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SIZE STRUCTURE AND SEX RATIO OF DWARF CAIMAN IN THE SERRA AMOLAR, PANTANAL, BRAZIL

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Paleosuchus palpebrosus is one of five caiman species that occur in Brazil. With a maximum length of about 1.6 m (Medem, 1981), it is among the smallest crocodylians in the world. *P. palpebrosus* has a highly ossified skin and, although some illegal hides have been confiscated in Amazonas (Rebelo & Magnusson, 1983), the species is of negligible commercial value. On the other hand, it is possible that some populations might be threatened by habitat modification.

This dwarf caiman apparently has strict habitat requirements in central Amazonia, where it is largely restricted to flooded forests along the margins of large rivers and lakes (Magnusson, 1985). Nevertheless, the species can be encountered from Amazonia southward through the drainages of the São Francisco, Paraná and Paraguay rivers, excluding central areas of the Pantanal (Ross & Magnusson, 1989). Despite this extensive geographic distribution, there are no published studies of *P. palpebrosus* populations in the wild. This general lack of ecological information is one factor that could eventually affect the species conservation (Thorbjarnarson, 1992).

In this study we evaluated densities, size structure and sex ratios in two streams of the Serra Amolar, Pantanal. We also analysed stomach contents of dwarf caiman in one of the streams. The study area, Acurizal Ranch, is located to the north of Corumbá, next to the Bolivian border. The elevation is about 600 m above mean sea level. The two clear-water streams studied are the Fundão and the Cafezal. They arise in the nearby mountains and flow to the Paraguay River. They have bottoms of sand and rock. Water depth is 30-120 cm; width varies between 3 and 10 m.

In June 1993 and August 1994 we walked 4 km stretches of the two study streams on two consecutive nights. Dwarf caiman were captured, measured and marked. In 1993, 19 dwarf caiman were captured in Cafezal stream and 19 in Fundão stream. In 1994, 11 dwarf caiman were found in Cafezal stream and 13 in Fundão stream. Stomach contents were obtained from five juveniles (< 40 cm snout-vent length - SVL) and one adult (57.5 cm SVL) by the wash-method of Taylor *et al.* (1977).

In 1993 in Fundão, the observed density was 6.5 caiman/km and in Cafezal it was 8 caiman/km. In 1994,

the observed density was 2 caiman/km in Fundão and 2.5 caiman/km in Cafezal. Caiman less than 20 cm were not included in density calculations.

The size structure in Fundão was dominated by smaller individuals, and the largest caiman we captured there was 65.6 cm SVL (Fig. 1A). In Cafezal, animals were often larger (Fig. 1B) and we found a dead caiman with SVL of 92 cm; this was larger than any individual measured by Medem (1981).

The male:female sex ratio of caimans captured in Fundão stream was 1:7.5 and 1:2 in Cafezal stream. The stomachs of five juveniles were empty except for small rocks. The one adult contained remains of crabs.

At least in 1993, observed densities of *P. palpebrosus* in the two streams of Serra Amolar were higher than those observed for *P. trigonatus* in Amazonia (Magnusson & Lima, 1991). However, in 1994, when the streams were very dry, we saw fewer caiman. Possibly, the caiman had moved to other areas within the forest, as has been observed for *P. trigonatus* (Magnusson & Lima, 1991). In addition, our recapture rate was quite low (5%), and this suggests that individuals may move into and out of the streams or that

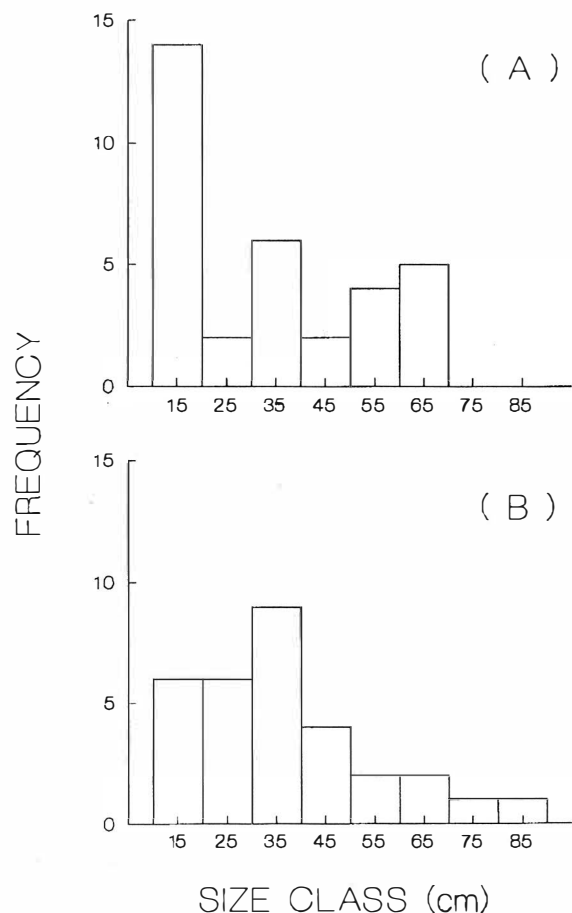


FIG. 1. Size structure (snout-vent length) of *P. palpebrosus* in (A) stream Fundão and (B) stream Cafezal, Serra Amolar, Pantanal. Size classes are in 10 cm intervals centered on the values shown.

many animals are not resident in the 4 km stretches. Furthermore, the abundance of hatchlings in both streams during both years indicates that reproduction is occurring annually. Nothing is known about the sex ratio of wild *P. palpebrosus*, but our observed female-biased sex ratio suggests that the region's relatively cool temperature might produce a female-biased hatch, as has been observed for *P. trigonatus* in Amazonian rainforest (Magnusson *et al.*, 1987).

Caiman populations and their habitat are now reasonably well protected within our study area. However, we also examined two apparently similar streams in Serra Urucum, near Corumbá. Both of these streams had been impacted by mining pollution, and we found no dwarf caiman in them

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