



INTRODUCED SPECIES

Mourning Geckos (*Lepidodactylus lugubris*) Established on Abaco Island, The Bahamas

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At 2030–2300 h on 15–21 September 2018, we encountered Mourning Geckos (*Lepidodactylus lugubris*) while searching 3.4 ha of bushes, trees, and buildings in a residential complex located at the eastern end of Marsh Harbour, Abaco Island, The Bahamas (26.544274°N, –77.049793°W; WGS 84). The habitat consisted of landscaped vegetation and bordering coppice surrounding this seaside complex. We observed no juveniles or hatchlings but did see as many as five individuals on a given night. During a subsequent visit on 15–22 May 2019, we did see two juveniles and at least one gravid female, providing direct evidence of reproduction. Most Mourning Geckos were observed using distal branches of ornamental shrubs (e.g., *Nerium oleander*, *Ixora* sp.), small trees (e.g., *Conocarpus erectus*), Coconut Palm fronds (*Cocos nucifera*), and Screw Pine (*Pandanus utilis*) thickets. During the second visit, they also were observed using artificial structures (e.g., buildings and painted concrete walls), and several appeared to be consuming insects attracted to artificial lights. Coleman Sheehy III at the Florida Museum of Natural History verified the identity of the geckos from a photographic voucher (FMNH 188143).

The establishment of *L. lugubris* on Abaco marks the seventh species of nonnative reptile and amphibian established on Abaco, four of which have become established within the last decade (Knapp et al. 2011; Powell et al. 2012; Giery 2013; Giery et al. 2017; Reynolds and Giery in press). Notably, invasion occurred despite a relatively diverse vertebrate community. At this site in Marsh Harbour, six additional species of lizards are abundant: Brown Anole (*Anolis sagrei*), Bark Anole (*A. distichus*), Bahamian Green Anole (*A. smaragdinus*), Tropical House Gecko (*Hemidactylus mabouia*), Ocellated Gecko (*Sphaerodactylus notatus*), and Northern Curlytail (*Leiocephalus cairnatus*). Predators such as the Northern Bahamas Boa (*Chilabothrus exsul*), Cuban Treefrogs (*Osteopilus septentrionalis*), domestic cats (*Felis silvestris catus*), and Black Rats (*Rattus rattus*) are commonly seen as well (Reynolds et al. 2016). No additional areas were surveyed for these lizards and their distribution in the wider Marsh Harbour area and on Abaco Island is unknown. However, given an ability to invade diverse communities and use a variety of habitats, expansion on Abaco Island is likely.



Fig. 1. Two adult Mourning Geckos (*Lepidodactylus lugubris*) found in Marsh Harbour, Abaco Island, The Bahamas in September 2018 (left) and the habitat in which they were found (a multi-unit residential complex composed of landscaped vegetation and abundant artificial surfaces; right). Photographs by S. Giery.

Mourning Geckos have been well-established human commensals along the Pacific Coast of Central and South America (Panama, Costa Rica, Colombia, and Ecuador) since before the start of the 20th century (Smith and Grant 1961; Myers and Rand 1969; Hoogmoed and Avila-Pires 2015). However, their dispersal along the Atlantic Coast has been much slower. Although established in the Panama Canal Zone since 1919 and the Nicaraguan coast since ~1976 (Hoogmoed and Avila-Pires 2015), only recently has the species become established in the Greater Caribbean: Curacao, Guadeloupe, Grand Cayman, Cuba, The Bahamas, Utila (Honduras), Costa Rica, Venezuela, Colombia, Suriname, and Florida (Bauer et al. 2007; Knapp et al. 2011; Krysko et al. 2011; Lorvelec et al. 2011, 2017; Daza et al. 2012; Hoogmoed and Avila-Pires 2015; Jimenez and Abarca 2015; Krysko and Mackenzie-Krysko 2016; Senaris et al. 2017; Bosch and Páez 2017; Borroto-Páez 2018; Goetz and Burton 2018; Johnson et al. 2018; Behm et al. 2019; Brown and Diotallevi 2019; Liebgold et al. 2019).

The range expansion of Mourning Geckos in the Greater Caribbean Region is ongoing and proceeding rapidly. Indeed, many of these invasions have been reported since 2009. We attribute this invasive potential to broad habitat tolerance, ability to invade diverse communities, and parthenogenic reproduction. We expect that this rapid expansion among and within islands of the Greater Caribbean region is likely to continue.

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