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### OBSERVED NESTING OF THE SNAIL KITE IN EASTERN ORANGE COUNTY, FLORIDA

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The Snail Kite (*Rostrhamus sociabilis*) is a resident breeder from central Florida southward to Cuba and Central and South America (Stevenson and Anderson 1994, Rodgers 1996). In Florida the Snail Kite has nested as far north as Wakulla Springs (Howell 1932); however, by the late 1970s the species was restricted to the west side of Lake Okeechobee and the southeastern region of Water Conservation Area 3A (Sykes 1984). In the 1980s, nesting kites were found north to lakes Kissimmee, Tohopekaliga and East Tohopekaliga (Takekawa and Beissinger 1989) and these remained the most northerly nesting sites into the mid-1990s (Stevenson and Anderson 1994).

On 17 May 1996 a male Snail Kite was observed carrying nesting material across a marsh at the Orlando Wetlands Park (OWP) in east Orange County, Florida. On 7 June 1996 a female was seen flying with an apple snail (*Pomacea paludosa*) in its bill to the top of a live cabbage palm (*Sabal palmetto*) in a stand of live and dead palms growing in water 0.8 m deep. Later that day, a male flew to the top of the same palm where it remained until it was replaced by a female. On 25 June 1996, a male Snail Kite took several apple snails to a large nestling atop the palm tree. The adult male would capture a snail, fly to a snag in close proximity of the nest tree, extract the muscular portion of the snail, then take it to the nest. On 3 July 1996 the nestling was heard calling loudly while the female in close proximity seemingly ignored the male and the nestling. Observations of only the male bringing food to the nestling continued until 19 July 1996 when the juvenile kite was seen and photographed on a live oak (*Quercus virginiana*) snag near the nesting site.

The Snail Kite may have recolonized this part its former range, because apple snails are abundant in OWP. OWP is a 494 ha wetland treatment system designed and built in the mid-1980s for the final treatment of up to 76 million liters of reclaimed wastewater per day initially treated by the City of Orlando's Iron Bridge Regional Water Reclamation Facility, which is a wastewater treatment plant initiated in July 1987. Three different wetland habitats (the deep marsh, open marsh and hardwood swamp) serve to polish the wastewater at OWP. It is in the open marsh that Snail Kites have been most frequently observed. A kite was first seen at the OWP in August 1989 (Ogden 1990), the species has been observed sporadically except for years 1993, 1994 and 1997.

The open freshwater marsh is characterized by large areas of open water with scattered patches of pickerelweed (*Pontedaria cordata*), duck potato (*Sagittaria lancifolia*), bulrush (*Scirpus californicus*) and other emergent macrophytes. Another important aspect of this marsh is the presence of submerged species, particularly southern naiad (*Najas quadalupensis*) and coontail (*Ceratophyllum demersum*). This habitat has a high density of apple snails, which serve almost exclusively as the sole food source for the Snail Kite (Snyder and Snyder 1969, Stevenson and Anderson 1994).

The kite's foraging habitat requires extensive areas of open water with a low density of emergent vegetation (Stevenson and Anderson 1994, Rogers 1996). The lack of the Snail Kite observations during 1993 and 1994 may be partially caused by an overgrowth of cattails (*Typha* spp.) within the open marsh. In 1994 a multi-phase management technique for the control of the encroaching cattails was begun. A combination of aerial heli-

copter herbicide applications followed with prescribed burning and spot herbicide applications using airboats led to significant reductions in the cattail density within the marsh. Rodgers (1996) noted that although the apple snail is widespread in north Florida, and parts of Georgia and Alabama, lack of suitable foraging habitat that provides access to the apple snails will prevent significant recolonization further north. Effective management for the control of cattail populations at the OWP led to more open water areas which aided in establishing foraging areas.

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