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FIRST RECORD OF ROSEATE SPOONBILL (*Platalea ajaja*) NESTING IN POLK COUNTY, FLORIDA

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Abstract.—The plume-hunting trade and disturbance at wading bird colonies contributed to the widespread extirpation of Florida's Roseate Spoonbill (*Platalea ajaja*) population by the 1930s. The population has increased in the past eighty years to re-establish about 1,400 pairs statewide, with about 60% of the population in the Everglades drainage basin (29% in Florida Bay, 18% in the Shark River Slough estuaries, and 14% in the Water Conservation Areas), 20% of the population nesting in 11 colonies in the Tampa Bay region of west-central Florida, 17% in the Indian River Lagoon, and 3% at a few other small colonies. Spoonbills nest typically in estuaries, although they also nest on the estuarine interface in the Everglades, and at a few freshwater locations in the Everglades and elsewhere. They are strong fliers and Audubon's banding studies since 2003 show that Florida Bay and Tampa Bay populations can disperse widely after breeding. Spoonbills forage commonly at freshwater sites as much as 30-40 km inland from coastal nesting colonies. Although the origin is unknown of the first two pairs that nested 65 km inland at Lake Somerset, Polk County, Florida, in 2008, a spoonbill banded at the Alafia Bank Bird Sanctuary in coastal Hillsborough County nested at Lake Somerset in 2009, confirming the nexus between Tampa Bay and the inland peninsula. The number of spoonbill nests averaged 4.4 (SD = 1.8, N = 6) annually from 2008 through 2013. To enhance annual nesting success at this colony, we recommend establishing an "idle speed no wake" buffer around the islands in Lake Somerset year-around as they are also winter night roosts, and adherence by "nature" photographers to the North American Nature Photography Association and American Birding Association guidelines.

In the Western Hemisphere, the Roseate Spoonbill (*Platalea ajaja*) occurs presently in breeding groups in Gulf coast states (Texas, Louisiana, and Florida) of the United States, the Caribbean, Mexico, Central America, and South America (Dumas 2000). In the U.S., the majority of the population breeds in Texas, with smaller populations

in Louisiana and Florida. Fragmented records confirm that large populations of spoonbills bred through the 1800s as far north as Tampa Bay on the Gulf coast, Brevard County on the east coast, and in the interior at Lake Okeechobee (Howell 1932, Allen 1942, Bjork and Powell 1996). The numbers of spoonbills and their nesting sites were greatly reduced by the 1880s, and continued to decline through the early 20th century as they were extirpated from most of their breeding range by plume hunting, the sale of wings as fans (Audubon [1879] 1945), and disturbance at nesting colonies. By the early 1930s, spoonbills nested in small numbers (6-8 pairs) at a few sites (e.g., Cuthbert Lake, Lane River, Shark River, and Charlotte Harbor) (Allen 1942) and at Bottle Key in Florida Bay. By 1935, Allen (1963) thought Bottle Key was the only remaining active colony, with only 15 pairs, in Florida. From 1938 to 1941, only 20 to 25 pairs nested at Bottle Key, and possibly a few on Little Patricio Island in Charlotte Harbor (Ogden 1978). By the 1948-49 nesting season, 100 nesting pairs were noted in ten colonies protected by National Audubon Society wardens in Florida Bay (Allen 1963). Florida Bay was added to Everglades National Park this year, thereby providing full protection from hunting and disturbance and, by 1978-79, 1,254 pairs nested in 18 colonies (Powell and Bjork 1989).

The first recent nesting record on Florida's central Gulf coast was in 1974, when one pair nested at the Richard T. Paul Alafia Bank Bird Sanctuary (27° 50' 49.08" N, 82° 24' 57.17" W) in Hillsborough Bay (Dunstan 1976). While the Alafia Bank has been the largest nesting colony of spoonbills in the Tampa Bay area, spoonbills also have nested at 11 colonies 20-100 km distant from the Alafia Bank in Tampa Bay, Clearwater Harbor and St. Joseph Sound, and Sarasota Bay since 1974 (Hodgson et al. 2006, Hodgson and Paul 2010). Spoonbills re-established nesting on the Atlantic coast in Brevard County in 1987 (Smith and Breininger 1988), and at least three nesting colonies presently occur in the Indian River Lagoon (Smith and Breininger 1988; R. T. Paul, unpublished data; J. Lorenz and ABH, unpublished data). The coastal sites are small (1-5 ha) islands with red, black, and white mangrove canopies (*Rhizophora mangle*, *Avicennia germinans*, and *Laguncularia racemosa*, respectively), often mixed with coastal hammock hardwoods and palms or invasive exotic trees (primarily Brazilian pepper *Schinus terebinthifolius*). Most currently active sites in central Florida are dredged spoil material islands in the Intracoastal Waterway and other navigable channels.

While spoonbills commonly nested on coastal islands and fed predominantly in coastal freshwater habitats, they also bred at several freshwater sites (Phelps 1914, Bent 1926, Nicholson 1929, Hancock et al. 1993).

A small spoonbill colony was found in the central freshwater Everglades in spring 1992 (Bancroft and Sawicki 1995); they also nested inland in Loxahatchee and WCA 3A in 1992 (Hoffman et al. 1994; Frederick and Towles 1995; Ricardo Zambrano, Florida Fish and Wildlife Conservation Commission, personal communication), and spoonbills now nest commonly in the WCAs. Spoonbills have also nested at the freshwater locations of Gatorland in Orange County since the 2000s, and St. Augustine Alligator Farm in St. Johns County since 2010 (G. Anderson, St. Augustine Alligator Farm Zoological Park, personal communication, 22 January 2013).

In 2008, we observed the first record of Roseate Spoonbills nesting at a freshwater lake in central Polk County; here, we document the nesting record and describe the colony site.

STUDY AREA

Lake Somerset, Lakeland. — Polk County has many phosphate pit lakes excavated during the long history of phosphate mining in the “Boneyard” area of central Florida. In Lakeland, the Lake Somerset complex has north (40 ha) and south (30 ha) (28° 0' 11.32" N, 81° 55' 52.02" W) lakes, joined by a shallow channel navigable by small boats when lake levels are up. Colonial waterbirds nest in the trees (live oaks *Quercus latifolia*, red maples *Acer floridana*, Brazilian pepper, and elderberry *Sambucus canadensis*) growing on the mounds of overburden forming islands in south Lake Somerset (Fig. 1).

METHODS

The Lake Somerset colony was surveyed first in 2003 (Richard T. Paul [RTP], field notes). We have surveyed the nesting colony annually since 2006 by circling the linear islands in canoes or kayaks, and directly counting the nests and nestlings, which are usually visible through the foliage. Survey data were compiled and analyzed in Microsoft Excel (Data Analysis Tools).

RESULTS

In 2003, the colonial waterbird nesting colony had 131 nests distributed among 11 species, and was dominated by Wood Storks (*Mycteria americana*), Double-crested Cormorants (*Phalacrocorax auritus*), Great Egrets (*Ardea alba*), and Cattle Egrets (*Bubulcus ibis*) (Table 1). A vibrant colony was present, comprised mostly of Anhingas (*Anhinga anhinga*), Cattle Egrets, other herons, White Ibis (*Eudocimus albus*), and Wood Storks, from 2006 to 2013. Roseate Spoonbills appeared in 2008. From 2003 to 2013, annual mean nesting effort (all species) was 1,372.8 nests (SD = 641.8, N = 9).

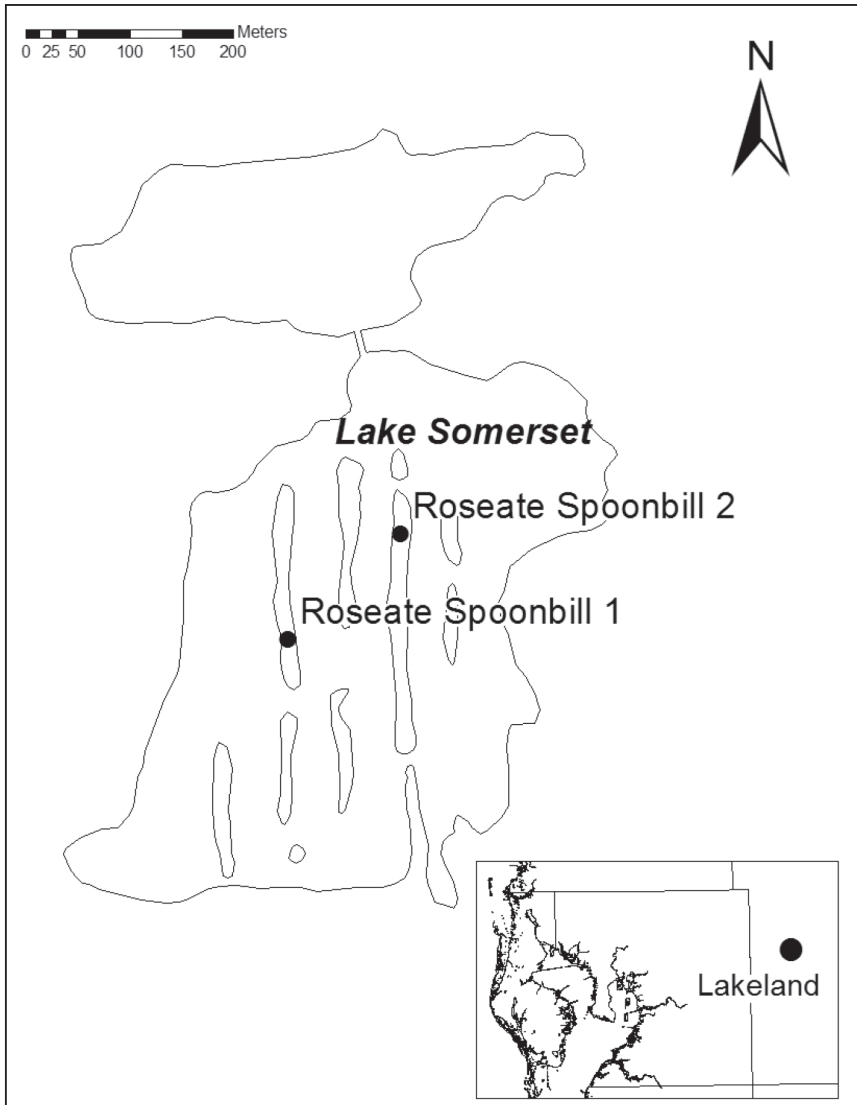


Figure 1. Locations of two Roseate Spoonbill nests in Lake Somerset, Polk County, Florida in 2008.

First record of Roseate Spoonbill nesting.— The spring 2008 nesting season in west-central Florida was interrupted by heavy, cold rainfall in March as spoonbills were starting nest construction and many birds delayed nesting until April in response to the poor weather conditions in the early nesting season.

Table 1. Number of nests for 16 species at Lake Somerset, Polk County, Florida from 2003 to 2013.

	7/4/2003	6/26/2004	6/27/2005	5/7/2006	6/10/2007	4/27/2008	5/31/2009	5/27/2010	5/31/2011	5/28/2012	5/6/2013	Mean	SD
Brown Pelican	0	NS	NS	0	0	2	1	6	1	0	1	1.2	1.9
Double-crested Cormorant	45	NS	NS	52	84	77	23	120	22	35	65	58.1	32.0
Anhinga	4	NS	NS	115	66	79	105	146	121	150	151	104.1	48.2
Great Blue Heron	3	NS	NS	0	2	3	0	5	1	1	3	2.0	1.7
Great Egret	10	NS	NS	74	25	54	32	133	30	44	65	51.9	36.5
Snowy Egret	2	NS	NS	37	19	23	7	12	10	1	19	14.4	11.4
Little Blue Heron	2	NS	NS	18	23	26	17	12	17	3	14	14.7	8.1
Tricolored Heron	5	NS	NS	15	50	28	48	28	26	12	7	24.3	16.4
Cattle Egret	25	NS	NS	169	565	291	194	137	136	345	245	234.1	155.6
Green Heron ^a	0	NS	NS	4	3	0	0	1	1	0	1	1.1	1.5
Black-crowned Night-Heron	1	NS	NS	9	5	18	10	33	24	5	15	13.3	10.3
White Ibis	5	NS	NS	235	617	1131	292	1355	626	128	544	548.1	452.3
Glossy Ibis	0	NS	NS	0	2	0	9	1	1	0	4	1.9	2.9
Roseate Spoonbill	0	NS	NS	0	0	2	5	4	4	7	9	5.2	2.5
Wood Stork	29	NS	NS	677	105	283	405	408	253	228	303	299.0	188.4
Limpkin	0	NS	NS	1	1	3	3	1	0	0	0	1.0	1.2
Total (N)	131			1406	1567	2020	1151	2402	1273	959	1446	1372.8	641.8

Notes: Numbers represent nesting pairs; the survey method was a direct count of nests observed from small craft; NS = no survey.
^aGreen Herons were seen at the boat ramp or during lake surveys and presumed nesting around the lake.

April—On 27 April 2008, AFP (field notes, with M. and C. Fearney) surveyed the nesting activity at Lake Somerset and observed one adult and two subadult spoonbills in the colony. The adult was in breeding condition, with a typical “carmine drip” on the secondaries, an orange tail, and a naked head skin tinged green with black patches stretching over the top of the head to the auricular patches. Both subadults had some carmine colored secondaries on their upper wings, but their heads and bodies were not as brightly colored as was the adult.

May—8 May – Two spoonbill nests were located in Brazilian pepper trees (H. Moulden and R. Munguia, field observations). A spoonbill in adult alternate plumage incubating at a stick platform and a mate standing near it were seen at the first nest. The second nest was two islands to the east. A possible third nest was never located and presumably failed early.

June—4 June – At least one spoonbill chick was seen on the first nest, which was in thick Brazilian pepper (H. Moulden, field observations). 8 June – The first spoonbill nest was re-located (ABH and AFP, field notes, with M. and C. Fearney). 15 June – Two spoonbill chicks were confirmed in this nest (H. Moulden and K. Cook, field observations). 20 June – Two vigorous stage II spoonbill chicks were seen in the first nest (Fig. 2). Two islands to the east, a very large stage IV pale pink chick with a downy white head was seen standing on the second nest (H. Moulden, K. and S. Cook, field observations).

July—4 July – The two young spoonbills in the first nest were moving around the nest, and one adult spoonbill flew in and landed close to them. The single young spoonbill in the second nest was a branchling moving around actively in the bushes near its nest (H. Moulden, field observations). 9 July – A well-grown pale fledgling with fully developed primaries and tail feathers was seen standing on a branch away from the second nest late in the day (H. Moulden and K. Cook, field observations). All three young were observed flying, but remained in the area near their nest sites, and no adults were seen. 20 July – The two sibling branchlings remained close to their nest (H. Moulden, field observations). 25 July – One young spoonbill was flying around the colony (H. Moulden, field observations). 31 July – Only one young spoonbill was flying at the colony (H. Moulden, field observations).

August—10 August – Spoonbills were absent from the colony (H. Moulden, field observations).

DISCUSSION

Spoonbills nest on many dredged spoil material islands with mangroves or Brazilian pepper trees in the Intracoastal Waterway and various bays along the coast (Dunstan 1976, Hodgson et al. 2006,



Figure 2. Spoonbill chick (Stage II) on 20 June 2009 (photograph: Ken Cook).

Hodgson and Paul 2010), thus, while the inland location of the spoil islands at Lake Somerset was unique, the substrate was not.

Spoonbills are well known to be strong fliers and Audubon's recent banding study, and satellite transmitter returns from Florida Bay, have shown that adults may disperse seasonally (Lorenz et al. 2002, 2008). In 2008, it was not possible to know the origin of the two pairs that nested at Lake Somerset. In 2009, at least one spoonbill (5H, banded as a stage IV nestling at the Alafia Bank in 2006) nested at Lake Somerset (Fig. 3). Several other spoonbills banded at the Alafia Bank have appeared also since 2009.

While preparing this report, we learned that two pairs nested in a small colony at Circle Bar B Reserve on the shoreline of Lake Hancock (27° 58' 53.54" N, 81° 51' 16.08" W) about 10 km east of Lake Somerset in spring 2006, but the nesting attempts failed (R. Munguia, personal communication, 12 October 2012).

Although spoonbills usually begin egg-laying in March with hatching in mid-April in central Florida (Lorenz et al. 2008; FCIS, unpublished data), in 2008 many spoonbills in the region initiated nesting later, and the nesting chronology at Lake Somerset was comparable to other central Florida colonies.

Management recommendations.—This colony is generally undisturbed by activities at the private residences on the lake shores (L. Blessing, personal communication, 2006, 2012, 2013). The greatest disturbances have been from nature photographers approaching nests too closely and fishermen trolling next to the islands. The City of Lakeland, which owns the north lake and co-owns the south lake with a private landowner, recently designated the islands a bird sanctuary, and the Florida Fish and Wildlife Conservation Commission posted them in 2013. To enhance annual nesting success at this colony, we recommend establishing an “idle speed no wake” buffer around the islands year-around as they are also winter night roosts, and adherence by “nature” photographers to ethical guidelines.

Lake Somerset is important as a large, persistent, inland colony of Florida's charismatic wading bird species. The Wood Stork colony, particularly, is one of the largest nesting groups in central Florida.

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Figure 3. Roseate Spoonbill 5H, banded at the Richard T. Paul Alafia Bank Bird Sanctuary in 2006.

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