

FIRST RECORD OF ROSEATE SPOONBILLS (*Platalea ajaja*) NESTING ON LAKE OKEECHOBEE SINCE 1874

JENNIFER E. CHASTANT¹, RICHARD A. BOTTA², AND DALE E. GAWLIK^{1,2}

¹*Florida Atlantic University, Department of Biological Sciences,
777 Glades Road, Boca Raton, Florida 33431*

²*Florida Atlantic University, Environmental Science Program,
777 Glades Road, Boca Raton, Florida 33431*

E-mail: jchastan@fau.edu

Abstract.—Roseate Spoonbills (*Platalea ajaja*) were almost extirpated from Florida by the turn of the 20th century. Prior to the 1850s, historic records suggest that spoonbills bred in large numbers on Lake Okeechobee. However, the last documented record of spoonbills nesting on the lake was in 1874. The first aerial surveys of nesting wading bird colonies began on Lake Okeechobee in 1957 and they continued sporadically until 1992. In 2006, we began conducting annual wading bird nesting surveys as a part of the Comprehensive Everglades Restoration Plan’s Monitoring and Assessment Plan, during which we observed Roseate Spoonbills nesting on Lake Okeechobee in 2009 (n = 3 nests) and 2013 (n = 2 nests). These recent nesting records represent the first confirmed nesting by the species on Lake Okeechobee since 1874. Our records, combined with other recent inland records, may indicate that the Roseate Spoonbill is expanding its nesting range to its historic distribution.

Historic records imply that Roseate Spoonbills (*Platalea ajaja*) once bred in large numbers on Lake Okeechobee (Allen 1942). The diary of U. S. Navy Midshipman George Henry Preble, kept during a military expedition that crossed the southern end of Lake Okeechobee in 1842 (Preble 1905), noted “immense flocks” of pink spoonbills in Fisheating Creek (Fig. 1; journal entry 6 March 1842). By 1874, the time of the next documented expedition on the lake, Frederick Albion Ober found only two breeding pairs of spoonbills, in the willows (*Salix* spp.) on Goodshore Island, now known as Observation Island (Fig. 1). He was told by members of the Seminole Tribe that spoonbills bred “abundantly” on Fisheating Creek (Ober 1874), but he failed to confirm it. The last reference to spoonbill nesting near the lake was in 1927, when Donald Nicholson was told of a colony on Fish Eating Lake in Hendry County south of La Belle. He visited the colony in 1928, but he saw no birds there (Nicholson 1929). Thus, between 1842 and 1874 spoonbills seem to have disappeared from Lake Okeechobee, although only one year without reports of nesting is inconclusive. What is more certain is that by the 1880s spoonbills were nearly extirpated

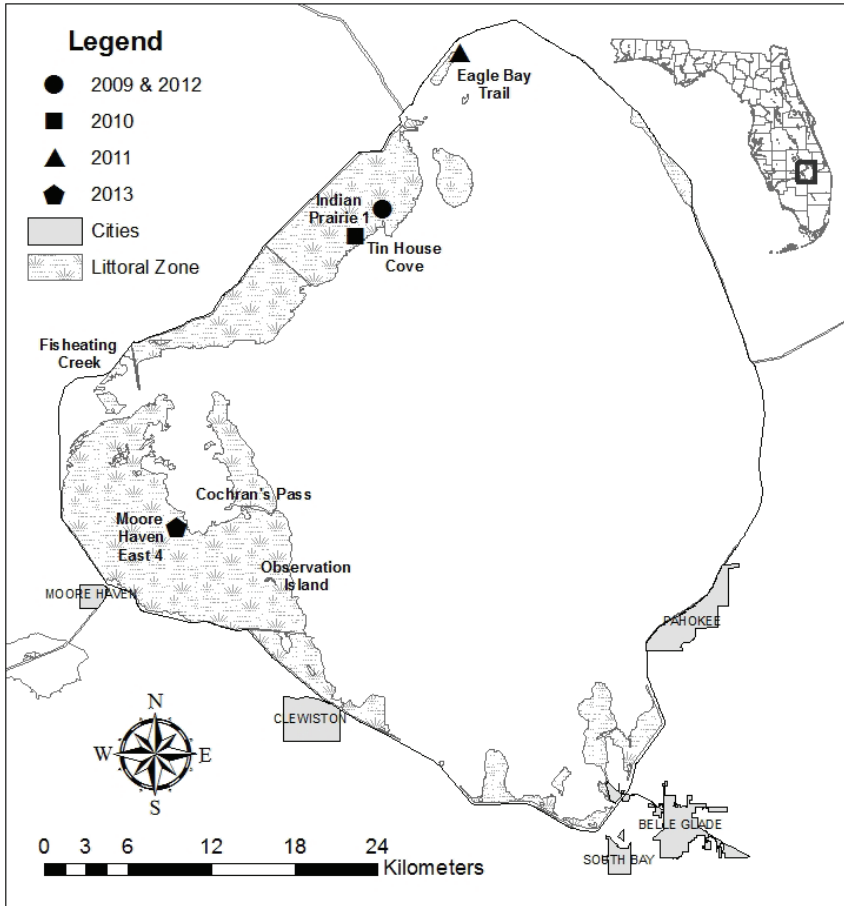


Figure 1. Roseate Spoonbill nesting on Lake Okeechobee was confirmed in Indian Prairie 1 colony in 2009 and Moore Haven East 4 colony in 2013. Spoonbills were seen roosting in Indian Prairie in 2010 and in the Eagle Bay Trail colony and Indian Prairie 1 colony in 2011 and 2012.

from Florida because of increased human settlement and commercial hunting (reviewed in Allen 1942, Dumas 2000).

Wading bird nesting surveys, which should have detected spoonbills if they were present, were conducted once during the breeding season from 1957-1959, 1961, and 1970-1976. From 1977-1992, more systematic monthly surveys were conducted throughout the breeding season by the South Florida Water Management District to assess the effects of water management practices on wading bird populations (Zaffke 1984, David 1994, Smith and Collopy 1995). In 2006, we began annual wading bird nesting surveys to determine location and size of

colonies as a part of the Comprehensive Everglades Restoration Plan's Monitoring and Assessment Plan. Our surveys detected spoonbills on Lake Okeechobee in 2010, 2011, and 2012 but no breeding was confirmed.

However, in 2009 and 2013 we confirmed Roseate Spoonbills nesting on Lake Okeechobee, the first records since 1874 (Ober 1874). Here we document the nesting records and describe the colony sites.

STUDY AREA AND METHODS

Lake Okeechobee is a large (1732 km²), shallow (mean depth of 2.7 m), eutrophic lake located in central south Florida (26° 56' 28.22" N, 80° 51' 32.23" W; Aumen 1995; Fig. 1). Once a month from January through June since 2006, we surveyed nesting wading birds along transects flying at an altitude of 244 m and a speed of 185 km/hr. One transect paralleled the eastern rim of the lake from Eagle Bay Trail to Clewiston. Remaining transects were oriented East-West, spaced at an interval of 3 km and traversed the littoral zone. During surveys, we searched for groups of large white wading birds with two observers, one from each side of a Cessna 182 aircraft. Once we observed a colony, we circled it at an altitude down to 122 m to enable us to estimate the number of nests of each species present within the colony, photograph nests, and record the geographic coordinates of the colony. We performed ground verification by airboat to improve our nest counts and species composition estimates.

RESULTS AND DISCUSSION

During an aerial survey on 25 March 2009, we detected three Roseate Spoonbills on nests in willow trees (*Salix caroliniana*) in the Indian Prairie 1 colony (27° 5' 6.94" N, 80° 53' 10.07" W; Fig. 1). A ground visit on 7 April 2009 confirmed that one nest on the northwestern edge of the colony contained one nestling and two eggs attended by an adult spoonbill. We were unable to confirm nesting during ground visits at the other two nests due to inaccessibility of the colony by boat. The following week three young and one adult were present at the confirmed nest, but by 21 April 2009 the nest had been abandoned and the chicks were gone. During an aerial survey on 23 April 2009 we observed that the two unconfirmed nests were destroyed. Other wading bird species nesting in this colony included the Great Egret (*Ardea alba*), Snowy Egret (*Egretta thula*), Tricolored Heron (*Egretta tricolor*), White Ibis (*Eudocimus albus*), and Anhinga (*Anhinga anhinga*) with the total colony estimated at 1,000 nesting pairs. All species at the colony experienced a high rate of nest failure, presumably due to low lake levels that left the majority of the Indian Prairie marsh dry by mid-April.

During the 2010 dry season, we regularly observed roughly 200 spoonbills roosting in a willow head in northern Indian Prairie (27° 4' 2.68" N, 80° 54' 20.77" W; Fig. 1) just south of the 2009 nesting location;

however, no nest initiation occurred. Throughout the dry season of 2011, a flock of 100 mostly sub-adult spoonbills was seen foraging from Cochran's Pass to Eagle Bay (Fig. 1) and in late May, a group of 30 spoonbills roosted in the Eagle Bay Trail colony (27° 11' 11.72" N, 80° 49' 50.02" W; Fig. 1). Every other week, from March to May of 2012, we observed a flock of roughly 100 spoonbills foraging at Tin House Cove and roosting in the Indian Prairie 1 colony (Fig. 1), which contained only 15 Anhinga nests.

Beginning in March of 2013, we reliably observed a flock of 50 spoonbills roosting in the Moore Haven East 4 colony (26° 53' 36.10" N, 81° 3' 12.13" W; Fig. 1) during our weekly ground visits. Other wading bird species nesting in this willow-dominated colony included the Great Egret, Snowy Egret, Tricolored Heron, White Ibis, Glossy Ibis (*Plegadis falcinellus*), and Anhinga. Colony size was estimated at 2,400 nesting pairs. On 14 May 2013, two spoonbill nests, one with two eggs and the other with three eggs and placed approximately 2 m above ground in the willows, were confirmed during our weekly ground visit. However, a week later and for unknown reasons, the nests were destroyed and the eggs were gone.

After their near extirpation in Florida, Roseate Spoonbills were restricted to breeding mostly on coastal islands in estuaries such as Tampa Bay, Indian River Lagoon, and Florida Bay, where their populations are largest even today (Smith and Breininger 1988, Dumas 2000, Hodgson and Paul 2013). However, starting in 1992, spoonbills were recorded nesting in the freshwater interior of the Everglades (Hoffman et al. 1994, Frederick and Towles 1995), something that had not been seen for nearly a century. Spoonbill nesting in the freshwater Everglades continued to expand to the present with birds now located throughout Water Conservation Area 3A and mainland Everglades National Park (Cook 2013), and spreading nearly as far north as Orlando Florida (Gatorland Park in Orange County; Hodgson and Paul 2013). These inland nesting sites represent about 32% of the Florida breeding population (Hodgson and Paul 2013). The recent Roseate Spoonbill nesting accounts in Lake Okeechobee and other inland sites suggest that this species is returning to its historic distribution throughout south Florida (described by Allen 1942). However, the range expansion is happening concurrent with a reduction in nesting in Florida Bay (Lorenz et al. 2002, Lorenz et al. 2009), a former core nesting area. Monitoring of spoonbills in Florida Bay over the past 80 years has shown that spoonbills respond to the degradation of foraging habitat by moving their colony locations (Lorenz et al. 2002). If the inland nesting locations become re-established, more research will be needed to determine if they are due to an expansion of the population or a movement of birds from declining colonies.

ACKNOWLEDGMENTS

Nesting observations were made during a monitoring study funded by the U.S. Army Engineer Research and Development Center and the National Park Service. We thank Justin Bredlau, Elizabeth Dancer, and Megan Dillon for their assistance in the field. Eric Stolen, Michelle Petersen, and Jessica Klassen provided helpful comments on an earlier draft of this manuscript.

LITERATURE CITED

- ALLEN, R. P. 1942. The Roseate Spoonbill. National Audubon Society Research Report No. 2, National Audubon Society, New York.
- AUMEN, N. G. 1995. The history of human impacts, lake management, and limnological research on Lake Okeechobee, Florida (USA). Archives of Hydrobiology Special Issues, Advances in Limnology 45:1–16.
- COOK, M. I. 2013. Systemwide Summary. Pages 1-2 in South Florida Wading Bird Report, Vol 19 (M. I. Cook, Ed.). South Florida Water Management District, West Palm Beach, Florida.
- DAVID, P. G. 1994. Wading bird nesting at Lake Okeechobee, Florida: an historic perspective. Colonial Waterbirds 17:69–77.
- DUMAS, J. V. 2000. Roseate Spoonbill (*Ajaia ajaja*). In The Birds of North America (A. Poole and F. Gill, Eds.). The Academy of Natural Science, Philadelphia, Pennsylvania.
- FREDERICK, P., AND T. TOWLES. 1995. Roseate Spoonbills (*Ajaia ajaja*) nesting at an inland location in the Everglades. Florida Field Naturalist 23:65–66.
- HODGSON, A. B., AND A. F. PAUL. 2013. First record of Roseate Spoonbills (*Platalea ajaja*) nesting in Polk County, Florida. Florida Field Naturalist 41:107-144.
- HOFFMAN, W., G. T. BANCROFT, AND R. J. SAWICKI. 1994. Foraging habitat of wading birds in the water conservation areas of the Everglades. Pages 585-614 in Everglades: The Ecosystem and its Restoration (S. M. Davis and J. C. Ogden, Eds.). St. Lucie Press, Delray Beach, Florida.
- LORENZ, J. J., B. LANGAN-MULROONEY, P. E. FREZZA, R. G. HARVEY, AND F. J. MAZZOTTI. 2009. Roseate Spoonbill reproduction as an indicator for restoration of the Everglades and the Everglades estuaries. Ecological Indicators 9: S96–S107.
- LORENZ, J. J., J. C. OGDEN, R. D. BJORK, AND G. V. N. POWELL. 2002. Nesting patterns of Roseate Spoonbills in Florida Bay 1935–1999: Implications of landscape scale anthropogenic impacts. Pages 555–598 in The Everglades, Florida Bay, and Coral Reefs of the Florida Keys: An Ecosystem Sourcebook (J. W. Porter and K. G. Porter, Eds.). CRC Press, Boca Raton, Florida.
- NICHOLSON, D. J. 1929. Notes on the Roseate Spoonbill (*Ajaia ajaja*) in Florida. Auk 46:381–382.
- OBER, F. A. 1874. Natural history: Birds of Lake Okeechobee. Forest and Stream; A Journal of Outdoor Life, Travel, Nature Study, Shooting, Fishing, Yachting (1873–1930) 2:162.
- PREBLE, G. H. 1905. The diary of a canoe expedition into the Everglades and interior of southern Florida in 1842. The United Service, 3rd series 8:26–46.
- SMITH, J. P., AND M. W. COLLOPY. 1995. Foraging habitat selection among wading birds (Ciconiiformes) at Lake Okeechobee, Florida, in relation to hydrology and vegetative cover. Archives of Hydrobiology Special Issues, Advances in Limnology 45:247–285.
- SMITH, R. B., AND D. R. BREININGER. 1988. Northern breeding range extension for the Roseate Spoonbill in Florida. Florida Field Naturalist 16:65–67.
- ZAFFKE, M. 1984. Wading bird utilization of Lake Okeechobee marshes 1977–1981. Technical Publication 84-9. South Florida Water Management District, Environmental Sciences Division, West Palm Beach, Florida.