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## INTRODUCED SPECIES

# Onward to the Mid-Atlantic: First Records of Cuban Brown Anoles (*Anolis sagrei*) on Ascension Island

James T. Stroud<sup>1</sup>, Andrew J. Richardson<sup>2</sup>, Jolene Sim<sup>2</sup>, Andrew Airnes<sup>2</sup>, and John M. Stritch<sup>2</sup>

<sup>1</sup>Department of Biology, Washington University, St. Louis, Missouri 63130, USA (jamesTstroud@gmail.com)

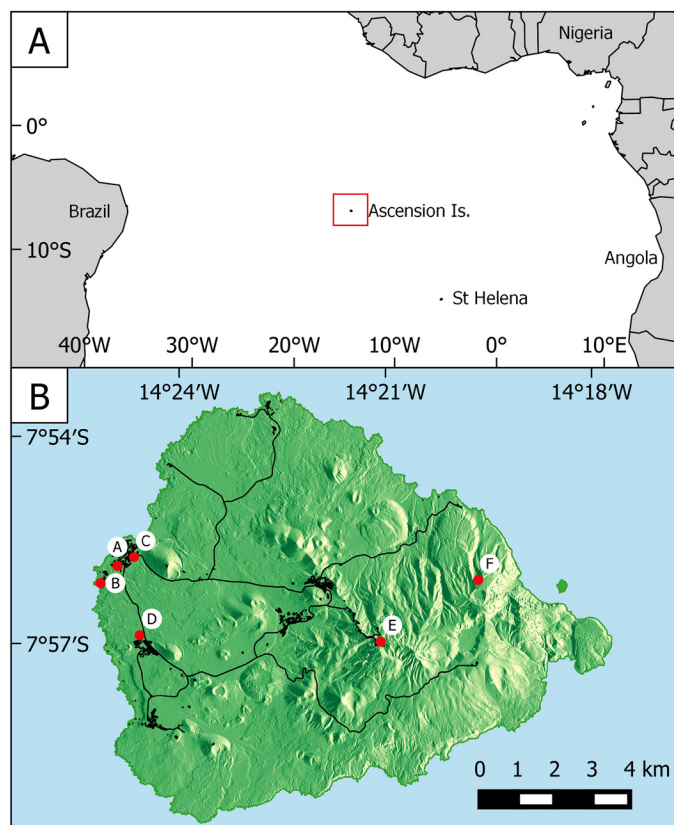
<sup>2</sup>Conservation & Fisheries Department, Ascension Island Government, South Atlantic ASCN 1ZZ

Cuban Brown Anoles (*Anolis sagrei*) are native to Cuba and many Bahamian islands (Schwartz and Henderson 1991), but the species has an expansive non-native range, having been introduced and become established in a number of US states (Florida, Georgia, Louisiana, Texas, California), several Lesser Antillean islands (Grenada, St. Vincent, the Grenadines, Barbados), Mexico, Belize, Hawaii, Bermuda (Stroud et al. 2017), Taiwan, and Singapore (reviewed in Henderson and

Powell 2009). Recently, two newly discovered populations represent expansion of *A. sagrei* into the Southern Hemisphere for the first time, first in the Pacific coastal town of Guayaquil, Ecuador (Amador et al. 2017) and secondly in Rio de Janeiro, Brazil (Oliveira et al. 2018).

Herein we present further evidence of *A. sagrei* in the Southern Hemisphere, with the first record of *A. sagrei* on the mid-Atlantic island of Ascension (Fig. 1A). No native terrestrial reptiles occur on Ascension, but four other species of lizards have been introduced and are established (Edgar 2010): Asian House Gecko (*Hemidactylus frenatus*), Gray's Leaf-toed Gecko (*H. mercatorius*), Cradock Thick-toed Gecko (*Pachydactylus geitje*), and Weigmann's Swift (*Liolaemus wiegmanni*).

The first sighting of *A. sagrei* on Ascension (Fig. 2) was confirmed by a photograph from a residence within the coastal capital of Georgetown. Most subsequent sightings (Table 1; Fig. 1B) were concentrated either within or on the outskirts of the capital (Fig. 3), but the most recent records were from botanical gardens in the Green Mountain National Park in the interior of the island (Fig. 4) and a remote caldera in the southeast of the island. Although no juveniles have



**Fig. 1.** (A) The British Territory of Ascension is located in the mid-Atlantic. (B) Locations of confirmed sightings of Cuban Brown Anoles (*Anolis sagrei*) on Ascension Island.



**Fig. 2.** The first confirmed record of a Cuban Brown Anole (*Anolis sagrei*; adult male) on Ascension (Georgetown, Jan/Feb 2017). Photograph by A.J. Richardson.

**Table 1.** Records of Cuban Brown Anoles (*Anolis sagrei*) on Ascension Island; letters reflect sites indicated on the map (Fig. 1B).

Observation	Site	Latitude	Longitude	Elevation (m)	Type	Date
A	Georgetown B262	-7.93130	-14.41492	15	Photograph	Jan/Feb 2017
B	AIG Beach Hut	-7.93544	-14.41901	5	Sighting	Mar/Apr 2017
C	AIG Guest House	-7.92912	-14.41094	20	Sighting	Nov/Dec 2017
D	USAF Base	-7.94800	-14.40951	65	Photograph	08 Dec 2017
E	Green Mountain National Park	-7.94945	-14.35105	690	Photograph	10 Dec 2017
F	Devil's Cauldron caldera	-7.93452	-14.32739	500	Sighting	09 June 2018

**Fig. 3.** An adult female Cuban Brown Anole (*Anolis sagrei*) of reproductive size found at the USAF base on the outskirts of Georgetown. Photographs by J.M. Stritch and the Ascension Conservation & Fisheries Department.

been observed, the spatially independent populations and high abundances of adults at each site suggest that a breeding population is established. Kenneth Krysko confirmed the identity of the species from photographs. Photographic

**Fig. 4.** The Green Mountain National Park, a recently confirmed locality for Cuban Brown Anoles (*Anolis sagrei*) on Ascension. Photographs by J.M. Stritch.

vouchers have been deposited in the Florida Museum of Natural History (UF 185968–69).

We recorded *A. sagrei* from near sea level (5 m) to nearly the summit of the highest peak (690 m; summit 859 m), indicating that these lizards occur across the entire range of climatic conditions available on Ascension (Fig. 1B). The origin of the population remains unknown, although given its presence at the USAF base, arrival by air or sea freight is the most likely vector. As far as we know, there are no current measures in place to officially monitor the dispersal dynamics of *A. sagrei* on Ascension or to manage the invasion as a conservation priority. Further new populations are expected to be discovered as lizards disperse, either passively or through human mediation – as has been observed in other non-native anoles (e.g., Kolbe et al. 2016).

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