

Crab predation by the San Salvador rock iguana (*Cyclura rileyi*)

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The San Salvador Rock Iguana, *Cyclura rileyi* (Stejneger, 1903) is a species that is endemic to the Bahamas. It is estimated that these iguanas now occupy only 0.2% of their historical range. Currently, populations are confined to small offshore cays and islets (Hudson & Alberts 2004). *C. rileyi* have few natural predators, hence the introduction of dogs, cats, and rats has effectively extirpated them from larger islands and relegated populations to small cays and islets.

The diet of *C. rileyi* is predominantly of plant material, and studies on closely related species of *Cyclura* indicate that their diet is 95% herbivorous (Iverson 1979, Auffenberg 1982, Hines 2011). The two most frequent items found in *C. rileyi* scat were *Borrchia arborescens* (Tree Seaside Tansy) and *Rhachicallis americana* (Seaside Rock Shrub) (Cyril 2001). There have been few recorded instances of *C. rileyi* exhibiting carnivorous feeding behaviour. Using scat analysis, Buckner and Thomas (2005) identified several putative cases of carnivory including the remains of a dead bird, conspecific hatchlings, legs of a dead land crab, a grasshopper, hermit crab, and various unidentifiable insects. Due to the nature of scat studies, the method of prey capture is unknown and thus, it is unclear if animal remains recovered from scat represent actual predation or scavenging by *C. rileyi*. These findings are also reflected in *C. nubile* in Cuba, where crab was also found in scat samples (Beovides-Casas & Mancina 2006).

Here, we present a novel observation of *C. rileyi* consuming *Grapsus grapsus* (Sally Lightfoot Crab) in the Bahamas. Though the presence of other crustaceans have been detected in scat, there have been no previous observations of the pursuit, capture, and consumption of a live crustacean by *C. rileyi*. Our observations bring to light the need for further studies on the dietary patterns of this critically endangered species. During a daytime hike, on 3 April 2014, we witnessed an adult *C. rileyi* pursue, capture, and consume a single *G. grapsus* (3-4 cm carapace width) on a large (>4m wide) rock in the high intertidal on Manhead Cay (N 24.125503, W -74.449191), off the island of San Salvador, Bahamas. In order to capture the prey, the iguana dashed and grabbed the crab with its mouth, as the crab attempted to evade the iguana by running sideways. After capture, the crab was consumed in less than a minute.

The observation reported here represents the first published record of *C. rileyi* pursuing, capturing, and consuming *G. grapsus*, a common rocky intertidal crab species. With the limited data available we cannot make sweeping predictions, but the observation of *C. rileyi* employing rover-type predation, which requires great agility and practice, alludes to the possibility that carnivory is a larger portion of the diet of *C. rileyi* than currently realised. Predation rather than

consuming plants represents a novel ecological niche for *C. rileyi* and dictates the development of novel adaptations for successful prey capture. Moreover, given the agility and speed of *G. grapsus*, the successful capture of a crab indicates that this iguana likely practiced this hunting behaviour previously and that this behaviour may be prevalent among other individuals.

Active predation could simply be an example of opportunistic carnivory, a tactic not uncommon among other organisms. Clearly, there is much to be learned regarding the use of active predation by *C. rileyi*. Future studies should concentrate on the importance of dietary subsidies for *C. rileyi*, particularly diet items that are marine in origin as these resources may provide a substantial source of energy that is free from the detrimental effects of human activities present in terrestrial habitats.

We thank Fred Diehl for his wisdom and guidance throughout our time in San Salvador. Also, we thank Gerace Research Centre and Duke University Marine Lab for their logistical support. Special thanks to James Nifong, Jennifer Chan, Robb Gaskins, and Chris Dee for their comments and input on the manuscript.

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