



New Distribution Records for Speckled Wormlizards (*Amphisbaena fuliginosa*) in Panama, with two Corrections of Previous Records

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The Speckled Wormlizard, *Amphisbaena fuliginosa* Linnaeus 1758, which ranges from northern South America north to Panama (Köhler 2008), is known to occur on both the Caribbean and Pacific versants of Panama, with the majority of records concentrated in the provinces of Coclé, Colón, Panamá, and Panamá Oeste in the central region of the isthmus (Ray et al. 2015). We herein present three new locality records for the species from Donoso District, Colón Province, Panama, including the westernmost locality in the country. We also provide corrections for two previously published locality records that were erroneously attributed to Chiriquí and Panamá Province and a comprehensive dataset of all known records for the species in Panama.

New locality records were obtained through opportunistic encounters, specimens collected during the removal of soil with heavy machinery, and a review of the Colección Zoológica Dr. Eustorgio Méndez (COZEM) at the Instituto Conmemorativo Gorgas de Estudios de la Salud (ICGES). Photographic vouchers were deposited in the University of Texas at Austin Digital Collection (UTADC) and specimens were deposited in the Museo Herpetológico de Chiriquí (MHCH). The identity of the species in all cases was verified by Abel Batista.

In our review of records, we noted cases where discrepancies existed between cited localities and georeferenced coordinates. We also verified and provided corrected coordinates for

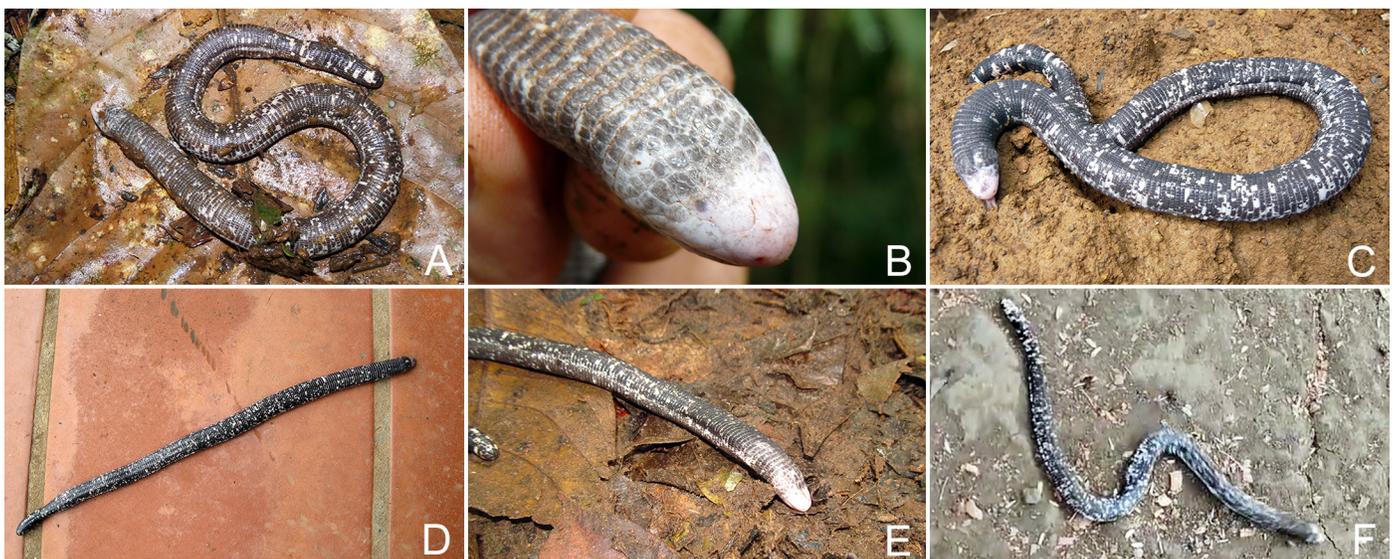


Figure 1. Speckled Wormlizards (*Amphisbaena fuliginosa*) in Panama: An individual encountered in Donoso District, Colón Province, during an excavation using heavy machinery (MHCH 1791) (A–C); an individual from Cerro Azul, Chagres National Park, Panamá Province (D); another on the banks of the Belén River, Colón Province (UTADC 9857a) (E); and the last from Río Tuira, Darién Province (F). Photographs by Marcos Ponce (A–C), Charlotte Skov (D), Vayron de Gracia (E), and a video capture by Isaac Pizarro (F).

previously published erroneous records. Specimens without specific locality data were included but are noted as such.

We collected and/or photographed three Speckled Wormlizards in Donoso District, Colón Province, Panama. The first (MHCH 1791; Fig. 1A–C) was collected on 21 February 2012 by Marcos Ponce at Campamento Colina (8.83, -80.66; elev. 225 m asl); the second record (UTADC 9857a–b; Fig. 1D) was photographed by VDG on 21 May 2013 near the town of Río Belén (8.87, -80.86; elev. 23 m asl);

and the third (MHCH 1886) was collected by MP on 12 June 2013 at C. Pionero 16k+500 (8.98, -80.71; elev. 67 m asl).

We found two additional records from localities near previously known sites in the COZEM: COZEM-REP 0493 from Altos de Pacora, Panamá Province, collected on 10 December 1965 by Rodolfo Hinds, and COZEM-REP 0496 from Juan Mina, Canal Zone, collected in March 1973 by H. Van Horn. In addition, we noted an observation made at 1312 h on 7 July 2010 by Charlotte Skov in Cerro Azul,

Table 1. Known localities for *Amphisbaena fuliginosa* based on specimens or sightings with photographs. Locations are in decimal degrees. Date refers to when specimens were collected or vouchered. *Coordinates correspond to Barro Colorado Island. **Coordinates correspond to Cerro Ancón. ***Coordinates correspond to Panama City, but the locality is imprecise. ****Locality does not correspond to the coordinates.

Province (locality; coordinates)	Voucher	Year	Reference
Coclé (Barrigón, 8.65, -80.59)	UTADC 7414	2008	Ray et al. 2015
Coclé (ca. 8 km SE El Copé de La Pintada; 8.61, -80.57)	UTADC 7632	2012	Ray et al. 2015
Colón (Campamento Colina; 8.83, -80.66)	MHCH 1791	2012	This work
Colón (near Río Belén; 8.87, -80.86)	UTADC 9857a-b	2013	This work
Colón (C. Pionero 16k+500; 8.98, -80.71)	MHCH 1886	2013	This work
Colón (Juan Mina, Canal Zone; 9.15, -79.66)	COZEM-REP 0496	1973	This work
Colón (Bohio Peninsula ; 9.19, -79.83)	USNM 38399	—	Vertnet 2025
Colón (Monte Lirio, Canal Zone; 9.23, -79.82)	MCZ R-24004	1926	Vertnet 2025
Colón (Campamento Botija, near Río Botija; 8.81, -80.58)	UTADC 7634	2010	Ray et al. 2015
Colón (Pipeline Rd. 6.9 mi N Gamboa, Canal Zone; 9.16, -79.76)	MVZ 57480	1951	GBIF 2025
Colón (Gatun; 9.26, -79.91)	MCZ R-18924	1924	GBIF 2025
Colón (Frijoles; 9.17, -79.79)	MCZ R-24003	1926	GBIF 2025
Colón (Chagres; 9.23, -80.07)	UMMZ 76723	1934	GBIF 2025
Colón (Fort Gulick Atlantic Side; 9.32, -79.86)	UMMZ 167675	1977	GBIF 2025
Colón (Barro Colorado Island; 9.15, -79.84)	UMMZ 64449	1927	GBIF 2025
Colón (Gatun Area; 9.27, -79.91)	UMMZ 90344	—	GBIF 2025
Colón (—; 9.16, -79.83*)	MCZ R-22070	1925	GBIF 2025
Darién (Route 17; 8.85, -77.91)	COZEM-REP 0495	1967	This work
Darién (—, —)	FMNH 170125	1967	Vertnet 2025
Darién (Río Tuira; —)	—	2025	This work
Panamá (Altos de Pacora; 9.24, -79.34)	COZEM-REP 0493	1965	This work
Panamá (Altos de Majé; 9.11, -78.84)	COZEM-REP 0497	1967	This work
Panamá (Cerro Azul; 9.20, -79.40)	UTADC 8420	2010	Ray et al. 2015
Panamá (Cerro Azul, Chagres National Park; 9.19, -79.49)	—	2010	This work
Panamá (Monte Luis; 8.96, -79.54**)	MCZ R-18925	1924	GBIF 2025
Panamá (Panama City; 8.96, -79.53)	MCZ R-37123	1933	GBIF 2025
Panamá (Panama City & Sabanas; 9.00, -79.51***)	MCZ R-37874	1933	GBIF 2025
Panamá (Madden Forest Highway; 9.10, -79.61)	UMMZ 155755	1977	GBIF 2025
Panamá Oeste (Altos de Campana; 8.70, -79.95)	CH 0989	1979	Ibáñez D. et al. 1996
Panamá Oeste (Midbasin Chagres & mouth of Río Pequini; 9.25, -80.06****)	MCZ R-37106	1933	GBIF 2025
Panamá Oeste (Madden Dam Chagres River; 9.20, -79.61)	UMMZ 79911	—	GBIF 2025
Panamá Oeste (Madden Dam; 9.21, -79.61)	UMMZ 76016	1933	GBIF 2025

Chagres National Park, Panama Province (9.19, -79.49; elev. 680 m asl). This individual (Fig. 1 E) was on a trail in an area of ankle-high grass. Weather conditions included a thunderstorm and continuous rain until 1030 h, although at the time of the observation, conditions were cloudy with mist and drizzle, temperature was 22 °C, and relative humidity was 96%. When captured, the animal (~38 cm total length, 1.8 cm diameter) initially froze, then tensed its body and writhed to break free.

We also include new records of *Amphisbaena fuliginosa* from eastern Panama. A specimen (COZEM-REP 0497) collected in Altos de Majé, Lago Bayano, Panamá Province (9.11, -78.84; elev. 59 m asl), during a 1967 expedition of the Gorgas Memorial Laboratory represents a new locality record for the province. Additionally, two records document the presence of the species in Darién Province: an individual (Fig. 1F) photographed in January 2025 along the Tuira River by Isaac Pizarro, a local ecotourism guide (no coordinates or additional information were recorded), and a specimen (COZEM-REP 0495) collected on Route 17 (8.85, -77.91; elev. 80 m asl) on 2 November 1967 by C. Madrid. A search of the VertNet database (VertNet 2025) provided an additional record (FMNH 170125) collected by M.J. Duever in 1967 at an unspecified locality in Darién Province. These records confirm the species' broad distribution in Panama, encompassing the provinces of Panamá, eastern Colón, Darién, and the indigenous regions of Emberá and Guna Yala, as indicated on the distribution map of Köhler (2008).

Based on specimen USNM 38399, Vanzolini (2002) mentioned the locality "Bohio," but did not provide a map or coordinates. Roberto et al. (2021) subsequently provided

coordinates for this specimen, assigning it to Cerro Ancón in Panama City, Panamá Province (8.95, -79.54). However, that was erroneous. According to the locality information for that specimen in VertNet (2016): "Panama, Canal Zone: Chagres River, 15 mi from Atlantic coast, Bohio," the correct locality is the Bohio Peninsula (9.19, -79.83) in Colón Province.

Roberto et al. (2021) also presented a map with an incorrect locality in Corregimiento Monte Lirio, Renacimiento District, Chiriquí Province. However, the listed locality of MCZ Herp R-24004, "Panama, Canal Zone: Monte Lirio: Canal Zone," indicates that the correct locality is Monte Lirio (9.23, -79.82) in Soberanía National Park, Colón Province.

The new and corrected records now result in a total of 32 confirmed localities for *A. fuliginosa* in Panama (Table 1), providing a more accurate understanding of its distribution (Fig. 2) and expanding the documented range in western Panama, where the Río Belén between Colón and Veraguas Provinces could represent a barrier. Costa (2020) suggested that soil texture could influence the distribution of a related species (*A. spurrelli*) in Panama, further research is needed to determine if this factor plays a role in the distribution of *A. fuliginosa*.

The necessity of correcting previously published locality records underscores the need for careful data management and verification to ensure the accuracy of information (Krishtalka and Humphrey 2000; Guedes et al. 2017), which is important for understanding the distribution and ecology of species, particularly in light of implementing increasingly important conservation measures (Flores-Villela and Goyenechea 2001; Cayuela et al. 2009; Guedes et al. 2017).

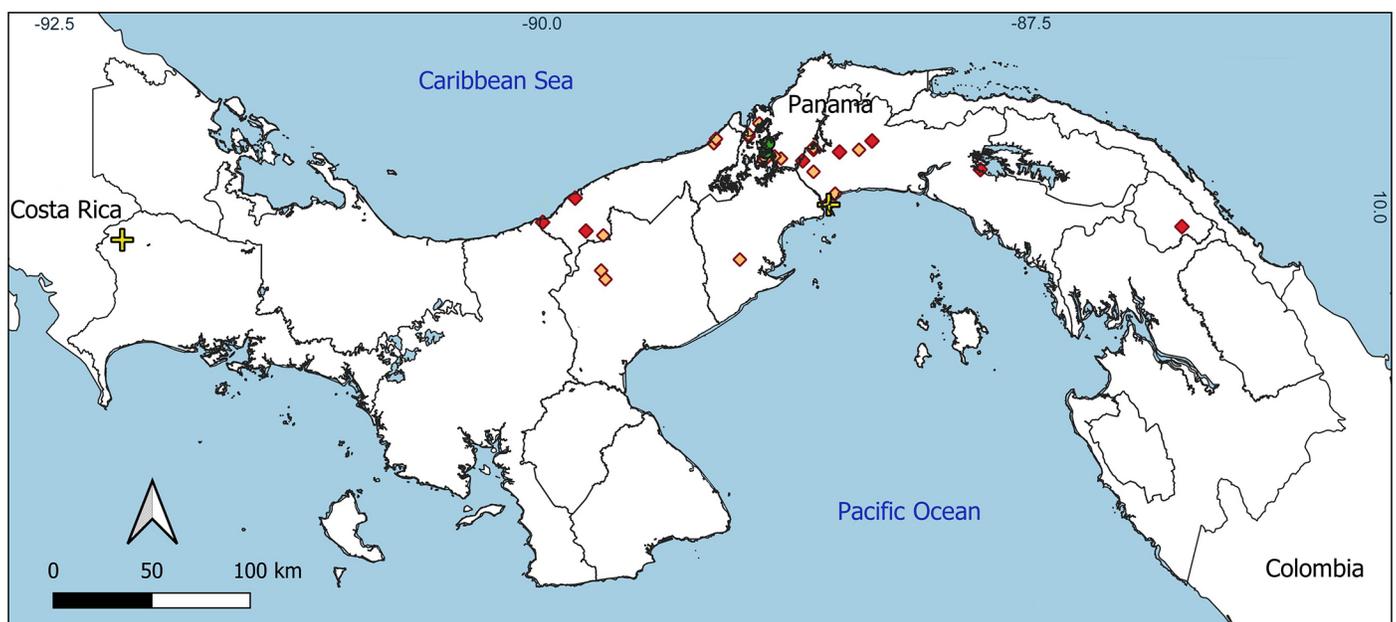


Figure 2. Geographic distribution of Speckled Wormlizards (*Amphisbaena fuliginosa*) in Panama, with new records (red symbols), incorrect localities (yellow crosses), corrections of previous localities (green dots), and records of museum specimens and reports in the literature (pink symbols).

Acknowledgements

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