An overview of the Cuban Turtle, *Trachemys decussata*, in Cuba

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TURTLES of the West Indies belong to the slider genus *Trachemys*. The endemic Cuban Turtle, called locally the Jicotea, *Trachemys decussata*, is divided into two subspecies: *T. d. decussata* and *T. d. angusta* (Seidel, 1988). *Trachemys d. decussata* is found in the Central and eastern Provinces of Cuba, whereas *T. d. angusta* is known to occupy western Cuba including Isla de Juventud or 'Island of the Youth' (formally known as Isla de Pinos or Isle of Pines).

Description

Trachemys decussata appears to be the largest West Indian *Trachemys* species (Seidel, 1988). During my visit in January 2002, the largest individuals I observed reached 266 mm for a female and 242 mm for a male from Santiago de Cuba Province, which is still below the maximum size of 388 mm for females and 268 mm for males reported by Seidel (1988). Melanism in adult males is common. The adult carapace is brown or olive and the plastron is usually yellow and unmarked. A complete diagnosis is provided by Seidel (1988): the inguinal scutes are posteriorly aligned and projected laterally to form an angle, the gular scute is short, the cranium is shallow with the maxilla flared laterally, and the squamosal is tapered posterodorsally.

Distribution

In Cuba, wetlands cover 5,345 square kilometers (Diaz-Briquets & Pérz-López, 2000). The Cauta River is the longest river (370 km) and flows from the mountains of eastern Cuba to the southern coast. Cauto tributaries are among the largest Cuban rivers. The two next longest rivers are the Sagua Grande and the Tara (Figure 1). Many other rivers run from the central spine of Cuba. After the revolution, numerous man-made reservoir were built in various parts of the country and about 200 large dams and 800 'mini-dams' are now part of the landscape (Diaz-Briquets & Pérz-López, 2000). The first herpetological reports from Cuba were vague about the distribution of *T. decussata* (Barbour & Ramsden, 1919; Buide, 1967). The species was found everywhere in Cuba where suitable habitat was present (e.g. rivers, ponds, marshes and reservoirs). The only detail mentioned by Barbour & Ramsden (1919) was that the Cauta River and other major large rivers harboured large populations, and they specifically noted that turtles were heavily captured for food.

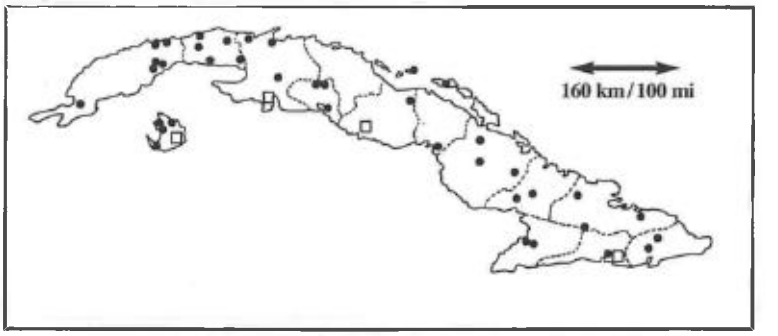
Due to my short excursion in Cuba, I could not evaluate the abundance of Cuban Turtles in the Cauta River. However, an ex-fisherman from the area (Manolo Benítez Corella, pers. comm. 2002) informed me that *T. decussata* is not as abundant as it used to be. The first Cuban Turtle distribution map shows that *T. decussata* is widespread (Seidel, 1988). I have added new localities to this map especially in the Zapata swamps (Matanzas Province) where abundant populations still exist (Figure 1). These localities are based on observations and interviews with fishermen in the field. The Cuban Turtle may also inhabit many man-made reservoirs, but further investigation is needed to determine its current extent in Cuba and its adaptation to man-made habitats.

Natural History

According to Pritchard (1979) *T. decussata* is carnivorous. However, I would characterise the Cuban Turtle as opportunistic and a dietary generalist, eating several groups of animals and plants. For instance, local people captured them using fruit as bait. Their diet may vary seasonally, locally, and also according to their different life stages. Food items are swallowed in the water. The Cuban Turtle is less active during the dry season (November to May) and some individuals are believed to aestivate. At this time of the year, fewer turtles are observed basking.

The reproductive ecology of *T. decussata* has been poorly studied. Females may deposit two

clutches or more in a single year (Sampedro & Montañez, 1989). Oviposition usually starts in May with egg-laying taking place after sunset and not later than midnight. The incubation time averages 87 days in the Zapata swamps (Sampedro & Montañez 1989). Egg sizes average 40.5˜25.5 mm (Petzold, 1968). Larger females appear to nest earlier in the season than smaller ones. Among the 36 nests studied by Sampedro & Montañez (1989), 45 percent were predated by feral dogs and mungus. Nests were excavated between 2-3 meters from the water's edge, with one instance up to 200 meters. Turtle density is unknown in their natural habitat; however, Builde (1963) noted that they live in colonies of hundred of individuals. Their home range and overland movements are still a mystery.



Distribution of *Trachemys decussata* in Cuba. Squares represent new locality records (2002), circles denote records from Siedel (1988). Scale bar = 160 km/100 miles.

Economic and Cultural Importance

In Cuba, many animals including reptiles are believed to cure human diseases. These beliefs originate from the indigenous Taino Indians, long before the invasion of the Spaniards. Most of these beliefs have been transformed or even disappeared since. The Cuban turtle is thought to help 5 diseases. The Cuban Boa *Epicrates angulifer* is held to be useful for 41 disorders! (Silva Lee, 1997). The believed medicinal properties of the turtles and other reptiles do not appear to be used any more. The Cuban turtle is also captured as a food source. At the beginning of the 1900s, turtles were sold in markets and probably widely consumed. Barbour and Ramsden (1919) were alarmed by their potential decline in the future due to over consumption. Until 1959, the year of the revolution, their consumption was probably important. The lack of ownership and private market imposed by the new centralized socialist government has probably decreased the *T. decussta* capture rate in the wild. The economic crisis of the 1990s, which continues nowadays, has revitalized the black market, creating a potential 'push' in turtle consumption. Cuban Turtles are eaten on an irregular basis. People also capture them to keep them as a 'pet' to provide good fortune. As such, they are sometimes kept in cruel conditions.

Vulnerability and Conservation

Numerous anthropogenic factors could have reduced or exterminated Cuban Turtle populations. Some major impacts to populations and their habitats are likely associated with a regime change in rivers and creeks due to extensive damming and lowering underground water tables (e.g. southern plain of Pinar del Rio Province), water pollution (industrial, agricultural and urban), and habitat loss. Non-native species could also affect *T. decussata*. For instance, the introduction of Bullfrogs, *Rana catesbeiana*, could be a potential predator of hatchlings. Builde (1967) was the first to mention the Bullfrog presence in Cuba but their introduction occurred before the late 1960s. The Cuban Turtle is not protected under Cuban laws. A small reproduction

Trachemys d. decussata; male, Zapata swamps area. Photograph by author.

Trachemys d. decussata from eastern Cuba; female on left, male on right. Photograph by author.

Trachemys d. decussata; head pattern of male from eastern Cuba. Photograph by author.

Cuban Turtle habitat near Santiago de Cuba. Photograph by author.

program (dozens of turtles) exits near the Zapata swamps as part of a larger, endemic fish reintroduction program. Due to the lack of financial resources however, the turtle reproduction program appears inefficient, especially after the recent damage inflicted by Hurricane Michelle (2001).

A study on the current distribution and abundance of *T. decussata* is urgently needed to assess its status in Cuba. This study should be part of a larger Cuban herpetofauna research program leading to conservation efforts.

ACKNOWLEDGEMENTS

I thank James Buskirk for providing two valuable references, and an anonymous referee for its review. I am also very grateful to Manolo Benítez Corella and the Zoological Park of Santiago de Cuba for their friendly assistance in the field.

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