

Distribution and Habitat Utilization of *Ctenosaura bakeri* on Utila

Alexander Gutsche

Institute for Biology, Department of Sensory Biology, Humboldt University, Berlin, Germany
(alexander-gutsche@web.de)

Photographs by the author except where indicated.

Abstract.—*Ctenosaura bakeri*, endemic to Utila (Honduran Bay Islands), is one of only two reptiles that are exclusive mangrove dwellers. With a total distribution of 1091 ha, the total size of the three mangrove areas on Utila, this species has the smallest range of any in the genus. Distribution of three species of mangroves is not homogenous in any of the three areas. Also, effects of tides and salt content vary substantially over place and time. I collected and marked 171 iguanas at three study sites. The most animals (107) were caught at the Iron Bound site, fewer than half that many (40) were caught at Big Bight Pond, and only 24 iguanas were caught at Blue Bayou. Adult iguanas totaled 125, 2.7 times the number of subadults (46). Population densities were 63 adults per ha or 103 iguanas (adults + subadults) per ha (Iron Bound), 37 adults or 39 iguanas per ha (Big Bight Pond), and 20 adults or 24 iguanas per ha (Blue Bayou). Recaptures of marked iguanas numbered from 1–14 and generated 123 distances moved involving 52 individuals (25 females and 27 males). Five animals were recaptured exclusively at initial capture sites and most (56 %) moved < 20 m from the site of initial capture. Distances moved were greater in males than females. Time between first capture and last recapture ranged from 10–323 days. Sex specific differences were not evident. The primary factor controlling population density was the abundance of tree hollows, used as retreats and found primarily in larger Black Mangroves (*Avicennia germinans*). These were inhabited for at least four years, regarded as territory year-round, and aggressively defended. Estimates, made using two different models, of total adult population size for the entire island were 21,820–73,097 and 38,185–85,098.

Key Words: *Ctenosaura bakeri*, Utila, Honduras, Bay Islands, Mangroves, Population size, Habitat association

The utilization of mangroves as preferred habitat has a certain exclusivity within the Iguanidae and also (as far as we know) within the class Reptilia. Certain reptiles appear frequently in mangrove habitat, but these are typically temporary visitors from marine (e.g., *Crocodylus acutus*) or terrestrial habitats (e.g., *Boa constrictor*). Even species often designated as mangrove specialists, such as the Mangrove Skink (*Emoia atrostrata*), the Mangrove Monitor (*Varanus indicus*), and the Mangrove Snake (*Boiga dendrophila*), also inhabit terrestrial habitats such as rocky coastlines and tropical rainforest (Alcala 1986, Manthey and Grossmann 1997). In contrast, the Utila endemics *Ctenosaura bakeri* (commonly known as the “Swamper”) and *Norops utilensis* are exclusively mangrove-dwelling lizards (Gutsche et al. 2004, Köhler 1996). From evolutionary and ecological perspectives, inhabiting mangroves entails some very specific adaptations of diet, behavior, and resource utilization.

Male *Ctenosaura bakeri* reach a total length of over 800 mm, snout-vent length (SVL) of 315 mm, and a weight around 900 g. Females are about 30% smaller. Adult males have a well-developed dewlap (up to 30 mm long) and a prominent dorsal crest consisting of up to 56 dorsal spines (each to 25 mm in height); both are less developed in females. Body coloration of adults varies from an inconspicuous grey-brown to bright turquoise blue. The body is generally patternless, and dark shading and dark lateral crossbands are only rarely distinguishable. In contrast, the tail has distinct dark crossbands. The dorsal crest of males consists of white and black spines arranged in alternat-

ing groups of two or three of the same color. Juvenile *C. bakeri* are uniformly blackish brown to grey-brown in color with dark brown crossbands on the dorsum and dorsal surface of the tail. This juvenile coloration varies notably from that of many other Spiny-tailed Iguana species, whose young display green or yellow-green pattern elements or are entirely green in color (Köhler 2002).

Isla de Utila belongs to the small Caribbean island group known as the Islas de la Bahia and lies in the Gulf of Honduras,



Swamper habitat in a Black Mangrove (*Avicennia germinans*) stand near Iron Bound Lake. Note the finger-like aerial roots emerging from the water in the foreground.