

Second observation of *Dermatemys mawii* in the upper Yucatán peninsula: a new population or an old individual?

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The Central American river turtle (*Dermatemys mawii*), or hickatee as it is known in Belize (Briggs-Gonzalez et al., 2018), is a large, freshwater turtle that represents the last remaining lineage of the family Dermatemydidae (Iverson & Mittermeier, 1980). Historically, this species was widely distributed throughout southern Mexico, Belize, and northern Guatemala (Alvarez del Toro et al., 1979; Iverson, 1992; Ernst & Barbour, 1989; Iverson & Mittermeier, 1980; Lee, 1996; Legler & Vogt, 2013; Vogt et al., 2011; Briggs-Gonzalez et al., 2018). However, due to harvesting for meat consumption (Moll, 1986; Polisar, 1994, 1995), numbers have declined drastically throughout much of its range, leading to its designation as a critically endangered species (Vogt et al., 2006; IUCN, 2019). The current distribution and many aspects of the general biology and life history of this turtle are not well known (Briggs-Gonzalez et al., 2018).

Dermatemys mawii was first reported from the northern coast of the Yucatan peninsula (21.281111° N, 89.643056° W) on 30 April 2010 (Chablé-Santos et al., 2011). This represented a 239 km northerly range extension for the species, although the specimen was presumed to be introduced (Vogt et al., 2011). Herein we document a second observation of *D. mawii* along the northern coast of the Yucatán Peninsula. On 6 March 2019, while hiking through La Reserva Ecológica El Corchito in the municipality of Progreso, Yucatán, Mexico (21.274754° N, 89.645159° W), we encountered and photographed an adult *Dermatemys* floating and swimming in the center of a cenote surrounded by mangroves and creeks (Fig. 1). This observation was made at a distance of roughly 740 m away from the 2010 record. It suggests either that more than one individual is present in the area or that we encountered the same individual as Chablé-Santos et al. (2011) nearly nine years later.

We attempted to determine whether the individual we encountered was the same as that in 2010 by referencing photographs of the two specimens. Both individuals appeared to be adult females, as indicated by the lack of yellow on the top of the head (Rainwater et al., 2012). The individual from 2010 was captured and marked with blue wire on the left supracaudal scute for identification at a distance (Fig. 2). While the individual in 2019 did not have this marking, it did have a conspicuous notch in the carapace where the wire would have been. As such, it may be impossible to determine whether the photographed individuals are different or if the individual from 2010 had simply lost the marking over the years.

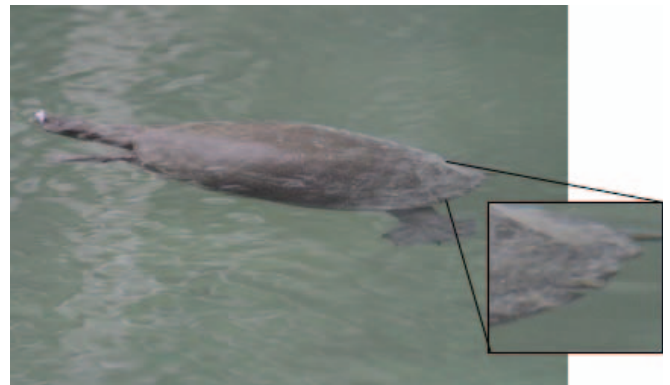


Figure 1. Adult female *D. mawii* observed in a freshwater cenote in 2019. Note the deep notch in supracaudal scute (inset).



Figure 2. Adult female *D. mawii* found in 2010 and marked with blue wire. Photos courtesy of Juan B. Chablé-Santos.

Regardless of whether the 2019 and 2010 observations represent one or two individuals, the current sighting has important implications for the conservation of *Dermatemys*. If the same individual was indeed observed nine years apart, then, given that the individual observed in 2010 was already an adult (Chablé-Santos et al., 2011), this would suggest that the longevity of adult *Dermatemys* in the wild is at least nine years. It may also imply that La Reserva Ecológica El Corchito is a suitable habitat for this species to thrive. If, in contrast, the two observations represent two different turtles, then this may indicate the establishment of a population in the El Corchito area. Identifying localities in which *Dermatemys* may persist, or are already persisting, could prove critical for conservation plans and potential head-starting or reintroduction programmes. We stress the need for further investigation into La Reserva Ecológica El Corchito and the surrounding areas (the home ranges of most aquatic turtles

are within a few square kilometers at most (Slavenko et al., 2015)) in order to determine which of the two scenarios proposed for our observation is more likely, as well as to lend insight into what factors might contribute to the apparent suitability of this habitat that is so distant from the primary range of this species.

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