



ROBERT POWELL

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Ecology and Conservation of the Lesser Antillean Iguana (*Iguana delicatissima*)

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The Lesser Antillean Iguana (*Iguana delicatissima*) survives on fewer than 10 main islands in the northern Lesser Antilles. Historically, these iguanas probably were common on every island from Anguilla in the north to Martinique in the south. The contemporary range reductions are associated with European colonization. Hunting and introduction of exotic predators and competitors threaten Lesser Antillean Iguanas with extinction across their range. The genetic integrity of the species also is in jeopardy on some islands because of hybridization with the introduced Green Iguana (*I. iguana*). Finally, in

tropical island systems such as those in the Caribbean, road construction and subsequent development occurs primarily along coastal areas to accommodate the tourism industry. As coastal roads and development projects expand, *I. delicatissima* becomes increasingly susceptible to road mortality during terrestrial movements. Often such terrestrial movements are to historic coastal nesting habitats, many of which have been severely degraded or completely destroyed. Decades of neglect and lack of appropriate conservation efforts have placed the Lesser Antillean Iguana in jeopardy of extinction. In fact, populations



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Lesser Antillean Iguanas (*Iguana delicatissima*) are susceptible to road mortality during terrestrial movements, which may be associated with historic coastal nesting habitats.

have already been extirpated from several islands (Barbuda, St. Christopher, Nevis, Antigua, Les Îles des Saintes, Marie-Galante, and St. Martin/St. Maarten). Moreover, many extant populations have been reduced to extremely low numbers and restricted to remaining “natural” areas, causing concern about the long-term viability of the entire species. Lesser Antillean Iguanas are listed as “vulnerable” to extinction by the IUCN (Hilton-Taylor, 2000). However, individual populations on several islands are critically endangered and only one population (Petite Terre) is considered stable (Powell, 2004).

Conservation and Research for Endangered Species (CRES) at the Zoological Society of San Diego has initiated a multiyear study of *I. delicatissima* in order to acquire ecological information that can be used to make informed conservation management decisions throughout the species’ range. Our aim also is to raise community awareness about the plight of the iguana, because the long-term survival of the species will require local stewardship and pride. Our focal study population is on the island of Dominica. The Commonwealth of Dominica is believed to support the largest single population of *I. delicatissima*, largely because of its expansive, undisturbed coastal habitats (Day et al., 2000). This population provides an opportunity to study the species under natural conditions prior to catastrophic declines and the subsequent cascading demographic perturbations that are occurring elsewhere in the Lesser Antilles.

This study focuses initially on investigating coastal populations of *I. delicatissima*. Specifically, we are investigating life-history variation between disturbed and undisturbed iguana populations. Study variables include clutch size, age to reproduction, nest-site selection, hatching rate, juvenile and adult survival, and diet. Because coastal features on many Lesser Antillean islands are similar, data from “control” undisturbed and disturbed sites can be used to predict the fate of populations on Dominica and other islands where coastal development is increasing — primarily to address the demands of tourism, which has become the economic mainstay of many regional island nations. Road surveys will be conducted to quantify current levels of road-kill



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Life-history data about Lesser Antillean Iguanas are limited.



Hatchlings were abundant in June.

mortality and identify its impact on population sustainability and demography. In addition to investigating life histories, we are radio-tracking adults to acquire movement data, which will help evaluate the impact of migrations to coastal nesting areas and possibly mitigate concomitant road mortality. Surveys also will be used to identify and qualify attributes of important crossing points characterized by high-frequency mortality events. Lastly, we will be radio tracking hatchlings from nests to record dispersal and survival, and document significant natural and invasive predators.

Working with coastal *I. delicatissima* populations on Dominica provides a means to close the gap in connecting different landscapes using charismatic species as conservation flagships. Currently on Dominica, parrots are seen as flagships for inland mesic forests, whereas sea turtles represent beach habitat. However, the coastal scrub areas lack such a focal species, and *I. delicatissima* has charisma and conservation appeal. Additionally, Dominica is one of the last strongholds for *I. delicatissima* and the methodologies used and results garnered during this study could be used as a model for other Lesser Antillean islands. Furthermore, we hope to establish a conservation footprint to spin off and replicate on other islands, using our results as leverage elsewhere.

Finally, iguanas are charismatic conservation ambassadors and we expect to work with local educators to develop programs focusing on iguanas and their importance to the island. Educational opportunities will include the provision of hands-on field-research experiences with students and teachers. With permission and assistance from the Division of Forestry, we will engage students in the classroom with educational lectures involving study animals.

Presently, life-history information about the Lesser Antillean Iguana is limited. This project offers an excellent opportunity to study the iguana comprehensively in its one remaining stronghold, use the data to educate Dominicans about its importance, and devise conservation and management strategies for iguana habitat throughout the region.

References

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- Powell, R. 2004. Conservation of iguanas (*Iguana delicatissima* and *I. iguana*) in the Lesser Antilles. *Iguana* 11:238–246.



Although largely arboreal, Lesser Antillean Iguanas readily forage and bask on the ground.