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D. Greg Braun

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FIRST DOCUMENTED NESTING IN THE WILD OF EGYPTIAN GEESE IN FLORIDA

D. GREG BRAUN

10370 Trailwood Circle, Jupiter, Florida 33478

Abstract.—During September-October 2002, Egyptian Geese (*Alopochen aegyptiaca*) nested in Martin County, Florida. The effort produced three chicks, and is the first documented nesting of this species in the wild in Florida. Because habitat and climatic conditions present in Florida are similar to conditions within their native range, this nesting may signal the establishment of a new non-native bird in Florida.

The Egyptian Goose (*Alopochen aegyptiaca*) is large (61-75-cm long) and distinctively patterned. Adult plumage is predominately gray on the head, neck, breast, underparts, flanks and back, with darker, chocolate brown tones around the eyes, nape, on the upper wing coverts, and in a blotch on the lower breast. Primaries, rectrices, and rump are black. Secondaries are iridescent green and the upper wing coverts are white except for a narrow black bar that extends across the front of the greater secondary coverts (Johnsgard 1978). Conspicuous features include shaggy, tan-colored neck feathers, a dark, glossy green speculum, and a chestnut patch around the eyes. In general, males cannot be distinguished from females by plumage, although they may be somewhat larger (Johnsgard 1978). Todd (1979) suggests that males are brighter in color and have a darker and larger chestnut patch on the breast. Bill, legs, and feet are pink. Reported weights are 5.5 lbs (male) and 4.5 lbs (female) (Mackworth-Praed 1980).

Egyptian Geese are found throughout Africa south of the Sahara, throughout the Nile River valley (Beazley 1974), and are a common resident in Kruger National Park, South Africa (Newman 1980). Within their native range, Egyptian Geese primarily inhabit inland waters, lake margins, swamps, large rivers (Williams 1963), and marshes (Long 1981). They also inhabit estuaries, coastal lakes and cultivated fields (Maclean 1988). Significant population increases (< 30 individuals 1971-1988 to approximately 600 in 1997) have been documented on a coastal island in southern Africa (Underhill et al. 2000). Resident populations are present from sea level to locations at 4,333 m (13,000 ft.) above sea level (Todd 1979).

Populations of Egyptian Geese are established at a variety of locations outside their natural range; they are currently present in East Anglia, England (Harrison, 1978), where the population is estimated

at 900 birds (Seago 2004), and in France (Long 1981). In England, the species was reportedly introduced during the 18th century and was referred to as a “familiar ornamental” species by 1785 (Sharrock 1976). Delaney (1993) reported small numbers of Egyptian Geese in Scotland. Although there has been natural dispersal of the species in England, feral populations have become well established only in Norfolk (Sharrock 1976).

There are reports of feral Egyptian Geese being present in New Zealand and Australia, but permanent populations did not become established in these countries (Long 1981). In the United States the Egyptian Goose commonly has been kept and occasionally escaped birds have been shot by hunters (Long 1981).

Egyptian Geese feed by grazing on land (Beazley 1974), consuming grass, leaves, seeds, grain, aquatic rhizomes, and tubers (Maclean 1988) and corms of *Cyperus* (Johnsgard 1978). They have become pests in grain farming areas when they occur in large numbers (Maclean 1988).

In captivity, Egyptian Geese do not breed before their second year (Johnsgard 1978). Pairs mate for life (Harrison 1978) and flocks often consist of small family groups (Beazley 1974). Johnsgard (1978) reports that they are very territorial, that intensive threatening or fighting behavior among males is typical, and Todd (1979) notes that they are “among the most vicious of all waterfowl, particularly when nesting.” Nests have been found in tree cavities (Beazley 1974), under vegetation, and in cliffs and caves (Harrison 1978).

In Africa, breeding takes place throughout the year, but most goslings are seen from August through January (Newman 1980). Clutch size is typically 6-10, and eggs are yellowish-white, approximately 55-75 mm x 44 to 54 mm (Mackworth-Praed 1980). Incubation period is 28-30 days (Maclean 1988). Life span in the wild has not been documented, but in captivity is reported to be 14 years (Woodland Park Zoological Society 2004). Both parents tend young, which fledge at approximately 55 days (Maclean 1988).

Observations in Florida.—Egyptian Geese have been reported at various locations in Florida. Robertson and Woolfenden (1992) reported the species present at widely-scattered, intensely-urbanized areas of peninsular Florida, including Miami-Dade, Hillsborough, Monroe, and Pinellas counties. Captive populations are present at various zoos in Florida (e.g., Miami Metrozoo). Although I have found no published reports that document Egyptian Geese successfully nesting in the wild in Florida, two Egyptian Goose nests were observed on Shell Key in Tampa Bay during 1985 (Paul 1985).

The first documented sightings of this species in Martin County on Florida’s southeast coast were in 1993-94. Sightings of the species were

reported to the Martin County Audubon Society (MCAS) in 1994, when two Egyptian Geese were seen on Hutchinson Island, a coastal barrier island connected to the mainland located east of Stuart. Because the birds were observed in a golf course resort and residential community and did not appear afraid of humans, it was assumed that the birds were either escapees from captivity or were pet birds that had been brought to the area. Speculation that the birds had dispersed from Miami Metrozoo when that facility was severely impacted by Hurricane Andrew during August 1992 was refuted by the curator, S. Conners (*pers. comm.*) who confirmed that none of the five captive Egyptian Geese at Metrozoo at the time of Hurricane Andrew escaped.

Egyptian Geese continued to be seen on Hutchinson Island routinely from 1994 to 2004 (D. Tucker, *pers. comm.*), although there has been no documentation of the extent to which the number of birds changed over the years.

Record of Nesting in Florida.—During 2002, the Martin County Audubon Society initiated a habitat enhancement project on a small 0.87 ha (2.2 acre) mangrove island in the Indian River Lagoon. The island, Dredged Material Disposal Island MC2, is owned by the State of Florida. It has been dedicated to Martin County, and hands-on management had been negligible prior to MCAS' habitat enhancement project. Prior to conducting enhancement activities (i.e., removal of invasive pest plants and planting of native vegetation), MCAS conducted monitoring to document the use of the island by birds. Site visits were conducted at least once or twice per month from March through October. The island has been used by nesting birds for many years. Records from the Florida Fish and Wildlife Conservation Commission (FWC) documented bird nesting on MC2 (a.k.a. Sewall's Point East) since 1976. Observations from 1976-2004 by Commission biologists, participants in the Commission's wading bird network, and MCAS members have documented that MC2 has been used by at least 28 bird species, 13 of which have been documented to nest on the island. Nesting species include Wood Stork (*Mycteria americana*), Brown Pelican (*Pelecanus occidentalis*), and various herons and egrets. During 2002, MCAS estimated that MC2 was used by approximately 750-800 pairs of nesting birds.

The first sighting of an Egyptian Goose on MC2 was during a nest-monitoring survey that was conducted on 21 June 2002. At that time, one Egyptian Goose was observed by G. Braun, R. Paul, S. Biernat, and T. Biernat. To prevent disturbing native birds that were nesting at that time, no attempt was made to set foot on the island; observations were made by boat, from a distance of ± 100 m (300 ft.) using binoculars.

On 10 September 2002, when observations from afar suggested that there were no eggs, chicks, or nest-dependent young on the island,

members of the project team, including FWC wildlife biologist R. Zambrano, landed on the island to conduct a field assessment, including a vegetation survey. While in the southwest quarter of the island, an adult Egyptian Goose emerged from moderately dense vegetation and vigorously defended the area from the human intruders. The bird vocalized, repeatedly flew directly at members of the survey team, and struck team members when the nest area was approached. A brief glimpse of the feather-lined nest revealed three large, beige-colored eggs (Fig. 1). A second adult Egyptian Goose, attracted by the commotion, joined the first in defending the nest.

The nest was on the ground, under an overhanging canopy of a shrub-sized sea grape (*Coccoloba uvifera*) tree. Herbaceous vegetation present near the nest was primarily creeping vines, including cow pea (*Vigna luteola*) and the non-native balsampear (*Momordica charantia*). The nest was somewhat oval; approximately 28 × 23 cm (11 × 9 inches).

Two adult Egyptian Geese and the three eggs were present when the nest was approached during a follow-up survey conducted on 3 October 2002. The next sighting of Egyptian Geese in the vicinity was of two adults and three hatchlings (Fig. 2) that were photographed on the golf course at the Hutchinson Island Marriott on 16 October 2002. This



Figure 1. Egyptian Goose nest with eggs in Martin County.



Figure 2. Adult Egyptian Goose with hatchlings.

location is approximately 1.8 km (1.1 mi.) northeast of MC2. The family group was foraging in the upland rough on the golf course and swam in a pond on the course. MC2 was next visited on 21 October 2002; no Egyptian Geese were present and the nest was empty. It is likely, although not certain, that the Egyptian Geese observed on 16 October were the ones previously observed on MC2.

Egyptian Geese vigorously defend territories, and one of the problems posed by many non-native species is the extent to which they compete with native species. Competition may be for food or for nesting habitats. However, because the diet of Egyptian Geese differs from those of the other species that nest on MC2 and because the nesting of native birds was nearly completed by the time the Egyptian Geese were nesting, competition with native species on MC2 by the Egyptian Geese was likely minimal or nonexistent during September/October 2002.

Because climatic conditions within their native range ($\pm 30^\circ$ south latitude) are similar to those of Florida ($\pm 30^\circ$ north latitude), it is possible that the nesting documented in Martin County during 2002 may be a harbinger of the establishment of a population of this species in Florida.

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