

Terrestrial and Freshwater Turtles of Tobago, W.I. and Report of a Potential Alien Invasive Species

Within the last decade, there has been growing attention toward the herpetofauna of Tobago. The checklist for Tobago is continually expanding as numerous cryptic species are documented, as reviewed by Murphy and Downie (2012), most notably lizards, snakes and frogs (for example new *Leptophis* sp. (Murphy *et al.* 2013)). Despite this, terrestrial and freshwater turtles are seemingly understudied possibly owing to their rarity on the island. This is in stark contrast to their marine counterparts who are more prevalent and are ranked higher on the International Union for Conservation of Nature listings, thereby receiving more recognition. Here, we reviewed the Emydidae (pond and river turtles) and the accounts of Testudinidae families (Tortoises).

In Emydidae family, a single species, *Rhinoclemmys punctularia punctularia* (Galap or Galup) has been documented in Tobago historically (Hardy, 1982 in Murphy, 1997)), based on two specimens. Hardy (1982) noted an apparent waif caught in a fisherman's net at Bloody Bay and an additional specimen in a river near Hillsborough Dam. Hardy (1982) also quoted Poyntz's (1683, 1695) account of a freshwater aquatic species present on the island. However, Murphy *et al.* (2018) suggested that emydids could be absent from the island.

Now, we add to this narrative two recent sightings of freshwater turtles in Tobago, presumably *R. punctularia punctularia*. In June 2014, one specimen was observed in a pond near Parlatuvier's Top River Fall (UTM 20P 756831E, 1250038N) in north east, Tobago. A second sub-adult with a carapace length of 12.0cm was caught in November 2013 at a tributary of the Bacolet River, on the outskirts of Scarborough (UTM 20P 748344E, 1238221N) south west, Tobago. Several wildlife tour operators (e.g. R. Corbin) and hunters recall witnessing them in the valley drainages of Mason Hall. In Trinidad, this species is relatively common in waterways with high turbidity and low visibility (Mohammed *et al.* 2010). In Tobago, similar habitats are limited as most rivers are clear water systems due to the island's dendritic drainage, short water catchments and limestone geology, which is comparable to the northern range drainage where this species is absent. This can account for the species' rarity in Tobago. There are however, several individuals being kept as pets in Tobago, with some originating from Trinidad (e.g. three specimens housed in Speyside of which at least one is a breeding female). Additionally, Corbin Local Wildlife Park (CLWP) located south of Mason Hall has two individuals which were captured within the area. The occurrence of *R. punctularia punctularia* in Tobago could therefore be due to both native breeding populations as well as introduced

individuals from the pet shop trade.

A second member of the Emydidae family is now reported in Tobago; however, this species has the potential to be invasive. An exotic Red-eared slider (*Trachemys scripta elegans*) was collected in July 2017 among debris on the beach in Speyside (UTM 20P 769196E, 1258397N) by Z. Frank (of Frank's Tours). It seemed to be a sub-adult with a carapace length of 14.0cm and in healthy condition. This species which is native to North America (Cadi and Joly, 2004), was first recorded in the wild in Trinidad by Mohammed *et al.* (2010) and its range has since expanded within the island (Mohammed *et al.* 2017). *T. scripta elegans* is noted as a niche competitor among the native freshwater turtles in Trinidad (Mohammed *et al.* 2010).

Instead, Tobago's high aquatic species biomass, particularly its *Macrobrachium* sp. could be at risk of falling prey to this voracious generalist predator as documented in other countries (Leberer, 2003). *T. scripta elegans* has been reported previously in Turks and Caicos Island (Reynolds and Niemiler, 2010), Puerto Rico and Hispaniola, to Guadeloupe and Martinique (Henderson and Powell 2009) though, it seems to still be absent in Barbados (Fields and Horrocks, 2011). We can infer this species can adapt to life on small island states. The species are becoming increasingly popular in the local pet trade in Trinidad and Tobago within the last decade, which could be its potential source of introduction. *Chrysemys picta dorsalis* (Southern painted turtle) also native to North America, has also been observed in the pet trade in Tobago, but not yet in the wild.

Native Testudinidae families (tortoises) have not been confirmed for Tobago. Some publications (Murphy, 1997; Boos and Quesnel 1994) suggested that *Geochelone carbonaria* (Red-footed tortoise) could potentially be an introduced species into Trinidad and only *Geochelone denticulata* (Yellow-footed tortoise or Morocoy) is considered native, although it is suspected they were introduced by early Amerindian colonisers. Distribution data documents *Geochelone* sp. throughout the Lesser Antilles except Barbados and Sombbrero (part of the British territory of Anguilla), though there is no conclusive evidence discerning whether their distribution is a result of natural dispersal or introduction (Censky and Kaiser 1999)

A shell of *Geochelone* sp. is documented for Tobago here, and currently housed at a private collection in Tobago. The animal was captured from the wild in 1952 but no locality information is known. Hardy (1982) remarked that several elderly citizens of Tobago recognised the word 'Morocoy' during discussions in 1979. They indicated the species was fairly abundant and

occurred in Speyside's forests. Additionally, Hardy (1982) noted captive populations of both *G. carbonaria* and *G. denticulata* were released in Speyside forest, leading to several shells being found. Specimens were caught in other parts of Tobago near rural villages but without proper documentation. Poyntz's accounts (1683, 1695) confirms the presence of a terrestrial turtle species on the island but without a detailed description. Considering no recent additional specimens have been documented by biologists, tour guides or forestry personnel on field surveys and communications with hunters have not yielded a positive account, it is possible that the *Geochelone* sp. is extinct in the wild in Tobago. There are nonetheless some persons keeping these tortoises as pets or at wildlife parks (eg. CLWP, specimens originating from Trinidad).

To conclude, monitoring and control on hunting pressures would support the survival of our native freshwater species, but we should be mindful of the increasing threat of aquatic alien invasive species. It is imperative that pet owners be responsible in their care, as our national regulation does not address the issues of management of invasive species since we now see *Trachemys scripta elegans* spreading in Trinidad. If these individuals are detected in the wild, the authors and Forestry Officials should be contacted. Also, if the animal is retrieved in Tobago, it can be taken to CLWP where they will be offered sanctuary without threatening Tobago's native species. Lastly, we see due to lack of managed hunting and suitable habitat, the morrocoy, *Geochelone* sp is now extinct in Tobago and we should do the needful to ensure our native *Rhinoclemmys* does not follow the same fate.

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