

## Notes on the Snail (Everglade) Kite in Cuba

*A search in the Zapata Swamp  
for wintering Florida-banded kites  
finds kites, but leaves questions*

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THE SNAIL (EVERGLADE) KITE (*Rostrhamus sociabilis*) is a medium-sized raptor noted for its specialized feeding habits (Fig. 1). Its food consists almost exclusively of large snails, primarily snails of the genus *Pomacea* (Haverschmidt 1962, Snyder and Snyder 1969, Sykes and Kale 1974, Beissinger 1983, Snyder and Kale 1983). Four subspecies of the kite have been recognized, distinguishable only by bill and body measurements (Friedmann 1950). These subspecies occur in (1) Cuba, (2) Florida, (3) Mexico and Central America, and (4) South America. Amadon (1975) has recently cast doubt on the validity of the Florida and Cuban races and has suggested that they be considered synonymous. By definition, if the Florida and Cuban kites are the same subspecies, this could indicate that these two populations may not be geographically isolated (Mayr 1963), *i.e.*, movement of Snail Kites between Florida and Cuba might occur.

Seasonal movements of Snail Kites in Florida have been and still are poorly understood. The population that occurs in the Lake Okeechobee area and southward through the Everglades has long been known largely to "disappear" from its usual haunts in late summer and to "reappear" in mid-October. This behavior, in conjunction with Amadon's (1975) revision of the subspecies, has led us to postulate that kites may move between Cuba and Florida. Because the Florida population is endangered, it is important to determine whether Snail Kite movement between Florida and Cuba occurs, in order to (1) assess population trends, (2) understand the causes and hazards of long-distance seasonal movements, and (3) set long-range population goals.



Records of kites from as far south as Cuthbert Lake (Job 1905) and Paurotis Pond (Beissinger and Takekawa 1983), a few kilometers north of Florida Bay, lend some, perhaps slight, credence to the possibility that kites may move between Florida and Cuba. Further evidence supports the idea; when South Florida underwent a severe drought in 1981-1982 that dried up most of the usually available kite habitat, kites responded to this condition by dispersing widely over long distances (Beissinger and Takekawa 1983). One bird moved over 483 km (300 miles) and others were observed 240 - 400 km (150 - 250 miles) from the place where they were banded as nestlings (Beissinger, unpublished data). Although these movements were northward and eastward the capability of moving such distances, make it seem probable that kites could fly

the 240 km from the Everglades to Cuba. Since Snail Kites are particularly adept at taking advantage of thermal updrafts and soaring to great heights, it may not require strenuous effort for kites to move long distances.

From 1978 through 1982, studies on Snail Kites were conducted in Florida by Noel Snyder of the United States Fish and Wildlife Service and Steven Beissinger of the University of Michigan. Roderick Chandler of the National Audubon Society has studied kites on Lake Okeechobee for many years. Together, Snyder, Beissinger and Chandler have banded nearly 350 kites, mostly as nestlings, with color bands for individual identification.

### FIELD WORK

Autumn of 1982 seemed an opportune

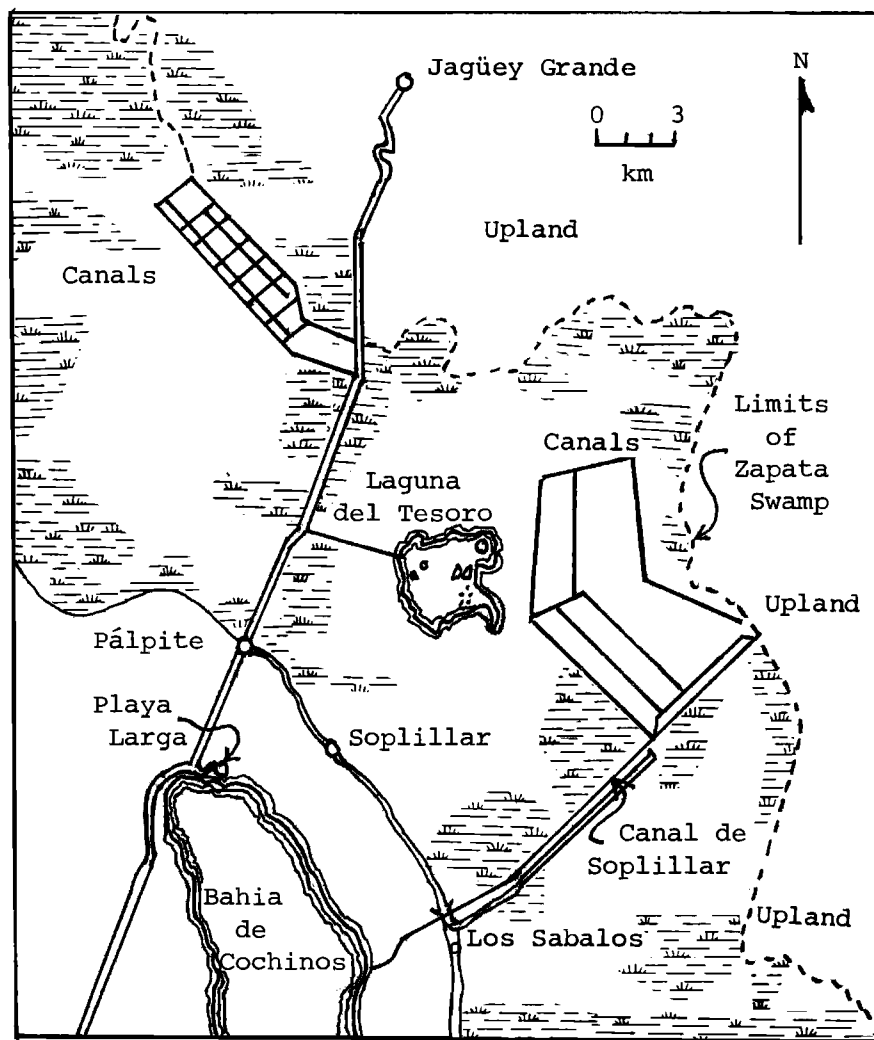


Fig. 2. Map showing the location of the main study area.

time to test the theory of possible movement of kites from Florida and Cuba because in Florida kites still were dispersed from the drought, the population had declined greatly, and a large number of kites were already individually marked. On September 24, Beissinger, Sprunt and Chandler, accompanied by a National Audubon Society film crew, went to Cuba for an eight-day stay. Arrangements had been made with the Academy of Sciences of Cuba for the help of an ornithologist, and the group was joined and led by Sr. Hiram J. Gonzalez Alonso of that organization.

**T**HE PRESENT DISTRIBUTION and status of the Snail Kite in Cuba is not well known. The species has been recorded in wetland habitats throughout the main island and in the Isle of Pines to the south. The drainage of freshwater marshes as early as the 1920s led to a decline in the population of kites in Cuba (Barbour 1923), much like that in Florida. Records of kites are in the literature from large

freshwater lakes such as Lago de Ariguanabo (La Habana Province) and from the Valley of the Rio Cauto (Granma Province), but the present status of the species in these locations is unknown. The Snail Kite is, however, common in the Laguna del Tesoro (Treasure Lake) in Matanzas Province. Kites have been recorded nesting on the laguna (Garrido and Montaña 1975, Garrido 1980) and can be found there throughout the year. Thus we chose to conduct our field studies in and around the 8.7 km<sup>2</sup> Laguna del Tesoro in the Zapata Swamp.

The 4500 km<sup>2</sup> Zapata Swamp is a peninsula shaped like a boot (hence its name), most of which is now a national park (Fig. 2). Freshwater marshes occupy the eastern and central portion of the peninsula with brackish and salt mangrove swamps to the west and south. The area visited during this trip was within a 24-km (15-mile) radius of the center of the Laguna del Tesoro.

The Laguna del Tesoro and its surrounding marshes are remarkably similar to Lake Okeechobee and the Everglades.

The emergent vegetation of the marshes consists of sawgrass (*Cladium*) and cattail (*Typha*), with willow (*Salix*) and wax myrtle (*Myrica*) on the higher ground. Red mangrove (*Rhizophora*) and custard apple (*Anona*) also were present. The submerged vegetation was abundant, providing an ideal substrate for *Pomacea* snails and thus good feeding areas for kites. Prominent among the submerged plants were pepper grass (*Potamogeton*), wild celery (*Vallisneria*), bladderwort (*Utricularia*) and muskgrass (*Chara*). There were differences from Florida marshes; arrowhead (*Sagittaria*) was present but pickerelweed (*Pontederia*) was not, and two species of *Cladium* were present, one much larger than the species found in Florida. Local people informed us that the lake was nearly one meter lower than normal for the season, a circumstance that made boat transportation more difficult.

**D**URING NINE HOURS of observations from outboard motorboats and rowboats over a period of three days, 15 to 20 kites were seen around the edges of the lake or in the waterways of La Guamá Tourist Center (Fig. 3). Guamá is a group of five small, artificial islands in the southeastern portion of the laguna and is a heavily used tourist attraction. Of the kites seen along the marsh edge, only 12 were seen well enough, with both binoculars and spotting scopes, to verify that they were not banded. It was impossible thoroughly to cover the extensive marshes around the lake without an airboat and a light airplane, neither of which was available.

The tourist center itself was a center of kite activity. They hunted and captured snails from the canals between the islands and within a few meters of the rustic cabins. A Snail Kite roost was located 75-100 m behind the main restaurant of the center in a stand of Australian Pines (*Casuarina equisetifolia*) about 15 m tall. The trees were growing on a small island in one of the canals and along the edge of the canal across from the resort. Kites began arriving at the roost just before sunset, about 1910 hours, and continued until almost full dark at about 1945 hours. On four nights 45, 33, 25, and 32 kites entered the roost. It was possible to check 47%, 66%, 28%, and 69% of the kites for the presence of bands, but none were seen. Many of the kites flew into the roost from the direction of the large impenetrable marshes to the southeast; the remainder came in from the direction of

the main portion of the lake to the north and west. It is probable that the majority of the kites in the vicinity of Laguna del Tesoro used this roost.

Only three other areas in the Zapata Swamp were accessible to us. Five kites were seen on two one-hectare ponds (Fig. 4) southwest of the small town of Soplillar (Fig. 2). Only one of these was seen well enough to determine that it was not banded. A second area was a wide canal south and east of Soplillar called Canal de Soplillar. It could only be observed with difficulty at irregular intervals from a road which ran parallel to it. No kites were observed in a 12-km section to the northeast of the village of Los Sabalos (Fig. 2). Kites have been observed along this canal regularly according to the local people. Another canal system near the entrance of the Zapata National Park was also investigated. This system is located about 10 km southwest of the town of Jagüey Grande (Fig. 2). In a 9-km section along one of these canals (Fig. 5), five kites were observed. Four of them were seen well enough to determine that they carried no bands.

**I**N THE AREAS VISITED, especially in the Laguna del Tesoro and its surrounding marshes, *Pomacea* snails seemed abundant. Kites had no difficulty capturing snails, seemingly at will, and clusters of snail eggs were abundant on the emergent vegetation. According to present taxonomic knowledge, the same species of *Pomacea* occurs in both Florida and Cuba. The Cuban specimens that were examined, however, seemed more variable and darker



Fig. 4. One of two small ponds near the town of Soplillar, Matanzas Province, Cuba, where five Snail Kites were observed.

than those in Florida. In addition, the snail egg clusters in Cuba contained more eggs per cluster ( $69 \pm 14$  for 8 clusters) compared to Florida ( $28 \pm 12$  for over 1000 clusters; Hanning 1978). Egg diameter was also smaller in Cuba ( $3.3 \pm 0.1$  mm) than in Florida ( $4.4 \pm 0.3$  mm; Hanning 1978). Because the taxonomy of the *Pomacea* snail complex throughout the neotropics was initially based on shell morphology (e.g. Pain 1950) and has not been recently revised, more information is needed to evaluate whether the Cuban *Pomacea* is indeed the same species as is found in Florida.

Cuban Snail Kites appeared to be somewhat darker overall than those in Florida, but taxonomic studies have failed to show

any substantive variation in color among the subspecies (Amadon 1975). One interesting fact emerged from our observations at the roost. Most of the birds coming into this particular location were adult males over three years of age, as determined by plumage coloration. On the four nights that observations were made, the percentage of adult males was 65%, 78%, 78%, and 67% for an overall percent of 72% males. In Florida brown birds, females and males less than two years old, consistently outnumber adult males (Sykes 1979). This could mean three things. First, it is possible that adult males in Cuba utilize different areas than juveniles and adult females. There was a suggestion that this might be true because the few kites seen away from the lake were predominantly juveniles or females. We have not, however, observed habitat segregation by kites in Florida during the non-breeding months. A second possibility is that the sex ratio of kites in Cuba was skewed towards males either at hatching or owing to differential survival of the sexes. Finally, the high percentage of adult males observed at the Laguna roost could indicate a population that is declining owing to poor recruitment. The samples available, however, were too small and duration of observations too brief to do more than suggest that further studies are needed.

#### SUMMARY

In summary, a minimum of 55 Snail Kites was observed in the vicinity of the eastern portion of the Zapata Swamp. At least two-thirds of these were checked under good conditions and no banded kites were seen. This, however, does not rule out



Fig. 3. The waterways of La Guamá tourist center, Matanzas Province, Cuba. This heavily used tourist attraction in the Laguna del Tesoro was a center of Snail Kite activity.



Fig. 5. Canal 10 km southwest of Jagüay Grande, Matanzas, Cuba where five Snail Kites were found.

the possibility of the exchange of kites between Florida and Cuba. The sample in this study was small and other populations of Snail Kites probably exist in Cuba. Sr. Hiram J. Gonzalez will continue to look for kites in other areas and to closely examine them wherever they may be found.

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