

RESEARCH ARTICLE

A STUDY OF MONA ROCK IGUANA (*CYCLURA CORNUTA STEJNEGERI*) NESTING SITES ON MONA ISLAND, PUERTO RICO

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ABSTRACT.—The Mona Island rock iguana (*Cyclura cornuta stejnegeri*) is a threatened species. The iguana population is thought to be at an all time low due to predation and competition by feral animals. Furthermore, the population appears to be very aged, and there is a high mortality rate in hatchling iguanas due to feral cats. In October and November 1994, I studied the nesting areas of the iguana using a Geographic Information Systems (GIS) based Gap Analysis. This GIS was used to predict unknown nesting sites. Known and predicted nesting sites were subsequently visited and evaluated for their use by iguanas. From this research I was able to establish that nesting success is dependent upon location. Although successful nesting occurs on some beaches, in the interior of the island all of the nesting sites appeared to be completely destroyed by feral pigs. Continued research and direct intervention, for which I offer recommendations, are essential for the continued conservation and survival of the iguana on Mona Island.

Key Words: Mona Island, rock iguana, *Cyclura*, GIS, gap analysis, nesting sites, conservation

Yu-ana is a form of serpent with four feet, very ugly to the sight and very good to eat, of which... there are many in the isles and on the mainland... I have eaten these animals on the mainland on occasion, and many more times in this city (Santo Domingo, Hispaniola), and they still bring them to me by sea from Isla de la Mona, where they are plentiful, which is forty leagues from here, and is very good eating...

—Fernandez de Oviedo, Governor of Santo Domingo
1535 (Aquino, 1977)

Mona is located midway between Puerto Rico and the Dominican Republic. Encompassing 5,500 ha, Mona is the second largest of Puerto Rico's offshore islands. Over 90% of the island consists of a raised limestone plateau (mean elevation = 45 m). On this plateau are numerous sinkholes and depressions, many of which are filled with soil. Mona also has a large coastal terrace on the southwest coast and a smaller terrace on the southeast coast (3-4 m elevation). Despite high relative humidity, the minimal rainfall (810 mm/year; Calvesbert, 1973) and rapid evaporation contribute to an arid climate. This is reflect-

ed in Mona's vegetation: 86% of the plateau forests consist of short, scrubby trees (Cintrón and Rogers, 1991). Larger trees occur in the sinkholes on the plateau where the accumulated soil is moister than in surrounding areas.

The Mona rock iguana (*Cyclura cornuta stejnegeri*; Figure 1) is the largest native herbivore on the island. Because of Mona's limestone topography and paucity of areas with deep soils, only about 1% of the island has suitable nesting areas for the iguana. Because these areas are scattered in the interior and along the beaches of the island, female iguanas must migrate to the few areas that have soil. The iguana is fortunate that Mona has no permanent human inhabitants and no commercial development. However, feral pigs, goats, and cats have led to a decline in the iguana population. Vegetation of the larger iguana nesting areas has been altered by humans and goats to the point that these areas may now be inhospitable to the iguana (Wiewandt, 1977).