR., AND G. E. WOOLFENDEN 1992. Florida Bird Species: An Annotated List. Special Publication No. 6, Florida Ornithological Society, Gainesville, Florida.

SIBLEY, D. A. 2014. The Sibley Guide to Birds, 2nd Ed. Alfred A. Knopf, New York, New York.

SIMPSON, K., AND N. DAY. 2010. Birds of Australia, 8th Ed. Princeton University Press, Princeton, New Jersey.

SMITH, P. W., AND S. A. SMITH. 1990. The identification and status of the Bahama Swallow in Florida. Birding 22:264-271.

SMITH, P. W., AND G. E. WOOLFENDEN. 1995. Status of the Northern Wheatear in Florida. Florida Field Naturalist 23:93-96.

Florida Field Naturalist 44(3):132-142, 2016.

FIELD OBSERVATIONS

Winter Report: December 2015-February 2016.—This report consists of significant bird observations compiled by the Field Observations Committee (FOC). Electronic submissions to the FOC should be in the following format: species, number of individuals, age and sex of the bird(s), color morph if applicable, location (including county), date, observer(s), and significance. Seasons are winter (December-February), spring (March-May), summer (June-July), and fall (August-November). Submit observations to regional compilers within two weeks after the close of each season, or to the state compiler within one month. Addresses of the compilers follow this report.

Sight-only observations are considered "reports" while only those observations supported by verifiable evidence (photographs, video or audio recordings, or specimens) are called "records." Species for which documentation is required by the FOC and by the FOS Records Committee (FOSRC; <fosbirds.org/official-florida-state-bird-list>) are marked here with an asterisk (*). A county designation (in italics) accompanies the first-time listing of each site in this report. Abbreviations in this report are: AFB = Air Force Base, AFR = Air Force Range, EOS = end of season, m. obs. = many observers, NERR = National Estuarine Research Reserve, NP = National Park, NSRA = North Shore Restoration Area, NWR = National Wildlife Refuge, SF = State Forest, SP = State Park, STA = Stormwater Treatment Area, STF = sewage treatment facility, WMA = Wildlife Management Area, and n, s, e, w, etc., for compass directions. Bold-faced entries denote birds newly reported or verified in Florida, or record numbers. Photographs or video- or audio-recordings archived by the FOC are identified by a plus (+).

Summary of the Winter Season

Data from reporting stations throughout Florida showed that the winter season marked the warmest December on record for the majority of the state followed by near-normal temperatures in January and slightly below-normal temperatures in February. January brought above-normal rainfall across most of Florida and consistent precipitation in February left the state entirely drought-free by the end of the period. Consequently, water levels across the regions were "unusually high" in many areas, forcing water management teams to adjust levels manually in many sites, including Lake Okeechobee (Stefanova and Zierden 2015, 2016a, 2016b). These conditions may facilitate noticeable changes in the spring season's shorebird migration.

FOSRC review species noted in this report include a Common Merganser in *Levy*, single Western Grebes at Lake Butler and Lake Ariana, a potential first state record **Bermuda Petrel** recorded at St. Augustine, a Manx Shearwater at Fort Pickens, two Neotropic Cormorants, a California Gull and "European" Herring Gull at Daytona Beach Shores, a Zenaida Dove at Long Key SP, continuing Vaux's Swifts in Gainesville, Allen's Hummingbird, Broad-billed Hummingbird, Cassin's Kingbird, "Audubon's" Yellow-rumped Warbler, a Black-faced Grassquit at Long Key SP, a Bullock's Oriole at Tallahassee, and a Great White Pelican of unknown provenance recorded in *Lee* 28-29 February.

Lastly, the FOC is seeking volunteers interested in joining the committee as regional compilers for counties that are currently uncovered. The first region would include *Suwannee*, *Columbia*, *Gilchrist*, *Union*, and *Bradford* counties. A second region would be *Pasco*, *Hillsborough*, *Manatee*, and *Sarasota*. A third area could be covered by one or multiple interested individuals: *Polk*, *Osceola*, *Hardee*, *De Soto*, *Highlands*, *Glades*, and

Okeechobee counties. Responsibilities would include soliciting and compiling notable field observations for these counties at the end of each season, to be included in this report. Interested individuals should contact the state compiler listed at the end of this report.

SPECIES ACCOUNTS

WHITE-FACED WHISTLING-DUCK: 1 at Wakodahatchee Wetlands (*Palm Beach*) 13 Feb (J. Giraulo).

BLACK-BELLIED WHISTLING-DUCK: 4 on the Intracoastal Waterway in n. Jacksonville (*Duval*) 20 Dec (+M. Harrell); 2 at Tallahassee (*Leon*) 1 Jan (E. Woodruff, B. Henderson, D. Wells); 2 at Sawgrass Lake Park (*Pinellas*) 12 Jan (J. Wells).

GREATER WHITE-FRONTED GOOSE: 12 at Whiting Field (*Santa Rosa*) 19 Jan (K. Kelly); 3 at Walnut Hill (*Santa Rosa*) 20 Jan (B. Duncan, L. Duncan, J. Callaway, B. Callaway).

SNOW GOOSE: 1 each (white morphs) at two locations at The Villages 1-5 Dec (*Lake, Sumter*) with 1 remaining in *Lake* through 20 Feb (+L. Ellinson, +V. Eddy, +A. Horst, J. Dinsmore); up to 9 at Tarpon Springs (*Pinellas*) 4-8 Dec (+B. O'Conner, m. obs.); 1 at Weedon Island Preserve (*Pinellas*) 4 Dec (+A. Zions); 1 at The Villages (*Sumter*) 4 Dec (V. Eddy); 4 (2 white, 2 dark) at Marl Bed Flats Conservation Area (*Seminole*) 5 Dec (+J. Leavens); 1 at Tallahassee 10 Dec (E. Schunke); 10 in flight over Three Rooker Bar (*Pinellas*) 11 Dec (+D. Sauvageau); 1 at Gainesville (*Alachua*) 20 Dec (J. Martin, R. Rowan, F. Goodwin); 3 dark morphs at Windermere (*Orange*) 4 Jan (R. Leato).

ROSS'S GOOSE: 1 at University of North Florida (*Duval*) 15 Dec-10 Jan (C. Hubbuch and C. Murphy)

CANADA GOOSE: 11 of local population at Largo (*Pinellas*) 7 Dec (C. Gjervold); 1 of introduced feral population at Sam Phillips Park, Ocklawaha (*Marion*) 21 Jan (A. Horst et al.); 1 at The Villages (*Lake*) 1 Feb (A. Horst et al.); 9 at e Clearwater (*Pinellas*) 15 Feb (R. Lane, D. Lane).

EGYPTIAN GOOSE: 1 at West Regional Wastewater Treatment Facility, Vero Beach (*Indian River*) 20 Jan (C. Cimino); 2 at Paradise Lake, The Villages 1 Feb (A. Horst et al.).

MANDARIN DUCK: 2 males, not pinioned, on a retention pond at Longwood (*Seminole*) 19 Dec (G. Williams).

GADWALL: 16 at Tallahassee 10 Dec (E. Schunke); 28 at Weedon Island's Duke Energy Plant (*Pinellas*) 19 Dec (M. Burns et al.).

AMERICAN BLACK DUCK: 4 at Perdue Pond Wildlife Area (*Duval*) 2 Dec-EOS (D. Foster et al.); 4 at Twin Oaks Conservation Area (*Osceola*) 26 Dec (C. Newton).

CINNAMON TEAL: 1 at Paynes Prairie Preserve SP (*Alachua*) 24-30 Jan (L. Davis, C. Deutsch).

NORTHERN SHOVELER: 190 at Weedon Island's Duke Energy property 13 Feb (R. Smith et al.).

GREEN-WINGED TEAL: 68 at Weedon Island's Duke Energy property 13 Feb (R. Smith et al.).

CANVASBACK: Up to 4 at Perdue Pond Wildlife Area 11 Jan-EOS (C. Leonard et al.); 70 at Lake Rowell (*Bradford*) 20 Feb (J. Hintermister).

GREATER SCAUP: 1 male at South Causeway Island Park (*St. Lucie*) 2 Feb (T. Rodriguez); 1 at Tallahassee 11 Feb (E. Schunke).

COMMON EIDER: 1 at Nassau Sound (*Nassau*) 14-15 Jan (P. Leary); 1 at Fort Clinch SP (*Nassau*) 3 Feb (J. Hintermister); 1 at Fort Clinch SP 12 Feb-EOS (+J. Knoll et al.).

SURF SCOTER: 1 male at Little Estero Island Critical Wildlife Area (*Lee*) 1 Jan-EOS (+R. Kaskan et al.); 1 at St. Vincent NWR (*Franklin*) 11 Feb (J. Murphy).

WHITE-WINGED SCOTER: 3 at Fort Clinch SP 20 Feb-EOS (+B. Bergstrom et al.).

BLACK SCOTER: 1 at Shell Key (*Pinellas*) 2 Dec (E. Plage); 9 at Newnans Lake (*Alachua*) 3-4 Dec (M. O'Sullivan, D. Segal et al.); 38 flew past Fort De Soto Park (*Pinellas*) 3

Jan (E. Haney, J. Eager, D. Goodwin); at least 3,000 at North Peninsula SP, Ormond-by-the-Sea (*Volusia*) 8 Jan 2016 (M. Brothers); 23 including 1 adult male at Little Estero Lagoon (*Lee*) 16 Jan (L. Felker).

Long-tailed Duck: 1 at Parrish Park, Titusville (*Brevard*) 23 Dec-14 Jan (J. Stefancic, P. Mulligan); 1 female at Cocoa Beach (*Brevard*) 13 Jan (P. Mansfield).

Bufflehead: Up to 9 throughout the season at Estero Bay Preserve SP (*Lee*) (+R. Kaskan et al.); 1 male on Lake Butler, Windermere 15 Dec (L. Malo); 22 at Shell Key 3 Jan (E. Plage, P. Plage); 25 in The Villages (*Sumter*) 7 Jan (L. Felker).

Common Goldeneye: 1-2 at Possum Branch Preserve (*Pinellas*) 26 Dec-2 Jan (+C. Yilmaz, m. obs.); 1 female at Merritt Island NWR (*Brevard*) 5 Jan (P. Mansfield).

Hooded Merganser: 230 at Brighton Bay (*Pinellas*) 16 Dec (M. Burns).

*Common Merganser: 1 at Cedar Key (*Levy*) 30 Dec (J. Hintermister, P. Laipis).

Red-breasted Merganser: 1 female at Lake Apopka NSRA (*Orange*) 17 Dec (E. Horn et al.); 1 at Tallahassee 31 Dec (E. Schunke).

Red-throated Loon: 1 brought into Marine Science Center from Ponce Inlet (*Volusia*) 9 Dec (M. Brothers, specimen to FLMNH); 1 at Bayport (*Hernando*) 15-16 Dec (V. Capp, D. Goodwin et al.); 1 at Parrish Park, Titusville 30 Dec (T. Rodriguez); up to 4 at Tomoka SP, Ormond Beach 10 Jan-2 Feb (M. Brothers, M. Wilson, m. obs.); 1 at Tallahassee 16 Jan-2 Feb (J. O'Connell, E. Schunke); 3 at Alligator Point (*Franklin*) 30 Jan (J. Murphy); 1 at Ponce de Leon Inlet 23 Feb (+M. Brothers); 2 in flight at Alligator Point 29 Feb (J. Eager).

Pacific Loon: 1 at Fort Pickens (*Escambia*) was disabled and taken to Wildlife Sanctuary of Northwest Florida 28 Dec (*fide* B. Duncan); 1 at Fort Pickens 11 Feb (A. Harper).

Horned Grebe: 11 on Lake Butler, Windermere 15 Dec and 4 there 22 Dec (L. Malo); 1 on Lake Sheen, Orlando 15 Dec and 3 there 7 Jan (L. Malo); 2 on Lake Tibet, Orlando 7 Jan (L. Malo); 1 at Lake Mills County Park (*Seminole*) 26 Jan-7 Feb (J. Leavens, T. Rodriguez).

Eared Grebe: 1 at Canaveral National Seashore (*Brevard*) 3 Jan-2 Mar (M. Harris, A. Zions, m. obs.).

*Western Grebe: 1 on Lake Butler, Windermere 15 Dec (L. Malo; details to FOSRC); 1 at Lake Ariana (*Polk*) 19 Dec-6 Feb (G. Schrader, J. Eager, m. obs.).

American Flamingo: 1 unbanded at Bunche Beach and Punta Rosa (*Lee*) 21 Jan-EOS (+G. Campbell, J. Eager et al.).

***Bermuda Petrel**: 1 at St. Augustine (*St. Johns*) 27 Dec (S. Ewing, B. Ewing, details to FOSRC).

Cory's Shearwater: 2 at Fort Pickens 27-28 Dec (S. Duncan, W. Duncan), provided the first Dec *Escambia* record.

Great Shearwater: 6 at Fort Pickens 28 Dec (S. Duncan, W. Duncan, B. Duncan, L. Duncan, C. Zehnder).

*Manx Shearwater: 1 at Fort Pickens 22 Dec (B. Duncan) provided the 4th area record.

Shearwater sp.: 40 at Fort Pickens 28 Dec (S. Duncan, W. Duncan).

Wood Stork: 7 in Pensacola (*Escambia*) 2 Dec (J. Pfeiffer).

Magnificent Frigatebird: 16 over Tierra Verde (*Pinellas*) 3 Dec (E. Plage); 100 at Glascock Beach, Jensen Beach (*Martin*) 2 Feb (T. Rodriguez); 1 ca. 30 km inland at Jacksonville (*Duval*) 18 Feb (B. Richter).

Brown Booby: 1 on Lake Apopka NSRA continued from previous season through 7 Jan (H. Robinson, m. obs.).

*Neotropic Cormorant: 1 nesting at Wakodahatchee Wetlands 1 Dec-EOS with chicks 20 Feb (J. Eager, m. obs.); 1 at Topeekeegee Yugnee Park (*Broward*) 1 Dec (m. obs.).

Great Cormorant: 1 first winter bird at Carillon Business District (*Pinellas*) 13 Jan (+W. Meehan et al.).

Great White Pelican: 1 unbanded at J. N. "Ding" Darling NWR (*Lee*) 28-29 Feb (E. Combs, +J. Padilla, +S. Daughtrey et al.).

BROWN PELICAN: 1 at Lake Jesup (*Seminole*) 26 Dec (D. Green et al.).

AMERICAN BITTERN: 1 at Tallahassee 5 Feb (E. Schunke).

LEAST BITTERN: Up to 4 at Sweetwater Wetlands Park (*Alachua*) throughout the season (M. Manetz, D. Segal et al.).

GREAT BLUE HERON, WHITE MORPH: 1 at Merritt Island NWR 26 Dec (E. Kwater); 1 at Sweetwater Wetlands Park to 7 Feb (P. Brannon, M. James et al.).

GLOSSY IBIS: 1 was unusually south in *Pinellas* at Eckerd College 12 Dec-13 Jan (+W. Tallyn, L. Witt).

SWALLOW-TAILED KITE: 12 at Alligator Point 21 Feb (S. Parker).

SNAIL KITE: Up to 6 at West Regional Wastewater Treatment Facility, Vero Beach 11 Dec-EOS (C. Cimino et al.); 8 along Hwy 70 near Lake Placid (*Highlands*) 31 Jan (T. Rodriguez); 1 at Lake Jackson 13 Feb was in the same location as last year's first *Leon* record (D. Jue, S. Jue).

SHORT-TAILED HAWK: 1 dark morph at Weeki Wachee (*Hernando*) 4 Dec (B. Pranty, V. Capp); 1 light morph at Orlando Wetlands Park (*Orange*) 7 Feb (T. Rodriguez); 1 near Salt Springs (*Putnam*) 21 Feb (C. Burney).

SWAINSON'S HAWK: 2 at the Okaloosa County Water and STF (*Okaloosa*) 4 Dec-2 Jan (B. Duncan, L. Duncan, C. Brown, A. Knothe, M. Swan, m. obs.); 1 at Fowlers Bluff (*Levy*) 3 Feb (D. Richard, G. DelPizzo); 1 at Eglin AFB (*Okaloosa*) 23 Feb (B. Stanley).

RED-TAILED HAWK: 1 Krider's near Mullet Lake Park, Geneva (*Seminole*) 4 Jan (+K. Ramos *fide* D. Hargrove).

GRAY-HEADED SWAMPHEN: 77 at STA-5/6 (*Hendry*) 2 Jan (M. England) and **94** there 30 Jan (B. Ahern, R. Harrod); up to 3 at Harns Marsh (*Lee*) 12 Jan-EOS (+P. Mulligan, T. Rodriguez et al.); 2 at Sweetwater Wetlands Park through 21 Feb (M. Smith, L. Davis et al.); 3 at Broadmoor Marsh Unit, T. M. Goodwin Waterfowl Management Area (*Brevard*) 21 Jan (C. Cimino et al.); 1 at Lake Apopka NSRA from fall 2015-4 Mar (S. Simmons *fide* P. Hueber).

PURPLE GALLINULE: 1 at Lake Seminole Park (*Pinellas*) 30 Jan-1 Feb (+J. Clayton, S. Tavaglione); 1 at John R. Taylor Park (*Pinellas*) 31 Jan-29 Feb (K. Nelson).

LIMPKIN: 65 at Sweetwater Wetlands Park 20 Dec (D. Segal et al.).

SANDHILL CRANE: 7 at St. Marks NWR (*Wakulla*) 16 Jan (J. Cavanagh); 2 at International Paper Wetlands (*Escambia*) 30 Jan (J. Callaway, B. Callaway).

WHOOPING CRANE: 1 at Gainesville 20 Dec (A. Rue); 1 at Kanapaha Prairie (*Alachua*) 23-29 Dec (J. Jordan); 1 at Tallahassee 25 Dec (K. Willes, E. Schunke); 1 adult at Double C Bar Ranch, Kenansville (*Osceola*) 12 Jan (J. Eager).

BLACK-NECKED STILT: 1 at Fort De Soto Park 6 Dec (D. Bedford); 3 at Puzzle Lake, near Geneva (*Seminole*) 26 Dec (D. Simpson); 1 at Brooker Creek Preserve 8 Jan (J. Vanderpoel, W. Kaempfer); 1 at Lem Turner Spray Fields (*Duval*) 10 Jan (B. Richter); 2 at Waste Management Lake (*Pinellas*) 16-29 Feb (+R. Smith et al.).

AMERICAN AVOCET: 3 at Puzzle Lake 26 Dec (D. Simpson); 10 at Weedon Island's Duke Energy property 13 Feb (+R. Smith et al.); 68 in White Shell Bay (*Duval*) 20 Feb (K. Dailey, M. Dailey).

AMERICAN OYSTERCATCHER: 51 at the *Pinellas* side of the Courtney Campbell Causeway 8 Feb (R. Lane, B. Lane).

SNOWY PLOVER: 19 at Honeymoon Island SP (*Pinellas*) 4 Jan (K. Tracey).

PIPING PLOVER: 42 at Honeymoon Island SP 9 Dec (K. Tracey); 58 at Three Rooker Bar 21 Jan (+S. Mann et al.).

LONG-BILLED CURLEW: 1 at Everglades NP (*Monroe*) 6 Jan (+P. Frezza).

MARBLED GODWIT: 66 at Fort De Soto Park 15 Dec (E. Plage); 97 at the Pinellas Point Lookout 19 Dec (E. Plage).

SEMIPALMATED SANDPIPER: 1 at the Okaloosa County Water and STF 2 Jan (+M. Swan) was the first Jan record; 1 at Honeymoon Island SP 8 Jan (J. Vanderpoel, W. Kaempfer).

PURPLE SANDPIPER: 1 at Ponce de Leon Inlet 1 Dec-EOS (M. Brothers).

DUNLIN: 5 at Scarborough Ranch (*Highlands*) 25 Jan (D. Simpson) and again on 15 Feb (T. Rodriguez).

AMERICAN WOODCOCK: 5 at Tate's Hell State Forest (*Franklin*) 1 Feb (J. Murphy).

RED PHALAROPE: 12 off Jetty Park, Cape Canaveral (*Brevard*) 19 Dec (M. Harris).

POMARINE JAEGER: 1-2 at Daytona Beach Shores (*Volusia*) from fall 2015-EOS (+M. Brothers).

PARASITIC JAEGER: 1 adult chasing a Royal Tern at Playalinda Beach, Canaveral National Seashore 30 Nov (+R. Merrigan); 1 adult on beach at Ponce de Leon Inlet 7 Dec (+M. Brothers); up to 3 offshore harassing the gulls at sunset at Daytona Beach Shores from fall 2015-EOS (M. Brothers); 2 at Fort Pickens 27-28 Dec (B. Duncan, L. Duncan, S. Duncan, W. Duncan C. Zehnder) was the first local Dec record; 1 at Fort De Soto Park 3 Jan (J. Eager); 2 at Alligator Point 24 Jan (J. Murphy).

BLACK-LEGGED KITTIWAKE: 1 at Lake Worth Pier (*Palm Beach*) 1-6 Dec (T. Smith et al.).

BONAPARTE'S GULL: 18 at Dunedin (*Pinellas*) 6 Dec (+T. Mast); 200 at John's Pass (*Pinellas*) 24 Jan (R. Smith); 2 at Tallahassee 25 Jan-12 Feb (E. Schunke); 224 at Courtney Campbell Causeway 3 Feb (R. Lane, D. Lane).

LAUGHING GULL: 1 leucistic and 1 melanistic at Daytona Beach Shores 17 Dec and 15 Jan respectively (M. Brothers).

FRANKLIN'S GULL: 1 at Spring Hill (*Hernando*) through 2 Dec (A. Hansen, B. Hansen); 1 at Redington Beach (*Pinellas*) 1 Dec (C. Gjervold); up to 5 first-cycle gulls at Daytona Beach Shores 2, 9, 14, 17, 30 and 31 Dec; after 31 Dec only singles 8, 19, 26 Jan and 1 and 29 Feb (all M. Brothers); 1 at Guana Tolomato Matanzas NERR (*St. Johns*) 8 Dec (D. Reed); 1 at the Okaloosa County Water and STF 8 Dec (M. Swan); 1 at Destin (*Okaloosa*) 14 Dec (B. Purdy); 1 first cycle at Cocoa 19 Dec (+M. Harris); 1 at Pinellas County Solid Waste 19 Dec (+B. Ahern et al.); 1 at Dunedin Causeway 5 Jan (J. Wells); multiple at various locations in *Lee* and *Collier* throughout the period (*fide* C. Ewell).

*CALIFORNIA GULL: 1 second-cycle on the beach at Daytona Beach Shores 17 Feb (+M. Brothers).

*"EUROPEAN" HERRING GULL: 1 first-cycle at Ponce de Leon Inlet 17 Dec (+M. Brothers; details to FOSRC).

ICELAND GULL: Single first-cycle Kumlien's race at Daytona Beach Shores 21, 22, 24 Jan and 2, 8, 25 Feb (+M. Brothers, S. Howell, A. Ayyash, et al.); 1 first-cycle nominate form offshore Ponce de Leon Inlet 24 Jan (M. Brothers, S. Howell, A. Ayyash, et al.).

LESSER BLACK-BACKED GULL: 1 at Gainesville 20-29 Dec (A. Kratter, J. Mangold, P. Polshek et al.); 1 at Gulf Breeze (*Santa Rosa*) 23 Jan (B. Duncan, L. Duncan); 1 at Eastpoint (*Franklin*) 30 Jan (J. Murphy); 1 at Pensacola Beach (*Escambia*) 8 Feb (D. Muth).

GLAUCOUS GULL: Single first-cycle gulls offshore of Ponce de Leon Inlet 24 Jan and at Daytona Beach Shores 2 Feb-EOS (M. Brothers); 1 at Fort Pickens 27-29 Jan (M. Rose, B. Duncan et al).

SOOTY TERN: 1 at Fort Pickens 28 Dec (S. Duncan, W. Duncan, B. Duncan, L. Duncan, C. Zehnder) provided the first local winter report.

GULL-BILLED TERN: 1 at Puzzle Lake 26 Dec (D. Simpson); 1 at Honeymoon Island SP 3 Feb (K. Nelson, S. Robinson); 1 at Weedon Island's Duke Energy property 13 Feb (R. Smith et al.); 4 at Weedon Island Preserve 26 Feb (J. Whitehead, S. Wilcox).

CASPIAN TERN: 11 at Fort De Soto Park 3 Jan (J. Eager).

COMMON TERN: 5 at Fort De Soto Park 2 Dec (+R. Smith); 1 at Fort De Soto Park 13 Dec (P. Plage); 1 in basic plumage at New Smyrna Beach (*Volusia*) 31 Jan (+J. Kendall); 1 at Fort De Soto Park 2 Feb (+E. Plage).

ROYAL TERN: 1 at Lake Apopka NSRA 17 Dec (D. Pulver).

WHITE-WINGED DOVE: 2 at Jacksonville Zoo and Gardens (*Duval*) 1 Dec-EOS (C. Dembiec).

*ZENAIDA DOVE: 1 at Long Key SP (*Monroe*) 15 Feb-EOS (A. Moss, +T. Mitchell, m. obs.).

KEY WEST QUAIL-DOVE: 1 male at Long Key SP campground 15 Feb (+G. Normand).

SMOOTH-BILLED ANI: 1 at Loxahatchee NWR (*Palm Beach*) 11 Dec-EOS (D. Schmerge, m. obs.).

BARN OWL: 1 at Floridatown (*Santa Rosa*) 1-15 Jan (B. Duncan, L. Duncan); 1 at Veteran's Memorial Park (*Okaloosa*) 7 Jan (M. Hammack); 1 at Fort Pickens 24 Jan (A. Holzinger).

BURROWING OWL: 1 at Fort Pickens 1 Dec-25 Jan (J. Prendergast, L. Duncan, C. Zehnder).

SHORT-EARED OWL: 1 at Shiloh Marsh, Merritt Island NWR (*Volusia*) 14-22 Jan (+D. Bales, A. Harper).

LESSER NIGHTHAWK: 1 female at Emeralda Marsh Conservation Area (*Lake*) 14-24 Dec (+E. Horn, T. Hanson, A. Zions); 1 at Fort De Soto Park 5-25 Jan (+J. Gray, R. Smith, L. Smith).

CHAETURA SP.: 1 silent bird, well described at Titusville 14 Dec (D. Stuckey).

*VAUX'S SWIFT: Up to 17 at Gainesville throughout the season (J. Hintermister, S. McKeon, et al.).

BLACK-CHINNED HUMMINGBIRD: 1 immature male at Altamonte Springs (*Seminole*) 1 Dec-EOS (+P. Hueber, G. Williams, m. obs.); 1 at Gainesville 5 Feb-EOS (S. Ewing et al.); 1 female at Tallahassee 28 Feb (J. Eager).

RUFOUS HUMMINGBIRD: 1 adult male was banded at Tallahassee 22 Jan-EOS (F. Rutkovsky, P. Meredith); 1 was banded at Orange Park (*Clay*) 26 Jan-12 Feb (C. Long).

*ALLEN'S HUMMINGBIRD: 1 was banded in Pensacola 18 Jan (J. Brady).

CALLIOPE HUMMINGBIRD: 1 was banded in Pensacola 4 Jan (G. Bowman).

*BROAD-BILLED HUMMINGBIRD: 1 adult male at Fred W. Coyle Freedom Park, Naples (*Collier*) 12 Feb (J. Eager).

BUFF-BELLIED HUMMINGBIRD: Up to 2 at Castellow Hammock Park (*Miami-Dade*) 2 Jan-EOS (m. obs.).

HAIRY WOODPECKER: 2 at Gold Head Branch SP (*Clay*) 27-30 Jan (+S. Raduns); 2 at Bayard Conservation Area (*Clay*) 1 Feb (G. Williams); 2 at Branan Field Mitigation Park (*Duval*) 22 Feb (K. Dailey, +R. Clark).

LEAST FLYCATCHER: 1 at Lake Apopka NSRA 17 Dec (P. Hueber, B. Anderson); 1 at Paynes Prairie Preserve SP to 31 Jan (J. Hintermister, L. Davis et al.).

VERMILION FLYCATCHER: 1 second-year male at Orlando Wetlands Park from fall 2015-8 Mar (B. Rohman, L. Walters *fide* P. Hueber, m. obs.); 3 at Fort Pickens 3 Dec-26 Feb (B. Duncan, L. Duncan, m. obs.); 1 at International Paper Wetlands 6 Dec-28 Feb (J. Callaway, B. Callaway); 1 at Paynes Prairie Preserve SP 10 Dec (J. Hintermister, H. Adams, M. Manetz); 1 female at Puzzle Lake 26-31 Dec (D. Simpson, +S. Simmons, G. Bretz); 1 female at Ormond Beach Sports Complex and Fields 2 Jan-16 Mar (+M. Wilson); 1 at Walnut Hill (*Escambia*) 20 Jan-2 Mar (B. Duncan, L. Duncan, J. Callaway, B. Callaway).

ASH-THROATED FLYCATCHER: 1 at Tallahassee 1 Dec-12 Feb (E. Schunke); 1 at Hague (*Alachua*) 2 Dec (M. O'Sullivan, M. Manetz); 1 at Markham County Park (*Broward*) 7 Dec (+D. Bernstein, m. obs.); 1 at Paynes Prairie Preserve SP 9 Dec (J. Mays); 5 at various locations in Clermont (*Lake*) 1 Jan (*fide* J. Thomton); 1 at Eastman/Taminco Sanctuary (*Santa Rosa*) 8 Jan (L. Kelly, B. Furlow); 1 at Ocala (*Marion*) 5 Feb (A. Zions); 1 at Paynes Prairie Preserve SP 21 Feb (A. Zions).

TROPICAL KINGBIRD: 2 at STA-5, Clewiston (*Hendry*) 16 Jan (J. Eager); 1 at Torry Island, Bell Glade Marina (*Palm Beach*) 31 Jan-2 Feb (+B. Scott); 1 at Francis S. Taylor WMA (*Miami-Dade*) 24 Feb (C. Sanchez).

*CASSIN'S KINGBIRD: 1 at *Flagler* Sod Fields / CR305 30 Jan-EOS (M. Brothers et al.).

WESTERN KINGBIRD: Up to 10 in Ocala throughout the period (D. Richard, A. Zions); 1 at Sawgrass Lake Park 28 Dec (+J. Clayton); 1 at Huguenot Memorial Park (*Duval*) 30 Dec (J. Wheat).

EASTERN KINGBIRD: 1 at Bill Robertson, Jr. Center, Everglades NP (Miami-Dade) 14 Dec (+C. Sanchez et al.).

Gray Kingbird: 1 at STA-5, Clewiston 16 Jan (J. Eager).

Scissor-tailed Flycatcher: 3 at the Okaloosa County Water and STF 4 Dec-26 Feb (B. Duncan, L. Duncan, S. Cerulean, m. obs.); 1 at Lake Apopka NSRA 5 Feb (L. Felker).

Bell's Vireo: 1 first seen 21 Nov at Joe's Creek Greenway Park (*Pinellas*) was still present through at least 19 Feb (*fide* R. Smith); 1 at Frog Pond WMA (*Miami-Dade*) 6 Jan (A. Harper); 1 at West Miramar (*Broward*) 1 Dec-EOS (K. Schneider); 1 at The Kampong National Tropical Botanical Garden (*Miami-Dade*) 20 Feb (J. Friers).

Horned Lark: 12 near Greenwood (*Jackson*) 3 Jan (M. Miller, J. Murphy).

Northern Rough-winged Swallow: 9 at Lake Santa Fe (*Alachua*) 17 Dec (C. Foil); 1 at Paynes Prairie Preserve SP 20 Dec (J. Mays, A. Zions); 1 at Gulf Breeze 5 Feb (B. Duncan).

Bank Swallow: 2 at Lake Sampson (*Bradford*) 2 Jan (J. Hintermister); up to 6 at Sweetwater Wetlands Park 25 Jan-EOS (T. Anderson, D. Rohan et al.).

Cave Swallow: 1 at Honeymoon Island SP 5 Dec (T. Kalbach); 1 at St. Augustine 31 Dec (S. Ewing, B. Ewing); 1 at Bayport 24 Feb (E. Kwater, D. Gagne).

Barn Swallow: 1 over Joe's Creek Greenway Park 19 Dec (B. Ahern, +J. Mangold et al.); 1 at Sweetwater Wetlands Park 25 Feb (L. Davis); 2 at Longwood 26 Dec (P. Lindsay).

Red-breasted Nuthatch: 1 at Deep Creek Preserve (*DeSoto*) 3 Feb (R. Desramaux).

Brown-headed Nuthatch: Up to 8 at Brooker Creek Preserve 2 Jan (*fide* R. Smith, m. obs.).

Brown Creeper: 1 at Micanopy (*Alachua*) 20 Dec-EOS (M. Walters, M. Manetz et al.).

Winter Wren: 1 at O'Leno SP (*Alachua*) throughout the season (M. Manetz et al.).

Golden-crowned Kinglet: 1 at Apalachicola River Wildlife and Environmental Area (*Franklin*) 17 Jan (J. Murphy); 5 in n. Jacksonville 30 Jan and 2 more there 13 Feb (K. Dailey, +D. Foster); 3 at Florida Caverns SP, Marianna (*Jackson*) 27 Feb (J. Eager).

Wood Thrush: 1 at Miccosukee (*Leon*) 6 Jan (B. Phelan).

American Pipit: 40 along Highway 70 near Arcadia (*DeSoto*) 29 Jan (T. Rodriguez).

Sprague's Pipit: Up to 3 at Apalachicola airport (*Franklin*) 26 Dec-19 Feb (J. Murphy, S. Jones, J. Eager, T. Rodriguez); up to 2 at Kilbee Tract, Little Big Econ WMA (*Seminole*) 4 Jan-12 Feb (+S. Simmons, G. Bretz) provided the southernmost verifiable record (B. Anderson).

Ovenbird: 1 at Miccosukee 7 Jan-25 Feb (B. Phelan).

Worm-eating Warbler: 1 at Gainesville 12 Jan-6 Feb (F. Newell, A. Kratter, et al.).

Louisiana Waterthrush: 1 at O'Leno SP 25 Feb (D. Richard).

Northern Waterthrush: Up to 8 in *Alachua* throughout the season (J. Hintermister, A. Zions, et al.); 1 at International Paper Wetlands 24 Jan (J. Callaway, B. Callaway).

Blue-winged Warbler: 1 at John Pennekamp Coral Reef SP (*Monroe*) 15 Dec (+K. Kuntze); 1 at Matheson Hammock County Park (*Miami-Dade*) 19 Jan (A. Harper, +C. Sanchez).

Swainson's Warbler: 1 at Enchanted Forest Elaine Gordon Park (*Miami-Dade*) 4 Feb (A. Harper); 1 at Long Key SP 20-21 Feb (A. Moss).

Nashville Warbler: Up to 4 at Gainesville throughout the season (A. Zions, L. Hensley, J. Hintermister, et al.); 1 at Hague 4 Dec-30 Jan (K. Collingwood, E. Roche, P. Bazany); 1 at Shingle Creek Regional Park (*Osceola*) 17 and 24 Dec (+C. Newton); 1 at Mead Botanical Garden, Winter Park (*Orange*) 22 Dec-9 Mar (D. Raleigh, G. Becker, L. Epps, m. obs.); 1 at Masaryktown (*Hernando*) 29 Dec-EOS (D. Love); 1 at Sawgrass Lake Park 27 Jan (+J. Clayton, S. Tavaglione); 1-2 at Largo 13-15 Feb (T. Young); 1 at Sweetwater Wetlands Park 27 Feb (T. Tompkins).

Hooded Warbler: 1 male near Pace Park in downtown Miami (*Miami-Dade*) 8 Feb (+A. Harper).

American Redstart: 1 at Lake Jem Park (*Lake*) 17 Dec (G. Quigley); 1 first-year male at Cocoa 19 Dec (+M. Harris); up to 4 at Paynes Prairie Preserve SP 26 Dec-23 Feb (H. Jones, A. Zions, L. Davis, et al.); 1 at Bystre Lake (*Hernando*) 24 Jan (S. Spenceley);

1 at Hague 30 Jan-16 Feb (E. Roche, P. Bazany, et al.); 1 at Gainesville 14 Dec-18 Jan (A. Zions et al.).

NORTHERN PARULA: 1 at Tallahassee 7 Jan (E. Schunke); 1 at Cedar Point Preserve (*Duval*) 31 Jan (K. Dailey); 1 in Gulf Breeze 19 Feb (L. Bogiages).

BLACK-THROATED BLUE WARBLER: 1 at Sweetwater Wetlands Park 26 Jan (H. Jones).

*"AUDUBON'S" YELLOW-RUMPED WARBLER: 1 at Lake Santa Fe 17 Dec (D. Segal, E. Schwartz).

BLACK-THROATED GREEN WARBLER: 1 male at Merritt Island NWR 14 Dec (+N. Steel); 1 in Wright (*Okaloosa*) 14 Dec (B. Duncan, L. Duncan, C. Brown); 1 at Paynes Prairie Preserve SP 20 Dec (A. Kilmer); 1 at Boca Ciega Millennium Park (*Pinellas*) 26-27 Dec (+B. Nidiffer, M. Nidiffer, S. Aversa); 1 at Sawgrass Lake Park 29 Dec-29 Feb (+M. Burns, m. obs.); 2 at SW Gainesville 9 Jan-20 Feb (A. Zions); 1 at Walsingham Park (*Pinellas*) 17 Feb (+C. Paonessa); 1 in Gulf Breeze 29 Feb (B. Duncan).

WILSON'S WARBLER: 1 in s Jacksonville 6 Dec-14 Jan (B. Richter); 1 adult male at Gulf Breeze 6 Dec-29 Feb (B. Duncan, L. Duncan); 2 at Gainesville 14-20 Dec (A. Zions, S. Robinson et al.); 1 at Tiger Point (*Santa Rosa*) 19 Dec (B. Bremser, D. Stangeland); up to 5 at Paynes Prairie Preserve SP to 21 Feb (A. Zions, H. Jones, M. Manetz et al.).

YELLOW-BREASTED CHAT: Up to 2 at Paynes Prairie Preserve SP 11 Jan-EOS (R. Rowan, L. Davis et al.); 1 at Alligator Point 24-25 Jan (+J. Murphy); 1 at Micanopy 14 Feb (L. Predny).

SAFFRON FINCH: 1 at a feeder at n. St. Petersburg (*Pinellas*) 7 Feb (+R. Smith).

WESTERN SPINDALIS: 1 male black-backed race at Markham County Park 1 Dec-1 Feb (D. Hall, +T. Center, et al.).

*BLACK-FACED GRASSQUIT: 1 female at Long Key SP campground 9 Feb-EOS (A. Abreu, M. Abreu, m. obs.).

BACHMAN'S SPARROW: 1 at Brooker Creek Preserve 2 Jan (T. Leukering, +T. Mast et al.).

CLAY-COLORED SPARROW: 1 at Black Hammock, Oviedo (*Seminole*) 26 Dec (B. Anderson, +P. Hueber).

FIELD SPARROW: 1 at Brooker Creek Preserve 13-28 Feb (+T. Mast et al.).

VESPER SPARROW: 1 at Brooker Creek Preserve 12 Dec (E. Plage, P. Plage).

LARK SPARROW: 1 continued from the previous season at Eastport Wastelands (*Duval*) through 5 Feb (+K. Dailey, m. obs.); 1 at Fort Pickens 21 Dec-26 Feb (B. Duncan, W. Duncan, C. Zehnder, D. Stangeland, m. obs.); 1 at Clermont 27 Dec (+L. Streeper); 1 at Port Saint Joe (*Gulf*) 27 Dec (B. Henderson, D. Wells); 1 at Fort De Soto Park 3 Jan-15 Feb (L. Margeson, +B. Forys, m. obs.); a second was discovered there on 12 Feb (E. Plage); 1 at Gulf Breeze 21 Feb (S. McNamar).

GRASSHOPPER SPARROW: 1 at Apalachicola (*Franklin*) 26 Dec (J. Murphy, S. Jones).

HENSLOW'S SPARROW: 1 at Tallahassee 1 Dec (E. Schunke); 1 at Gold Head Branch SP 17 Dec (C. Wainwright); up to 5 at Prairie Creek Preserve (*Alachua*) 20 Dec-15 Feb (C. Burney, K. Miller et al.); 1 at Branan Field Mitigation Area 14 Jan (L. Flesher) and there again on 23 Feb (R. Clark); 1 at Hague 27 Jan-6 Feb (C. Burney, M. Manetz et al.); up to 2 at Gainesville 18-23 Feb (L. Davis. S. Goodman).

LE CONTE'S SPARROW: 1 at Kilbee Tract, Little Big Econ WMA 4 Jan (+S. Simmons, G. Williams); 1 at Little Big Econ SF (*Seminole*) 16 Jan (S. Simmons, G. Williams); 2 at Hague 27 Jan (C. Burney, C. Poli et al.).

NELSON'S SPARROW: ca. 15 at Shiloh Marsh, Merritt Island NWR (*Volusia*) 16 Dec (+D. Bales).

SALTMARSH SPARROW: 3 at Fort De Soto Park 7 Dec (+E. Plage); ca. 25 at Shiloh Marsh, Merritt Island NWR 16 Dec (D. Bales); 1 at Peacocks Pocket, Merritt Island NWR (*Brevard*) 7 Jan (J. Eager).

FOX SPARROW: 1 at Paynes Prairie Preserve SP 20 Dec (G. McDermott); 1 at Prairie Creek Preserve 20 Dec-16 Jan (C. Burney et al.).

WHITE-CROWNED SPARROW: 1 at Bald Point SP (*Franklin*) 29 Dec (J. Murphy); 1 adult at Fort De Soto Park 24 Jan-27 Feb (+J. Clayton, P. Graber).

DARK-EYED JUNCO: 1 in *St. Johns* 31 Jan-20 Feb (D. Mier).

SUMMER TANAGER: Up to 19 at Gainesville throughout the season (R. Robinson, A. Kent, G. Kent et al.); 1 male at Winter Park mid-Dec-EOS (R. Butler); 1 in w Pensacola 15 Dec-1 Jan (S. Coster, C. Coster); 1 at the Okaloosa County Water and STF 19 Dec (B. Purdy); 1 female at Gulf Breeze 20 Dec-1 Feb (B. Duncan, L. Duncan); 1 in s Jacksonville 24 Dec-19 Feb (R. Becker); 1 male at Sawgrass Lake Park 9 Jan-29 Feb (J. Vanderpoel, +T. Leukering et al); 1 north of Brooksville (*Hernando*) 14 Jan-EOS (A. Wraithmell et al.); 2 in Pensacola 5 Feb (J. Cobb) and 10 Feb (A. Harper); 1 male at a Safety Harbor feeder (*Pinellas*) 7 Feb (J. Ekern); 1 at Ocala 8 Feb (D. Richard); 1 at Tarpon Woods (*Pinellas*) 12 Feb (J. McGinity et al.); 1 female at Possum Branch Preserve (*Pinellas*) 15 Feb (S. Aversa).

WESTERN TANAGER: 1 at nw Gainesville 20-23 Dec (D. Fagan); 1 at Sawgrass Lake Park 11-21 Jan (+M. Burns et al.); 1 at Gainesville 24 Jan (B. Tarbox); 1 at Alligator Point 24-25 Jan (M. Lisitza, +J. Murphy); 2 at Jacksonville Zoo and Gardens 27-30 Jan (M. Chappell, G. Williams, m. obs.).

ROSE-BREASTED GROSBEAK: 1 male and 1 female at Tiger Point 23-31 Dec (L. Bogiages, P. Blakeburn); 1 female at Gulf Breeze 24 Dec (D. Timmons); 1 in Pensacola 29 Dec (G. Bowman); 1 female at Largo Nature Preserve 2-29 Feb provided *Pinellas* with its 2nd-ever winter record (+R. Cornelius).

BLUE GROSBEAK: 1 female at Lake Apopka NSRA 6 and 17 Dec (J. Eager, E. Horn et al.); 1 calling at Black Hammock, Oviedo 26 Dec (P. Hueber); up to 2 at Hague to 13 Jan (M. O'Sullivan et al.).

INDIGO BUNTING: 1 at Hague 2 Dec (M. O'Sullivan); 2 at Apalachicola 26 Dec (J. Murphy, S. Jones); up to 9 at Gainesville to 12 Feb (A. Kratter, A. Zions, et al.); 1 at Pensacola 24 Feb (J. Brady).

PAINTED BUNTING: 1 at Tallahassee 1 Dec-4 Jan (G. Farr); 1 female at Fort Pickens 11 Dec (B. Duncan, L. Duncan, S. Cerulean); 4 at Possum Branch Preserve 15 Feb (S. Aversa).

DICKCISSEL: 1 male at a feeder at DeLand (*Volusia*) 11-12 Dec (+P. May); 1 at *Alachua* 12-24 Jan (B. Wallace et al.); 1 at Big Talbot Island SP - Spoonbill Pond (*Duval*) 31 Jan (+K. Eldredge).

RUSTY BLACKBIRD: 2 at Marl Bed Flats Conservation Area, Sanford 2 and 5 Dec (+J. Leavens); 150 at Tallahassee 3 Jan-EOS (E. Schunke); up to 18 at Gainesville 16 Jan-EOS (L. Davis et al.).

BREWER'S BLACKBIRD: 1 female spent her fifth winter at Bayport (m. obs.); up to 3 females at Feiser's Dairy, DeLeon Springs (*Volusia*) 13 Dec and 18 Jan (M. Brothers); 130 at Wacissa (*Jefferson*) 28 Jan (D. Asbell, E. Schunke, A. Wraithmell, E. DuVal).

SHINY COWBIRD: 1 at Tallahassee 28 Feb (J. Cavanagh).

ORCHARD ORIOLE: 1 at Gainesville 24 Dec (+S. Goodman); 1 adult male at Valrico (*Hillsborough*) 11 Feb (J. Eager).

*BULLOCK'S ORIOLE: 1 at Tallahassee 29 Jan-EOS (+J. Langford, J. Cavanagh).

BALTIMORE ORIOLE: 28 at a residence in Jacksonville 12 Feb (M. Rosset).

PURPLE FINCH: 1 at Melrose (*Alachua*) 10-11 Dec (K. Collingwood); 3 in western *Duval* 17 Dec (D. Peacock).

HOUSE FINCH: 1 male at Cocoa where established but local in *Brevard* 19 Dec (+M. Harris).

PINE SISKIN: 15 at Alligator Point 30 Jan (D. Segal, A. Whitlock); 21 in *Alachua* 1 Feb-EOS (R. Rowan, C. Currey et al.); 1 at Morriston (*Levy*) 4 Feb (C. Bandyk); 2 at a feeder in s Jacksonville 7 Feb (+A. Craig); 2 at a feeder in Bayard Conservation Area 8-10 Feb (G. Williams); 3 at Seaton Creek Historic Preserve (*Duval*) 13 Feb (K. Dailey, D. Foster).

SCALY-BREASTED MUNIA: 12 in Pace (*Santa Rosa*) 29 Feb (D. Stangeland); 20 in w Pensacola 29 Feb (S. Yates).

LITERATURE CITED

STEFANOVA, L., AND D. ZIERDEN. 2015. Climate Summary for Florida – December 2015. Florida Climate Center. Florida State University, Tallahassee.

STEFANOVA, L., AND D. ZIERDEN. 2016a. Climate Summary for Florida – January 2016. Florida Climate Center. Florida State University, Tallahassee.

STEFANOVA, L., AND D. ZIERDEN. 2016b. Climate Summary for Florida – February 2016. Florida Climate Center. Florida State University, Tallahassee.

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CORRECTION: COORDINATES FOR A BANDED NORTHERN CARACARA (*Caracara cheriway*)

In our recent article "A new longevity record for the Northern Caracara (*Caracara cheriway*) in Florida" (Florida Field Naturalist 44:26-28, 2016), the longitude of the location where the caracara was originally banded, in March 1994, was erroneously reported as W 85° 01'. The correct location where this caracara was banded in 1994, and then photographed in 2015, is N 27° 28′, W 81° 01′. — *Joan L. Morrison, Brian K. Schmidt, and Steven M. McGehee*

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WHITE-CROWNED PIGEONS (*Patagioenas leucocephala*) IN SUBURBAN MIAMI-DADE COUNTY: A REVIEW OF LITERATURE AND CITIZEN-SCIENCE DATA

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Abstract.—The threatened White-crowned Pigeon (*Patagioenas leucocephala*) forages in intact hardwood hammock forest and breeds in mangroves, and historically is not closely associated with suburban habitat. Our observations of this bird in the Miami-Dade County suburbs prompted us to reassess whether this species is present in these habitats. We reviewed the literature and citizen-science records (through eBird) in the region to determine the frequency of observations of the White-crowned Pigeon across Miami-Dade and Monroe Counties. We found that in Miami-Dade, the frequency of observation of this bird is fairly constant year-round. This contrasts with the Florida Keys, where observations of the pigeon decrease in the winter months. We suggest that ecological changes to the region, such as replacing freshwater marsh with tree-lined suburbs and recently increasing street tree canopy cover, may have facilitated year-round expansion of White-crowned Pigeons in Miami-Dade County.

The White-crowned Pigeon (*Patagioenas leucocephala*; WCP) is a state-listed threatened bird in Florida. This Caribbean species occurs primarily in extreme southern Florida, especially the Florida Keys, but vagrant individuals have been recorded as far northwest as the Panhandle (Ware 1997). This species is under threat across its range, and it is still widely hunted in the Caribbean, especially the Bahamas (Meyer and Wilmers 2006). In the Florida Keys and elsewhere in the Caribbean, the tropical dry and mangrove forests and upon which WCP depend are under constant threat of development (Karim and Main 2009)tropical hardwood hammock is a threatened forest ecosystem that occurs only in extreme south Florida, primarily on the Florida Keys archipelago. This rare forest type is characterized by high plant diversity that is strongly influenced by

tropical, mast-producing trees and shrubs of West Indian origin. Tropical hardwood hammocks in the Florida Keys provide important habitat for resident and migratory birds, particularly Neotropical species that rely on suitable stopover habitat during migration. The Florida Keys are under intense development pressure, particularly in higher elevation sites where tropical hardwood hammock occurs. With exception of a survey completed during 1991 in the Upper Keys, information regarding habitat loss and current coverage, conservation status, and how best to conserve remaining patches of this rare forest habitat are lacking. We used a Geographic Information Systems approach to assess the extent of loss and fragmentation of tropical hardwood hammock in the upper Keys during 1991-2004, quantify area and number of hammock patches under private ownership and in conservation status throughout the Florida Keys as of 2004, and evaluate strategies to most effectively conserve large blocks of remaining tropical hardwood hammock. Total remaining hammock habitat throughout the Keys encompassed 3,712 ha and hammock habitat declined by 31% in the upper Keys during 1991-2004. Hammock habitat in the upper Keys encompassed 1,962 ha among 124 habitat patches (median = 1.5 ha, range = 0.1-205.7 ha. In addition to the short-term threat of deforestation, the entire regional distribution of coastal hardwood forests and mangrove islands are vulnerable to sea level rise (Saha et al. 2011).

Breeding in Florida primarily occurs on mangrove islands that are free from mammalian predators (Strong and Bancroft 1994). The nesting season peaks in May through August (Bancroft et al. 2000). The mangrove islands provide little in way of nourishment for frugivores. Therefore, the pigeons must fly to tropical dry forests on the mainland to forage in order to obtain the nutrient-rich fruits necessary to produce the crop milk fed to nestlings. (Bancroft et al. 1995). Tropical hardwood hammocks, South Florida's dry forests, consist of hundreds of plant species, many of which produce fleshy fruits (Simpson 1920, Ross et al. 1992, Redwine et al. 2007, Diamond and Heinen 2016). Fruiting trees dominate early-, mid-, and late-successional hardwood hammock forests (Diamond and Ross 2016). From mid-July through the end of September, fledglings disperse to the mainline Keys and the Florida mainland (Strong and Bancroft 1994). It is believed that most of the individuals breeding in Florida overwinter in the Caribbean (Bancroft and Bowman 1994). Suburban and urban habitats were reported to be avoided by the WCP, and fledgling birds preferred any size forest fragment over developed habitat (Strong and Bancroft 1994). However, our year-round casual observations of these birds in the densely-populated suburbs of Miami-Dade County prompted us to reassess whether the WCP would use developed habitat. Habitat ecology influences the process of range expansion, for example, two dove species colonized greater proportions of urban habitats in South

Texas (Veech et al. 2011). We reviewed citizen-science data to examine a whether a change in bird activity in developed areas could be noted in the time since the Strong and Bancroft (1994) publication.

METHODS

We used the eBird database of bird observations from 2004-2014 to analyze the frequency of WCP records across developed and natural areas in Miami-Dade and Monroe Counties, Florida. This database is one of the largest collections of citizen-science data in the world, allowing birders to enter data from any computer or smartphone, creating a digital record of bird distributions (Sullivan et al. 2009). This database is particularly useful for reviewing temporal patterns in bird sightings as data collection is constantly ongoing. The Christmas Bird Count is a better estimate of local abundance, which is not a suitable application of eBird data. We downloaded all eBird data from Miami-Dade and Monroe Counties for this time period, and removed duplicate observations from concurrent observers. Here, frequency is calculated as the percentage of checklists reporting the WCP within the specified date range and region. Frequency is only calculated from complete checklists of all birds reported by users, helping to control for seasonal variation in effort. Casual observations, a sighting of a species without recording all other species observed at that time, are not used in frequency calculations. Concurrent observations, multiple checklists submitted by a group of birders, were filtered out.

The eBird database allows users to add links to georeferenced bird photographs. This allows moderators to confirm correct species identification, especially for a rarity or a bird outside of its typical known range. Filtering for only checklists with media attached, we viewed and downloaded all WCP photographs in Miami-Dade and Monroe Counties. If a WCP was photographed while perched, we recorded whether the perch used was a powerline or a tree, and identified the tree to species when possible. This is important because the WCP is an obligate arboreal frugivore, and the use of a perch tree suggests a possible foraging relationship. We examined 15 photographs in suburban Miami-Dade, 14 photographs in Everglades National Park, and 32 photographs from the Florida Keys.

RESULTS

Mapping of nearly 1,500 WCP sightings indicates a large number of observations in certain communities of Miami-Dade County (Fig. 1). The bulk of the observations occur in the inland unincorporated suburbs of Kendall, West Kendall, and the surrounding communities, as well as the coastal towns of Pinecrest, Coral Gables, and South Miami. Relatively few birds were observed in the northern parts of Miami-Dade County. The coastline of southern Miami-Dade County, which includes natural areas and botanical gardens, also has sightings primarily at these public locations. Observations in Everglades National Park show a distribution of sightings along the main park road, and other public-access visitor areas in the southern portion of the park. However, the northern portion of the national park along Tamiami Trail shows no observations. This includes public birding hotspots like the Shark Valley Visitors Center which has over 900 complete bird checklists and over 200 confirmed bird species.

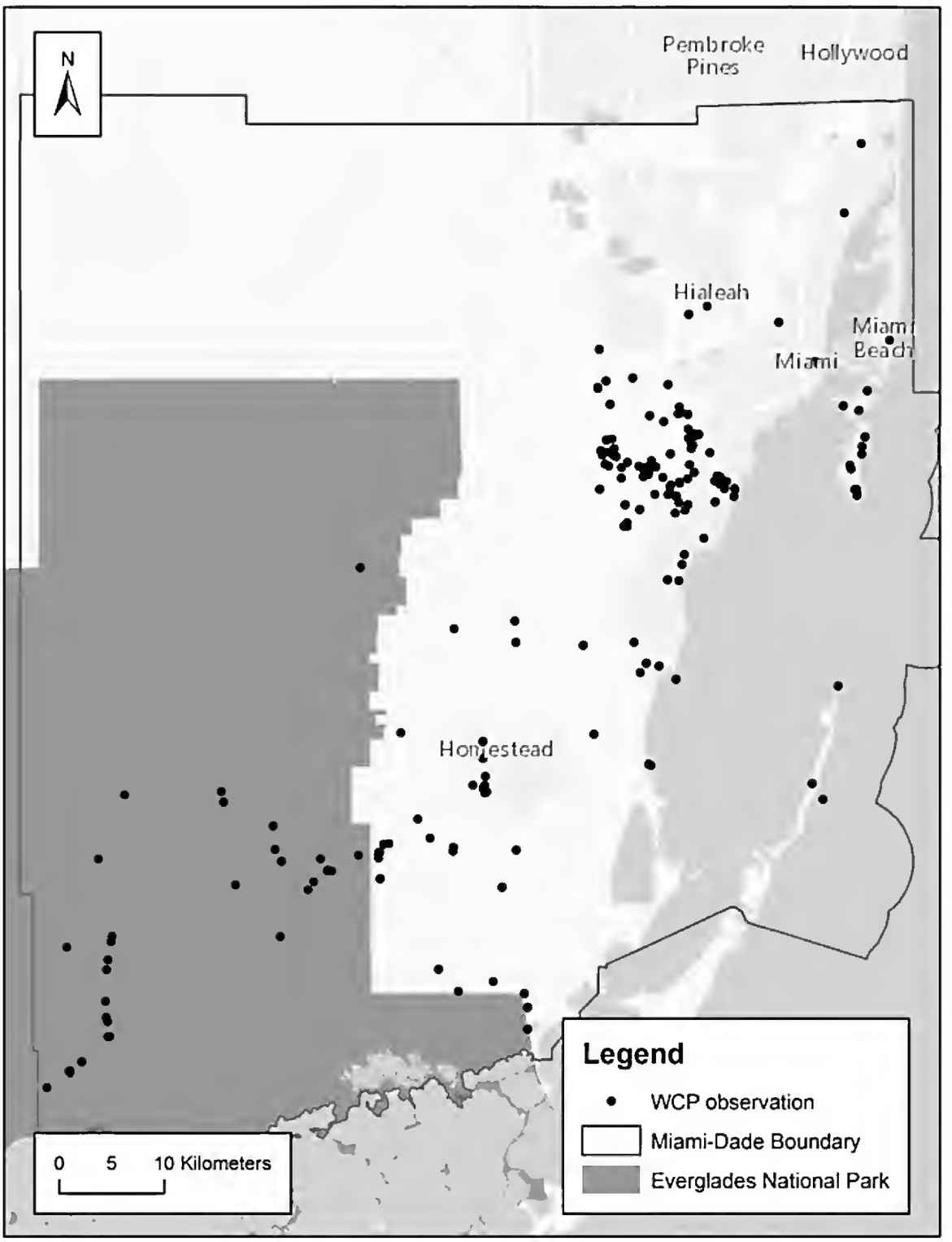

Figure 1. Distribution of White-crowned Pigeon sightings in Miami-Dade County, Florida.

We compared the 11-year annual frequency of observations between the Miami-Dade portion of Everglades National Park and suburban Miami-Dade County (Fig. 2). We compared the years 2004/05 and 2013/14 inside and outside of the park, and the frequency of checklists reporting WCP was significantly different, $\chi^2(3, N = 11{,}895)$

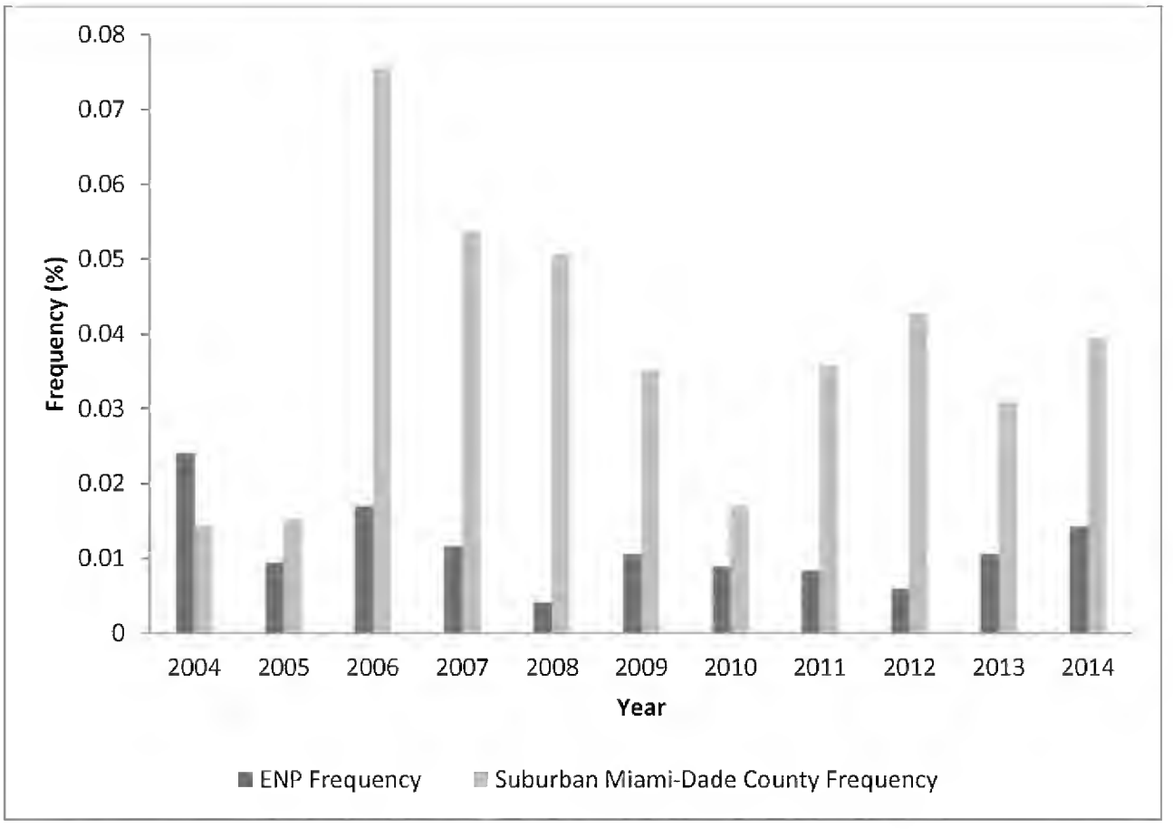

Figure 2. Annual frequencies of observations (percent of complete checklists reporting the species) of White-crowned Pigeons in the suburban and Everglades National Park portions of Miami-Dade County.

= 20.05, $p < .0005$. 2004 was the only year in which the park had a higher frequency of observation for WCP than the suburban areas. By 2006, the frequency of observation in the suburbs was more than four times greater than in the Miami-Dade portion of Everglades National Park. For the next eight years, the suburban areas would continue to record WCP at much greater frequencies.

We compared the 11-year weekly frequency of observations between Miami-Dade County, and Monroe County, Florida (Fig. 3). Monroe County encompasses the Florida Keys and the western portions of Everglades National Park. While the maximum weekly frequency of observation in Miami-Dade is about 13%, the WCP is much more frequently observed in Monroe County, up to almost 60% in the peak post-fledgling period. However, during the winter, the frequencies in both counties are about the same. The frequencies of observations in Miami-Dade are considerably more constant year-round, with a slight increase in the post-fledgling period. In Monroe County, the frequency of observations is six times higher in the first week of September than the first week of November.

We examined all eBird photos of WCP from South Florida. Six of fifteen WCP photographed in suburban Miami-Dade were perched

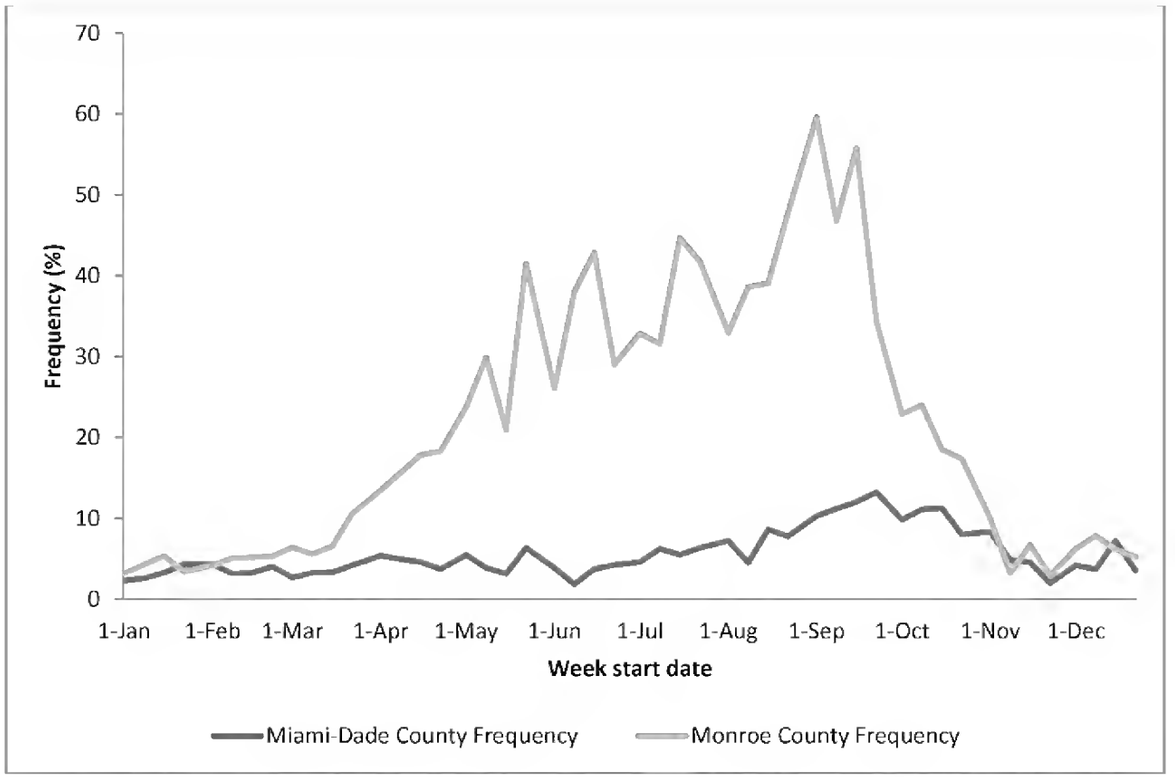

Figure 3. Weekly frequency of White-crowned Pigeons recorded in Miami-Dade and Monroe counties, Florida, from 2004-2014.

on wires, and the rest were perched on vegetation. All fourteen birds photographed in Everglades National Park were perched on vegetation. Five of 30 WCP photographed in the Florida Keys were perched on wires. 13 tree taxa were recorded as perches in these photographs, in addition to dead snags or unidentifiable trees (Table 1). Although this is a small dataset, seven of these 13 tree taxa, Bahama strongbark (*Bourreria ovata*), gumbo limbo (*Bursera simaruba*), cocoplum (*Chrysobalanus icaco*), dahoon holly (*Ilex cassine*), poisonwood (*Metopium toxiferum*), *Coccoloba* and *Trema* species, have already been documented as food sources for the WCP. Four of the trees, buttonwood (*Conocarpus erectus*), South Florida slash pine (*Pinus elliottii var. densa*), Jamaican dogwood (*Piscidia piscipula*) and *Senna* species, do not produce bird-edible fruit, but were likely used because they are tall and serve as a safe perch. These are canopy-level trees, and unlike other columbids, the highly arboreal WCP is rarely seen on the ground (FWC 2013). The remaining species, cabbage palm (*Sabal palmetto*), and umbrella tree (*Schefflera actinophylla*), have not been documented in the WCP diet, but produce fruits that are edible to birds.

Discussion

The changes to the landscape of the Miami-Dade suburbs may have facilitated the increased use by foraging pigeons. Prior to changes of

Table 1. List of tree perches identified in photographic analysis of eBird records from Miami-Dade and Monroe counties, Florida.

Tree species	Everglades National Park (ENP)	Miami-Dade County (excluding ENP)	Monroe County (excluding ENP)
Bourreria ovata			1
Bursera simaruba	2	2	3
Chrysobalanus icaco	2		
Coccoloba uvifera			1
Conocarpus erectus	3	1	4
Dead tree (snag)	2		3
Ilex cassine	1	1	
Metopium toxiferum	2		1
Pinus elliottii var. *densa*			1
Piscidia piscipula			4
Sabal palmetto			1
Schefflera actinophylla		1	
Senna sp.			1
Trema spp.	1	3	1
Unidentified tree	1		4

the hydrological regime of the eastern Everglades, many of the western suburbs of Miami-Dade would have been marl prairie dominated by sawgrass (*Cladium jamaicense*) (Davis et al. 2005). Increasing urbanization may have caused biotic homogenization within a naturally heterogeneous region (Barrett et al. 2008). Following drainage and spread of residential development, trees were grown in a suburban landscape which would not have previously contained many large canopy trees. In 1996, Miami-Dade County had only 10% tree canopy cover, with some neighborhoods having as little as 1-2%, compared to the US metropolitan area average of 33% (Miami-Dade County 2007). Since then, additional trees have been planted in public right-of-way areas such as road medians. The official goal of these street tree plantings are to reduce storm water runoff, provide energy savings with shade, and increase property values (Escobedo et al. 2014). The native trees used in county plantings that have already been documented as WCP food sources include willow bustic (*Sideroxylon salicifolium*), inkwood (*Exothea paniculata*), black ironwood (*Krugiodendron ferreum*), pigeon plum (*Coccoloba diversifolia*), blolly (*Guapira discolor*), and four species of *Eugenia*. Over the past decade these plantings have increased Miami-Dade County's canopy cover closer to the goal of 30%.

Whether planted by humans or naturally dispersed, these trees could be providing food resources needed by the WCP. The most important food source for the WCP is believed to be the berries of poisonwood (*Metopium toxiferum*) (Bancroft and Bowman 1994). This tree has been widely persecuted in developed areas because it causes

dermatitis similar to poison ivy (*Toxicodendron radicans*). Since *M. toxiferum* is nearly absent from the urban landscape, other fruiting trees in the suburban habitat must be important for sustaining pigeons. Several common landscaping trees, including gumbo limbo and strangler fig (*Ficus aurea*), are already documented as food sources for the pigeon. The asynchronicity of fruiting between the two native and nine exotic species of *Ficus* in South Florida may be particularly important in providing a year-round food resource (Reed Bowman, personal communication; Lee and West 2011). WCP have been known to exploit seasonally available food resources. For example, in Jamaica, increased abundance of non-breeding WCPs was recorded during the peak fruiting season of mountain thatch palm (*Thrinax parviflora*) (Strong and Johnson 2001).

In addition to the native tropical hardwood hammock species present in the suburban landscape, Miami-Dade has many non-native tree species. One such tree, Brazilian pepper (*Schinus terebinthifolia*), has been recorded in the crop milk of the WCP. During winter, WCP have been recorded consuming large quantities of dried *Schinus* fruit (Meyer and Wilmers 2006). Our eBird photo analysis also showed a WCP perched in the canopy of a highly invasive umbrella tree that is bearing ripe fruit. The increase in tree species richness in the suburban landscape may have inadvertently provided new food resources for the WCP (Sjöman et al. 2016). Despite any possible benefit to the WCP, we do not recommend spreading invasive vegetation, in particular those that are prohibited for planting as Category I invasive species. Everglades National Park is leading an aggressive campaign to eradicate invasive trees, such as the 4000 acre (1,629 hectare) restoration of the "Hole in the Donut" site (Smith et al. 2011). At this site a monoculture of *Schinus* was established on abandoned farmland. *Schinus* is difficult to eradicate in the urban environment, as it readily colonizes disturbed uplands and is often unwittingly protected by homeowners and landscapers (Gann 2015). Controlling *Schinus* in Everglades National Park necessarily involves controlling it in adjacent urban areas.

In addition to planting new trees, the region has seen an increase in the protection of natural upland forest communities (Diamond and Heinen 2016). The Environmentally Endangered Lands (EEL) program has acquired thousands of hectares of forest and wetland habitats, and restored many parcels by removing invasive plants and planting native trees. Over 300 rare upland plants have been conserved in the EEL program (Diamond and Heinen 2016). This program contains over 600 hectares of pine rockland forest and almost 300 hectares of hardwood hammock (Alonso and Heinen 2011). Since 2011, an additional 400 hectares of hardwood hammock have been purchased and restored.

About one hundred additional forested hectares have been protected on private property, as part of an EEL program providing tax relief to land owners in exchange for habitat conservation (Giannini and Heinen 2014).

The WCP are primarily being recorded in the southern areas of Miami, such as Kendall, Coral Gables, South Miami, and Pinecrest. These areas have greater canopy cover than northern parts of the county at similar levels of urbanization, such as Hialeah and Miami Gardens. In addition, most of the sites in the EEL program are in south Miami-Dade County (Diamond and Heinen 2016). We recommend a continuation of the Miami-Dade County street tree master plan, increasing use of native species, especially in communities that still lag behind in canopy cover. Future acquisitions by the EEL program may increase canopy cover through restoration efforts in northern Miami-Dade County, and potentially provide the WCP additional foraging resources.

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LITERATURE CITED

ALONSO, J., AND J. T. HEINEN. 2011. Miami-Dade County's Environmentally Endangered Lands Program: Local efforts for a global cause. Natural Areas Journal 31:183-189.

BANCROFT, G. T., AND R. BOWMAN. 1994. Temporal patterns in diet of nestling White-crowned Pigeons: implications for conservation of frugivorous columbids. Auk 111:844-852.

BANCROFT, G., A. STRONG, AND M. CARRINGTON. 1995. Deforestation and its effects on forest nesting birds in the Florida Keys. Conservation Biology 9:835-844.

BANCROFT, G. T., R. BOWMAN, AND R. SAWICKI. 2000. Rainfall, fruiting phenology, and the nesting season of White-crowned Pigeons in the upper Florida Keys. Auk 117:416-426.

BARRETT, K., C. M. ROMAGOSA, AND M. I. WILLIAMS. 2008. Long-term bird assemblage trends in areas of high and low human population density. Research Letters in Ecology 2008:1-4.

DAVIS, S. M., E. E. GAISER, W. F. LOFTUS, AND A. E. HUFFMAN. 2005. Southern marl prairies conceptual ecological model. Wetlands 25:821-831.

DIAMOND, J. M., AND J. T. HEINEN. 2016. Conserving rare plants in locally-protected urban forest fragments: A case study from Miami-Dade County, Florida. Urban Forestry & Urban Greening 20:1-11.

DIAMOND, J. M., AND M. S. ROSS. 2016. Canopy gaps do not help establish pioneer species in a South Florida dry forest. Journal of Tropical Ecology 32:107-115.

ESCOBEDO, F. J., D. C. ADAMS, AND N. TIMILSINA. 2014. Urban forest structure effects on property value. Ecosystem Services 12:209-217.

FWC [FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION]. 2013. A Species Action Plan for the White-Crowned Pigeon. Florida Fish and Wildlife Conservation Commission, Tallahassee.

GANN, G. D. 2015. Vascular Plant Species of Management Concern in Everglades National Park: Final Report. Delray Beach, Florida.

GIANNINI, H. C., AND J. T. HEINEN. 2014. Miami-Dade County's Environmentally Endangered Lands Covenant Program: Creating protected areas on private lands via financial incentives. Natural Areas Journal 34:338-345.

KARIM, A., AND M. B. MAIN. 2009. Habitat fragmentation and conservation strategies for a rare forest habitat in the Florida Keys archipelago. Urban Ecosystems 12:359-370.

MEYER, K. D., AND T. J. WILMERS. 2006. Foraging Habitats, Winter Residency, Survival, and Philopatry of Adult White-crowned Pigeons (*Patagioenis leucocephala*) in the lower Florida Keys. Final Report NG03-013 to Florida Fish and Wildlife Conservation Commission, Tallahassee.

MIAMI-DADE COUNTY. 2007. A Greenprint for our Future: Miami-Dade County Street Tree Master Plan.

REDWINE, J. R., R. SAWICKI, J. J. LORENZ, AND W. HOFFMAN. 2007. Ripe fruit availability in the fragmented hardwood forests of the northern Florida Keys. Natural Areas Journal 27:8-15.

ROSS, M. S., J. O'BRIEN, AND L. FLYNN. 1992. Ecological site classifications of Florida Keys terrestrial habitats. Biotropica 24:488-502.

SAHA, A. K., S. SAHA, J. SADLE, J. JIANG, M. S. ROSS, R. M. PRICE, L. S. L. O. STERNBERG, AND K. S. WENDELBERGER. 2011. Sea level rise and South Florida coastal forests. Climatic Change 107:81-108.

SIMPSON, C. T. 1920. In Lower Florida Wilds: A Naturalist's Observations on the Life, Physical Geography, and Geology of the More Tropical Part of the State. G. P. Putnam & Sons, New York.

SJÖMAN, H., J. MORGENROTH, J. DEAK, S. A. SAEBØ, AND I. KOWARIK. 2016. Diversification of the urban forest–can we afford to exclude exotic tree species? Urban Forestry & Urban Greening 18:237-241.

SMITH, C. S., L. SERRA, Y. LI, P. INGLETT, AND K. INGLETT. 2011. Restoration of disturbed lands: The Hole-in-the-Donut restoration in the Everglades. Critical Reviews in Environmental Science and Technology 41:723-739.

STRONG, A. M., AND G. T. BANCROFT. 1994. Postfledging dispersal of White-Crowned Pigeons: Implications for conservation of deciduous seasonal forests in the Florida Keys. Conservation Biology 8:770-779.

STRONG, A. M., AND M. D. JOHNSON. 2001. Exploitation of a seasonal resource by nonbreeding Plain and White-Crowned pigeons: Implications for conservation of tropical dry forests. Wilson Bulletin 113:73-77.

SULLIVAN, B. L., C. L. WOOD, M. J. ILIFF, R. E. BONNEY, D. FINK, AND S. KELLING. 2009. eBird: A citizen-based bird observation network in the biological sciences. Biological Conservation 142:2282-2292.

VEECH, J. A., M. F. SMALL, AND J. T. BACCUS. 2011. The effect of habitat on the range expansion of a native and an introduced bird species. Journal of Biogeography 38:69-77.

WARE, D. M. 1997. White-crowned Pigeon north of its known range. Florida Field Naturalist 25:141-142.

Florida Field Naturalist 44(4):157-168, 2016.

SONGBIRD DISTRESS CALLS AS AN IMPROVED METHOD FOR DETECTING RED-SHOULDERED HAWKS (*Buteo lineatus*)

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Abstract.—We present an audio playback method that increases the probability of encountering, and consequently increases the efficiency of detecting, counting, and monitoring, Red-shouldered Hawks (*Buteo lineatus*). Our design involves a passive census period prior to and following a playback period with broadcast of one of two, five-minute pre-recorded playbacks: distress calls of Tufted Titmouse (*Baeolophus bicolor*), or perched calls of Eastern Screech-Owl (*Megascops asio*). We conducted fixed-radius point counts before, during, and after playback periods at 124 independent sites in north-central Florida from September 2012 to May 2013. We used generalized linear modeling to estimate the effects of habitat type, census period, and treatment (playback type) on the probability of the presence of Red-shouldered Hawks on surveys. We detected raptors (*B. lineatus*) on 10 (8%) surveys prior to playback of either treatment (distress, owl). Following playback of *M. asio* we detected raptors (Red-tailed Hawk, *B. jamaicensis*; Barred Owl, *Strix varia*) on two surveys (0.3%). Following playback of *B. bicolor* we detected raptors (Red-tailed hawk, Red-shouldered Hawk, Barred owl) on 21 surveys (34%). A post-hoc multiple comparisons test of the fixed interaction effect among treatment and playback periods detected a significant effect of distress call playback on the probability of presence of Red-shouldered Hawk both within, and across treatments. We conclude that songbird distress calls significantly enhance the detectability of Red-shouldered Hawk within the sound-exposed area, and thereby decreases the effort required to census for these, and possibly other, raptorial species.

INTRODUCTION

Accurate and precise estimates of density, abundance and occupancy of animals directly influences the capacity to monitor, assess and predict population trends. Population estimates are especially challenging when attempting to census species that are non-colonial, highly social, trap-shy or cryptic (Fuller and Mosher 1981, Johnson et al. 1981, Legare et al. 1999, Johnson et al. 2014). The majority of bird species, because they rely heavily on vocal and visual communication

cues that humans can readily detect, represent favorable subjects for detection and monitoring programs, assuming that observers are skilled in sound and sight identification. Common techniques for censusing terrestrial birds include point counts and transects using human observers on foot or in vehicles (Fuller and Mosher 1981, Bibby et al. 1992) and, increasingly, automated acoustic monitoring (Gregory et al. 2004, Acevedo and Villanueva-Rivera 2006, Blumstein and Mennill 2011). Point counts and acoustic monitoring applied to avian communities and individuals can be relatively efficient because of the predictability of their diurnal activity and vocalization periods (Palmgren 1949). Such methods can be standardized to rely on the assumption of uniform detection among survey samples or can be conducted in ways that allow for the estimation of detectability (Buckland et al. 1993).

Raptor survey methods.—Many raptor species, however, present a variety of unfavorable characteristics for detection and population estimation with standard avian survey techniques. Raptors exhibit highly cryptic behaviors and their coloration typically maximizes background matching which, by design, decreases the probability of detection by humans and prey (Fuller and Mosher 1981, Newton 1986, Andersen 2007, Henneman et al. 2007). Consequently, passive point and transect surveys yield low numbers of raptor detections, usually with very low detection probabilities (Millsap and LeFranc 1988). This limits accuracy and precision in relative abundance, occupancy or density estimation (Sattler and Bart 1984) and can only be overcome with very large (extensive) sample sizes or repeated (intensive) sampling. One common, extensive technique applied to assess relative abundance of temperate, diurnal raptors is the roadside survey (Andersen et al. 1985, Millsap and LeFranc 1988, Ellis et al. 1990). Roadside surveys rely on the probability of detecting raptors that are soaring or vocalizing during the census period and are conducted over long distances of vehicle-accessible trails or roads. Because soaring and vocalizing are relatively infrequent in the diurnal cycles of most raptors, underestimation of raptors in roadside surveys is assumed. Moreover, because of the large distances between sampling points, roadside surveys provide data that are course-grained and relatively inaccurate with respect to habitat associations for most raptor species (Burnham et al. 1980, Fuller and Mosher 1987).

Use of playbacks in avian censusing.—Many small to medium-sized raptors occupy home ranges that are scale-appropriate for point- or transect-based census methods. Therefore, a focus for improving census methods for raptors should focus on enhancing the probabilities of detection, despite their cryptic phenotypes. The use of taped call playbacks (hereafter, playbacks) to enhance detection has become

more frequent in surveys for many cryptic bird species, including raptors (Johnson et al. 1981, Marion et al. 1981; Harris and Haskell 2013). Two classes of playback stimuli are typically used with birds to elicit different kinds of conspicuous behaviors; (i) conspecific (i.e. territorial) vocalizations (Stamps 1988) and (ii) predation-related vocalizations, including calls of predators and/or their prey (scolding, mobbing, or distress calls). Conspecific vocalizations can be used for single species to elicit territorial defense and display behaviors such as close approaches, counter-singing, wing flicking, and frequent perch changes (e.g., Mosher and Fuller 1990, Andersen 2007). Predator scolding (mobbing) calls, or calls of predators themselves, have been used primarily with non-raptorial birds to attract multiple species at once. Scolding calls of birds that are preyed upon by raptors as well as raptor (and other predator) vocalizations will generate multi-species 'mobs' of prey birds exhibiting conspicuous predator inspection behaviors such as close approaches, frequent perch changes, and alarm vocalizations (Falls 1981, Hurd 1996, Forsman and Mönkkönen 2001, Johnson et al. 2004, Sieving et al. 2004, Langham et al. 2006, Magrath et al. 2007). This method has been used to census non-breeding passerine bird communities (Turcotte and Desrochers 2002), but has not been applied to raptors.

Conspecific playback can be used to map territories of focal individuals or groups (Kendeigh 1944; Bibby et al. 1992), and short-duration playbacks of territorial calls have been used to evoke conspicuous behaviors (i.e. eliciting sentinel behavior on high perches) during censusing. For example, broadcasting vocalizations following a period of passive census for Florida Scrub-Jay *Aphelocoma coerulescens* greatly enhances this species' detectability (Johnson et al. 2014). Conspecific territorial playbacks are used in raptor surveys (e.g., Mosher et al. 1990, Watson et al. 1999, Salvati et al. 2000) and in raptor capture attempts (Bloom et al. 2007; Rosenfield et al. 2007). As with most species, (conspecific) playback often functions only during early-breeding-season sampling and is difficult to apply when more than one species is being counted. This is because large raptors prey on smaller species of raptors and songbirds alike; playback of multiple species of raptor calls from one location may suppress responses of the more vulnerable species (Call 1978).

Study objectives.—We present data supporting a playback technique that can attract raptorial species outside of the breeding season, and that will increase the efficiency of detection of Red-shouldered Hawks *Buteo lineatus* relative to passive surveying techniques. Like other birds, raptors spend the majority of their time seeking food (e.g., Plumpton and Andersen 1997). We have noted that hawks and jays are sometimes attracted to the distress

calls of small passerines during handling at mist nets. Therefore, we investigated the utility of songbird distress calls to invoke prey inspection behavior by raptors. Distress calls are elicited under a variety of conditions when individuals perceive imminent harm or experience contact with an attacker (Norris and Stamm 1965). Among the functions of distress calls proposed in the literature, the three most common are that (1) captured prey use them to directly startle their captor into letting go (startle-predator hypothesis; Driver and Humphries 1969), (2) that distress calls can attract aggressive mobs of family members or heterospecifics to drive the captor away (call-for-help hypothesis; Rohwer, et al. 1976), or (3) that by signaling vulnerability, the distressed prey can attract a counter-attack by a competing predator that could distract the captor into releasing the captive (predator-attraction hypothesis; Curio 1976). Some evidence supports the first two hypotheses. Distress calls can elicit approach and inspection responses by heterospecifics and conspecifics (Stefanski and Falls 1972, Perrone 1980, Hill 1986, Aubin 1991). Regarding (3), recreational and sport hunters have long recognized that prey distress calls can readily attract predators (Branch and Freeberg 2012). For example a bestselling predator caller device broadcasts (among others) the distress calls of jack- and cottontail rabbits and snowshoe hares, deer fawns, voles, squirrels, prairie dogs, and three bird species (FOXPRO® Spitfire Predator Caller). Under the assumption that raptors are highly motivated to approach and inspect a distressed and presumably incapacitated prey, we tested whether the use of songbird distress calls could enhance the rate of detection of woodland raptors in North-central Florida.

Methods

Study area.—Research was conducted in hardwood forests of north Florida at Ordway-Swisher Biological Station (OSBS) near Melrose (Putnam County; N 29° 41' 22.8588", E -82° 0' 10.1304"), Gold Head Branch State Park (GHBSP, Clay County, N 29° 50.041', E -81° 56.747") and additional samples were taken at various city, private and state-managed natural lands in Gainesville (Alachua County). Sample locations occurred in mesic to xeric woodlands with > 40% canopy cover of mixed hardwood and pine. All study species occur throughout the heterogeneous woodland ecosystems of north-central Florida, therefore the only requirement was that the habitat be natural woodland.

Playback recordings.—We used two types of playback recordings for this study; the distress call of the Tufted Titmouse (*Baeolophus bicolor*), and recordings of an Eastern Screech-Owl (*Megascops asio*). The Tufted Titmouse is a common songbird of eastern North American woodlands and is a common prey item in the diets of a variety of raptor species (Courter and Ritchison 2010). We used species lists maintained by park officials (e.g., Gold Head Branch State Park 2004. OSBS 2004) to compile a list of predator species expected at our study sites. When species lists were unavailable we referred to eBird (2012; Table 1). In north-central Florida, unpublished observations of raptor attacks on titmice suggests that the most common avian predators of titmice are accipiters (e.g.,

Table 1. List of raptors potentially detectable in our study area and the number of detections they were observed in each survey or set of survey periods. We conducted a total of 373 point-count surveys for this study at 124 sites, and observed raptors during a total of 23 surveys. Species in bold were detected during this study, others were not detected during this study.

Red-tailed Hawk, *Buteo jamaicensis*
Barred Owl, *Strix varia*
Red-shouldered Hawk, *B. lineatus*
Broad-winged Hawk, *B. platypterus*
Northern Harrier, *Circus cyaneus*
Merlin, *Falco columbarius*
American Kestrel, *F. sparverius*
Barn Owl, *Tyto alba*
Great Horned Owl, *Bubo virginianus**
Eastern-Screech-Owl *Megascops asio**
Cooper's Hawk *Accipiter cooperii**

*Species detected during informal playback of Tufted Titmouse distress call playback but not detected during this study's sampling efforts.

Sharp-shinned Hawk [*Accipiter striatus*], Cooper's Hawk [*A. cooperii*]; K. E. Sieving, unpublished data). Some owls and hawks are highly opportunistic predators that should also be attracted to inspect a distressed titmouse.

Census protocol.—We counted individuals within a 25 m fixed radius about a single point at which a playback device was centered. We assumed the detection rate of any individuals within this radius would be high (Buckland et al. 1993; Pacifici et al. 2008). To test the effects of playback type on avian predator response (i.e., a predator approaching the playback device), we broadcast one of two playbacks: (1) the recorded distress call of a tufted titmouse from wild, captured birds in the hand (recorded by T. Freeberg), or (2) the perched call (trill) of an Eastern Screech-Owl (files obtained from Xeno-Canto online database). Titmice are vocal during handling and emit distress calls; high pitched vocalizations that are not produced in any other context while the birds are free-living. For each trial within each treatment, we randomly chose a playback file from ten distress-call and three screech-owl five-minute, looped playback files (.wav format). We conducted 372 censuses across treatments at 124 sites between September 2012 and May 2013. We restricted playbacks and surveys to between 30 min after sunrise and 1100 EST to avoid inactive hours of the day.

At the beginning of each sampling day we walked or drove along a trail or road until we were at least 300 m from any previously sampled point (using distance estimation tool on GPS unit; < 10 m accuracy); we then walked off the trail or road for approximately 25 m and obtained the location of this point using the GPS. We chose a minimum of 300 m distance as an effective distance at which songbirds may not be conditioned by our playback treatments. We suggest that future protocols include a minimum sampling distance of at least one home range of the target, raptorial species, to reduce both the probability of sampling the same species, or of conditioning individuals. We played back sounds on an iPod connected by wired to a battery-powered speaker (Radio Shack model 277-1008) mounted on a 3 m pole, and before each count we placed the pole at a slight angle against a tree, allowing the speaker to sit between 2.5 m and 3 m above the ground. We then retreated with iPod in a random direction to a location approximately 10 m from the speaker. Following a period of silence we conducted a 3-min fixed-radius point-count, recording all raptors seen and/or heard within a 25 m radius. We then immediately applied the treatment for 3 minutes, during which time we simultaneously

broadcast a playback and conducted the second 3-min census. Following this playback period, we ceased playback and immediately conducted the final 3-min census. All censuses conducted followed the methods for fixed-radius point counts described by Hutto et al. (1986). We also took note of raptors seen or heard beyond. This sampling scheme resulted in three sampling periods (Pre-, During-, and Post-playback). All observations and playbacks were conducted by J. Burnett. During pilot studies we conducted five- and ten-minute playback periods, and observed raptors responding to the playback within the first two minutes; therefore, we decided to use a shortened sampling period (of three minutes) during this study.

We standardized the volume of playback emitted by the speaker to ensure similar sound degradation (and sampling area) across sampling points. The average minimum, maximum, and mean volumes of the ten titmouse recordings used were 45.4 dB, 98.3 dB, and 65.2 dB, respectively. These measurements were obtained at a distance of 1 m from the playback speaker using the Decibel 10th application (Apple iPhone 6). The specific note types comprising titmouse distress calls (related to Z and D notes, Owens and Freeberg 2007) originating from the speakers at these sound levels degrade to near zero signal-to-noise ratio by approximately 50 m to 60 m from the sound source in dense forest (J. R. Lucas, unpublished data). Therefore we expect our sampling area to be within a circle with radius < 70 m around the sound source, although we do not know if predator sensory detection and motivation to approach the speaker are directly correlated with spectral degradation of the signal. It is, however, very likely that this method would only attract individuals whose home ranges included the broadcast area, and is assumed we did not pull birds from adjacent territories in to the detection circle (Gunn et al. 2000).

Statistical analyses.—We conducted all analyses in Program R version 3.1.2 (R Core Team 2014). We converted predator detections (abundances) for each census to binary presence/absence data (0=absent, 1=present). We fit the data with a generalized linear model (package *stats*) using a logit transformation and binomial error structure, and evaluated model fit using likelihood-ratio chi-square test. We included two fixed effects in our model: all levels of interaction of treatment and playback period (N_{levels} = 6), and the effect of habitat type (cateogorical, N_{levels} = 3). We tested the hypothesis of no difference among the interacting groups using a post-hoc multiple comparisons using the generalized linear hypothesis test (packages *glht*). Means and standard errors about the estimated probabilities are presented on the logit scale.

Results

We observed raptors at a total of 23 of 124 sites overall, with most observations occurring after initial playback of the Tufted Titmouse distress call. Raptors responding to the distress call playback were primarily Red-shouldered Hawks, and included occasional Red-tailed Hawks and Barred Owls. On all but one occasion raptors approached singly; on one occasion, two Barred Owls approached the speaker together. The model including habitat type as a fixed effect was not an adequate fit of the data (D_5 = 25.77, P <0.001), but the nested model disregarding habitat type and including only the interaction effect (i.e., the less complex model) was an adequate fit (D_2 = 2.23, P >0.10). Multiple comparisons indicate significant effects of both the treatment applied (distress call versus owl playbacks) and between sampling periods of distress call treatments (Fig. 1).

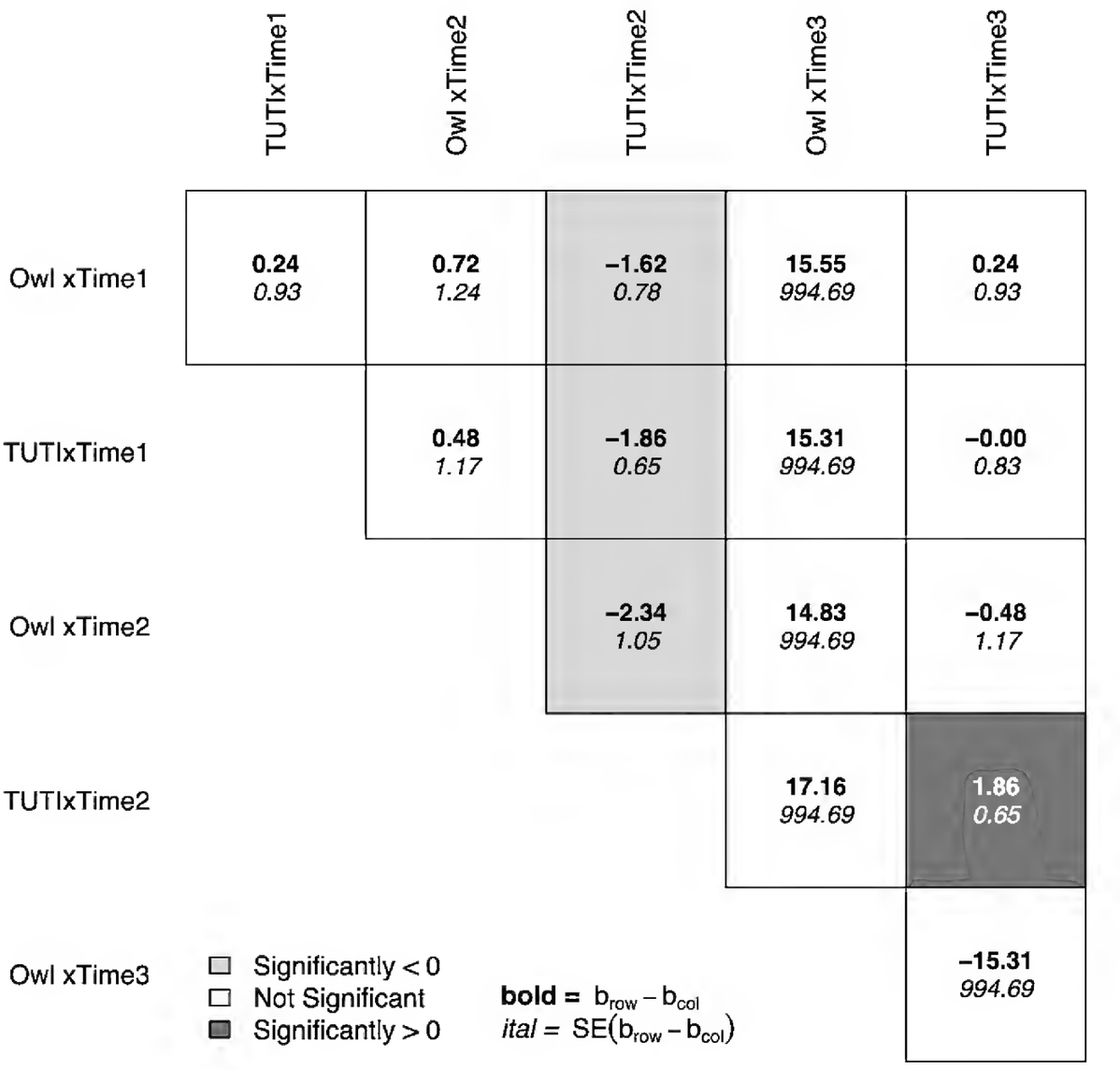

Figure 1. Factor plot of all pairwise interactions examined on the response of Red-shouldered Hawks to two playback treatments, Eastern Screech-Owl ("OWL") and Tufted Titmouse ("TUTI"), across three sampling periods, before playback ("Time1"), during playback ("Time2"), and after playback ("Time3"). Estimated probability of response by predators (b) are given on the log-odds scale. A value significantly different from zero (i.e., mean +/- SE does not include zero) indicates a statistically significant influence in the probability of a raptor responding to the playback.

DISCUSSION

The distress calls of the Tufted Titmouse significantly enhanced the probability of detecting raptorial species in forested habitat of north-central Florida. With a relatively small sample size, we detected a large effect of playback of a "screaming" Tufted Titmouse on the probability of detection (of Red-shouldered Hawks). Due to the time and resource-intensive nature of surveys for birds of prey (Fuller and Mosher 1987, Andersen 2007), such a large positive change in an observer's

probability of detection will improve the practicality of including raptor species in sampling regimes that are intensive; that is, point-based census methods applied in high densities within habitats that detect individual and population distributions at relatively fine scales. Just as species-specific calls are used to better detect many cryptic birds that exhibit low calling rates (e.g., rails and Florida Scrub-Jay), our method enhanced the detectability of present but hidden individuals. And like mobbing-call playbacks, which can elicit approaches by numerous different species simultaneously (e.g., Langham et al. 2006), our distress-call playbacks attracted several species of predators.

We intentionally used a brief 3-min period to keep the overall sampling period under 10 minutes (akin to typical point-count periods). Longer playbacks could conceivably lead to double counting if birds approached, were flushed, and then returned again. In a pilot study, we used longer playback periods of up to 30 min and accipiters that were attracted to the calls would often swoop repeatedly past the speaker to investigate (Sieving and Burnett, unpublished data). We detected raptors in both non-breeding and breeding seasons using this method during morning sampling periods. Indeed this method should be effective in all seasons and situations with hunting raptors. During our pilot work we also sampled during crepuscular and evening periods and obtained high response rates by Barred Owls (> 50% detection rate during playback of distress calls). On one informal sampling occasion we observed simultaneous investigation of the speaker by one Great Horned Owl, one Barred Owl, and two Eastern Screech-Owls on a forest edge after dusk. Like Branch and Freeberg (2012) we detected various songbirds (including titmice) that responded with varying intensities of apparent predator inspection behavior (e.g., mobbing behaviors as observed to owl call playback; Sieving et al. 2004). Hence, there may be other applications of the distress call playback in behavior-based sampling of non-raptorial birds. However, only Red-shouldered Hawks were statistically more likely to be present during the playback period than were other responding raptors. The distress-call playback method presented here has several attributes that enhance its utility over that of typical playback applications: (1) it is useful in all seasons as a playback type that should elicit response by hunting predators within earshot; (2) it can be used in diurnal, crepuscular and early evening hours; and (3) it can enhance detection of more than one species simultaneously (Burnett and Sieving, unpublished data).

All playback methods, because they elicit approaches by target birds, lead to violation of a key assumption underlying census-based population estimation; that of unaltered distribution of target individuals (Buckland et al. 1993). In eliciting approaches, playback will cause an over-estimation of density by reducing detection distances

(Johnson et al. 2014). Playback may not be as problematic in occupancy modeling if the sampling area within which raptors respond can be estimated and incorporated into the analysis. If, however, the goal of the survey is to estimate relative abundances only or to detect presence or absence of a species within patches or stands of habitat at the scales of smaller raptor home ranges, then this method should be of great value.

Prior to incorporating this method into raptor surveys, a variety of considerations may be useful. We recommend that observers (1) use the playback only after one or more periods of passive censusing to estimate changes in detection rates with playback (MacKenzie et al. 2003, Riddle et al. 2009), (2) playback volumes should be calibrated within sampling habitats to ensure that the area exposed to playback experiences similar degradation (Ratcliffe et al. 1998; Sieving, et al. 2004), (3) preliminary behavioral studies of target species could help understand if and how they respond to species-specific distress calls being considered, and (4) given the probability that multiple responding predators could interfere with detection of target species, this should be accounted for in the sampling strategy (Sergio and Hiraldo 2008). Overall, this study suggests the use of the distress call of a small songbird may provide a supplementary method of enhancing an observer's probability of detecting and, therefore, counting, raptorial species in forested areas.

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LITERATURE CITED

ACEVEDO, M. A., AND L. J. VILLANUEVA-RIVERA. 2006. Using automated digital recording systems as effective tools for the monitoring of birds and amphibians. Wildlife Society Bulletin 34:211-214.

ANDERSEN, D. E., O. J. RONGSTAD, AND W. R. MYTTON. 1985. Line transect analysis of raptor abundance along roads. Wildlife Society Bulletin 13:533-539.

ANDERSEN, D. E. 2007. Survey techniques. Pages 89-100 *in* Raptor Research and Management Techniques (D. M. Bird, K. L. Bildstein, D. R. Barber, and A. Zimmerman, Eds.). Hancock House Publishers, Blaine, Washington.

AUBIN, T. 1991. Why do distress calls evoke interspecific responses? An experimental study applied to some species of birds. Behavioural Processes 23:103-111.

BIBBY, C. J., N. D. BURGESS, AND D. A. HILL. 1992. Bird Census Techniques. Academic Press, San Diego, California.

Bloom, P. H., W. S. Clark, and J. W. Kidd. 2007. Capture techniques. Pages 193-219 *in* Raptor Research and Management Techniques (D. M. Bird, K. L. Bildstein, D. R. Barber and A. Zimmerman, Eds.). Hancock House Publishers, Blaine, Washington.

Blumstein, D. T., and D. J. Mennill. 2011. Acoustic monitoring in terrestrial environments using microphone arrays: Applications, technological considerations and prospectus. Journal of Applied Ecology 48:758-767.

Branch, C. L., and T. M. Freeberg. 2012. Distress calls in tufted titmice (*Baeolophus bicolor*): Are conspecifics or predators the target? Behavioral Ecology 23:854-862.

Buckland, S. T., D. R. Anderson, K. P. Burnham, and J. L. Laake. 1993. Distance Sampling: Estimating Abundance of Biological Populations. Chapman and Hall, London.

Burnham, K. P., D. R. Anderson, and J. L. Laake. 1980. Estimation of Density from Line Transect Sampling of Biological Populations. Wildlife Monographs 72.

Call, M. W. 1978. Nesting Habitats and Surveying Techniques for Common Western Raptors. Technical Note TN-316, Bureau of Land Management, U. S. Department of the Interior, Colorado.

Courter, J. R., and G. Ritchison. 2010. Alarm calls of tufted titmice convey information about predator size and threat. Behavioral Ecology 21:936-942.

Curio, E. 1976. The Ethology of Predation. Springer, Berlin.

Driver, P. M., and D. A. Humphries. 1969. The significance of the high-intensity alarm call in captured passerines. Ibis 111:243-244.

eBird. 2012. eBird: An Online Database of Bird Distribution and Abundance [web application]. eBird, National Audubon Society and Cornell Lab of Ornithology, Ithaca, New York. <http://www.ebird.org>.

Ellis, D. H., R. L. Glinski, and D. G. Smith. 1990. Raptor road surveys in South America. Journal of Raptor Research 24:98-106.

Falls, J. B. 1981. Mapping territories with playback: An accurate census method for songbirds. Pages 86-91 *in* Estimating Numbers of Terrestrial Birds (C. J. Ralph and J. M. Scott, Eds.). Studies in Avian Biology No. 6, Cooper Ornithological Society.

Forsman, J. T., and M. Mönkkönen. 2001. Responses by breeding birds to heterospecific song and mobbing call playbacks under varying predation risk. Animal Behaviour 62:1067-1073.

Fuller, M. R., and J. A. Mosher. 1981. Methods of detecting and counting raptors: A review. Pages 235-246 *in* Estimating Numbers of Terrestrial Birds (C. J. Ralph and J. M. Scott, Eds.). Studies in Avian Biology No. 6, Cooper Ornithological Society.

Gold Head Branch State Park. 2004. Mike Roess Gold Head Branch State Park Unit Management Plan. <http://www.dep.state.fl.us/parks/planning/parkplans/MikeRoessGoldHeadBranchStatePark.pdf>. Accessed 14 July 2012.

Gregory, R. D., D. W. Gibbons, and P. F. Donald. 2004. Bird census and survey techniques. Pages 17-56 *in* Bird Ecology and Conservation: A Handbook of Techniques (W. K. Sutherland, I. Newton, and R. E. Green, Eds.). Oxford University Press, Oxford, UK.

Gunn, J. S., A. Desrochers, M. Villard, J. Bourque, and J. Ibarzabal. 2000. Playbacks of mobbing calls of Black-capped Chickadees as a method to estimate reproductive activity of forest birds. Journal of Field Ornithology 71:472-483.

Harris, J. B. C., and D. G. Haskell. 2013. Simulated birdwatchers' playback affects the behavior of two tropical birds. PLoS One 8:e77902.

Henneman, C., M. A. McLeod, and D. E. Andersen. 2007. Red-shouldered Hawk occupancy surveys in central Minnesota, USA. Journal of Wildlife Management 71:526-533.

Hill, G. E. 1986. The function of distress calls given by tufted titmice (*Parus bicolor*): An experimental approach. Animal Behaviour 34:590-598.

Hurd, C. R. 1996. Interspecific attraction to the mobbing calls of black-capped chickadees (*Parus atricapillus*). Behavioral Ecology and Sociobiology 38:287-292.

HUTTO, R. L., S. M. PLETSCHET, AND P. HENDRICKS. 1986. A fixed-radius point count method for nonbreeding and breeding season use. Auk 103:593-602.

JOHNSON, R. R., B. T., BROWN, L. T. HAIGHT, AND J. M. SIMPSON. 1981. Playback recordings as a special avian censusing technique. Pages 68-75 *in* Estimating Numbers of Terrestrial Birds (C. J. Ralph and J. M. Scott, Eds.). Studies in Avian Biology No. 6, Cooper Ornithological Society.

JOHNSON, F. R., R. M. DORAZIO, T. D. CASTELLÓN, J. MARTIN, J. O. GARCIA, AND J. D. NICHOLS. 2014. Tailoring point counts for inference about avian density: Dealing with nondetection and availability. Natural Resource Modeling 27:163-177.

JOHNSON, F. R., E. J. MCNAUGHTON, C. D. SHELLEY, AND D. T. BLUMSTEIN. 2004. Mechanisms of heterospecific recognition in avian mobbing calls. Australian Journal of Zoology 51:577-585.

KENDEIGH, S. C. 1944. Measurement of Bird Populations. Ecological Monographs 14:67-106.

LANGHAM, G. M., T. A. CONTRERAS, AND K. E. SIEVING. 2006. Why pishing works: Titmouse (Paridae) scolds elicit a generalized response in bird communities. Ecoscience 13:485-496.

LEGARE, M. L., W. R. EDDLEMAN, P. A. BUCKLEY, AND C. KELLY. 1999. The effectiveness of tape playback in estimating Black Rail density. Journal of Wildlife Management 63:116-125.

MACKENZIE, D. L., J. D. NICHOLS, J. E. HINES, M. G. KNUTSON, AND A. B. FRANKLIN. 2003. Estimating site occupancy, colonization, and local extinction when a species is detected imperfectly. Ecology 84:2200-2207.

MAGRATH, R. D., B. J. PITCHER, AND J. L. GARDNER. 2007. A mutual understanding? Interspecific responses by birds to each other's aerial alarm calls. Behavioral Ecology 18:944-951.

MARION, W. R., T. E. O'MEARA, AND D. S. MAEHR. 1981. Use of playback recordings in sampling elusive or secretive birds. Pages 81-85 *in* Estimating Numbers of Terrestrial Birds (C. J. Ralph and J. M. Scott, Eds.). Studies in Avian Biology No. 6, Cooper Ornithological Society.

MILLSAP, B. A., AND M. N. LEFRANC, JR. 1988. Road transect counts for raptors: How reliable are they? Journal of Raptor Research 22:8-16.

MOSHER, J. A., AND M. R. FULLER. 1990. Surveying raptors by broadcast of conspecific vocalizations. Journal of Field Ornithology 61:453-461.

MOSHER, J. A., M. R. FULLER, AND M. KOPENY. 1990. Surveying for forest-dwelling hawks by broadcast of conspecific vocalizations. Journal of Field Ornithology 61:453-461.

NEWTON, I. 1986. The Sparrowhawk. T. & A. D. Poyser, Staffordshire, UK.

NORRIS, R. A., AND D. D. STAMM. 1965. Relative incidence of distress calls or "squeals" in mist-netted birds. Bird-Banding 36:83-88.

OSBS [ORDWAY-SWISHER BIOLOGICAL STATION]. 2004. Annotated Avian Species List. <http://ordway-swisher.ufl.edu/species/os-aves.htm>. Accessed 15 July 2012.

OWENS, J. L., AND T. M. FREEBERG. 2007. Variation in chick-a-dee calls of Tufted Titmice, *Baeolophus bicolor*: Note type and individual distinctiveness. Journal of the Acoustical Society of America 122:1216-1226.

PACIFICI, K., T. R. SIMONS, AND K. H. POLLOCK. 2008. Effects of vegetation and background noise on the detection process in auditory avian point-count surveys. Auk 125:600-607.

PALMGREN, P. 1949. On the diurnal rhythm of activity and rest in birds. Ibis 91:561-576.

PERRONE, M., JR. 1980. Factors affecting the incidence of distress calls in passerines. Wilson Bulletin 92:404-408.

PLUMPTON, D. L., AND D. E. ANDERSEN. 1997. Habitat use and time budgeting by Ferruginous Hawks. Condor 99:888-893.

RATCLIFFE, N., D. VAUGHN, C. WHYTE, AND M. SHEPHERD. 1998. Development of playback census methods for Storm Petrels *Hydrobates pelagicus*. Bird Study 43:302-312.

RIDDLE, J. D., R. S. MORDECAI, K. H. POLLOCK, AND T. R. SIMONS. 2009. Effects of prior detections on estimates of detection probability, abundance, and occupancy. Auk 127:94-99.

ROHWER, S., S. D. FRETWELL, AND R. C. TUCKFIELD. 1976. Distress screams as a measure of kinship in birds. American Midland Naturalist 96:418-430.

ROSENFIELD, R. N., J. W. GRIER, AND R. W. FYFE. 2007. Reducing management and research disturbance. Pages 351-364 *in* Raptor Research and Management Techniques (D. M. Bird, K. L. Bildstein, D. R. Barber, and A. Zimmerman, Eds.). Hancock House Publishers, Blaine, Washington.

SALVATI, L., A. MANGANARO, AND S. FATTORINI. 2000. Responsiveness of nesting Eurasian Kestrels *Falco tinnunculus* to call playbacks. Journal of Raptor Research 34:319-321.

SATTLER, G., AND J. BART, 1984. Reliability of counts and migrating raptors: An experimental analysis. Journal of Field Ornithology 55:415-423.

SERGIO, F., AND F. HIRALDO, 2009. Intraguild predation in raptor assemblages: A review. Ibis 150:132-145.

SIEVING, K. E., T. A. CONTRERAS, AND K. L. MAUTE. 2004. Heterospecific facilitation of forest-boundary crossing by mobbing understory birds in north-central Florida. Auk 121:738-751.

STAMPS, J. A. 1988. Conspecific attraction and aggregation of territorial species. American Naturalist 131:329-347.

STEFANSKI, R. A., AND J. B. FALLS. 1972. A study of distress calls of song, swamp, and white-throated sparrows (Aves: Fringillidae). II. Intraspecific responses and properties used in recognition. Canadian Journal of Zoology 50:1501-1512.

TURCOTTE, Y., AND A. DESCROCHERS. 2002. Playbacks of mobbing calls of Black-capped Chickadees help estimate the abundance of forest birds in winter. Journal of Field Ornithology 73:303-307.

WATSON, J. W., D. W. HAYS, AND D. J. PIERCE. 1999. Efficacy of Northern Goshawk broadcast surveys in Washington state. Journal of Wildlife Management 63:98-106.

XENO-CANTO. Sharing Bird Sounds from Around the World. <http://www.xeno-canto.org/>.

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PACIFIC GOLDEN-PLOVER (*Pluvialis fulva*) IN FLORIDA: A FIRST STATE RECORD

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On 9 April 2016, while birding in western Palm Beach County, I noted an odd shorebird that I was not immediately familiar with. The overall size and coloration quickly led me to the conclusion that it was one of the golden-plovers (*Pluvialis dominica/fulva/apricaria*.). Given a viewing period of < 5 min, significant heat shimmer, and long viewing distance, I concluded that it was an odd-looking American Golden-Plover (*Pluvialis dominica*). On 10 April 2016, Kenny Miller and Brian Fedak re-located the golden-plover and obtained photos sufficient to identify it as Pacific Golden-Plover (*Pluvialis fulva*) (Fig. 1). The bird persisted until at least 24 April 2016. This observation represents the first record of this species in Florida. Here I describe observations of the bird, discuss identification, and review the species' status in North America.

OBSERVATIONS

The Pacific Golden-Plover was found at Six Mile Bend Sod Farm Corporation (26.646015, -80.578035) in the rural portion of Palm Beach County. The habitat consisted of mowed sod fields with some exposed soil, surrounded by gravel roads primarily used by farm workers. There were no other birds with the plover when it was first found (9 April 2016). Subsequent sightings (10 April 2016-24 April 2016) documented the bird with a flock of approximately nine Black-bellied Plovers (*Pluvialis squatarola*) and occasionally one Ruddy Turnstone (*Arenaria interpres*). The bird was not documented past 24 April 2016, despite searching by myself and others.

While under observation, the majority of the bird's time was spent foraging in alert posture or resting on gravel roads. On several occasions, it was observed foraging by dipping its bill into the soil, presumably capturing terrestrial invertebrates, the main food source of this species (Johnson and Connors 2010). The diagnostic two-noted call, accented on the second syllable, was heard on at least one instance (L. Manfredi, pers. comm.). Other behaviors that were noted included preening,

and scanning the sky for predators. The bird closely associated with the Black-bellied Plover flock (Fig. 1b), and on one occasion, showed minor aggressive behavior (i.e., opening of bill) towards a Black-bellied Plover. It was not observed interacting with any other species.

Taxonomy

Pacific Golden-Plover was historically considered conspecific with American Golden-Plover and both were formerly known as Lesser Golden-Plover. However, Connors (1983) and Connors et al. (1993) analyzed differences between the two forms and argued that they indicated species-level divergence, which led to the split and reclassification of the two as separate species (*P. fulva and P. dominica*) (AOU 1993). No subspecies of Pacific Golden-Plover are recognized. Furthermore, there are no fully documented instances of hybridization between the Pacific Golden-Plover and American Golden-Plover. It is likely that reports (Pym 1982, Golley and Stoddart 1991, McCarthy 2006) of hybrids represent individual variation within each species (Johnson and Connors 2010).

Age and Identification

Given the strikingly similar appearance of Pacific- and American golden-plovers, this description focuses on and highlights the primary identifying features between the two congeners.

The Pacific Golden-Plover was a medium-sized shorebird with black eyes, long gray legs, a short black bill, and rich golden-buff coloration throughout the head, neck, and upper back (Fig. 1b). The underparts were mostly whitish, indicating a juvenile or basic (non-breeding) plumaged adult. There were a few scattered black splotches throughout the underparts that became more prominent on the belly over the duration of the bird's visit, a sign that it was molting into alternate (breeding) plumage. A prominent dark auricular spot was noticeable on the face, as was a buff-colored supercilium (Fig. 1a-c). Distinct golden edges and notches on otherwise blackish feathers were present on the upperparts, leading to a bold 'spangled' look. Structurally, the bird was smaller and slimmer than the Black-bellied Plovers, showing a proportionately longer, thinner neck, and longer legs.

Much attention has been given to separating Pacific and American Golden-Plover in the field. Byrkjedal and Thompson (1998) describe key structural differences between the two species such as bill, leg, and tertial length, while Chandler (2009) and O'Brien et al (2006) discuss differences in both plumage and shape. Compared to American Golden-Plover, the bird appeared slightly longer-legged, longer-billed, and

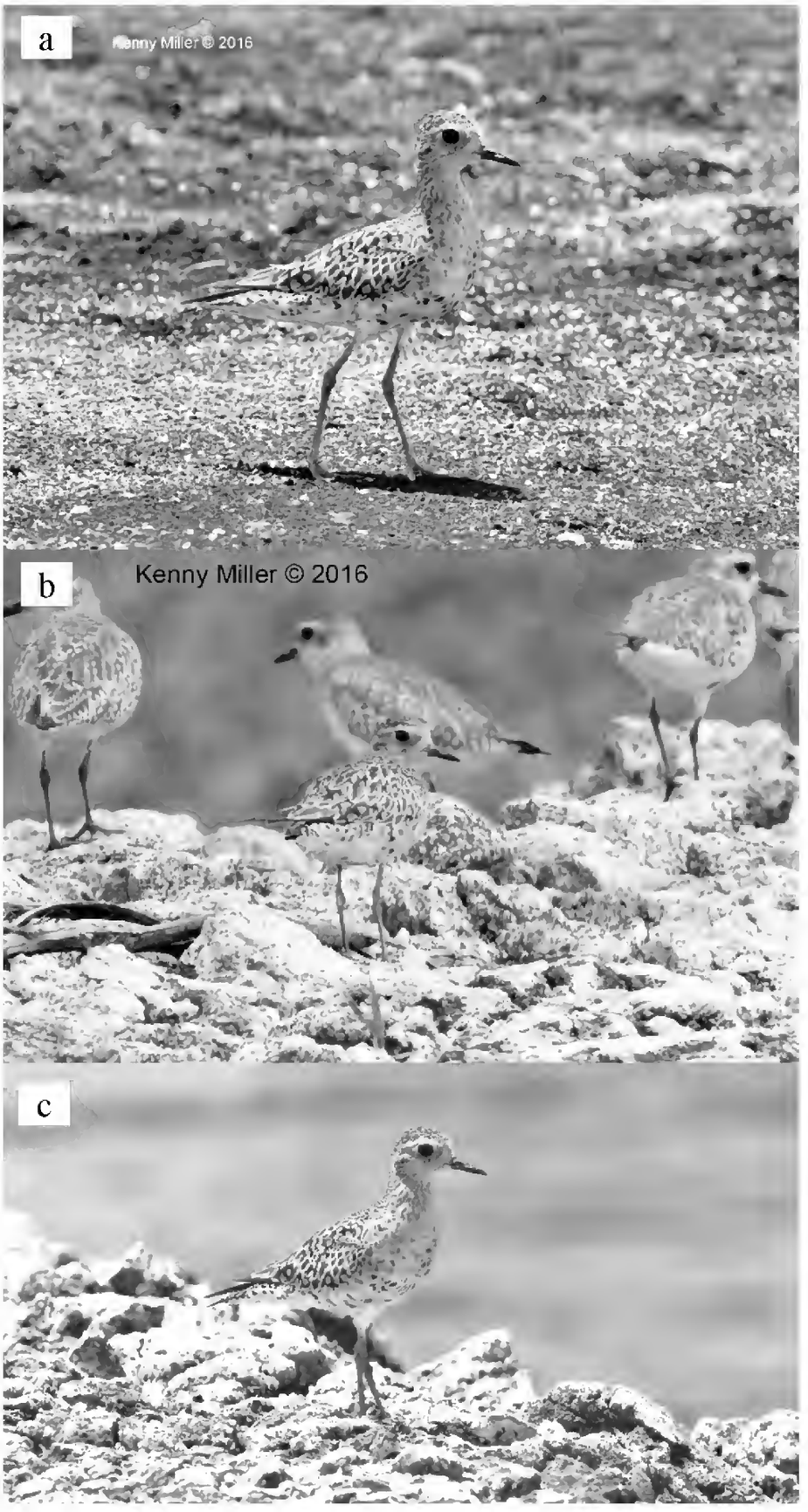

Figure 1. a) Pacific Golden-Plover. Six-Mile Bend Sod Farm, Palm Beach County, Florida, 10 April 2016. Photo by Kenny Miller. b) Pacific Golden-Plover (front) with Black-bellied Plovers. Six-Mile Bend Sod Farm, palm Beach County, Florida, 10 April 2016. Photo by Kenny Miller. c) Pacific Golden-Plover. Six-Mile Bend Sod Farm, Palm Beach County, Florida, 10 April 2016. Photo by Kenny Miller.

shorter-winged (Fig. 1a) and stood seemingly as tall as the Black-bellied Plovers, despite having only about two-thirds the body size (cf. Dunning 2008). In juvenal and non-breeding plumage, American Golden-Plover is duller overall, with a whitish supercilium, grayish-brown face, and upperparts not as bright. Under ideal viewing conditions, a key feature used to separate the two species is the number of visible primary tips beyond the tertials on the folded wing (Chandler 2009). Pacific Golden-Plovers show two to three tips, while American Golden-Plovers show four to five. As seen in the field and in several photographs of the bird, three primary tips were visible beyond the tertials on the folded wing. Additionally, the longest tertial nearly reached than the tail tip when at rest or feeding. American Golden-Plover is more variable in this respect, with the longest tertial often resting about mid-tail and occasionally near the tail tip (Chandler 2009).

The third species of golden-plover, European Golden-Plover (*Pluvialis apricaria*), is similar in coloration to Pacific Golden-Plover in juvenal and non-breeding plumages, but differs in structure and underwing coloration. European Golden-Plover was eliminated based on the more slender body and longer legs of the Palm Beach County bird, typical of Pacific Golden-Plover, as well as the gray axillaries and underwing coverts when viewed in-flight.

Discussion

The Pacific Golden-Plover was extensively documented at Six Mile Bend Sod Farm, and has been accepted by the Florida Ornithological Society Records Committee as the first record for the state of Florida (A. W. Kratter, pers. comm.). However, given the relatively short period of time that the species (Johnson and Connors 2010) has been considered distinct from American Golden-Plover, it is possible that it could have previously occurred in Florida and been reported as Lesser Golden-Plover with no sub-specific identification given.

Pacific Golden-Plover is very rare in the eastern half of North America, with six accepted records total. New York has one (McGuinness 2003), Massachusetts has two (Heil 2003, MARC 2016), New Jersey has one (Crossley 2002), Maine has one (from 1911; Palmer 1949), Delaware has one (DRC 2006), and Vermont has one 'hypothetical' record (Vermont Center for Ecostudies 2016). Additionally, there are three records from Greenland, one from Bermuda, and one from Barbados (Crossley 2002). In the Pacific Coast states, Pacific Golden-Plover is a regular fall migrant, casual spring migrant, and is known to winter occasionally. In the west, there are several inland records of Pacific Golden-Plover (McGuinness 2002), while nearly all records in the east have been coastal in occurrence.

Pacific Golden-Plover is a long-distance migrant that breeds in western Alaska and eastern Siberia, and makes some of the longest migrations in the world, often with non-stop flights over water (Johnson and Connors 2010). The species winters primarily in the Indo-Pacific region from the horn of Africa east to eastern Oceania. Migration strategies and routes are diverse and can follow coastal, transoceanic, or transcontinental routes (Johnson and Connors 2010). Given the timing of the bird's presence in Florida (9 April 2016-24 April 2016), it is likely that it was on its spring migration northward. Its presence well outside the normal range could be explained by mirror-image migration (Diamond 1982) in which a species may migrate 90 or 180 degrees relative to its typical migratory path. In this case, a Pacific Golden-Plover normally headed southwest from the breeding grounds in eastern Siberia could instead migrate southeast and winter in South America or the Caribbean. Additionally, it is plausible that the Pacific Golden-Plover found and began associating with Black-bellied Plovers at some point after it wandered off course, and continued to follow the movements of the Black-bellied Plovers.

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I thank Jim Pawlicki for suggesting that I consider Pacific Golden-Plover in the identification from the initial poor photo that I took and for comments on earlier drafts of this manuscript. I thank Kenny Miller and Brian Fedak for re-locating the bird on 10 April 2016 and allowing me to use their photos for this note. I thank Mark Berney and Bruce Anderson for comments that helped improve this manuscript.

LITERATURE CITED

BYRKJEDAL, I., AND D. B. A. THOMPSON. 1998. Tundra Plovers: The Eurasian, Pacific, and American Golden Plovers and Grey Plover. T. and A. D. Poyser, London.

CHANDLER, R. 2009. Shorebirds of North America, Europe, and Asia: A Photographic Guide. Princeton University Press, Princeton, New Jersey.

CONNORS, P. G. 1983. Taxonomy, distribution, and evolution of golden plovers (*Pluvialis dominica* and *Pluvialis fulva*). Auk 100:607-620.

CONNORS, P. G., B. J. MCCAFFERY, AND J. L. MARON. 1993. Speciation in golden-plovers, *Pluvialis dominica* and *P. fulva*: Evidence from the breeding grounds. Auk 110:9-20.

CROSSLEY, R. 2002. New Jersey's first Pacific Golden-Plover. Records of New Jersey Birds 28: 57-60.

DIAMOND, J. M. 1982. Mirror-image navigational errors in migrating birds. Nature 295:277-278.

DRC [DELAWARE RECORDS COMMITTEE]. 2006. Delaware Records Committee Summary for 2006. <http://www.dosbirds.org/wpcontent/flyer/v38.20062007/Flyer38.03a_DBRC-2006FlyerReport.pdf>. Accessed 5 May 2016.

DUNNING, J. B., JR. 2008. The CRC Handbook of Avian Body Masses, 2nd Ed. CRC Press, Boca Raton, Florida.

GOLLEY, M., AND A. STODDART. 1991. Identification of American and Pacific golden-plovers. Birding World 4:195-204.

GREENLAW, J. S., B. PRANTY, AND R. BOWMAN. 2014. Florida Bird Species: An Annotated List. Florida Ornithological Society Special Publication No. 8, Gainesville.

HEIL, R. S. 2003. Three new species for Massachusetts from Plum Island in 2001-2002. Bird Observer 31(2).

JOHNSON, O. W., AND P. G. CONNORS. 2010. Pacific Golden-Plover (*Pluvialis fulva*). The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu.ezproxy.fau.edu/bna/species/202 doi:10.2173/bna.202>.

MARC [MASSACHUSETTS AVIAN RECORDS COMMITTEE]. 2016. Pacific Golden-Plover (*Pluvialis fulva*). <http://www.maavianrecords.com/home/about-species-accounts/pacific-golden-plover>. Accessed 5 May 2016.

MCCARTHY, E. M. 2006. Handbook of Avian Hybrids of the World. Oxford University Press, Oxford, U. K.

MCGUINNESS, H. 2003. New York's first record of Pacific Golden-Plover (*Pluvialis fulva*). Kingbird 53:307-312.

O'BRIEN, M., R. CROSSLEY, AND K. KARLSON. 2006. The Shorebird Guide. Houghton Mifflin, New York.

PALMER, R. 1949. Maine Birds. Bulletin of the Museum of Comparative Zoology 102.

PYM, A. 1982. Identification of Lesser Golden-Plover and status in Britain and Ireland. British Birds 75:112-124.

VERMONT CENTER FOR ECOSTUDIES. 2016. An Annotated List of Vermont Vagrant, Out of Season and Rare nesting birds. <http://vtecostudies.org/wildlife/wildlife-watching/vbrc/annotated-bird-list/>. Accessed 5 May 2016.

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FIRST RECORD OF GREAT SHEARWATER (*Ardenna gravis*) IN CUBA

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Cayo Coco (22° 30' N, 78° 27' W), located north of Ciego de Avila province, is the second biggest cay of Cuba. Part of the Sabana-Camagüey archipelago, Cayo Coco is one of the most important islands due to its area (370 km^2) and high habitat diversity and complexity. This cay is separated from the mainland by a shallow and open macro-lagoon named Perros bay, but since 1989 both landmasses were connected by a 17 km causeway. North of Cayo Coco are the open waters of the Caribbean Sea with coral reef crests, while several areas of mangroves and halophytic communities in Perros bay are the limits to the south. Nature tourism (e.g., recreational diving, fly fishing) and commercial fisheries are the main human activities in the marine areas that surround Cayo Coco.

This island is one of the most productive regions in Cuba for its avian abundance and richness (Garrido and Kirkconnell 2011, Parada et al. 2011). Waterbirds have been less studied than land birds due to logistic limitations of working in marine areas. However, some contributions have been made to the ecology of waterbirds in aquatic and coastal ecosystems (Sánchez and Rodríguez 2000, Nol et al. 2014), reproduction of colonial seabirds (Rodríguez et al. 2003, Pérez et al. 2005, Rodríguez et al. 2008) and new reports of rare and vagrant species (Parada et al. 2014, Stott 2015) in Cayo Coco and adjacent areas. The central and eastern cays of the Sabana-Camagüey archipelago provide critical stopovers and wintering habitats for several transient and wintering species (Parada et al. 2014).

Great Shearwater (*Ardenna gravis*) is a pelagic seabird with a wide range in the Atlantic Ocean. This species breeds on islands of the southern hemisphere during the summer and then makes a long trans-equatorial migration to the northern hemisphere where it feeds on fish, squid, and krill in the boreal summer (Haman et al. 2013). Migration of this species in the Caribbean Basin seems to peak in June through the Lesser Antilles (Sandoval et al. 2010). *A. gravis* is an uncommon non-breeding resident between The Bahamas and Puerto Rico mainly from May to July (Raffaele et al. 2003). In the rest of the West Indies, it is rare during these months. Mortality of individuals of *A. gravis* is high during migration (mainly juveniles) due to potential factors as equatorial fronts, currents, sea surface temperature, salinity, plankton distribution, hurricanes (Haman et al. 2013) and the effect of the Doldrums (Lee 2009).

In the morning of 23 June 2015 several divers were coming back to the Diving Center of Tryp Cayo Coco Hotel and found a rare dark bird that had fallen to the sea in the northern coast of Cayo Coco (approximately 200 m from the Rocarena cliff, 22° 32' 20.7" N, 78° 21' 22.5" W). The bird was taken to the Centro de Investigaciones de Ecosistemas Costeros (CIEC), where it was identified as *A. gravis* because of its characteristic white bands on hindneck and rump contrasting with black cap and dark grayish-brown upperparts, dark bill, and underparts white with indistinct dusky patch on belly (Fig. 1). The bird had a small but deep injury on the breast, probably caused by fishing gear or by a predator; it died after a few hours. The specimen was not preserved. This is the first record of *A. gravis* in Cuba; this species is not recorded in the most recent comprehensive manual of Cuban birds (Garrido and Kirkconnell 2011).

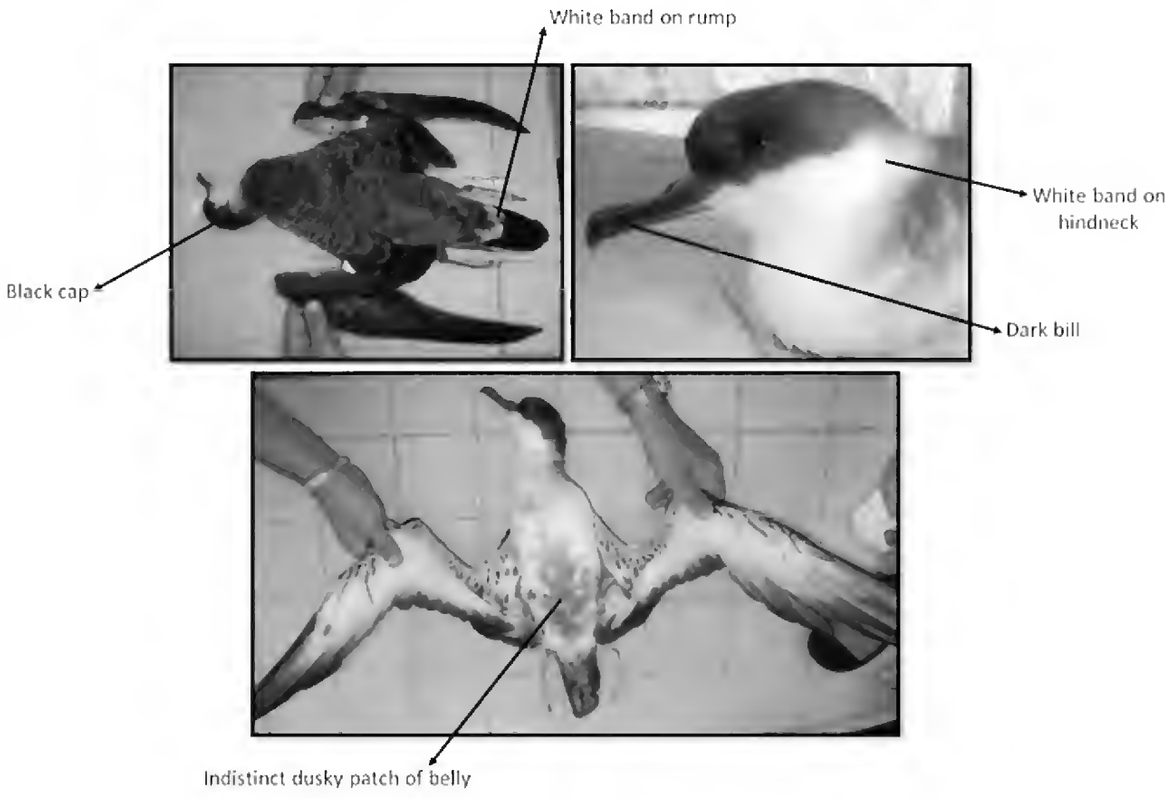

Figure 1. Diagnostic characteristics of the Great Shearwater (*Ardenna gravis*), collected near Cayo Coco, Ciego de Ávila province, Cuba, 23 June 2015.

The presence of this species in Cuban waters is plausible because the migratory route of *A. gravis* includes the Caribbean Basin, and it has been recorded recently at several islands in this region (Raffaele et al. 2003, Sandoval et al. 2010). Several isolated records of this species on the coasts of Mexico and Costa Rica have been documented by Imhof (1977) and Speaker (1979), but its pelagic distribution pattern is nearly exactly restricted to the areas of eutrophic waters (mainly the open waters of the Atlantic Ocean) (Voous and Wattel 1963). It is possible that the scarcity of this shearwater in Cuba, despite the abundant mortality in the eastern Caribbean, is related to its distribution pattern and energy availability. The migration route of *A. gravis* exerts a heavy physical and energetic demand on the individuals, so there would be a penalty on deviations from its well-defined migratory route in the rich waters of North America. Only some individuals (mainly the sick and the injured) would be expected to move outside of the route toward distant areas such as Cuba. Furthermore, studies of seabirds in Cuba are few, and this significantly reduces the probability of detecting the presence of species such as *A. gravis*.

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Literature Cited

Garrido, O. H., and A. Kirkconnell. 2011. Aves de Cuba. Cornell University Press, New York.

HAMAN, K. H., T. M. NORTON, R. A. RONCONI, N. M. NEMETH, A. C. THOMAS, S. J. COURCHESNE, A. SEGARS, AND M. K. KEEL. 2013. Great Shearwater (*Puffinus gravis*) mortality events along the eastern coast of the United States. Journal of Wildlife Diseases 49:235-245.

IMHOF, T. A. 1977. The Greater Shearwater in the northern Gulf of Mexico. Auk 94:163-164.

LEE, D. S. 2009. Mass die-offs of Greater Shearwaters in the western North Atlantic: Effects of weather patterns on mortality of a trans-equatorial migrant. Chat 73:37-47.

NOL, E., K. MACCULLOCH, L. POLLOCK, AND L. MCKINNON. 2014. Foraging ecology and time budgets of non-breeding shorebirds in coastal Cuba. Journal of Tropical Ecology 30:347-357.

PARADA, A., A. PARADA ISADA, E. WIANCKO, E. NOL, AND D. BURKE. 2011. Noteworthy records of Parulidae on Cayo Coco, Cuba. Cotinga 33:108-111.

PARADA, A., O. MARTÍNEZ, AND L. J. DEGNAN. 2014. First report of Common Merganser (*Mergus merganser*) for Cuba and the Greater Antilles. Florida Field Naturalist 42:148-150.

PÉREZ, E., A. RODRÍGUEZ, D. RODRÍGUEZ, A. PARADA, O. BARRIOS, AND E. RUIZ. 2005. Primer registro de *Sterna sandvicensis eurygnatha* para Cuba. Journal of Caribbean Ornithology 18:29-30.

RAFFAELE, H., J. WILEY, O. GARRIDO, A. KEITH, AND J. RAFFAELE. 2003. A Guide to the Birds of the West Indies. Princeton University Press, Princeton, New Jersey.

RODRÍGUEZ, A., A. PARADA, E. PÉREZ, D. RODRÍGUEZ, O. BARRIOS, E. RUIZ, AND A. BLANCO. 2008. Primer registro de nidificación del Pampero de Audubon (*Puffinus lherminieri*) en Cuba. Journal of Caribbean Ornithology 21:44-45.

RODRÍGUEZ, A., D. RODRÍGUEZ, E. PÉREZ, A. LLANES, A. BLANCO, O. BARRIO, A. PARADA, E. RUIZ, E. SOCARRÁS, A. HERNÁNDEZ, AND F. CEJAS. 2003. Distribución y composición de las colonias de nidificación de aves acuáticas en el Archipiélago de Sabana-Camagüey. CD-ROM Memorias del VII Simposio de Botánica. ISBN: 959-270-029-X.

SÁNCHEZ, B., AND D. RODRÍGUEZ. 2000. Avifauna associated with the aquatic and coastal ecosystems of Cayo Coco, Cuba. El Pitirre 13:68-75.

SANDOVAL, L., C. SÁNCHEZ, E. BIAMONTE, J. R. ZOOK, J. E. SÁNCHEZ, D. MARTÍNEZ, D. LOTH, AND J. O'DONAHOE. 2010. Recent records of new and rare bird species in Costa Rica. Bulletin of the British Ornithologists' Club 130:237-245.

SPEAKER, G. 1979. Greater Shearwater in Costa Rica. Condor 81:323.

STOTT, R. E. 2015. First record of Eurasian Wigeon *Anas penelope* for Cuba. Cotinga 37:47.

VOOUS, K. H., AND J. WATTEL. 1963. Distribution and migration of the Greater Shearwater. Ardea 51:143-157.

Florida Field Naturalist 44(4):178-188, 2016.

FIELD OBSERVATIONS

Spring Report: March-May 2016.—This report consists of significant bird observations compiled by the Field Observations Committee (FOC). Electronic submissions to the FOC should be in the following format: species, number of individuals, age and sex of the bird(s), color morph if applicable, location (including county), date, observer(s), and significance. Seasons are winter (December-February), spring (March-May), summer (June-July), and fall (August-November). Submit observations to regional compilers within two weeks after the close of each season, or to the state compiler within one month. Addresses of the compilers follow this report.

Sight-only observations are considered "reports" while only those observations supported by verifiable evidence (photographs, video or audio recordings, or specimens) are called "records." Species for which documentation is required by the FOC and by the FOS Records Committee (FOSRC; <fosbirds.org/official-florida-state-bird-list>) are marked here with an asterisk (*). A county designation (in italics) accompanies the first-time listing of each site in this report. Abbreviations in this report are: AFB = Air Force Base, AFR = Air Force Range, EOS = end of season, m. obs. = many observers, NERR = National Estuarine Research Reserve, NP = National Park, NSRA = North Shore Restoration Area, NWR = National Wildlife Refuge, SF = State Forest, SP = State Park, STA = Stormwater Treatment Area, STF = sewage treatment facility, WMA = Wildlife Management Area, and n, s, e, w, etc., for compass directions. Bold-faced entries denote birds newly reported or verified in Florida, or record numbers. +Photographs or video- or audio-recordings archived by the FOC are identified by a plus (+).

Summary of the Spring Season

The spring season opened with the panhandle receiving above-average rainfall while the remainder of the state experienced below-average volumes, leading 20% of the state to abnormally dry conditions by month end. This cycle repeated in April, but reversed in May when peninsular Florida received higher-than-average rainfall—ultimately leaving the state in relatively drought-free conditions. All three months of the season were marked by higher than average temperatures throughout the state, continuing the trend of recent seasons. The season will undoubtedly be remembered for a trio of exceptional first state records (pending FOSRC review and approval): Pacific-Golden Plover, European Storm-Petrel, and Cuban Vireo (which was also a first American Birding Association [ABA]-area record).

This report reflects the recent changes made by the FOSRC to the state's review list, adding 33 species back to the list. As such, FOSRC review species noted in this report include a pair of American Black Ducks in *Duval*, single Pacific Loons in *Escambia* and *Santa Rosa*, a Northern Fulmar in *St. Johns*, the state's first European Storm-Petrel from *Volusia*, Red-billed Tropicbird, Neotropic Cormorant, a Great White Pelican in *Lee*, the first state-record Pacific Golden-Plover, two Ruffs, California Gull, a continuing Zenaida Dove in *Monroe*, up to 10 Vaux's Swifts in Gainesville, Cuban Pewee, Cassin's Kingbird, two Fork-tailed Flycatchers, Thick-billed Vireo, the first ABA-area record of Cuban Vireo, one Yellow-Green Vireo, two Bahama Mockingbirds, a single Kirtland's Warbler, one Western Spindalis, a Black-faced Grassquit, one Green-tailed Towhee, and two Lazuli Buntings.

Lastly, the FOC seeks volunteers interested in joining the committee as regional compilers for counties that are currently not covered. The first region would include

Suwannee, Columbia, Gilchrist, Union, and *Bradford* counties. A second area could be covered by one or more individuals: *Polk, Osceola, Hardee, De Soto, Highlands, Glades,* and *Okeechobee* counties. Responsibilities would include soliciting and compiling notable field observations for these counties at the end of each season, to be included in this report. Interested individuals should contact the state compiler listed at the end of this report.

SPECIES ACCOUNTS

BLACK-BELLIED WHISTLING-DUCK: 62 in 5 locations in *Escambia* and *Santa Rosa* 16 Mar-17 May (m. obs.); 19 at Brooker Creek Preserve (*Pinellas*) 29 Apr (+T. Mast); 14 at dusk over Woodlawn Park, St. Petersburg (*Pinellas*) 25 May (E. Plage); 2 at Sawgrass Lake Park (*Pinellas*) in May where they bred last summer (+J. Clayton, m. obs.).

FULVOUS WHISTLING-DUCK: 1 at J. N. Ding Darling NWR (*Lee*) 28 Mar (J. Conrad, L. Partymiller); 1 at Paynes Prairie Preserve SP (*Alachua*) 17 May (L. Davis, D. Dacol).

GREATER WHITE-FRONTED GOOSE: 1 at Palm Lake Park (*Martin*) 1-28 Apr (R. Netherton, m. obs.).

SNOW GOOSE: 1 continued from the previous season at Perdue Pond Wildlife Area (*Duval*) through 12 Mar (D. Cusick, m. obs.); 1 at Fort Pickens (*Escambia*) 22 Apr (B. Callaway, J. Callaway).

TRUMPETER SWAN: 1 in Blackwater River State Forest (*Santa Rosa*) 11-19 Mar (M. Petrosky, m. obs.).

EGYPTIAN GOOSE: 2 at Lake Placid (*Highlands*) 9-27 Mar (M. Wilson).

GADWALL: 50 at Tallahassee (*Leon*) 7-20 Mar (J. Cavanagh); 2 at Big Talbot Island SP - Spoonbill Pond (*Duval*) 3-4 Apr (K. Dailey).

AMERICAN WIGEON: 2 at Huguenot Memorial Park (*Duval*) 19 Mar (+K. Dailey); up to 2 adult males at Big Talbot Island SP - Spoonbill Pond through 26 Apr (K. Dailey).

*AMERICAN BLACK DUCK: 2 continued from previous season at Perdue Pond Wildlife Area through 11 Mar (C. Leonard, m. obs.).

NORTHERN SHOVELER: 1 drake at Big Talbot Island SP - Spoonbill Pond through EOS (K. Dailey et al.).

CANVASBACK: Up to 2 continued from the previous season at Perdue Pond Wildlife Area through 12 Mar (N. Wallen, m. obs.); 1 at Guana Tolomato Matanzas NERR Six Mile Landing (*St. Johns*) 27-28 Mar (+K. Dailey, D. Reed).

GREATER SCAUP: 2 at Big Talbot Island SP - Spoonbill Pond 25 Mar-3 Apr (K. Dailey).

LESSER SCAUP: 1 at Big Talbot Island SP - Spoonbill Pond 17 Apr (K. Dailey).

COMMON EIDER: 1 continued from previous season at Fort Clinch SP pier (*Nassau*) 2-8 Mar (A. Wraithmell et al.); 1 in St. Johns River at the Intracoastal Waterway (*Duval*) 4 Apr (D. Doyle).

SURF SCOTER: 1 male continued at Little Estero Island Critical Wildlife Area (*Lee*) through 26 Apr (+M. Rousher, R. Kaskan et al.); 1 at Fort Clinch SP pier 5-8 Mar (K. Dailey, M. Dailey, S. Killeen).

WHITE-WINGED SCOTER: Up to 4 continued from previous season at Fort Clinch SP pier through 8 Mar (A. Moss, +K. Dailey et al.); 16 at Gulf Breeze (*Santa Rosa*) 1 May (L. Duncan, S. Duncan, W. Duncan).

BLACK SCOTER: Up to 10 at Little Estero Island Critical Wildlife Area 1 Mar and 2 there 31 May (C. Ewell, M. Rousher); 1 at Fort Pickens (*Escambia*) 28 Mar (D. Muth); 1 at Gulf Breeze 13 Apr (B. Duncan, L. Duncan); up to 10 at Huguenot Memorial Park through 29 May (+K. Dailey et al.); 1 male at Porpoise Point (*St. Johns*) 11 Apr (D. Doyle).

LONG-TAILED DUCK: 1 female at Pelican Island NWR (*Indian River*) 16 Mar (K. Janes, J. Pecatore).

BUFFLEHEAD: 1 at Estero Bay Preserve SP (*Lee*) through 22 Mar (E. Warren, P. Hawrylyshan); 2 at Big Talbot Island SP - Spoonbill Pond 3 Apr (K. Dailey).

Red-breasted Merganser: 1 at Sweetwater Wetlands Park (*Alachua*) 18 Apr (F. Goodwin, D. Rohan).

Ruddy Duck: 15 at Estero Bay Preserve SP 5 Mar (E. Combs et al.); 2 at Bunche Beach (*Lee*) 13 Apr (G. Kent); 2 at Scarborough Ranch, SR 70, Lake Placid (*Highlands*) 5 May (J. Eager); up to 3 remained at Lake Morton (*Polk*) through 6 May (G. Williams, m. obs.).

Red-throated Loon: 1 at Fort Clinch SP continued through 8 Mar (*fide* K. Dailey).

*Pacific Loon: 1 at Fort Pickens 16–21 Mar (B. Duncan, L. Duncan, S. Duncan); 1 in Gulf Breeze 14–17 Apr (B. Duncan, L. Duncan).

Common Loon: 1 at Tallahassee 1-3 May (N. Wienders, J. Chan).

Horned Grebe: 1 at Guana Tolomato Matanzas NERR Six Mile Landing 27 Mar (K. Dailey); 1 in alternate plumage at Huguenot Memorial Park 4 Apr (K. Dailey); 1 at Topeekeegee Yugnee Park (*Broward*) 6-11 Apr (M. Berney, A. Scheflow); 1 at Melrose (*Clay*) 12 May (S. Carlock); 3 at William Dunn Water Reclamation Facility (*Pinellas*) 14-21 May (+C. Yilmaz).

Eared Grebe: 1 continued at Merritt Island NWR, Vista 5 (*Brevard*) through 3 Mar (M. Harris, A. Zions).

American Flamingo: 1 at Bunche Beach 19-23 Mar and probably the same individual at Lovers Key SP (*Lee*) 25-29 Mar (+K. Magnuson, +T. Buchanan et al.); up to 36 at STA-2 (*Palm Beach*) 23 Apr-21 May (+R. Diaz, m. obs.); 2 at Taylor Creek Area (*Okeechobee*) 30 Apr (B. Wedderburn).

*Northern Fulmar: 1 fatigued bird collected at Guana Tolomato Matanzas NERR (*St. Johns*) and later perished 16 Apr (D. Reed, specimen to FLMNH).

Black-capped Petrel: 25 offshore of Ponce de Leon Inlet (*Volusia*) 29 May (M. Brothers et al.).

Cory's Shearwater: 4 at Fort Pickens 10 Mar (B. Duncan, L. Duncan); 1 there 11 Mar (B. Duncan, L. Duncan); 19 offshore of Ponce de Leon Inlet 29 May (M. Brothers et al.).

Great Shearwater: 1 offshore of Ponce de Leon Inlet 29 May (M. Brothers et al.).

Audubon's Shearwater: 1 offshore of Ponce de Leon Inlet 29 May (M. Brothers et al.).

***European Storm-Petrel**: 1 offshore of Ponce de Leon Inlet 29 May (+M. Brothers et al.), pending FOSRC review will provide the first state record.

Wilson's Storm-Petrel: 36 offshore of Ponce de Leon Inlet 29 May (M. Brothers et al.).

Band-rumped Storm-Petrel: 2 offshore of Ponce de Leon Inlet 29 May (M. Brothers et al.).

White-tailed Tropicbird: 1 ca. 145 km off *Lee* 14 Apr (T. Marvel); 1 at Garden Key, Dry Tortugas NP (*Monroe*) 27 Apr (+T. Moulton); 2 offshore of Ponce de Leon Inlet 29 May (+M. Brothers et al.).

*Red-billed Tropicbird: 1 offshore Jupiter (*Palm Beach*) 6 May (+C. Callaghan).

Magnificent Frigatebird: 1 in Vilano (*St. Johns*) 14 May (S. Killeen).

Masked Booby: 1 first year bird at Turner Beach (*Lee*) 16 Mar (F. Melanson).

Brown Booby: 1 adult at Jetty Park, Port Canaveral, Cape Canaveral (*Brevard*) 10 Mar (J. Eager).

*Neotropic Cormorant: 1 at Topeekeegee Yugnee Park 3 Mar-9 Apr (m. obs.); up to 4 at Wakodahatchee Wetlands (*Palm Beach*) including 1 adult and 2 hybrid fledglings 26 Mar and 2 adults 30 May (+M. Berney); 1 at Boca Chica Beach (*Monroe*) 23-26 Apr (B. Rapoza, +R. Diaz, m. obs.).

***Great White Pelican**: 1 unbanded bird of unknown provenance continued at J. N. Ding Darling NWR from 28 Feb through 1 Mar (m. obs.).

American White Pelican: Up to 100 at Scarborough Ranch, SR 70, Lake Placid 5 May (J. Eager).

American Bittern: 2 at Waterworks Pool (*Duval*) 8 Mar (K. Eldredge).

Cattle Egret: 1 oddly overall-buff-colored adult at Wakodahatchee Wetlands 18 May (J. Torkomian, +E. Strimban).

YELLOW-CROWNED NIGHT-HERON: 1 at Hart Springs County Park (*Gilchrist*) 23 Mar (T. Rodriguez).

GLOSSY IBIS: 1 at Paynes Prairie Preserve SP carrying nesting material 20 and 26 May (M. Manetz) suggests the first nesting in *Alachua* since 1965.

WHITE-FACED IBIS: 1 at Gainesville (*Alachua*) 24-25 Mar (T. Anderson, A. Zions et al.); 1 at St. Marks NWR (*Wakulla*) 26 Mar (M. Smith); 2 at Tallahassee 12 Apr (R. Cassidy, D. Cassidy).

ROSEATE SPOONBILL: 1 at Paynes Prairie Preserve SP 20 May-EOS (M. Manetz, A. Zions).

OSPREY: 1 *ridgwayi* on Overseas Highway, Islamorada (*Monroe*) 23 Apr (+G. Williams).

SWALLOW-TAILED KITE: 33 in *Escambia* and *Santa Rosa* 10 Mar (m. obs.).

WHITE-TAILED KITE: 1 at Punta Gorda Airport Pond (*Charlotte*) 9 Apr (J. Bouton).

SNAIL KITE: 1 at Sweetwater Wetlands Park 20-23 Mar (L. Davis et al.); 1 at Ichetucknee Springs SP (*Columbia*) 20 Mar (J. Buchy) had plumage identical to that of the Sweetwater Wetlands bird of 20-23 Mar and was presumably the same individual; 1 at Sweetwater Wetlands Park 27 May-EOS (D. Dacol, B. Price et al.) was a different bird.

MISSISSIPPI KITE: 1 at Middleburg (*Clay*) 14 Mar (M. Williams); 1 at Genoa (*Hamilton*) 24 Mar (T. Rodriguez); 1 at Lake Apopka Wildlife Drive (*Orange*) 27 May (P. Hueber, L. Mathis); 1 near St. Johns Agricultural Extension (*St. Johns*) 30 May (D. Doyle).

COOPER'S HAWK: Active nest with 4 young (2 fairly large with some contour feathers and 2 smaller, covered with down) at The Villages (*Sumter*) 29 May (J. Dinsmore).

SHORT-TAILED HAWK: Pair on Withlacoochee River near Dunnellon (*Marion*) attempted nest 16 Mar-EOS (J. Shetzler, J. Lewis et al.); 1 light morph over Central Park, Ormond Beach (*Volusia*) 10 Apr (M. Brothers).

BLACK RAIL: 1 at Big Bend WMA, Hickory Mound (*Taylor*) 23 Apr (S. Parrish).

SORA: 1 "heard giving whinny" at Boyd Hill Nature Preserve (*Pinellas*) 14 May (G. Delisle).

PURPLE SWAMPHEN: 2 adults present the entire period at Harns Marsh with 3 chicks on 3 May providing first breeding record in *Lee* (+T. Obrock et al.); 1 at Sweetwater Wetlands Park 27 Mar-9 Apr (Y. Morrell, L. Davis).

PURPLE GALLINULE: 2 at St. Marks NWR 26 Mar (M. Smith); adults were seen at 3 mid-*Pinellas* parks throughout the period (*fide* R. Smith).

LIMPKIN: 1 nested a month earlier than usual at Westside Industrial Park (*Duval*) 8 Apr (A. Langgood).

SANDHILL CRANE: 1 was unusual near San Pablo Road in coastal *Duval* 1 Mar (K. Dailey).

WHOOPING CRANE: 1 at Paynes Prairie Preserve SP 21 Apr-EOS (M. Manetz, F. Goodwin et al.) was one of ~12 birds remaining in the Florida non-migratory population (*fide* T. Dellinger); 1 at Micanopy (*Alachua*) 15 May (B. Sturm). The Micanopy bird was a different individual as indicated by its differently colored band.

AMERICAN AVOCET: 36 at Ribault Monument (*Duval*) 2 Mar (L. Royce); 2 at Guana Tolomato Matanzas NERR Six Mile Landing 27-28 Mar (+K. Dailey, D. Reed); 10 in Pensacola (*Escambia*) 24 May (A. Forster, D. Forster).

AMERICAN OYSTERCATCHER: 34 at Fort Island Gulf Beach (*Citrus*) 19 Mar (L. Lane); 7 at Huguenot Memorial Park 4 Apr (K. Dailey).

***PACIFIC GOLDEN-PLOVER:** 1 on CR 880 near 6 Mile Bend (*Palm Beach*) 9-25 Apr (+C. Callaghan, m. obs.), pending acceptance by the FOSRC this would provide the first state record.

SEMIPALMATED PLOVER: 2 at Sweetwater Wetlands Park 30 Apr (J. Mays).

SPOTTED SANDPIPER: Up to 20 at Big Talbot Island SP – Spoonbill Pond 15 May (K. Dailey, D. Reed).

UPLAND SANDPIPER: 1 at n St. Petersburg (*Pinellas*) 3 Apr (+W. Meehan, m. obs.); up to 4 at St. Cloud (*Osceola*) 10-15 Apr (J. Hoch m. obs.).

WHIMBREL: 1 at Fred Howard Park (*Pinellas*) 3 Apr (+T. Mast); 6 at Caladesi Island SP (*Pinellas*) 4 Apr (T. Malone); up to 4 were at Fort De Soto Park (*Pinellas*) 18-22 April (*fide* R. Smith); 5 at South Anclote Key Preserve (*Pinellas*) 26 May (+P. Brady).

LONG-BILLED CURLEW: 1 at Bunche Beach Preserve (*Lee*) 3 Mar-9 Apr (M. Rousher, m. obs.); 1 at St. Vincent NWR (*Franklin*) 7 Mar (J. Murphy).

MARBLED GODWIT: 2 at Huguenot Memorial Park 29 Mar (*fide* K. Dailey).

RED KNOT: 200 at Fort De Soto Park 15 May (S. Olsen).

SEMIPALMATED SANDPIPER: 2,500 at the Okaloosa County Water- and STF 9 May (M. Swan).

WHITE-RUMPED SANDPIPER: 1 at Tallahassee 3 May (J. Cavanagh); 1 at Fred Howard Park 5 May (+T. Mast); up to 21 at Eagle Lakes Community Park (*Collier*) 8 May (K. Laakkonen), and multiple at various locations in *Collier* 4-14 May (D. True, T. Zambon et al.); up to 4 at various locations in *Lee* 5-17 May (C. Ewell et al.); 1 at n St. Petersburg 7-8 May (R. Smith, +R. Harrod); 1 at Shell Key (*Pinellas*) 15 May (+R. Smith); 6 at Hart Springs (*Gilchrist*) 16 May (R. Robinson, J. Allison).

PECTORAL SANDPIPER: 1 at Guana Tolomato Matanzas NERR Six Mile Landing 27 Mar (K. Dailey).

PURPLE SANDPIPER: 1 at Huguenot Memorial Park 26 Mar (B. Richter); 1 at Ponce de Leon Inlet through 14 Apr (M. Brothers).

STILT SANDPIPER: 30 at Guana Tolomato Matanzas NERR Six Mile Landing 27 Mar (K. Dailey, D. Reed); 1-6 at n St. Petersburg 2-3 Apr (M. Burns, m. obs.); 3 at Pinellas Point (*Pinellas*) 9 Apr (+J. Clayton); up to 6 at Big Talbot Island SP–Spoonbill Pond 17 Apr-15 May (K. Dailey).

*RUFF: 1 at Big Talbot Island SP–Spoonbill Pond 3-8 May was the third *Duval* record (+K. Dailey, D. Foster, G. Williams); 1 at Lake Jesup Conservation Area – Marl Bed Flats (*Seminole*) 3-5 May (S. Simmons et al.).

WILSON'S SNIPE: 1 at Big Talbot Island SP–Spoonbill Pond 19 Apr (K. Dailey).

AMERICAN WOODCOCK: 1 at Little Talbot Island SP (*Duval*) 6 Mar (K. Dailey).

WILSON'S PHALAROPE: 2 at St. Vincent NWR 4 Apr (J. Murphy).

RED-NECKED PHALAROPE: Up to 56 offshore *Palm Beach* 30 Apr (M. Brothers, m. obs.); 1 at Merritt Island NWR–Bio Lab Road (*Brevard*) 29 May (D. LaGrange).

POMARINE JAEGER: 4 offshore of Ponce de Leon Inlet 29 May (M. Brothers et al.).

LAUGHING GULL x RING-BILLED GULL: 1 adult on beach Daytona Beach Shores (*Volusia*) 16 Mar (+M. Brothers).

FRANKLIN'S GULL: 1 at Daytona Beach Shores 24 Mar, 29 Mar (2 first cycle), and 1 Apr (1 first cycle; all M. Brothers); 3 at Tomoka Landfill, Daytona Beach (*Volusia*) 25 Mar (M. Brothers).

*CALIFORNIA GULL: 1 first-cycle bird at Cocoa Landfill (*Brevard*) 4 Mar (M. Harris).

ICELAND GULL: 1 first-cycle at Daytona Beach Shores 1, 4, 24 Mar and 3 Apr (M. Brothers); 1 first-cycle at Fort Matanzas peninsula (*St. Johns*) 25-31 Mar (M. Brothers, m. obs.).

LESSER BLACK-BACKED GULL: 1 at St. George Island (*Franklin*) 29 Mar-12 Apr (J. Cavanagh).

GLAUCOUS GULL: 1 first cycle at Daytona Beach Shores 3, 4, 16, 24 Mar and 1 Apr (M. Brothers); 1 second cycle northwest of Brooksville (*Hernando*) 3-5 Mar (M. Gardler et al.); 1 first-cycle at Tomoka Landfill 25 Mar (M. Brothers); 1 at Fort Matanzas peninsula 27-31 Mar (D. Robbins); 1 at Fort De Soto Park 17 Apr (+D. Margeson) provided the 2nd *Pinellas* record; 1, probably the same as 17 Apr, was at Three Rooker Bar (*Pinellas*) 22 May (+C. Yilmaz).

GREAT BLACK-BACKED GULL: 1 adult took an adult Sandwich Tern at Huguenot Memorial Park 31 Mar (K. Dailey).

BLACK NODDY: 1 at Garden Key, Dry Tortugas NP 15 Apr-12 May (m. obs.).

SOOTY TERN: 1 at St. Petersburg Beach 22 and 29 May (+B. Forys); 1 at Flagg Island (*Franklin*) 24 May (E. Thompson, N. Kirkos); 9 offshore Ponce de Leon Inlet 29 May (M. Brothers et al.).

BRIDLED TERN: 4 offshore of Ponce de Leon Inlet 29 May (M. Brothers et al.).

LEAST TERN: 1 at Clearwater's Courtney Campbell Causeway (*Pinellas*) 16 Mar (R. Lane et al.); 42 at Gandy Beach (*Pinellas*) 25 Mar (R. Smith, J. Clayton); 1 at Guana Tolomato Matanzas NERR Six Mile Landing 27 Mar (K. Dailey, D. Reed); 6-8 "defending territory" on rooftop of Keystone Heights High School (*Clay*) 24 Apr, not seen thereafter (J. King).

GULL-BILLED TERN: 2 adults at Gandy Beach 14 Apr (J. Rosenfeld) provided *Pinellas* with a rare spring record; 1 at Big Talbot Island SP–Spoonbill Pond 17 Apr and 2 there 7 May (K. Dailey); 2 at Lake City (*Columbia*) 21 Apr (J. Krummrich); 1 at Sawgrass Lake Park 12-24 May (+B. Bartley, J. Clayton); 2 at Gainesville 13 May (M. Manetz).

BLACK TERN: 5 at Fort De Soto Park 17 May (E. Plage).

ROSEATE TERN: 1 at Stump Pass Beach SP (*Charlotte*) 10 Apr (J. Bouton et al.).

COMMON TERN: 6 at Lake Okeechobee Lock 7 (*Okeechobee*) 18 Mar (E. Rasmussen); 1 at St. Marks NWR 26 Mar (M. Smith); 37 at Fort De Soto Park 17 Apr (+R. Smith); 2 offshore of Ponce de Leon Inlet 29 May (M. Brothers et al.).

WHITE-CROWNED PIGEON: 1 at J. N. Ding Darling NWR throughout the season (R. Repenning, E. Combs et al.).

WHITE-WINGED DOVE: 40-45 were courting in the Crescent Heights neighborhood (*Pinellas*) 9 Mar (S. Tavaglione, R. Smith).

*ZENAIDA DOVE: 1 continued from the previous season at Long Key SP (*Monroe*) 1 Mar-15 May (m. obs.).

MANGROVE CUCKOO: 1 at Carysfort Circle, Key Largo (*Monroe*) 30 Apr (J. Eager).

BLACK-BILLED CUCKOO: 1 at Cedar Key (*Levy*) 9 Apr (J. Mays); 2 at Fred Howard Park 5 May (+T. Mast); up to 2 at Fort De Soto Park 5 May (+G. Schleicher, J. Clayton).

SMOOTH-BILLED ANI: Up to 2 nesting at Loxahatchee NWR (*Palm Beach*) 1 Mar-EOS (m. obs.).

BARN OWL: 1 at Gulf Breeze 28 May (B. Duncan, L. Duncan).

BURROWING OWL: 1 in a yard in downtown Orlando (*Orange*) 7 May (+E. Stoccardo).

LESSER NIGHTHAWK: 1-2 at Fort Pickens 13-16 Apr (J. Callaway, B. Callaway, D. Stangeland, B. Duncan, L. Duncan).

COMMON NIGHTHAWK: 61 in Molino (*Escambia*) 7 May (J. Yuhaz).

ANTILLEAN NIGHTHAWK: 1 at Jonathan Dickinson SP (*Martin*) 17 May (D. Doyle).

EASTERN WHIP-POOR-WILL: 1 at Weedon Island Preserve (*Pinellas*) 1-9 Mar (R. Smith et al.); 2 at Cedar Point Preserve (*Duval*) 11 Mar (K. Dailey, M. Dailey).

CHIMNEY SWIFT: 1 at Gainesville 8 Mar (J. Mays).

*VAUX'S SWIFT: Up to 10 at Gainesville through 6 Apr (B. Ewing, S. Ewing).

BUFF-BELLIED HUMMINGBIRD: 1 east of Brooksville 28 Mar (+J. Mann).

BLACK-CHINNED HUMMINGBIRD: 1 immature male at Spring Lake Hills, Altamonte Springs (*Seminole*) from winter 2015-2016 through 1 Mar (+P. Hueber, m. obs.); 1 at Gainesville to 17 Mar (S. Ewing et al.).

RUFOUS HUMMINGBIRD: 1 adult female at ne St. Petersburg yard (+J. Clayton et al.) provided the 3rd *Pinellas* record.

HAIRY WOODPECKER: 2 at Gold Head Branch SP (*Clay*) 13 Mar (J. Graham); 1 at International Paper Wetlands (*Escambia*) 29 May (J. Callaway, B. Callaway); 2 in Blackwater River SF (*Santa Rosa*) 30 May (J. Yuhaz).

PEREGRINE FALCON: 1 at Eco Pond, Everglades NP (*Monroe*) 1 May (J. Eager); 1 at Big Talbot Island SP–Spoonbill Pond 15 May (D. Reed, K. Dailey).

ROSE-RINGED PARAKEET: 1 adult at Babcock-Webb WMA, Punta Gorda (*Charlotte*) 5 May (J. Eager); 1 visited a Clearwater backyard feeder each evening 27-31 May (+K. Duncan), providing the 2nd report/1st record for *Pinellas*.

WHITE-WINGED PARAKEET: 10 adults at Lejune Road and 7th Street, Miami (*Miami-Dade*) 3 May (J. Eager).

*Cuban Pewee: 1 at Crandon Park (*Miami-Dade*) 13-14 Mar (O. Zequeira, J. Zequeira, +R. Diaz et al.).

Acadian Flycatcher: 1 at Taylor Park (*Pinellas*) 3 Apr (+K. Duncan); 1 at Fort De Soto Park 23-24 Apr (B. Ahern et al.).

Least Flycatcher: 1 at Veteran's Memorial Park (*Okaloosa*) 26-28 Apr (M. Swan, m. obs.).

Vermilion Flycatcher: 1 at Walnut Hill (*Escambia*) 1 Mar (B. Duncan, L. Duncan); 1 at Fort Pickens 2 Mar (J. Callaway, B. Callaway); 1 at International Paper Wetlands 6 Mar (J. Callaway, B. Callaway); 1 at St. Marks NWR 29 Mar (R. Cassidy, S. Cassidy).

Ash-throated Flycatcher: 1 in Okeechobee (*Okeechobee*) 21 Mar (A. Zions).

Tropical Kingbird: Up to 3 at STA-5 (*Hendry*) through 16 Apr (M. England, +B. Bergstrom et al.); 1 at STA-2 13 Mar (m. obs.); 2 at Browns Farm Road (*Palm Beach*) 14 Apr (B. Pickholtz, S. Kaplan); 1 at Fort De Soto Park 25 May (+J. Clayton, et al.).

*Cassin's Kingbird: 1 at CR305 (*Flagler*) 4-6 Mar, continuing from previous season (S. Killeen).

Western Kingbird: 1 ne of Brooksville 21 Mar (K. Spilios); 1 at Helen Cooper Floyd Park (*Duval*) 18 Apr (D. Pridgen); 1 at Fort De Soto Park 29 Apr and again 6 May (both +R. Cornelius).

Eastern Kingbird: 2 at Fort De Soto Park 20 Mar (+J. Clayton); 1 at Fort De Soto Park 25 May (J. Clayton).

Gray Kingbird: 1 at Florida Botanical Gardens (*Pinellas*) 14 Mar (+C. Langan); 1 at Sawgrass Lake Park 5 Apr (+J. Clayton); 1 at Lake Apopka Wildlife Drive 20 May (+P. Hueber).

Scissor-tailed Flycatcher: 1 at Fort De Soto Park 10 Apr (*fide* R. Smith).

*Fork-tailed Flycatcher: 1 at Homestead Air Reserve Base (*Miami-Dade*) 2 Apr (J. Friers, +H. Bucht et al.); 1 at Mariner's Club, North Key Largo (*Monroe*) 15 Apr (D. Wilcove, B. Scheffers).

*Thick-billed Vireo: 1 at John U. Lloyd SP (*Broward*) 17-22 Apr (+M. Berney, m. obs.).

***Cuban Vireo**: 1 singing at Fort Zachary Taylor Historic SP (*Monroe*) 19-24 Apr (+C. Goodrich, M. Hedden, M. Gardler, L. Dunn, T. Dunn, m. obs.). Pending acceptance by the FOSRC, would provide the first ABA-area record.

Bell's Vireo: 1 at Sugden Regional Park (*Collier*) 5 Mar-7 Apr (m. obs.); 1 at Paynes Prairie Preserve SP 6-16 Mar (S. Ewing, M. Awan et al.); 1 at Fred W. Coyle Freedom Park (*Collier*) 16 Mar (M. Rousher).

Yellow-throated Vireo: 1 at Vaill Point Park (*St. Johns*) 12 Mar (D. Kainauskas); 5 at Fort De Soto Park 23 Mar (J. Clayton).

Warbling Vireo: 1 at the University of West Florida (*Escambia*) 3 Apr (J. Lloyd); 1 at Fort De Soto Park 18-20 Apr (+J. Gibson, m. obs.).

Red-eyed Vireo: 2 at Brooker Creek Preserve 15 Mar (+T. Mast); 25+ at Fort De Soto Park and Fred Howard Park 5 May (R. Smith, +T. Mast et al.).

*Yellow-green Vireo: 1 at Columbia Road Hammock, Port Canaveral (*Brevard*) 10-12 May (+M. Harris, m. obs.).

Black-whiskered Vireo: 1 at Fort De Soto Park 18-20 Apr (*fide* R. Smith, m. obs., +J. Clayton); 1 at Lori Wilson Park, Cocoa Beach (*Brevard*) 19 Apr-1 May (J. Eager, m. obs.); 1 at St. George Island 21 Apr (+K. Yakola, M. Ramirez); 1 at Fort De Soto Park 2 May (E. Plage, +R. Smith); 1 at Cedar Key 8 May (D. Henderson); 1 at a Largo (*Pinellas*) yard 18 May (+T. Knuth).

Tree Swallow: 1 at Bystre Lake (*Hernando*) 25 May (S. Mann, J. Mann).

Northern Rough-winged Swallow: 2 (an apparently mated pair) at Port Orange (*Volusia*) 20 Mar (M. Brothers).

Bank Swallow: 1 at Fort De Soto Park 7 Apr (T. Ford et al.); 2 at ne St. Petersburg 9 Apr (J. Clayton); up to 6 at Fort De Soto Park 5 May (E. Plage et al.).

Cliff Swallow: Up to 84 nesting in Everglades Agricultural Area (*Palm Beach*) 11 Apr-30 May (+M. Berney); 1 at ne. St. Petersburg 5 Mar (R. Smith, +J. Clayton); up to 5

at Fort De Soto Park 7 Apr (E. Plage et al.); 3 (1 light, 1 medium, 1 dark forehead) attending 2 active nests at SR 50 and St. Johns River bridge (*Orange*) 14 May (P. Hueber, L. Mathis, G. Williams).

CAVE SWALLOW: 1 at Fort De Soto Park 15 Mar (E. Plage, +J. Clayton); 2 at Honeymoon Island SP 27 Mar and again 16 Apr (both T. Kalbach); 2 at ne St. Petersburg 29 Mar (M. Burns, +R. Smith); 2 at the Okaloosa County Water and STF 26 Mar (M. Swan); 2 at the Cliff Swallow roost in Everglades Agricultural Area 11 Apr (+M. Berney).

WHITE-BREASTED NUTHATCH: 1 at St. George Island SP 19 Mar (S. Jones, +J. Murphy); 7 at Miccosukee (*Leon*) 16 May (R. Cassidy, D. Cassidy).

BROWN CREEPER: 1 at Micanopy to 10 Mar (B. Rohman).

GOLDEN-CROWNED KINGLET: 1 in n Jacksonville (*Duval*) 22 Mar (G. Williams).

GRAY-CHEEKED THRUSH: 1 at Fort Pickens 26 Mar (D. Stangeland); 1 at Fort Zachary Taylor Historic SP 21 Apr (J. Eager); 1 at Frogmore Farm (*Lafayette*) 5 May (J. Middleton).

SWAINSON'S THRUSH: 3 at Fort De Soto Park 3 Apr (+S. Tavaglione et al.); 1 at Fred Howard Park 3 Apr (T. Mast); 1 at George McGough Nature Park (*Pinellas*) 23 May (K. Nelson).

WOOD THRUSH: Up to 4 at Fort De Soto Park 3 Apr (+D. Sauvageau, m. obs.).

AMERICAN ROBIN: 1 at Fort De Soto Park 5-8 May (+S. Tavaglione et al.); up to 4 at Princess Place Preserve (*Flagler*) 13 May-EOS, including up to 2 fledglings 28-30 May (J. Giraulo, M. Giraulo, +D. Doyle); 6 nesting in Pensacola 19 May (J. Callaway, B. Callaway).

*BAHAMA MOCKINGBIRD: 1 at No Name Key (*Monroe*) 5 May (+T. Watts); 1 at Hugh Taylor Birch SP (*Broward*) 5-27 May (B. Roberts, +M. Berney, m. obs.).

COMMON MYNA: 1 at Fort De Soto Park 19 Apr (+S. Robinson et al.).

AMERICAN PIPIT: 1 at the Okaloosa County Water- and STF 25 May (C. Brown).

LAPLAND LONGSPUR: 1 at Fort Jefferson, Dry Tortugas (*Monroe*) 28 May (J. Roth).

LOUISIANA WATERTHRUSH: 1 at John Chesnut Senior Park (*Pinellas*) 10 Mar (J. Wells); 1 at Sawgrass Lake Park 24-26 Mar (M. Burns et al.).

NORTHERN WATERTHRUSH: 1 at Fort De Soto Park 22 Mar (E. Plage); 1 at Sawgrass Lake Park 23-26 Mar (M. Burns, +J. Clayton et al.); 1 at Dunedin Hammock Park (*Pinellas*) 27 Mar (C. Yilmaz).

GOLDEN-WINGED WARBLER: 1 at Marco Island (*Collier*) 24-25 Apr (J. Krakowski, C. Krakowski, M. Chavez).

BLUE-WINGED WARBLER: 1 at Big Cypress NP (*Collier*) and 1 at Florida Panther NWR (*Collier*) 13 Mar (J. Krakowski); 1 at Sanibel (*Lee*) 4 Apr (J. Long); 1 at Boca Ciega Millenium Park (*Pinellas*) 6 Apr (J. Clayton); 1 at Fort De Soto Park 7-10 Apr (*fide* R. Smith); 1 at Sand Key Park (*Pinellas*) 9 Apr (K. Duncan); 1 at Guana Tolomato Matanzas NERR 11 Apr (C. Weissburg); 1 at Six Mile Cypress Slough Preserve (*Lee*) 13-14 Apr (J. Padilla et al); 1 at Boyd Hill Nature Preserve 17 Apr (R. Smith).

PROTHONOTARY WARBLER: 1 at Fort De Soto Park 21 Mar (E. Plage et al.).

SWAINSON'S WARBLER: 1 banded at Dunedin Hammock Park 27 Mar (J. McGinity, C. Yilmaz); 1 at Fort De Soto Park 3 Apr (D. Sauvageau); up to 3 at Fort De Soto Park 10-12 Apr, and 1 lingered to at least 21 Apr (*fide* R. Smith, +G. Williams); 1 banded at Dunedin Hammock Park 17 Apr (+J. McGinity); 1 at Ichetucknee Springs SP (*Suwannee*) 17 Apr (J. Krummrich); 2 at Steinhatchee Springs WMA (*Lafayette*) 19 Apr (J. Hintermister); 2 singing in n Jacksonville 1 and 7 May (K. Dailey, D. Foster); 1 at Boca Ciega Millenium Park 12-13 May (K. Nelson, S. Aversa).

TENNESSEE WARBLER: 1 at Eastman/Taminco Sanctuary (*Santa Rosa*) 25 Mar (L. Kelly, B. Furlow); 1 at Fort De Soto Park 31 Mar-4 Apr (+J. Clayton, D. Sauvageau et al.).

NASHVILLE WARBLER: 1 at Masaryktown (*Hernando*) through 10 Mar (D. Love); 1 at Eastman/Taminco Sanctuary 22 Mar (L. Kelly, B. Furlow); 1 at Gainesville 27 Mar (A. Casella); 1 at Gainesville 10 Apr (A. Kratter).

CONNECTICUT WARBLER: 1 at Fort Pickens 28 Apr (J. Callaway, B. Callaway); up to 2 at Sebastian Inlet SP (*Indian River*) 7 (G. Mina) and 14 May (T. Towles); 1 at Theodore Roosevelt Area (*Duval*) 9 May (G. Williams, D. Foster); up to 2 at Columbia Road Hammock, Port Canaveral 10-16 May (J. Eager, m.obs.); 1 at Pelican Island NWR (*Indian River*) 10 May (T. Ledford); up to 3 at Lake Lotus Park, Altamonte Springs (*Seminole*) 8-15 May (m. obs.); 1 female banded at Tomoka SP (*Volusia*) 12 May (Me. Wilson).

KENTUCKY WARBLER: 1 at Bonner Park (*Pinellas*) 5 Apr (B. Parkhurst, K. Nelson et al.).

HOODED WARBLER: 1 at Fort De Soto Park 21 Mar (J. Clayton et al.).

*KIRTLAND'S WARBLER: 1 in coastal *Volusia* 27 Apr (+T. Lee).

CAPE MAY WARBLER: 1 at Fort De Soto Park 6 Apr (J. Rosenfeld); up to 5 at Fort De Soto Park 6 Apr-8 May (*fide* J. Clayton, K. Duncan).

CERULEAN WARBLER: 1 at Rookery Bay NERR (*Collier*) 4 Apr (+K. Laakkonen).

MAGNOLIA WARBLER: 1 at Bonner Park 15-16 May (S. Aversa, K. Nelson).

BAY-BREASTED WARBLER: 4 at Fort De Soto Park 5 May (R. Smith et al.); 1 at Largo 13 May (+C. Evans).

BLACKBURNIAN WARBLER: 1 at Gainesville 13 May (A. Kent, G. Kent).

CHESTNUT-SIDED WARBLER: 3 at Fort De Soto Park 5 May (E. Plage et al.).

BLACKPOLL WARBLER: 1 at Gainesville 5 Apr (M. O'Sullivan); 1 at Fort De Soto Park 10 Apr (*fide* R. Smith); up to 50 at Fort De Soto Park 17 Apr (M. Burns, J. Clayton et al.).

BLACK-THROATED BLUE WARBLER: 1 at Boca Ciega Millenium Park 6 Apr (+J. Clayton, P. Brannon).

BLACK-THROATED GREEN WARBLER: A probable over-wintering bird at Moccasin Lake Park (*Pinellas*) 5 Mar (M. Bohrer).

CANADA WARBLER: 1 at Fort Pickens 22 May (P. Doggerell); 1 in *Charlotte* 25 Apr (J. Bouton).

YELLOW-BREASTED CHAT: 1 continuing from the winter season at Sugden Park, Naples (*Collier*) through 31 Mar (T. Zambon, D. Simpson et al.).

*WESTERN SPINDALIS: 1 male at Hugh Taylor Birch SP 12 May (+A. Seelye-James).

*BLACK-FACED GRASSQUIT: 1 female at Long Key SP 1-29 Mar (m. obs.).

*GREEN-TAILED TOWHEE: 1 at Little Talbot Island SP 3-4 Mar (+S. Ewing) provided the first *Duval* record.

CLAY-COLORED SPARROW: 1 at Fort Clinch SP feeders 2-25 Mar (A. Wraithmell et al.).

LARK SPARROW: 1 at Gainesville 9 Mar (A. Kratter, M. Manetz, R. Rowan); 1 at Fort De Soto Park 15 Mar was most likely one of two wintering birds (E. Plage, +J. Clayton); 1 at Fort Pickens 17-27 Mar (J. Yuhaz, D. Stangeland, D. Muth); 1 at Eastport Wastelands (*Duval*) 26 Mar (+K. Dailey).

GRASSHOPPER SPARROW: 1 at Old Keystone Road (*Pinellas*) 1 Mar-8 Apr (+T. Mast, J. Wells); 1 at Oldsmar (*Pinellas*) 25 Mar (R. Smith); 1 at Eastport Wastelands 2 Apr (+K. Dailey).

HENSLOW'S SPARROW: 1 at St. Marks NWR 26 Mar (M. Smith); 2 at Avon Park AFR (*Highlands*) 4 Apr (A. Rice); 1 at Loxahatchee NWR 11-12 Apr (K. Dailey, M. Dailey, G. Williams).

LE CONTE'S SPARROW: 1 at Hague (*Alachua*) to 8 Mar (L. Davis, J. Hintermister et al.); 2 at Sweetwater Wetlands Park 10 Mar (A. Kent, G. Kent, A. Harper); 1 at Lake Apopka Wildlife Drive 19-20 Mar (P. Hueber, m. obs.).

SEASIDE SPARROW: 3 adult *A. m. mirabilis*, the Cape Sable race, at Everglades NP (*Miami-Dade*) 1 May (J. Eager).

LINCOLN'S SPARROW: 1 at Lake Apopka Wildlife Drive 20 Mar (P. Hueber, +Mi. Wilson); 1 at St. George Island SP 11-17 Apr (R. Cassidy et al).

WHITE-CROWNED SPARROW: 1 "Gambel's" at Fort Clinch SP pier 8 Mar (A. Wraithmell).

DARK-EYED JUNCO: 1 in *St. Johns* continued from previous season through 7 Mar (D. Mier).

SCARLET TANAGER: 1 male at Vaill Point Park (*St. Johns*) 9 Apr (A. Langgood, S. Heijman et al.); 1 at Jonathan Dickinson SP 6 May (D. Doyle).

WESTERN TANAGER: 1 at High Springs (*Alachua*) 2 Mar-20 Apr (J. Lynch, M. Lynch et al.); 1 at Gainesville mid-Mar-17 Apr (S. Reynierson); 1 in *Lee* 1 Apr (J. Padilla-Lopez); 1 adult male in Gulf Breeze 11-15 Apr (B. Duncan, L. Duncan); 1 at St. George Island SP 14 May (J. Cavanagh).

ROSE-BREASTED GROSBEAK: 1 first seen Feb 2nd was seen again at Largo Nature Preserve (*Pinellas*) 3 Mar (+R. Cornelius); 1 at John Taylor Park (*Pinellas*) 3 Apr (+K. Duncan).

*LAZULI BUNTING: 1 at a private residence in *Martin* 8 Mar (L. Gomez); 1 at St. George Island SP 6-10 Apr (K. Chiasson, +J. Murphy).

INDIGO BUNTING: 1 at Reddie Point Preserve (*Duval*) 13 Mar (D. Kainauskas).

DICKCISSEL: 1 at Cedar Key 5 Mar (R. Rowan, J. Lebreton); 1 at San Pablo Commons (*Duval*) 15 Mar (K. Dailey); 1 in *Polk* 5 Apr (C. Lanker).

BOBOLINK: 1 at Fort De Soto Park 22 Apr (S. Aversa, T. Aversa); 60 at n St. Petersburg 25-26 Apr (+J. Clayton, m. obs.).

YELLOW-HEADED BLACKBIRD: Up to 2 at Hague 14-18 Mar (C. Horning, T. Anderson et al.); 1 at Pace (*Santa Rosa*) 15–27 Mar (D. Stangeland); 1 at Clintwood Acres (*Charlotte*) 29 Mar (K. Blackshaw); 4 males at Sem Chi Rice Plant, CR 880, Belle Glade (*Palm Beach*) 11 Apr (J. Eager).

SHINY COWBIRD: 1 at Cedar Key 17 Mar (J. Mays) and 28 Apr-5 May (D. Henderson, M. O'Sullivan); 1 male at Fort Pickens 15–16 Apr (A. Etienne, J. Callaway, B. Callaway, B. Duncan, L. Duncan, D. Stangeland); 1 male at Flamingo, Everglades NP (*Monroe*) 1 May (J. Eager); 1 male at Fort De Soto Park 2 May (K. Nelson, S. Aversa, +T. Aversa); 1 in *Lee* 14 May (E. Swank).

BRONZED COWBIRD: Up to 3 (2 male, 1 female) at Newton Park, Winter Garden (*Orange*) 16 Mar-11 Apr (T. Leukering, +P. Hueber, M. Rogner, m. obs.); up to 3 at Cedar Key 17 Mar-4 May (J. Mays, M. O'Sullivan et al.); 1 at Crystal River (*Citrus*) 6 May (A. Kent).

BALTIMORE ORIOLE: 1 in Lawton (*Monroe*) 10 May (+D. Doyle).

PINE SISKIN: 1 at a Jacksonville feeder (*Duval*) 2-11 Mar (M. Vergenz); 2 at Alligator Point (*Franklin*) 6 Mar (J. Murphy); 1 in n Jacksonville 9 Apr (L. Johannsen).

SCALY-BREASTED MUNIA: 22 in Pace 9 Mar (D. Stangeland); 5 at Inerarity Point (*Escambia*) 14 Mar (*fide* B. Duncan); 9 in Pace 19 Mar (D. Stangeland); 11 in Pace 2 Apr (D. Stangeland); 7 in w Pensacola 4 Apr (J. Lloyd); 8 in n Pensacola 24 May (Kirk Roth); 3 at International Paper Wetlands 29 May (J. Callaway, B. Callaway).

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Correction to Fall 2015 report: A report of Brown Booby: 3-4 at Paynes Prairie Preserve SP 15 Oct (B. Enneis, L. Holt) should have been listed under Brown Pelican.

Report prepared by **Kevin E. Dailey**, state compiler (6661 Beatrix Drive, Jacksonville, Florida 32226, <kedailey@yahoo.com>). Regional compilers are **Bruce H. Anderson** (2917 Scarlet Road, Winter Park, Florida 32792, <scizortail@aol.com>), **Robin Diaz** (200 Ocean Lane Drive #PB-1, Key Biscayne, Florida 33149, <rd4birds@bellsouth.net>), **Bob and Lucy Duncan** (614 Fairpoint Drive, Gulf Breeze, Florida 32561, <Town_Point@bellsouth.net>), **Charlie Ewell** (115 SW 51st Terrace, Cape Coral, Florida 33991, <anhinga42@comcast.net>), **Bev Hansen** (6573 Pine Meadows Drive, Spring Hill, Florida 34606, <bevalhansen@earthlink.net>), **John Murphy** (766 Alligator Drive, Alligator Point, Florida 32346, <southmoonunder@mchsi.com>), and **Ron Smith** (1500 85th Avenue North, St. Petersburg, Florida 33702, <rsmithbirds@gmail.com>).

FLORIDA ORNITHOLOGICAL SOCIETY, INC.
TREASURER'S REPORT — 2015

Account balances as of December 31, 2015:

Account	**Balance**
Fidelity Account	$182,875.96
PayPal Account	674.61
Petty Cash	118.26
Total Assets	**$183,668.83**
Sales Tax Liability	(85.90)
Net Assets	**$183,582.93**

Fund balances as of December 31, 2015:

Fund	**Balance**
General Operating Fund	$51,300.98
Special Publications Fund	35,414.44
Cruickshank Fund	42,583.72
Robertson Fund	19,513.31
Endowment Fund	31,925.95
Friends of FFN	2,844.53
Total Assets	**$183,582.93**

2015 Income and Expenses:

Income	**Amount**	**Expenses**	**Amount**
Annual Membership Dues	$8,565.00	FFN Printing	$10,185.26
Life Membership Dues	1,700.00	FFN Color Printing	750.00
Interest/Asset Change in Value	1,559.49	Postage & Shipping	1,396.90
Page Charges	175.00	Operating Expenses	1,984.95
Meetings	3,655.00	Meetings	2,828.04
Special Publication Sales	1,573.51	Records Committee	897.66
Back Issue Sales	187.85	Cruickshank Award	2,000.00
Misc. Operating Income	154.67	Robertson Award —	
Gifts General Operating Fund	750.00	Space Coast Festival	150.00
Gifts Cruickshank Fund	320.00	PayPal Fees	73.31
Gifts Robertson Fund	190.00		
Gifts Endowment Fund	105.00		
Gifts Friends of FFN	2,090.00		
Total	**$21,025.52**	**Total**	**$20,266.12**

Change in Net Assets:

Totals	**Balance**
Net Assets December 31, 2014	$182,823.53
Total Income 2015	21,025.52
Total Expenses 2015	(20,266.12)
Net Assets December 31, 2015	**$183,582.93**

Charles H. Fisher, Jr., Treasurer, 4806 West Beach Park Drive, Tampa, FL 33609

OUR FOS FIELD OBSERVATIONS COMMITTEE NEEDS YOUR SKILLS

The FOS Field Observations Committee seeks volunteers interested in joining the committee as regional compilers for counties that are currently not covered. The first region would include *Suwannee, Columbia, Gilchrist, Union,* and *Bradford* counties. A second region would be *Pasco, Hillsborough, Manatee*, and *Sarasota*. A third could be covered by one or multiple interested individuals: *Polk, Osceola, Hardee, De Soto, Highlands, Glades,* and *Okeechobee*. Responsibilities would include soliciting and compiling notable field observations for these counties at the end of each season, to be included in this report. Interested persons should contact state compiler Kevin Dailey, listed at the end of the Field Observations report in this issue.

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J. A. Cox. 1987. **Status and Distribution of the Florida Scrub Jay.** Florida Ornithological Society Special Publication No. 3. vii + 110 pages. $8.

R. W. Loftin, G. E. Woolfenden, and J. A. Woolfenden. 1991. **Florida Bird Records in *American Birds* and *Audubon Field Notes* (1947-1989): Species Index and County Gazetteer.** Florida Ornithological Society Special Publication No. 4. xiv + 99 pages. $8.

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G. E. Woolfenden, W. B. Robertson, Jr., and J. Cox. 2006. **The Breeding Birds of Florida.** Florida Ornithological Society Special Publication No. 7. ii + 142 pages. $12.

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