

***Ctenosaura bakeri* Stejneger, 1901**

Common Name

Utila Spiny-tailed Iguana

Other Names:

Swamper (English), Utila-leguan (German), Wishiwilly Del Suampo (Spanish; Castilian)
Baker's Spiny-tail Iguana (included as link to previous assessment)

Subspecies:

Taxonomic Notes

Synonym = *Enyaliosaurus bakeri* (Stejneger, 1901). Not a basionym

Geographic Range Information

The Utila Spiny-tailed Iguana is known only from the island of Utila, Bay Islands, Honduras. The extent of occurrence (EOO) is 41 km². However, in 2009, S.A. Pasachnik and L. Ehlke estimated the iguana's area of occupancy as less than 10 km² of the island (unpublished data).

Range Countries

Honduras > Isla de Utila (Native)

Regions Possibly Extinct, Introduced, or Presence Uncertain:

None

Population Information

The total population size is unknown, but is likely to be less than 5,000 mature individuals. Although supporting documentation is lacking, it is thought that the population has continually declined in association with increased habitat degradation and destruction over the last 15 years. The population has also been severely affected by harvesting for human consumption (D. Maryon pers. obs. 2016). The effects of this practice are exacerbated by hunters specifically targeting gravid females, and thus dramatically impacting annual reproduction rates. Genetic variation in the population does not follow a specific geographic pattern indicating that this iguana appears to be mating randomly across the island (Pasachnik *et al.* 2009). However, with ever-increasing habitat loss, further fragmentation of local populations appears imminent, and a reassessment is currently underway to establish whether these populations are becoming isolated.

Population trend:

Decreasing

Habitat and Ecology Information

The Utila Spiny-tailed Iguana is found primarily in mangrove forests and vegetated sandy shores, though occasionally they can be found in disturbed areas such as coastal/beach front developments and gardens. They are typically most active during the morning, when adults can be seen basking from 0 – 15m above ground in black (*Avicennia germinans*), white (*Laguncularia racemose*) and red (*Rhizophora mangle*) mangrove trees as well as on the ground. Individuals are commonly observed hiding in the hollows of black and white mangrove trees, which they use as diurnal and nocturnal retreats. Juveniles occur in both small and large mangrove trees, on the mangrove forest floor, and within coastal beach vegetation shortly after hatching (Schulte and Köhler 2010, D. Maryon pers. obs. 2016).

The breeding season occurs from February to late July (D. Maryon pers. obs. 2016). Mating occurs on or near the ground in the mangrove forests. Females then migrate from the mangroves to beach-fronts, nesting in a variety of areas, including those with full sun exposure, under piles of leaf litter, beneath large beach-front trees, and within short shrub vegetation (D. Maryon pers. obs. 2016). Nests can be up to a few meters long but not more than 60 cm deep. Nesting takes place from mid-March to August (D. Maryon pers. obs. 2016). On average females lay 11 to 15 eggs, though larger females have been known to lay 20 to 24 eggs. The incubation period is approximately 85 days. Double clutching has been observed in some individuals of the species (D. Maryon pers. obs. 2016). Hatching occurs from late May through October (D. Maryon pers. obs. 2016). Hatchlings then disperse to the mangrove forests. As hatchlings, they are easy prey for birds such as Great-tailed Grackle (*Quiscalus mexicanus*), Common Black Hawk (*Buteogallus anthracinus*) and Green Heron (*Butorides virescens*), snakes, including Salmon-bellied Racer (*Mastigodryas melanolomus*), Mexican Parrot Snake (*Leptophis mexicanus*), Mexican Vine Snake (*Oxybelis aeneus*), Green Vine Snake (*Oxybelis fulgidus*) and Boa Constrictor (*Boa constrictor*), and lizards such as Brown Basilisk (*Basiliscus vittatus*). Both the Common Black Hawk and Boa Constrictor have been observed to prey on adults as well.

Threat Information

The primary threat to this iguana is habitat loss due to mangrove degradation, deforestation and fragmentation attributable to infrastructure development for the tourism industry. Mangrove forest habitats are used as garbage dumping sites, and there is a potential risk posed by water contamination from terrestrial landfills and agricultural chemicals (fertiliser, pesticides). Oceanic and local pollution (plastics, polystyrene etc.) covers sandy beaches, affecting prime nesting sites. There is extensive deforestation of mangrove habitat for housing and marina construction and, in the future, potentially for crop plantations. Mangroves near developed areas and roads are also becoming isolated from water sources, causing die off of the trees in many areas. Natural beach habitat is being lost through the removal of vegetation in preparation for development. This coupled with the introduction of exotic invasive plants is making beach habitat unsuitable for egg laying.

It has been shown that this iguana is capable of hybridizing with its wide-ranging congener, the Black Spiny-tailed Iguana (*Ctenosaura similis*). Although this is occurring too infrequently to greatly threaten this species, hybridization could become a greater problem with increases in habitat destruction (Pasachnik *et al.* 2009). An updated hybridization study is currently in progress to assess any changes that may have occurred. Recently observed Northern raccoons (*Procyon lotor*; D. Maryon pers. obs. 2016), dogs, cats, and rats are also present on the island and pose a predation risk.

Use and Trade

The Utila Spiny-tailed Iguana is listed on Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and are protected under Honduras law. However, iguanas and their eggs continue to be sought for human consumption year round, and are sold both locally and on the adjacent mainland. Groups of hunters with dogs have been reported in mangrove habitats between February and May (D. Maryon pers. obs. 2016), coinciding with the presence of gravid females, as the eggs are a traditional cultural delicacy. From 2006 to 2011, the sex ratio became increasingly more male biased, which may be indicative of increasing hunting pressure on females (Pasachnik *et al.* 2012).

Conservation Measures

The Utila Spiny-tailed Iguana is protected by Honduran law through a ban on hunting that has been in place since 1994; however, actual enforcement of this is inadequate. Two local organizations, Kanahau Utila Research and Conservation Facility (Kanahau URCF) established in 2012, and the Utila Iguana Research and Breeding Station (IRBS) established in 1997, work to protect the species through raising awareness in local communities.

Currently, Kanahau URCF and the University of South Wales, UK are conducting a population, behavioral and genetic study in six areas of Utila where the iguana occurs. This study is using telemetry to locate important migration routes of gravid females across the island and identify nesting areas, while capture-mark-recapture and distance sampling techniques are being used to assess the size and structure of the population. All survey sites are being checked for signs of hunting and habitat destruction. Kanahau URCF has conducted questionnaire surveys to understand harvesting rates and local perceptions of iguanas and is collecting genetic material to understand the current rate of hybridization. An environmental education program in local schools run by Kanahau URCF, and in conjunction with the Bay Island Conservation Association (BICA) and the Utila Whale Shark Oceanic Research Centre (WSORC), focuses on environment awareness which includes presentations on the biology and conservation of *C. bakeri*, its habitats, and other natural resources.

The IRBS has been run by a local non-government organization, The Bay Island Foundation (FIB) since 2008. FIB runs a breeding program with captive and wild gravid female iguanas. Captive-hatched juveniles are released on the beaches where the females were captured and also in other suitable mangrove forest areas. To date no studies have assessed the survival rate of these released iguanas.

Recommended conservation measures include active management and protection of the wild iguana population and their habitats. It is critical that local authorities are supported and encouraged in enforcing existing legislation, and follow through with prosecution of individuals caught hunting or selling iguanas. Creation of protected areas, including mangrove and nesting habitats, and migration routes, is essential. Educating both locals and tourists about the iguana is also crucial for the survival of the species.

Given the identified threats, lack of enforcement, and the fact that the entire island is currently under private ownership (with the exception of Turtle Harbour Wildlife Refuge) it is essential

that areas of suitable mangrove and nesting habitat, and identified migration routes, are privately protected. Research needs include the continued monitoring of population and habitat trends, further investigation of breeding behavior and requirements, habitat classification and quantification of the scale and rates of degradation, deforestation, and fragmentation across the entire island, quantifying other potential threats, as well as an in-depth study into the effects of harvesting on the iguana.

Current Red List Assessment (2010)

Critically Endangered B1ab(i,ii,iii,v)+2ab(i,ii,iii,v)

Current Rationale:

The Utila Spiny-tailed Iguana is known only from the island of Utila, Honduras. Total known extent of occurrence is 41 km² but the area of occupancy is approximately 10 km². The iguana and its eggs are harvested and sold both locally and on the adjacent mainland. The primary threats to the population are habitat loss and fragmentation associated with development for tourism; decreasing quality of habitat from introduced invasive vegetation and degradation of nesting habitat due to local and oceanic pollution. The population is currently thought to be declining due to the above threats.

Assessors:

Maryon, D.F., Ardon, D., Clayson, S, Martinez, A. & Pasachnik, S.A.

Contributors:

Albergoni, A., Brown, T., Black, H., Lee, D.C., & Lonsdale, G.

Evaluators:

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