



The Non-native Mourning Gecko, *Lepidodactylus lugubris* (Duméril and Bibron 1836) (Squamata: Gekkonidae), in Southern Mexico

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The Mourning Gecko (*Lepidodactylus lugubris*) is a small lizard (SVL to 45 mm) with an elongated, depressed body, relatively short limbs, and fingers and toes connected by small webs at the base and with enlarged subdigital lamellae (Savage 2002; Hoogmoed and Avila-Pires 2015). Dorsal scales are small, granular, and equal in size and ventral scales are larger than dorsals. Eyes have vertical pupils and golden irises with a branching pattern of dark veins (Hoogmoed and Avila-Pires 2015). Although Hoogmoed and Avila-Pires

(2015) indicated that this species has both sexual and parthenogenetic populations, *L. lugubris* is a parthenogenetic species believed to have originated through hybridization between a female *L. modestus* and a male *L. pantai* (Radtkey et al. 1995; Karin et al. 2021). Both diploid and triploid populations generate genetically distinct clones (Yamashiro et al. 2000).

Coloration is highly variable, with different clonal groups exhibiting distinct phenotypic characteristics (Ineich and Ota 1993; Griffing et al. 2018). The A clone is considered the most



Figure 1. A Mourning Gecko (*Lepidodactylus lugubris*) (CH-CIB-166) on Isla Mujeres, Quintana Roo, Mexico. Photograph by Pedro E. Nahuat-Cervera.

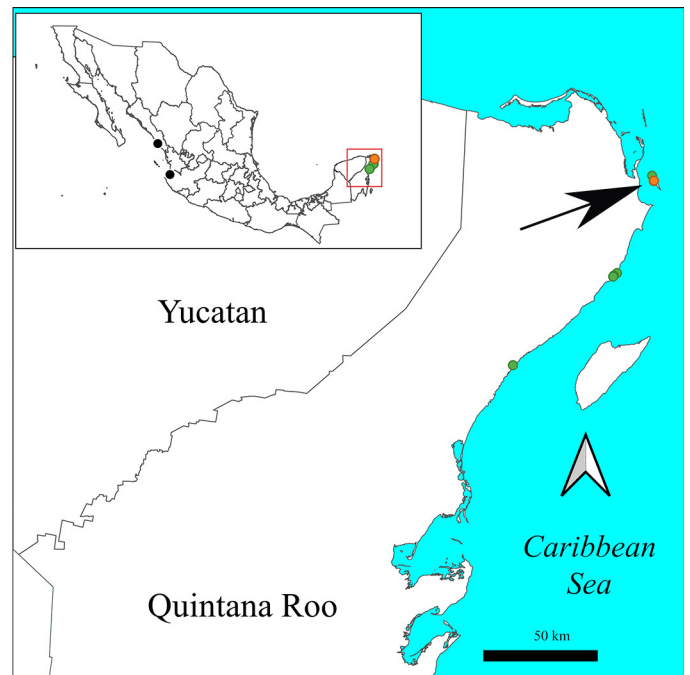


Figure 2. Maps showing the localities where Mourning Geckos (*Lepidodactylus lugubris*) have been recorded in Mexico. Previous records are indicated by black dots, iNaturalist records by green dots and the arrow, and the new record by the orange dot.

common in certain areas (Ineich and Ota 1993), including the American populations (Collazos-Astudillo et al. 2022). Dorsal and lateral surfaces of this clone are beige, with dark stripes extending from the nostrils, crossing the eyes and ears, and ending at the forelimbs, and two longitudinal series of dark paravertebral spots, which are parts of a series of light brown W-shaped chevrons (Hoogmoed and Avila-Pires 2015).

The natural distribution of this species includes south-eastern Asia, Indonesia, and the Indo-Australian Archipelago. However, it has been introduced in northern Australia, Hawaii, and regions in the Pacific Ocean. In the Americas, this species has been recorded in Mexico and the United States, Central America (Costa Rica, Nicaragua, Panamá), and South America (Brazil, Colombia, Chile [Pascual Island], Ecuador, Guadalupe, Peru, Suriname, Venezuela) (Henderson et al. 1976; Savage 2002; Bauer et al. 2007; Guerreiro and Graterol 2011; Rubio-Rocha et al. 2012; Hoogmoed and Avila-Pires 2015; Ahumada-Carrillo and Weatherman 2018; Collazos-Astudillo et al. 2022).

In Mexico, *L. lugubris* initially was recorded in the Municipality of Puerto Vallarta, Jalisco, on the basis of a single individual, and more lizards were observed in subsequent years, indicating the establishment of that population (Ahumada-Carrillo and Weatherman 2018). More recently, this species has been reported in the port of Mazatlán, Sinaloa (González-Sánchez et al. 2021). We herein present the first formal record of *L. lugubris* in Quintana Roo.

At 1905 h on 3 March 2024, we encountered an adult *L. lugubris* (SVL ~43 mm; Fig. 1) on the wall of a house surrounded by mangroves and secondary vegetation in Isla Mujeres, Municipality of Isla Mujeres, Quintana Roo, Mexico (21.237147, -86.742798; elev. 6 m asl; Fig. 2). This individual had a partially regenerated tail and was actively hunting around a lamp in sympatry with Common House Geckos (*Hemidactylus frenatus*). A second adult (SVL 54 mm) was observed on the same day at 1947 h 215 m northeast of the first observation at an abandoned wooden lookout tower surrounded by mangroves (21.238738, -86.741550; elev. 7 m asl). This individual also had a regenerated tail and was active on the ground, again sympatric with *H. frenatus*. The identity of the species was confirmed by Dr. J. Rogelio Cedeño-Vázquez, and the photograph of the first individual was deposited in the digital collection of the Centro de Investigaciones Biológicas of the Universidad Autónoma del Estado de Hidalgo (CH-CIB-166).

To complement the search for records of *L. lugubris* in southern Mexico, we conducted a search of online databases, which revealed seven records on the citizen-science platform iNaturalistMX. All were on the Caribbean Coast of Quintana Roo at Puerto Morelos, Municipality of Puerto Morelos (iNaturalist observations #64942461, #110587237, and 194151955), one was in Akumal, Municipality of Tulum

(iNaturalist observation #193879799), and three were on the island of Isla Mujeres (iNaturalist observations #147105887, #150805256, and 200570155; Fig. 2). The earliest observation by the user lorenzoaf in Puerto Morelos was at 1521 h on 14 November 2020.

Using ecological niche modeling, Nania et al. (2020) determined that environmental conditions in the state of Quintana Roo are suitable for *L. lugubris*. Our observation is the first documented record for Quintana Roo and southern Mexico, and increases the herpetological richness of the Yucatan Peninsula to 151 species (González-Sánchez et al. 2017; Díaz-Gamboa et al. 2020). We recommend additional monitoring in the area to track its spread on the peninsula and identify any ecological implications of this introduction on ecologically similar native populations in the genera *Aristelliger*, *Phyllodactylus*, and *Thecadactylus*.

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