The herpetofauna of Grenada and the Grenada Grenadines: Conservation concerns

Robert W. Henderson¹, Craig S. Berg²

¹ Section of Vertebrate Zoology, Milwaukee Public Museum, 800 W. Wells St., Milwaukee, Wisconsin 53233-1478, USA
² Milwaukee County Zoo, 10001 W. Blue Mound Rd., Milwaukee, Wisconsin 53226, USA

Abstract. Grenada and the politically associated Grenadines harbor 19 species of terrestrial herpetofauna, and four species of marine turtles either nest on their beaches or forage in the surrounding waters. The islands have a 2000-year history of human activity, but the past five centuries had the most adverse impact on the environment. Although some members of the herpetofauna have responded well to dramatically altered habitats (Anolis spp.), others have not (e.g., Eleutherodactylus euphronides). Similarly, the introductions of alien predators (most notably Herpestes javanicus) have likely impacted some species (e.g., Ameiva ameiva, Mabuya sp.), but not others. Several species appear to be genuinely rare (e.g., Clelia clelia, Typhlops tasymicris), and sharp declines in numbers have been documented for the arboreal boa Corallus grenadensis. The future of marine turtles in the area is threatened by habitat destruction (development of beachfront habitat for the tourist industry), slaughter of adults, and poaching of nests. Eco-tourism may hold the key for protection of forested habitats and the herpetofauna of this important group of islands.

Key words: Conservation; frogs; Grenada; mongoose; reptiles.

Introduction

The southernmost of the main islands in the Lesser Antilles, Grenada is situated about 135 km off the northern coast of Trinidad and about 140 km off the northern coast of Venezuela. The island has had a long history of human activity with dramatic effects on the ecology of its herpetofauna. For the vast majority of that time, the impact of humans on the herpetofauna has probably been negligible. The past five centuries, however, have witnessed tremendous growth of the human population coupled with widespread habitat destruction or alteration. Studying the ecology of any member of Grenada’s herpetofauna without taking into account the impact of human activity is virtually impossible today (e.g., Germano et al., 2003).
Our fieldwork in Grenada commenced in 1988, and since then we have witnessed changes to the island’s landscape and to its herpetofauna.

The Setting

Grenada is about 34 km long and 19 km wide, and has an area of 311 km² (fig. 1). It is a moderately eroded volcanic pile, apparently intermediate in age between young St. Vincent and old St. Lucia. The highest peak, Morne St. Catherine (840 m), rises in the northern half of the island as the center of a massif surrounded by lesser peaks and ridges. South of this peak is a low depression, and beyond it the land rises again into a long, curving ridge (or system of ridges), running first to the south and then to the east and northeast. This chain contains numerous peaks and high points (Morne QuaQua 735 m, Mt. Sinai 701 m, and Southeast Mountain 219 m) and embraces several old crater basins, one of which is occupied by the lake Grand Etang. From these central mountains the land descends gradually to the sea. A true coastal plain is missing, but lowlands occur in the northeast at Levera and in the southwest, where a long, low peninsula runs out to Pointe Salines. A large portion of the island has been cleared for cultivation (table 1) due to the small size of the island and the fact that mountain slopes are not excessively steep except at extreme elevations. Orchard crops form the bulk of the cultivations. Because of the gentle topography along most of the coastline, eroded hills covered with thorny scrub are not a common feature except in the extreme south (rough grazing land with Acacia covers most of the Pointe Salines Peninsula).

The Grenadine Islands are part of the Grenada Bank (Grenada plus the Grenadines) and are situated between St. Vincent to the north and Grenada to the south, but of the populated islands, only Carriacou and Petit Martinique are politically associated with Grenada; the remainder are governed by St. Vincent. Approximately 120 islands comprise the group, and the composite surface area of the islands is about 130 km². According to Howard (1952), if the current sea level was lowered 38 m, all of the islands between Bequia and Carriacou would be united. Europeans have inhabited the Grenadines continuously since 1650, and deforestation, poor farming practices, and rapidly increasing erosion have caused agriculture to deteriorate over the past 200 years (Kingsbury, 1960). The islands were divided into estates, with the smaller islands representing single plantations. The human population on the Grenadines waxed and waned with the sugar economy and the associated slave population. In 1831, the total human population was 9,500, of which 6,000 were slaves, and sugar production was about 25,000 tons. A more-or-less gradual population decline occurred through the remainder of the 19th century, and, by 1859, sugar production was down to 8,000 tons. By 1910, the human population was reported to be 2,500 persons. The 20th century, however, saw a gradual increase in human population on the islands (Howard, 1952), but sugar was grown only for local consumption. With the abolition of slavery and the sugar crisis, cotton became the important crop in the economy of the Grenadines in the latter half of the 19th