
AMOS GLASGOW

These Greenhouse Frogs (*Eleutherodactylus planirostris*) were discovered in a shipment of ornamental plants from Florida.

2009). However, in its native range *E. planirostris* reaches elevations that, if exploited on St. Vincent, could result in contact with endemic *Pristimantis shrevei*, which is listed as Endangered on the IUCN Red List (Hedges and Powell 2004) and already is threatened by competition with *E. johnstonei* and ongoing declines in habitat quality and extent.

Individuals of either species are unlikely to have escaped detection, but the organization that received the plants (Nature Care SVG) has been instructed by quarantine officers to monitor them closely while still on-site and after any sales and relocations.

**Acknowledgements**

The quarantine officers at Layou are to be commended for their diligence in discovering these invasive animals and for bringing them to the attention of the Forestry Department. I thank Robert W. Henderson, Kenneth L. Krysko, and Robert Powell for identifying specimens.

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# The Pacific Coast Giant Musk Turtle, *Staurotypus salvinii* Gray 1864 (Kinosternidae), a New Non-indigenous Species in Florida

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Photographs by the senior author.

The Pacific Coast Giant Musk Turtle, *Staurotypus salvinii* Gray 1864, is indigenous to the Pacific lowlands of Oaxaca and Chiapas, Mexico, ranging eastward into El Salvador and Guatemala (Ernst and Barbour 1989). This species feeds on fishes, invertebrates, and amphibians, and lives in slow-moving, soft bottom lakes, rivers, and other waterways with aquatic vegetation (Ernst and Barbour 1989).

On 2 October 2010 at 1400 h, an adult (270 mm carapace length [CL]) female *Staurotypus salvinii* (Fig. 1; photographic voucher UF 160342) was collected on the property of Zoo Miami, Miami-Dade County, Florida, along the perimeter fence of a hoof-stock exhibit adjacent to a 0.85-km-long man-made lake (25.60276°N, 80.40123°W, WGS84 datum). This *S. salvinii* was placed in the zoo's quarantine facility for a future exhibit, where it was kept in a 300-gallon enclosure. On 26 October 2010, the animal was radiographed because of unusual behavior and discovered to contain two calcified eggs (Fig. 2). On 15 November 2010, this *S. salvinii* oviposited the two eggs in substrate of sand and leaf litter in the enclosure. These eggs (10.1 g, 39.5 x 20.8 mm; 9.9 g, 39.5 x 19.7 mm, respectively) were removed and placed on vermiculite substrate and incubated within a GQF 1550 Hatcher Incubator (Savannah, Georgia) at 28.6 °C with a humidity of approximately 80%. On 2 December 2010, the two eggs appeared to have failed to develop and were discarded.

On 1 November 2010 at 1210 h, a juvenile (107 mm CL) female *Staurotypus salvinii* (Fig. 3; photographic voucher UF 162276) was collected crossing a zoo service road between exhibits (25.61079°N, 80.40068°W), 0.9 km north of the first individual. The nearest water source to this location is a 0.13-km-long man-made lake, which is not connected to the larger, 0.85-km lake where the first individual was found. This *S. salvinii* was also placed in the zoo's quarantine facility for a future exhibit, where it was kept in a separate enclosure.

Zoo Miami contains approximately 300 ha of pine rockland, approximately 133 ha of which are developed for the institution. Although much

**Fig. 1.** Adult female (UF 160342) Giant Musk Turtle, *Staurotypus salvinii*, from Miami, Miami-Dade County, Florida.

**Fig. 2.** Radiograph of female (UF 160342) Giant Musk Turtle, *Staurotypus salvinii*, from Miami, Miami-Dade County, Florida.

**Fig. 3.** Juvenile female (UF 162276) Giant Musk Turtle, *Staurotypus salvinii*, from Miami, Miami-Dade County, Florida.

of eastern Miami-Dade County consists of urban development, properties directly adjacent to the zoo comprise large tracts of mostly undeveloped pine rockland. None of these pine rockland areas are residential, and for security the zoo is bordered by a 2.5-m-tall chain-link fence and concrete perimeter moat. *Staurotypus salvinii* has never been kept as part of the zoo's collection, but is available through the pet trade, which is likely the invasion pathway. Although this species was probably intentionally released on the grounds by a zoo visitor, we acknowledge that it also could have been released along perimeter properties because of gaps under gates and other potentially compromised areas. Like in other Miami-Dade County parks (e.g., see Krysko et al. 2010), numerous non-indigenous amphibian and reptilian species frequently are found on or near zoo grounds; these were likely released by zoo visitors and/or previous owners who no longer want to care for their animals. The presence of multiple *S. salvinii*, including a female with eggs and a juvenile found at different sites on zoo grounds, suggests likely reproduction and establishment of this species there. However, before making this claim we believe evidence of reproduction in the wild is necessary. This is the first known documented introduction of this species in Florida.

**Acknowledgments**

We thank John B. Iverson, Peter A. Meylan, Paul Vanderschouw and Jason Bourque for species confirmation; J. Steve Conners, Nicole Atteberry, Gad Perry, Robert Powell, and an anonymous reviewer for helpful comments on this paper.

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