



# SOUTHEAST GAP ANALYSIS PROJECT



## Species Modeling Report

### Snail Kite

*Rostrhamus sociabilis*

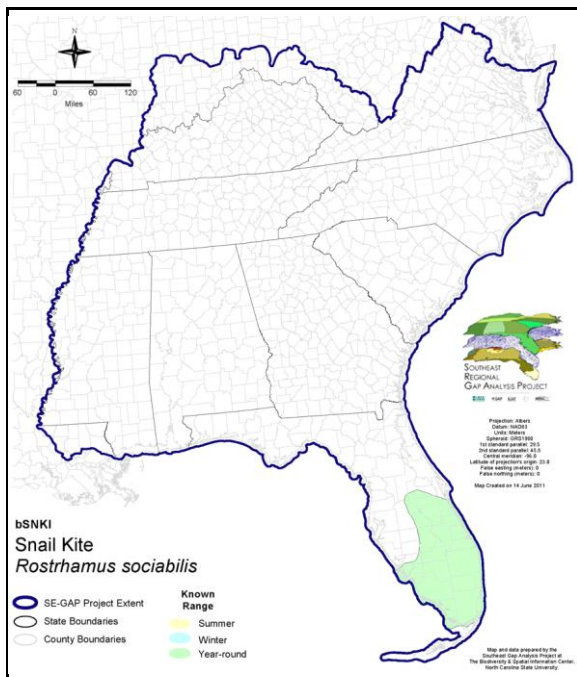
Taxa: Avian  
Order: Falconiformes  
Family: Accipitridae

SE-GAP Spp Code: **bSNKI**

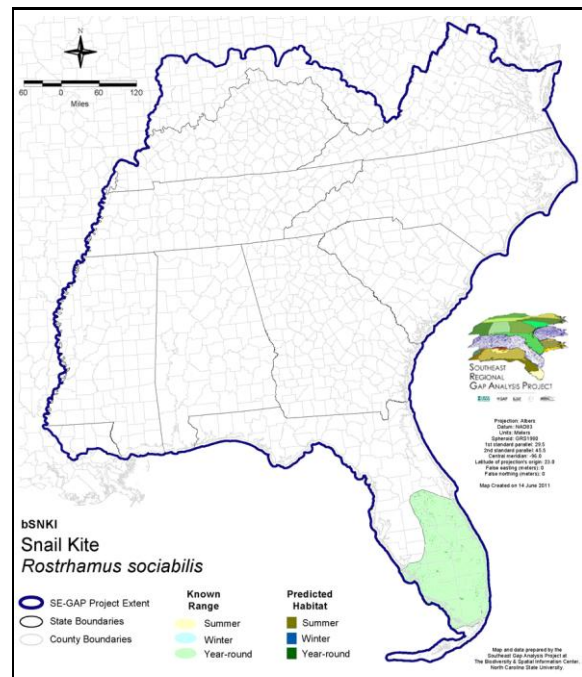
ITIS Species Code: 175295

NatureServe Element Code: ABNKC07010

#### KNOWN RANGE:



#### PREDICTED HABITAT:



Range Map Link: [http://www.basic.ncsu.edu/segap/datazip/maps/SE\\_Range\\_bSNKI.pdf](http://www.basic.ncsu.edu/segap/datazip/maps/SE_Range_bSNKI.pdf)

Predicted Habitat Map Link: [http://www.basic.ncsu.edu/segap/datazip/maps/SE\\_Dist\\_bSNKI.pdf](http://www.basic.ncsu.edu/segap/datazip/maps/SE_Dist_bSNKI.pdf)

GAP Online Tool Link: <http://www.gapservice.ncsu.edu/segap/segap/index2.php?species=bSNKI>

Data Download: [http://www.basic.ncsu.edu/segap/datazip/region/vert/bSNKI\\_se00.zip](http://www.basic.ncsu.edu/segap/datazip/region/vert/bSNKI_se00.zip)

#### PROTECTION STATUS:

Reported on March 14, 2011

Federal Status: ---

State Status: ---

NS Global Rank: G4G5

NS State Rank: FL (SNR), GA (SNA), TX (SNA)

**SUMMARY OF PREDICTED HABITAT BY MANAGMENT AND GAP PROTECTION STATUS:**

|          | US FWS                 |     | US Forest Service     |    | Tenn. Valley Author. |     | US DOD/ACOE           |     |
|----------|------------------------|-----|-----------------------|----|----------------------|-----|-----------------------|-----|
|          | ha                     | %   | ha                    | %  | ha                   | %   | ha                    | %   |
| Status 1 | 28.3                   | < 1 | 0.0                   | 0  | 0.0                  | 0   | 0.0                   | 0   |
| Status 2 | 0.0                    | 0   | 0.0                   | 0  | 0.0                  | 0   | 0.0                   | 0   |
| Status 3 | 0.0                    | 0   | 0.0                   | 0  | 0.0                  | 0   | 272.2                 | 2   |
| Status 4 | 0.0                    | 0   | 0.0                   | 0  | 0.0                  | 0   | 0.0                   | 0   |
| Total    | 28.3                   | < 1 | 0.0                   | 0  | 0.0                  | 0   | 272.2                 | 2   |
|          | US Dept. of Energy     |     | US Nat. Park Service  |    | NOAA                 |     | Other Federal Lands   |     |
|          | ha                     | %   | ha                    | %  | ha                   | %   | ha                    | %   |
| Status 1 | 0.0                    | 0   | 676.4                 | 6  | 0.0                  | 0   | 0.0                   | 0   |
| Status 2 | 0.0                    | 0   | 0.0                   | 0  | 21.1                 | < 1 | 0.0                   | 0   |
| Status 3 | 0.0                    | 0   | 315.4                 | 3  | 0.0                  | 0   | 0.0                   | 0   |
| Status 4 | 0.0                    | 0   | 0.0                   | 0  | 0.0                  | 0   | 0.0                   | 0   |
| Total    | 0.0                    | 0   | 991.7                 | 9  | 21.1                 | < 1 | 0.0                   | 0   |
|          | Native Am. Reserv.     |     | State Park/Hist. Park |    | State WMA/Gameland   |     | State Forest          |     |
|          | ha                     | %   | ha                    | %  | ha                   | %   | ha                    | %   |
| Status 1 | 0.0                    | 0   | 0.0                   | 0  | 0.0                  | 0   | 0.0                   | 0   |
| Status 2 | 0.0                    | 0   | 0.0                   | 0  | 1,048.4              | 9   | 0.0                   | 0   |
| Status 3 | 0.0                    | 0   | 635.9                 | 6  | 0.0                  | 0   | 347.9                 | 3   |
| Status 4 | 0.0                    | 0   | 0.0                   | 0  | 0.0                  | 0   | 0.0                   | 0   |
| Total    | 0.0                    | 0   | 635.9                 | 6  | 1,048.4              | 9   | 347.9                 | 3   |
|          | State Coastal Reserve  |     | ST Nat.Area/Preserve  |    | Other State Lands    |     | Private Cons. Easemt. |     |
|          | ha                     | %   | ha                    | %  | ha                   | %   | ha                    | %   |
| Status 1 | 0.0                    | 0   | 0.0                   | 0  | 0.0                  | 0   | 0.0                   | 0   |
| Status 2 | 0.0                    | 0   | 0.0                   | 0  | 0.0                  | 0   | 0.0                   | 0   |
| Status 3 | 0.0                    | 0   | 0.0                   | 0  | 0.0                  | 0   | 35.8                  | < 1 |
| Status 4 | 0.0                    | 0   | 0.0                   | 0  | 0.0                  | 0   | 0.0                   | 0   |
| Total    | 0.0                    | 0   | 0.0                   | 0  | 0.0                  | 0   | 35.8                  | < 1 |
|          | Private Land - No Res. |     | Water                 |    | Overall Total        |     |                       |     |
|          | ha                     | %   | ha                    | %  | ha                   | %   | ha                    | %   |
| Status 1 | 0.0                    | 0   | 0.0                   | 0  | 704.6 6              |     |                       |     |
| Status 2 | 0.0                    | 0   | 0.0                   | 0  | 1,069.5 9            |     |                       |     |
| Status 3 | 0.0                    | 0   | 0.0                   | 0  | 1,607.0 14           |     |                       |     |
| Status 4 | 6,228.0                | 54  | 1,833.9               | 16 | 8,061.9 70           |     |                       |     |
| Total    | 6,228.0                | 54  | 1,833.9               | 16 | 11,443.1 100         |     |                       |     |

GAP Status 1: An area having permanent protection from conversion of natural land cover and a mandated management plan in operation to maintain a natural state within which disturbance events (of natural type, frequency, and intensity) are allowed to proceed without interference or are mimicked through management.

GAP Status 2: An area having permanent protection from conversion of natural land cover and a mandated management plan in operation to maintain a primarily natural state, but which may receive use or management practices that degrade the quality of existing natural communities.

GAP Status 3: An area having permanent protection from conversion of natural land cover for the majority of the area, but subject to extractive uses of either a broad, low-intensity type or localized intense type. It also confers protection to federally listed endangered and threatened species throughout the area.

GAP Status 4: Lack of irrevocable easement or mandate to prevent conversion of natural habitat types to anthropogenic habitat types. Allows for intensive use throughout the tract. Also includes those tracts for which the existence of such restrictions or sufficient information to establish a higher status is unknown.

## PREDICTED HABITAT MODEL(S):

### Year-round Model:

Habitat Description: Snail kites feed almost exclusively on apple snails (genus pomacea) (Howell 1932, Haverschmidt 1962, Beissinger 1983, Sykes 1987). Microhabitats used for foraging are described by Sykes et al. (1995) as open water patches within emergent marsh vegetation and other palustrine wetland types such as shallow lakes, river banks and canals and ephemeral wetlands. In Florida they do not feed in rice plantations. Marsh vegetation is usually dominated by sawgrass and open water areas that are used are characterized by emergent vegetation such as water-lily, spike rush, maidencane, arrowhead and pickerel weed, willow, pond apple and pond cypress. Wetlands that are continuously flooded for > 1 year are needed to sustain apple snail populations. During dry spells snail kites disperse to smaller permanently flooded wetlands. Snail kites can not forage in wetlands that are choked with wetland plants from high phosphorus pollution or invasive species. Nests are constructed near foraging areas, over water in trees generally < 10 m.

Based on Sykes et. Al (1995), birds of North America - K. Cook - 6-2-05

\*\*\* Note: Breeding success and nesting of snail kites is influenced by water depth which is ephemeral (Beissinger and Snyder 2002). Therefore the GAP model aims to predict the maximum extent of breeding habitat, however some dry areas during 2001, which have water in subsequent years may not be mapped as breeding habitat.

### Hydrography Mask:

Freshwater Only

Utilizes open water features with buffers of unlimited from and 120m into selected water features.

### Selected Map Units:

| Functional Group               | Map Unit Name                                  |
|--------------------------------|--|
| Brackish Tidal Marsh & Wetland | South Florida Everglades Sawgrass Marsh        |
| Water                          | Open Water (Fresh)                             |
| Wetlands                       | Central Florida Herbaceous Pondshore           |
| Wetlands                       | Floridian Highlands Freshwater Marsh           |
| Wetlands                       | South Florida Dwarf Cypress Savanna            |
| Wetlands                       | South Florida Freshwater Slough and Gator Hole |
| Wetlands                       | South Florida Pond-Apple/Popash Slough         |
| Wetlands                       | South Florida Wet Marl Prairie                 |
| Wetlands                       | South Florida Willow Head                      |

### Selected Secondary Map Units within 30m of Primary Map Units:

| Functional Group | Map Unit Name                  |
|------------------|--------------------------------|
| Wetlands         | South Florida Hardwood Hammock |
| Wetlands         | South Florida Cypress Dome     |
| Wetlands         | South Florida Bayhead Swamp    |

**CITATIONS:** Beissinger, S. R., and N. F. R. Snyder. 2002. Water levels affect nest success of the snail kite in Florida: AIC and the omission of relevant candidate models. *Condor* 104:208-215 | 208.

Beissinger, S. R.. 1983. Hunting behavior, prey selection, and energetics of Snail Kite in Guyana: consumer choice by a specialist. *Auk* 100: 84-92.

Haverschmidt, F.. 1962. Notes on the feeding habits and food of some hawks of Surinam. *Condor* 64: 154-158.

Howell, A.H. 1932. Florida birdlife. Coward-McCann, New York.

Sykes, P. W., Jr., J. A. Rodgers, Jr., and R. E. Bennetts. 1995. Snail Kite (*Rostrhamus sociabilis*). In *The Birds of North America*, No. 171 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, and The American Ornithologists' Union

Sykes, P. W., Jr.. 1987. The feeding habits of the Snail Kite in Florida, USA. *Colon. Waterbirds* 10: 84-92.

For more information:: SE-GAP Analysis Project / BaSIC  
127 David Clark Labs  
Dept. of Biology, NCSU  
Raleigh, NC 27695-7617  
(919) 513-2853  
[www.basic.ncsu.edu/segap](http://www.basic.ncsu.edu/segap)

Compiled: 15 September 2011

This data was compiled and/or developed  
by the Southeast GAP Analysis Project at  
The Biodiversity and Spatial Information  
Center, North Carolina State University.