

STATUS OF RED-BELLIED SQUIRRELS (*SCIURUS AUREOGASTER*) INTRODUCED TO ELLIOTT KEY, FLORIDA

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Introductions of non-native species can have significant consequences for ecosystems (Williamson 1996). Mammals are often introduced; however, fate of introductions is not well documented (Lever 1985, Long 2003). Two pairs of red-bellied squirrels (*Sciurus aureogaster*) obtained from Mexico were introduced to Elliott Key, Dade County, Florida in 1938 (Brown 1969). The species thrived in the densely forested tropical hammocks of the island for decades with densities reaching about 2.5 squirrel/ha (Brown and McGuire 1975, Tilmant 1980). Red-bellied squirrels dispersed to Adams Key and Sands Key, and an individual was captured swimming to Old Rhodes Key (Layne 1997); all of these islands are adjacent to Elliott Key at straight-line distances of <800 m.

Red-bellied squirrel nests are composed of twigs and leaves in the canopy of trees (dreys) or in cavities and the squirrels feed heavily on fruits and seeds of a diversity of trees on Elliott Key (reviewed by Brown 1997). Tilmant (1980) reported that *S. aureogaster* used leaves of palms in construction of dreys and suggested that endangered Sargent's palm (*Pseudophoenix sargentii*) might be at risk. Consequences of this introduced species were believed negated following the storm surge and winds of Hurricane Andrew in 1992 that submersed the island (Ogden 1992, Davis et al. 1993), thereby resulting in the likely extinction of red-bellied squirrels (Layne 1997). However, recent anecdotal reports suggested that this introduced tree squirrel survived the significant impacts of Hurricane Andrew (Layne 1997). Herein, we document the persistence of red-bellied squirrels on Elliott Key.

On 23 and 24 March 2005, we traversed the major trails within approximately 2 km of Elliott Key Harbor, located near the center of this 10.4 km long island, to document characteristic dreys of tree squirrels (Brown 1997) in the canopy of the hammock. We documented 14 dreys likely constructed by red-bellied squirrels; five nests were in various stages of disrepair and composed of decaying leaves, whereas nine nests were globular masses of fresh dry leaves. Additionally, we sighted four red-bellied squirrels of adult size with an entirely black pelage, the melanistic morphs common to Elliott Key (Brown 1997). Two squirrels of unknown sex were observed for <30 s moving on the ground in the forested hammock at 1339 and 1811 EST on 23 March; a third individual was heard to vocalize at 0618 on 24 March for 20 s from 9 m above ground in the canopy. It retreated through the canopy upon our approach. A fourth squirrel, an adult male with scrotal testes, was observed at 1331 on 23 March to move in the canopy for 2 min within 5 m of a leaf nest before departing through the canopy.

Our observations document the presence of red-bellied squirrels on Elliott Key following the devastation of Hurricane Andrew in 1992 (Ogden 1992, Davis et al. 1993) and confirm anecdotal accounts of the exotic species that have accrued during the subsequent years (Layne 1997). Persistence of a population that originated from four founding individuals for more than 60 years is noteworthy, yet similar findings have been reported for extremely small introductions of Abert's squirrels (*S. aberti*) in Arizona and New Mexico (Davis and Brown 1988).

We documented the ability of this exotic species to weather a catastrophic event with the potential to decimate the population (Brown 1997). Our observations of numerous nests and individuals during a short visit over a small portion of the island suggest that red-bellied squirrels might again be thriving in the second-growth tropical hammock forest on Elliott Key. The ecological consequences of this non-native species are not yet known.

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