

THE SÃO FRANCISCO RIVER 'CODFISH': THE NORTHERNMOST WILD POPULATIONS OF THE BROAD-SNOUDED CAIMAN (*CAIMAN LATIROSTRIS*).

The geographic distribution of the broad-snouted caiman spreads over the hydrographic basins of Paraná and São Francisco rivers, including northern Uruguay and Argentina, southern Paraguay, southeastern Bolivia, and south to northeast Brazil (Grombridge 1987). Small coastal river drainages are also inhabited by the species in Brazil from Banhado do Taim (32°32' S and 52°23' W), Rio Grande do Sul (Melo. In press) to the north of São Francisco river estuary. The species can also be found in mangroves and islands close to the coast, like Ilha do Cardoso in southern São Paulo (Moulton *et al.*, 1999). However, the northern limit of the species geographic distribution is, actually, unknown.

Paulo E. Vanzolini (1972) mentions the State of Rio Grande do Norte, whereas Neill (1971) considers the State of Pernambuco and Brazaitis *et al.* (1990) suggest the border between Paraíba and Rio Grande do Norte. Unfortunately, none of the authors above present field evidence or collected specimens to support their opinion.

Crocodylians depend on wetlands to survive. The broad-snouted caiman is essentially a palustrine – not riverine – species (Lang 1987). The interior region of northeastern Brazil is predominantly semi-arid and only its coastal region is relatively humid supporting the northern limit of Atlantic Forest. We may suppose the northern limit of the broad-snouted caiman distribution is dictated by the existence of permanent wetlands associated with Atlantic forest patches from Alagoas to Pernambuco and Paraíba, eventually, but possibly not permanently, including the southern region of Rio Grande do Norte. For these reasons wild remnant populations of the species in those places should be considered for conservation purposes.

In November 1999, I made a preliminary survey based on night counts in some areas of eastern Alagoas and Pernambuco. No specimens were captured, but identifications of detected animals as *C. latirostris* were completely confident. The environments included wetlands and lakes. When possible, I estimated individuals body length by their head length based on previous experience (Verdade 2000). I considered the age-classes presented in Table 1. The sites surveyed in Alagoas and Pernambuco are presented in Table 2.

Table 1. Age-class considered for the presented study

<u>Age-class</u>	<u>Description</u>
Adults	dorsal cranial length (DCL) equal to or longer than 15 cm (snout-vent length approximately 70 cm)
Young	dorsal cranial length (DCL) between 5 and 15 cm (snout-vent length approximately between 20 and 70 cm)
Hatchlings	dorsal cranial length (DCL) smaller than 5 cm (snout-vent length smaller than 20 cm)

All of these sites are associated with or near human dense populated areas with clear evidences of high hunting pressure. However, caiman reproductive activity has been detected in two sites (nest in Tapacurá and hatchlings in Lagoa Vermelha). Caiman population density has been estimated in Lagoa Vermelha as 6 to 8 individuals per linear kilometer of lake perimeter. For this calculation, I recorded the boat speed as 7 to 10 km/h with a GPS Garmin 12 for a period of 4.2 hours. Lake perimeter at that time was then estimated as 29.4 to 42 km.

Table 2. Survey of *Caiman latirostris* in sites of Alagoas and Pernambuco, northeast Brazil.

<u>State</u>	<u>Site</u>	<u>Coordinates</u>	<u>Habitat type</u>	<u>Apparent population</u> *	<u>Age-distribution</u>
Alagoas	Poço do Cruiri	10°24.038'S, 36°22.545'W	wetland	2	1 adult, 1 young
	Riacho Salgado	10°25.517'S, 36°22.750'W	lake associated with wetland	1	1 adult
	Lagoa Vermelha	10°03.408'S, 36°05.210'W	lake	239	6 adults, 64 young, 47 hatchlings, and 122 undetermined
Pernambuco	Parque Dois Irmãos	8°00.802'S, 34°56.657'W	four connected lakes	10	3 adults, 5 young, and 2 undetermined
	Estação Ecológica de Tapacurá	8°02.415'S, 35°11.782'W	artificial reservoir	0	old abandoned nest with eggs' debris

* = Total number of individual by night-count

Alagoas is the most densely human populated State of Brazil. More than 700 politically organized fishermen communities are officially recognized by the State (Lira 1998). Broad-snouted caiman is sold in local markets as salted fish meat, called by local people as "São Francisco codfish" or simply "river codfish" (*bacalhau do São Francisco* or *bacalhau de rio*, in Portuguese, respectively). Many evidences indicate that some poor fishermen provide this market. However, most of its original wetlands and lakes remain relatively well conserved. Under these circumstances, sustainability of an organized "ranching" or "cropping" program involving local people should be assigned.

In Pernambuco, the metropolitan area of Recife - the State capital - has deeply affected caiman habitats by urbanization and pollution. Tourism has been attracting former fishermen as a major economic activity. Under these circumstances, conservation efforts should be concentrated on tourism, not on direct economic exploitation of caiman products. In João Pessoa, capital of Paraíba State, the City Zoo (Parque Zoológico Arruda Câmara) keeps a group of approximately 30 broad-snouted caiman including adults and young. Although, historical records are unclear, they indicate the colony founders were caught at the country side of the State (Jair Azevedo, Zoo Director, pers. comm.). However, there is no evidence of large populations in Paraíba or Rio Grande do Norte.

The occurrence of both hunting pressure and habitat loss on the wild northernmost populations of the broad-snouted caiman stresses the importance of this region for its conservation. Field surveys in Paraíba and possibly in southern Rio Grande do Norte might clarify the northern actual limit of the species geographic distribution.

Acknowledgements: I wish to thank Maria Cristina and Sílvia Ruffo for the logistic support in Alagoas; Paulo Montenegro for the logistic support in Pernambuco, and Jair Azevedo for the information about the species in Paraíba. — Luciano M. Verdade, *Laboratório de Ecologia Animal, Escola Superior de Agricultura "Luiz de Queiroz", Universidade de São Paulo, Cx. P. 09, 13418-900, Piracicaba, SP, BRAZIL.* <lmv@esalq.usp.br>.

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