

THE STATUS OF CROCODILES IN THE EASTERN COROZAL DISTRICT

Jan C. Meerman

The International Tropical Conservation Foundation organized a short survey in the dry season of 1991 to establish the status of the crocodiles in and around the Shipstern Nature Reserve. Mr. P. Ouboter from the Anton de Kom University of Paramaribo, Suriname led the survey that took place between April 26 and May 30, 1991 (Ouboter, in press).

Study Area

The study area encompassed the eastern Corozal district between Progreso and Sarteneja (Fig. 1). Most attention was paid to the inland creeks, lakes and lagoons. Near Sarteneja a small stretch of coastline (Chetumal Bay) was also investigated. The salinity of water was measured during the survey and ranged from 0.6‰ (Progreso Lagoon) to 3.3‰ (Shipstern Lagoon). The depth varied from < 0.5 meter (Shipstern Lagoon, Barracouta Pond, Wakaxcai, Chacan Chac Mol) to > 10 meters (Cenote near Sarteneja). The depth and salinity will probably vary according to the seasons. Aquatic vegetation at all the sites was either scarce or absent. Very few fish > 20 cm were seen at any of the sites studied.

Methods

Preliminary reconnaissance was carried out by day either on foot, by canoe or using an outboard powered boat. The actual surveys followed

at night by canoe or boat. Crocodiles were spotted with the aid of halogen headlamps. To enable identification, a few young specimens were caught using a metal noose mounted on a long stick. All specimens were released unharmed. Salinity measurements were by the Department of Fisheries, Belize City.

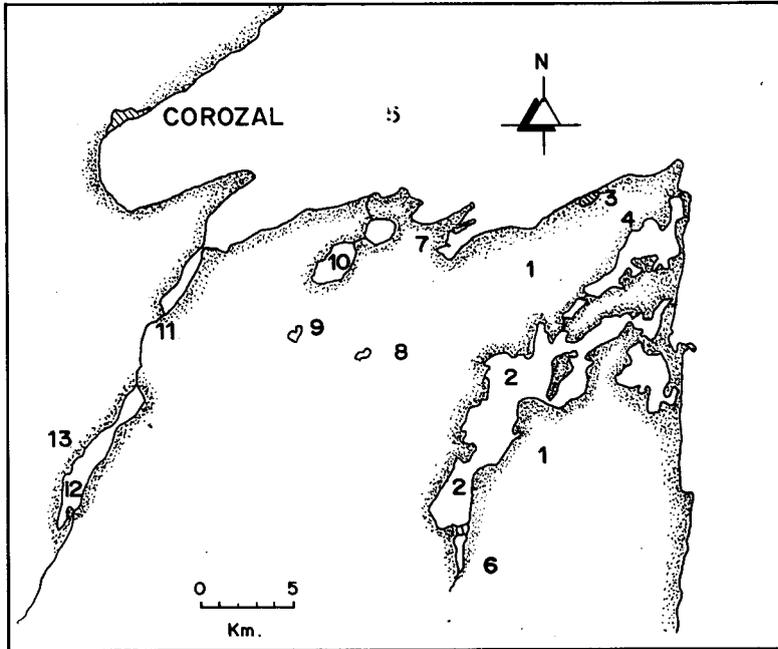


Fig. 1 1: Shipstern Nature Reserve, 2: Shipstern Lagoons, 3: Sarteneja, 4: Sarteneja Cenote, 5: Chetumal Bay, 6: Corozalito swamps, 7: Warree Bight forest pond, 8: Chacan Chac Mol, 9: Wakaxcay, 10: Barracouta Pond, 11: John Piles Creek, 12: Progresso Lagoon, 13: Progresso.

Results

During the survey, crocodiles were not found in Progresso Lagoon, Wakaxcay, the Sarteneja Cenote or the main bodies of Shipstern Lagoon. They were also scarce at most other localities like the forest ponds in the Shipstern Nature reserve (1) and Warree Bight area (1), the Barracouta pond (3), and along the sea coast near Sarteneja (2, including 1 outside survey period).

Crocodiles were numerous in the John Piles Creek (6), Chakan Chac Mol (10) and in the Corozalito swamps at the south end of Shipstern Lagoon (10). Length of the specimens measured varied from 0.4 meters

to 2.3 meters. Positive signs of breeding activity were observed at the Corozalito swamps and near the Barracouta pond.

Species identification

It proved to be very difficult to identify all the crocodiles observed. Identification in the field often depends on coloration of the animals. The color of *Crocodylus moreletii* is usually dark green to nearly black in adults. *Crocodylus acutus* is usually lighter with more clearly visible cross bands on the back and tail. Although these are "usually" the respective colors, Abercrombie *et al.* (1982), point out that they can be unreliable for identification.

Crocodylus acutus can grow very large while *C. moreletii* rarely exceeds 2.5 meters in length. Any specimens larger than approximately 3 meters, therefore might be regarded as *C. acutus*. Smaller specimens cannot be identified simply by using size. *Crocodylus acutus* is a coastal species, often living in salt water while *C. moreletii* is more of an inland species, preferring fresh water. But habitat can be deceiving as well. This was proved by a crocodile that was caught in Chetumal bay by a Sartenejan fisherman on 16 April 1991. The salinity of Chetumal bay is 2.2‰ but the specimen proved to be a *C. moreletii*.

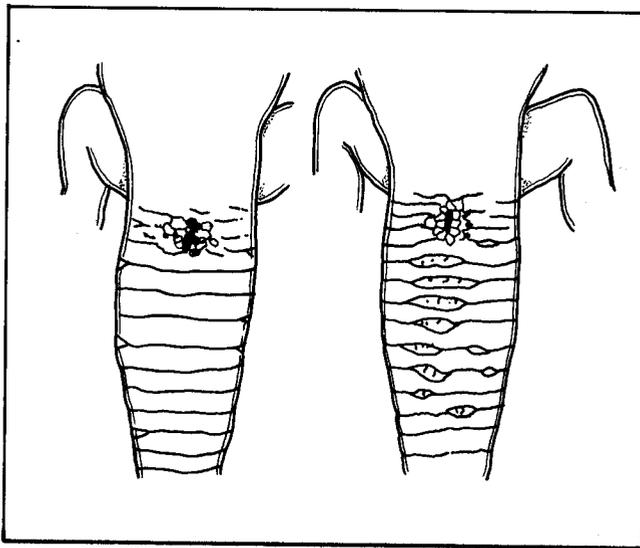


Fig. 2 Underside tail of *Crocodylus acutus* (left) and *C. moreletii* (right). Note extra scales between scale rows in *C. moreletii*.

The only certain way to distinguish between *C. acutus* and *C. moreleti* is by checking a few morphological characters. Several clues to the proper identification are given by Brazaitis (1973) and Abercrombie (1980). The most important ones being: in *C. acutus* the rows of scales on the underside of the tail are regular and not interrupted by groups of small scales, although interruptions are sometimes present at the side of the tail (Fig. 2). The snout is slender, length 1.8 - 2.5 times width at the base (L/W in Fig. 3) and mandible tip TL longer than width TW.

In *C. moreleti* the rows of scales on the underside of the tail are interrupted by groups of small scales (Fig. 2). The snout is wide, length 1.4 - 1.8 times width at base (L/W in Fig. 3) and mandible tip TL is equal to or shorter than width TW.

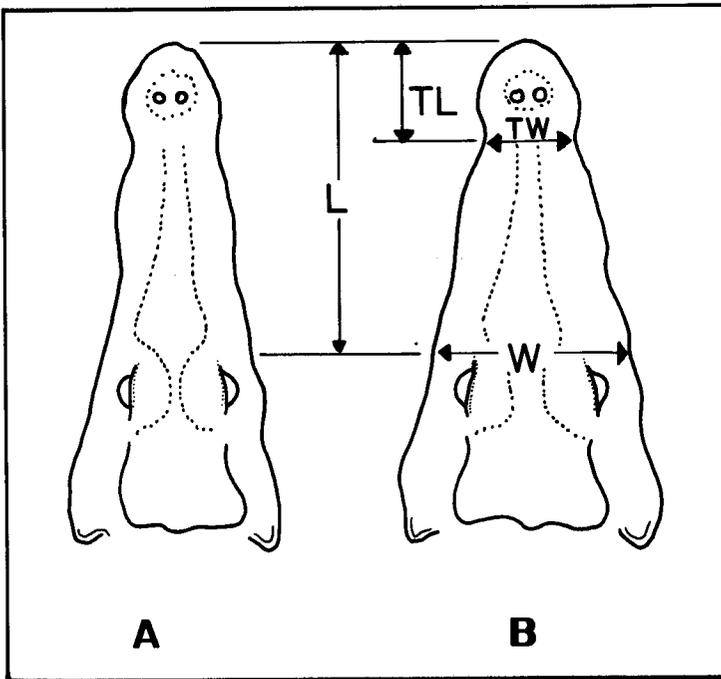


Fig. 3 Head shape of A) *Crocodylus acutus* and B) *C. moreleti*. Length of snout (L), width of snout (W), Length of mandible tip (TL) and width of mandible tip (TW).

Using a combination of these characters it was possible to identify some specimens. Two of the specimens from the John Piles Creek were

identified as *C. moreleti*. All specimens in Chacan Chac Mol, the six specimens at the Corozalito swamps and the one Chetumal Bay specimen were identified as *C. moreleti*. *Crocodylus acutus* could not be proven with 100% certainty, but based on both visually estimated head shape and body color only, the specimens observed in the Barracouta Pond and in a Warree Bight forest pond were almost certainly *C. acutus*. One specimen observed in a creek connecting the Corozalito swamps with Shipstern Lagoon might also have been a *C. acutus*. All other specimens observed were seen from a too great distance to allow identification with any degree of certainty.

Discussion

In general the number of crocodiles encountered in the surveyed area was much lower than expected and definitely did not reflect the often exaggerated accounts of local informants. Low prey-densities and killing of crocodiles by locals are probably responsible for the low densities of crocodiles. Assuming that the specimens identified as *C. acutus* are indeed that species it has to be concluded that *C. acutus* and *C. moreleti* occur partly sympatric in the study area. Although *C. moreleti* obviously prefers low saline conditions it can occur in salt water as well as the Chetumal Bay specimen proves.

Acknowledgements

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References

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