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FIRST RECORDS OF BROWN PELICAN (*Pelecanus occidentalis*) NESTING IN POLK COUNTY, FLORIDA

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Abstract.—Brown Pelicans nest widely along much of Florida's coast, breeding at scattered sites from Port Orange (Volusia Co.) on the Atlantic coast south to Florida Bay and the Lower Keys and north along Gulf coast to St. Andrews Bay (Bay Co.). In coastal colonies, they typically nest in mangroves or Brazilian pepper canopies on both natural and dredged spoil material islands. Brown Pelicans were first reported nesting inland on a dredged spoil island at Clewiston Spit West, Lake Okeechobee, Hendry County, in 1991 and 1992. Although there have been anecdotal reports of Brown Pelicans nesting inland in central Florida on some lakes and phosphate pits in the phosphate-mining region, inland nesting has not been confirmed previously in Polk County. We observed a Brown Pelican pair nesting in a Brazilian pepper tree on a linear dredged spoil material island in freshwater Lake Somerset in Lakeland, about 50 km inland from the Gulf of Mexico coast, in 2008, after which they nested persistently at this site through the present (mean 2.0 pairs, SD = 2.7, n = 7, 2008-2014).

Brown Pelicans (*Pelecanus occidentalis*), the most marine of the world's pelicans, have nested widely throughout much of coastal Florida from Port Orange (Volusia Co.) on the Atlantic coast south to the Everglades, Florida Bay and the Lower Keys, and north along the Gulf coast to St. Andrews Bay (Bay Co.) (Nesbitt et al. 1977, Stevenson and Anderson 1994, Nesbitt 1996, Nesbitt et al. 2002, Shields 2002). Typical pelican nesting sites are small (5-10 ha) natural or dredged spoil material islands in bays and the Intracoastal Waterway (ICWW) (Schreiber and Schreiber 1982a). Black mangrove (*Avicennia germinans)* is the preferred nesting substrate in the northern portions of the peninsula (Nesbitt et al. 2002), and north of Cedar Key and through the Florida panhandle they nest on the ground or in low shrubs (Nesbitt et al. 2002, Steve Nesbitt, personal communication, 5 August 2014). However, in Hillsborough County, they nest also on Brazilian pepper (*Schinus terebinthifolius*) at the Alafia Bank Bird Sanctuary, and in sea oats (*Uniola paniculata*) and sea grapes (*Cocoloba uvifolia*) on Egmont Key (Schreiber and Schreiber 1982b, Hodgson et al. 2006, Hodgson and Paul 2010, Florida Coastal Islands Sanctuaries [FCIS] unpublished data).

Inland observations of Brown Pelicans were rare in Florida in past decades, and an itinerant "Brown Pelican: 1 imm. S of Bartow (Polk Co.) on 11 Oct (1991); unusual inland (H. Robinson)" was reported as a unique record (Cox 1992). Brown Pelicans were first reported nesting inland on Clewiston Spit West (CSW; 26° 46' 32" N, 80° 54' 35" W) at Lake Okeechobee, Hendry County, in 1991 on the highest branches of a 5-6 m Australian pine (*Casuarina equisetifolia*) surrounded by Brazilian pepper (Langridge 1991, Cox 1992, Smith and Goguen 1993). Although there have been some more recent unsubstantiated reports of Brown Pelicans nesting on some central Florida lakes (e.g. Lake Hancock) and phosphate pits in the phosphate mining region in Polk County (P. J. Fellers, C. Geanangel, F. E. Lohrer, personal communications), the recent Biological Status Review did not identify other inland nesting (FWC 2011).

In 2008, we observed the first record of Brown Pelicans nesting in Polk County, at a freshwater lake in Lakeland. Here, we document the nesting record and describe the colony site where they have nested persistently from 2008 through 2014.

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 a north (40 ha) and south (30 ha) (28° 0' 11.32" N, 81° 55' 52.02" W) lake, joined by a shallow channel navigable by small boats when lake levels are up. Colonial waterbirds nest in the trees (live oaks *Quercus virginiana*, red maples *Acer rubrum*, Brazilian pepper, sabal palms *Sabal palmetto*, and elderberry *Sambucus nigra* ssp. *canadensis*) growing on the overburden islands in south Lake Somerset (Fig. 1).

Methods

The Lake Somerset colony was surveyed first in 2003 (Richard T. Paul [RTP], field notes), although we learned since then that local residents observed the Lake Somerset colony was active before 2003. We have surveyed the nesting colony annually since 2006 by circling the linear islands in canoes or kayaks, and directly counting nests and nestlings, which are visible usually through the islands' foliage. Survey data were compiled and analyzed in Microsoft Excel (Data Analysis Tools).

Results

First record of Brown Pelican nesting.— In 2008, the spring nesting season in west-central Florida was interrupted by cold, heavy rainfall in March and many waterbirds in the region nested later than normal (FCIS field notes).

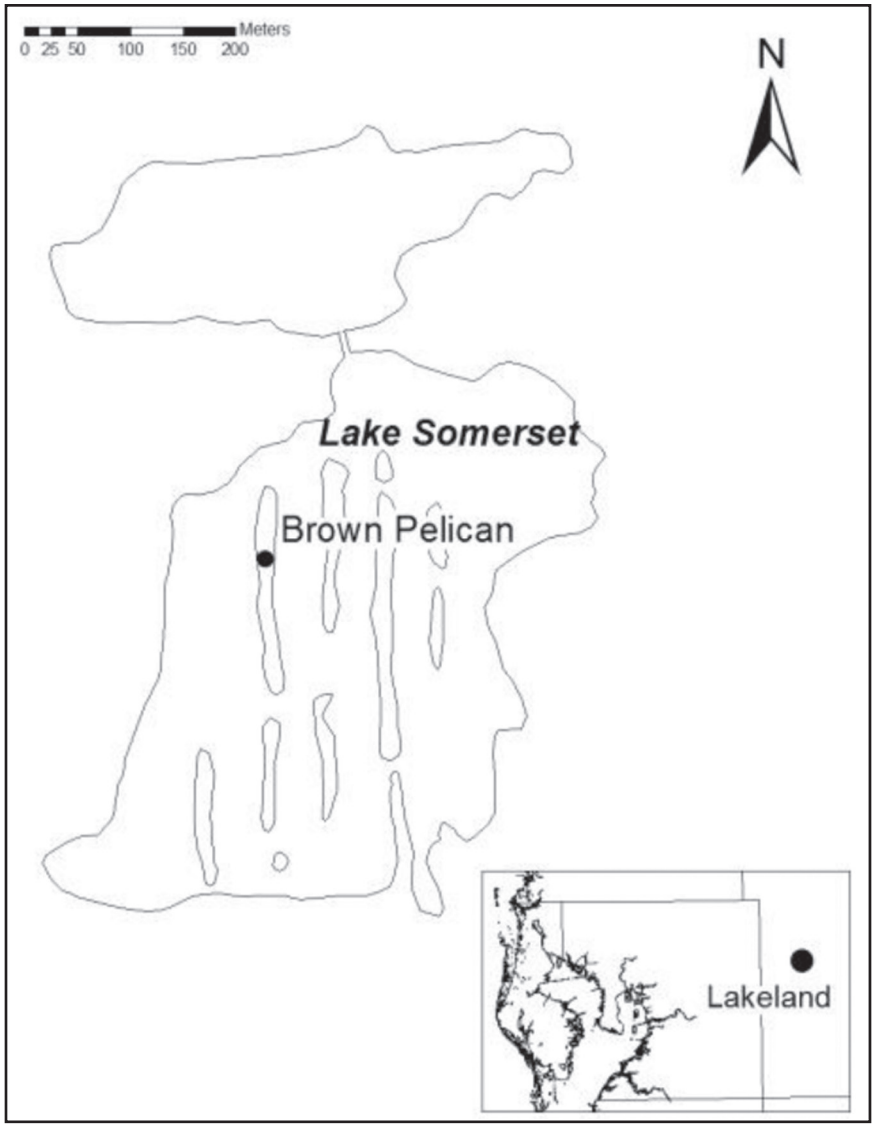

Figure 1. Location of the Brown Pelican nest at Lake Somerset in 2008 and subsequent years.

April — On 27 April, AFP (field notes, with M. and C. Fearney) surveyed the nesting activity at Lake Somerset and observed one pair of adult pelicans at a stick platform in a Brazilian pepper tree on the western island. The adults were in alternate plumage with white heads, brown necks and abdomens, and silver-gray backs (Schreiber1976).

May — 8 May – An adult was seen incubating at the nest (H. Moulden and C. Genangel, field observations). 28 May – Three chicks were photographed being fed by an adult in their nest (H. Moulden, field observations).

June — 4 June – Two chicks were photographed on their nest (H. Moulden, K. and S. Cook, field observations). 8 June – The two chicks were observed again on their nest (ABH and AFP, field notes, with M. and C. Fearney). 15 and 20 June – The two unfledged chicks (Stage III - large unfledged chicks with erupting primaries) were photographed again in the nest (H. Moulden, K. and S. Cook, field observations).

July — 4, 9, and 20 July – An adult was seen attending the two chicks (H. Moulden and K. Cook, field observations). 25, and 31 July – The unfledged chicks were exercising their wings, still in the nest (H. Moulden, field observations) (Fig. 2).

August — 10 August – A fledged chick was seen flying (H. Moulden, field observations).

Brown Pelicans nested on the same island at approximately the same site in 2009 through 2014, with seven pairs in 2014, and the mean annual nesting effort was 2.0 pairs (SD = 2.7, n = 7) (cf. Table 1 in Hodgson and Paul 2013).

Discussion

Brown Pelicans are strong fliers and are seen commonly at the lakes in Polk County, at least 50 km from nearby coastal nesting sites, especially during the fall and winter months (Fellers 1986, 1991). They roost commonly about 10 km east of Lake Somerset at Circle Bar B Reserve on the shoreline of Lake Hancock (27° 58' 53.54" N, 81°51' 16.08" W) (Langridge 1991, R. Munguia, personal communication, 12 October 2012; Paul J. Fellers, personal communication, 10 October 2013). A group of at least 20 pelicans also roosted on south Lake Somerset in January 2008 (Lillian Blessing, personal communication, 21 February 2008). Although we do not know if the pelican pair that initiated nesting at Lake Somerset in spring 2008 were pelicans that had roosted at the lake over the winter, at Clewiston Spit West pelicans were attracted to the site and roosted there persistently for a couple of years before they initiated nesting. Since pelicans nest commonly on estuarine dredged spoil material islands, with at least one occurrence inland on a similar spoil material substrate, and nest opportunistically in Brazilian pepper, it was plausible that they would nest in Brazilian peppers on the spoil islands at Lake Somerset.

On Florida's west-central coast, Brown Pelicans usually begin egg laying in March with hatching in mid-April (Schreiber 1980, Shields 2002, FCIS unpublished data). In 2008, many pelicans at the Alafia Bank Bird Sanctuary in Hillsborough County and at other

Figure 2. Adult and two young Brown Pelicans on their nest in a Brazilian pepper tree at Lake Somerset (photograph: Herman Moulden, 4 June 2008).

central Florida colonies delayed nesting due to abnormally cold spring temperatures, and the nesting chronology at Lake Somerset was comparable to other late-nesting pairs in the region (FCIS field notes).

Brown Pelicans normally complete incubation normally in 29-35 days, and the nestling period is 77-84 days (Schreiber 1980, Shields 2002). At Lake Somerset, a breeding-condition adult was seen on 27 April, incubation was observed on 8 May, and the chicks fledged between 1 and 10 August, suggesting that the pelicans initiated nesting in the fourth week of April.

While we did not detect what fish species comprised the chicks' diet, Smith and Goguen (1993) noted that "sunfish" (Centrarchidae) were fed to the CSW chicks, and several sunfish species are common in the numerous lakes around Lakeland (FWC 2013). Inland nesting by Brown Pelicans remains rare in Florida with only two geographically distant reports in 20 years.

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Literature Cited

Cox, J. A. 1992. Fall Report: September-November 1991. Florida Field Naturalist 20:50-56.

Fellers, P. J. 1986. Birding records of note by local birders for interior central Florida, August 1, 1984 - July 31, 1985. Lake Region Naturalist 1985-1986:16-17.

Fellers, P. J. 1991. Birding records of note by local observers primarily for interior central Florida August 1, 1989 - December 31, 1990. Lake Region Naturalist 1990-1991:27-31.

FWC [Florida Fish and Wildlife Conservation Commission]. 2011. Biological Status Review Report: Brown Pelican. http://myfwc.com/media/2273274/Brown-Pelican-BSR.pdf. Accessed 15 June 2013.

FWC [Florida Fish and Wildlife Conservation Commission]. 2013. Annual Progress Report: Freshwater Fisheries Management. Southwest Region, Lakeland, Florida.

Hodgson, A. B., A. F. Paul, and M. L. Rachal. 2006. Chapter 14: Birds. Pages 14-1 – 14-14 *in* Bay Environmental Monitoring Report 2002-2005 (A. Poe, A. J. Janicki, and H. Greening, Eds.). Technical Publication 06-06, Tampa Bay Estuary Program, St. Petersburg, Florida.

Hodgson, A. B., and A. F. Paul. 2010. Twenty-five years after BASIS I: An update on the current status and recent trends in colonial waterbird populations of Tampa Bay. Pages 233-247 *in* Proceedings, Tampa Bay Area Scientific Information Symposium, BASIS 5:20-23 (S. T. Cooper, Ed.). 20-23 October 2009, St. Petersburg, Florida.

Hodgson, A. B., and A. F. Paul. 2013. First record of Roseate Spoonbill (*Platalea ajaja*) nesting in Polk County, Florida. Florida Field Naturalist 41:107-116.

Langridge, H. P. 1991. Florida region. American Birds 43:467-470.

Nesbitt, S. A., M. J. Fogarty, and L. E. Williams, Jr. 1977. Status of Florida nesting Brown Pelicans, 1971-1976. Bird-Banding 48:138-144.

Nesbitt, S. A. 1996. Eastern Brown Pelican (*Pelecanus occidentalis carolinensis*). Pages 144-155 *in* Rare and Endangered Biota of Florida, Volume V. Birds (J. A. Rodgers, Jr., H. W. Kale II, and H. T. Smith, Eds.). University Press of Florida, Gainesville.

Nesbitt, S. A., T. Schwikert, and E. R. Ehrbar. 2002. The return of a Brown Pelican nesting colony. Florida Field Naturalist 30:86-90.

Schreiber, R. W. 1976. Growth and development of nestling Brown Pelicans. Bird-Banding 47:19-39.

Schreiber, R. W. 1980. Nesting chronology of the eastern Brown Pelican. Auk 97:491-508.

Schreiber, R. W., and E. A. Schreiber. 1982a. Essential habitat of the Brown Pelican in Florida. Florida Field Naturalist 10:9-17.

Schreiber, R. W., and E. A. Schreiber. 1982b. Colonial Bird Use and Plant Succession on Dredged Material Islands in Florida. Vol. I. Sea and Wading Bird Colonies. Technical

Report D-78-14. U.S. Army Engineers Waterways Experiment Station, Vicksburg, Mississippi.

SHIELDS, M. 2002. Brown Pelican (*Pelecanus occidentalis*). The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; <http://bna.birds.cornell.edu/bna/species/609doi:10.2173/bna.609>. Accessed 15 August 2013.

SMITH, J. P., AND C. B. GOGUEN. 1993. Inland nesting of the Brown Pelican. Florida Field Naturalist 21:29-33.

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