



### **Stock Island Tree Snail Assessment Guide**

May 20, 2012

The U.S. Fish and Wildlife Service's (Service) FEMA Biological Opinion (BO) dated April 30, 2010, and modified on December 14, 2010, identified 5,607 at-risk parcels, representing 2,322 acres, intersecting habitats that may be used by the Stock Island tree snail (*Orthalicus reses*, not incl. *nesodryas*) in Monroe County. There are 1,725 acres and 4,101 at-risk parcels in unincorporated Monroe County; 300 acres and 779 parcels in Islamorada; 5 acres and 5 parcels in Key Colony Beach; 43 acres and 102 parcels in Key West; less than 1 acre and 1 parcel in Layton; and 249 acres and 579 parcels in Marathon. The BO also identified an additional 436 acres of at-risk lands outside Monroe County's parcel layer not subject to the Rate of Growth Ordinance program.

The at-risk properties were determined by overlaying the County's property parcel layer onto the County's 2009 land cover boundary maps (Monroe County 2009). The County's land cover boundary maps included 13 land cover types. Developed land, undeveloped land, impervious surface, and exotic are considered non-native land cover types. Hammock, pineland, scrub mangrove, freshwater wetland, salt marsh, buttonwood, mangrove, and beach berm are considered native land cover types. The water classification is also considered a native cover type. The minimum mapping unit for land cover polygons was 0.35 acre for hammock and 0.5 acre for all other cover types.

The County's boundary map land cover types containing suitable habitat for the Stock Island tree snail include hammock and beach berm. Beach berm cover types were included as this mapping unit could also include small inclusions of tropical hardwood hammock.

*Species Profile:* The Stock Island tree snail is an arboreal snail inhabiting hardwood hammocks of the Keys (Deisler 1987). Its historic range includes the islands of Stock Island and Key West (Voss 1976). Individuals of the species have since been relocated to other hammocks in the Keys and the mainland. Today, populations of snails occur throughout the Keys in hardwood hammocks. The Service has records of 27 populations, 25 in the Keys and 2 in mainland Miami-Dade County (Service 2006). However, for most populations, the area occupied is poorly defined (Service 2009). Survey and monitoring efforts have been limited and highly variable, and methodologies are not usually reported in detail (Service 2009). Many of the known snail populations are outside the snail's historic range at the extreme southern end of the Florida Keys.

*Threats:* Although the predominant threat described at the time of listing was habitat destruction (Service 2009), much of the suitable protected habitat is currently unoccupied. Additional threats include: non-native predators, inadequacy of existing regulatory mechanisms, climate change, hurricane winds, right-of-way maintenance, and Key deer browsing. Natural disasters such as hurricanes and drought can have a significant effect. The snails are also faced with predation by invertebrate predators, such as fire ants (Service 2009).

*Assessment Guide:* In order to provide assistance in assessing threats to the Stock Island tree snail from a given project, the Service has developed the following guidance and recommendations that, if implemented, will minimize adverse effects to the Stock Island tree snail. If the use of this guide results in a determination of "no effect" for a particular project, the Service supports this determination. If the use of this guide results in a determination of "not likely to adversely affect" (NLAA) for the Stock Island tree snail, the Service concurs with this determination and no additional correspondence is necessary. If the use of this guide results in a "may affect" determination, then additional coordination with the Service is necessary prior to permit issuance. For

projects that result in a “*may affect*” determination, if, after reviewing the specific project and assessing its potential effects to federally listed species, the Service determines that the project will result in take, the Service will notify FEMA and the acreage of impacts will be subtracted from the take limits provided in the BO. This guide is subject to revision as necessary.

- A. Parcel is one of the 25 known locations of the Stock Island tree snail referenced in the BO ***may affect***  
  - Parcel is in the species focus area or on the Real Estate (RE) parcel list (but not one of the 25 known locations) ***go to B***
  - Parcel is not one of the 25 known locations of the Stock Island tree snail referenced in the BO, is not in the species focus area and is not on the RE parcel list..... ***no effect***
- B. The property is within a developed subdivision and adjacent lots and properties within 500 feet are greater than 60 percent developed or scarified. ***NLAA***  
  - The property is not as above and contains and/or is adjacent to contiguous hammock greater than 1 acre in size. Further coordination with the Service is necessary.... ***may affect***
  - Hammock will be impacted but neither of the above apply to the property.. ***go to C***
- C. The applicant proposes no removal or modification of the Stock Island tree snail’s native habitat (hammock and beach berm)..... ***NLAA***  
  - The applicant proposes removal or modification of the Stock Island tree snail’s native habitat..... ***go to D***
- D. The proposed action will remove or modify the Stock Island tree snail’s native habitat. A vegetation survey is required to document the native plant species and size present on the property and a general description of the surrounding properties within 500 feet is also required. Once these have been completed..... ***go to E***
- E. A negative Stock Island tree snail survey, following Service protocol, has been provided and accepted as valid by the Service (*i.e.*, Stock Island tree snails are not present). The applicant has proposed either on-site or off-site habitat compensation\* commensurate with the amount of native habitat lost. Permit with habitat compensation\*..... ***NLAA***  
  - A Stock Island tree snail survey documents presence, or habitat compensation\* is either not proposed or not sufficient..... ***may affect***

**\*Habitat Compensation**

The minimum recommended habitat compensation is replacement of lost vegetation through protection or restoration of habitat, and/or monetary contributions to accomplish the aforementioned activities, according to the participating community's land development regulations. The Service has reviewed the following participating communities' Codes of Ordinances governing habitat compensation and found them to meet minimum recommended habitat compensation: Monroe County, Part II, Chapter 18, Sections 118-2 and 118-8; City of Marathon, Article 2, Chapter 106; Village of Islamorada, Part II, Chapter 30, Article VII, Division 4, Section 30-1616; and Key West, Part II, Subpart B, Chapter 110, Article V, Section 110-223 and Section 110-225, and Article VI, Division 2, Section 110-287 and Division 3, Section 324 and 327. The Cities of Key Colony Beach and Layton were determined to not have ordinances that meet the minimum recommended habitat compensation. If the participating community proposes to modify the habitat compensation requirements of their ordinance, additional review by the Service will be necessary.

If habitat compensation is being provided in excess of the minimum recommended, the Service may consider the additional compensation as a credit to the not to exceed habitat acreage losses referenced in the BO. To be considered for credit, the compensation must be like for like habitat compensation and credit will be granted at half value. For example, if 4 acres of additional compensation are provided, the credit granted would be 2 acres. This partial credit is considered appropriate as existing vegetation currently provides benefit and the credit vegetation may not provide the same habitat benefit until later in time.

**Monitoring and Reporting Effects**

For the Service to monitor cumulative effects and to track incidental take exempted for the Stock Island tree snail, it is important for FEMA and the NFIP participants to monitor the number of permits and provide information to the Service regarding the number of permits issued. In order to meet the reporting requirements in the BO, we request that FEMA and/or the NFIP participants send to the Service an annual database summary consisting of: project date, permit number, project acreage, native impact acreage, amount of acres and/or number of trees/plants replaced as habitat compensation, and project location in latitude and longitude in decimal degrees.

**Literature Cited**

- Deisler, J.E. 1987. The ecology of the Stock Island Tree Snail (*Orthalicus reses reses*) (Say). Bulletin Florida State Museum, Biological Science 31(3):107-145.
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- U.S. Fish and Wildlife Service. 2006. Biological Opinion. FEMA's continued administration of the NFIP in Monroe County, Florida. Atlanta, Georgia.
- U.S. Fish and Wildlife Service. 2009. Stock Island tree snail, 5-year status review. Atlanta, Georgia.
- Voss, R.S. 1976. Observations on the Ecology of the Florida Tree Snail *Liguus jasciatus* (Muller). Nautilus, 90:6569.

