

## Hispaniolan Boa (*Chilabothrus striatus*) on Vieques Island, Puerto Rico

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The Hispaniolan (Haitian) Boa, *Chilabothrus striatus* Fisher 1856, is a large (max snout-vent length [SVL] at least 1865mm) boid species endemic to the island of Hispaniola and nearby satellites (Tolson and Henderson, 1993; Henderson and Powell, 2009). Though previously considered to range into the Bahamas, the Bahamian populations of this species were recently described as an independent lineage warranting specific status (Reynolds et al., 2013). This species is popular in the pet trade, but to-date no known introductions in the Caribbean have occurred outside of the native range (Henderson and Powell, 2009). Indeed, only a single species of West Indian boa (*C. monensis granti*) is known to have been anthropogenically introduced and become established on an island in the Caribbean (USFWS, 2005). In this case, the introduction was conducted as a conservation measure to an island on which it is believed *C. monensis granti* had previously been found. In Puerto Rico, the smallest of the four Greater Antillean islands, two species of native boas and one introduced boa occur. The endangered Virgin Islands Boa (*C. monensis granti*) occurs in the Spanish (Culebra I.), US (St. Thomas I.), and British Virgin Islands, as well as in a single known population on the main island of Puerto Rico and two populations on satellite islands (Mayer, 2012). The introduced boa (*Boa constrictor*) occurs throughout western Puerto Rico (Reynolds et al., 2013), and has been suggested, though not confirmed, to have been sighted on Vieques (USFWS, 2007). The

endangered Puerto Rican Boa (*C. inornatus*), found throughout Puerto Rico, is not presently known from either Vieques Island or Culebra Island on the eastern Puerto Rican bank, though presumably the species used to occur on Vieques. Though a few juvenile waif Royal Pythons (*Python regius*) have been reported from Vieques (USFWS, 2007), large boas are occasionally also reported from the island and were presumed to be native Puerto Rican Boas. However, the identity of these animals has not been conclusively determined.

On January 24, 2013, the authors examined an adult female boa that had been captured on Vieques in 2009 and stored in a freezer at the U.S. Fish and Wildlife Service Vieques National Wildlife Refuge headquarters in Isabel Segunda, Vieques Island, Puerto Rico. The individual was found crossing a road near a large resort complex on the north end of the island (18.140468°N, -65.465106°W, Datum WGS 84) and taken to the Refuge headquarters, where it was promptly frozen in a specimen freezer. Though labeled as *C. inornatus*, the specimen appeared to resemble the Hispaniolan Boa (*C. striatus*) [Fig. 1]. We photographed the specimen, accessioned the photo voucher (MPM Herp Photo P770), and removed 5mm of the tail for DNA analysis.

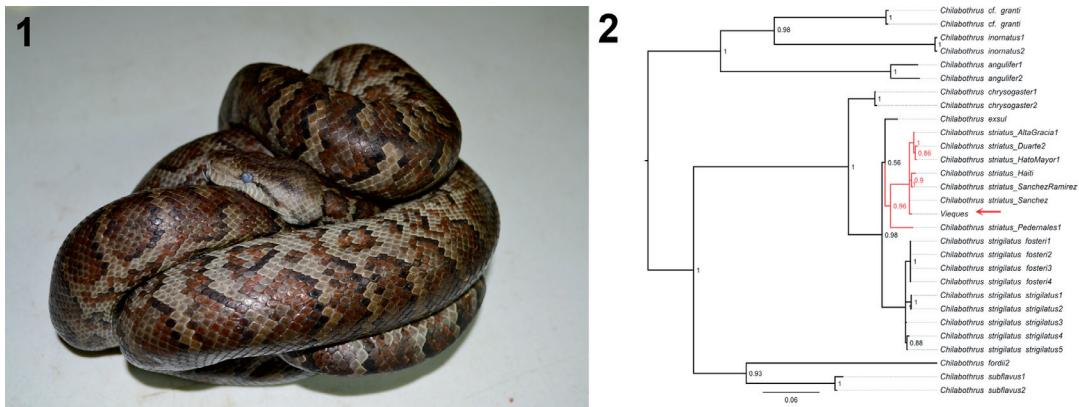
To confirm the identity of the boa, we extracted whole genomic DNA from the tail tip and sequenced the sample at the mtDNA locus *CYTB*, which is useful for species identification in boid snakes (Campbell, 1997; Burbrink, 2004). The resulting sequence (Genbank accession #KC750014) was aligned with *CYTB* sequences from all other species of West Indian boas (except *C. gracilis*, for which we have no DNA sample and which is easily morphologically distinguishable) including individuals of *C. striatus* from both Haiti and the Dominican Republic, and the closely related and morphologically similar Bahamian species *C. strigilatus* from Long Island, Bimini Island, and the Berry Islands (Genbank sequences available in Reynolds et al., 2013). We then conducted a Bayesian phylogenetic analysis using MrBayes 3.2 (Ronquist et al., 2012) with established input parameters for this locus (e.g. Reynolds et al., 2013). Our analysis indicated that the

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Photograph by A.R. Puente-Rolón



**Fig. 1.** Panel 1. Preserved adult female Hispaniolan Boa (*Chilabothrus striatus*) captured alive on Vieques Island, 2009. Panel 2. Mitochondrial gene tree showing relationship of the sample obtained on Vieques (“Vieques”) to other boa species (genus *Chilabothrus*) in the West Indies. *Chilabothrus striatus* samples are highlighted in red. Note that the topology is slightly different from other recent studies (e.g. Reynolds et al., 2013) owing to the fact that this is a single gene tree instead of a multilocus species tree.

specimen is indeed *C. striatus* from Hispaniola (Fig 2). However, given our limited sampling in the native range we are unable to conclusively determine what part of Hispaniola the mitochondrial lineage originates from.

It is unclear how this animal might have arrived on Vieques, though human facilitated transport is almost certainly the mechanism. Though ownership of this species and most other exotic reptiles is illegal in Puerto Rico, many waifs of exotic boas and pythons have been found on the main island over the last few years (Mayer, 2012; Reynolds et al., 2013) and it is possible that this specimen arrived via the pet trade. We presently do not know if additional individuals of this species occur on Vieques, though it is certainly possible given the frequency of reports of large boas and the large amount of suitable habitat and prey.

**Acknowledgments.** R.G.R. and L.J.R. are supported by the Department of Biology, University of Massachusetts Boston. We are appreciative of the assistance and cooperation of the Vieques National Wildlife Refuge staff, and for funding provided by a United States Fish and Wildlife Southeast region Endangered Species Recovery Implementation grant. Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

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