Cuvier's Smooth-fronted Caiman
Paleosuchus palpebrosus

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Common Names: Dwarf caiman, Cuvier's smooth-fronted caiman, Jacaré-paguá, jacaré-preto, jacaré-ferro, jacaré-tiritiri, Cachirre, musky caiman, Cocodrilo

Range: Bolivia, Brazil, Colombia, Ecuador, French Guiana, Guyana, Paraguay, Peru, Suriname, Venezuela

Figure 1. Distribution of *Paleosuchus palpebrosus*.

Conservation Overview

CITES: Appendix II

CSG Action Plan:
Availability of survey data: Poor
Need for wild population recovery: Low
Potential for sustainable management: Low

2009 IUCN Red List: LRlc (Lower Risk/Least Concern. Widespread and remains locally abundant in some areas although quantitative data on trends is lacking; IUCN 2009) (last assessed in 1996).

Principal threats: Habitat destruction, local subsistence hunting, dams, urbanization, pollution

Figure 2. *Paleosuchus palpebrosus*. Photograph: Zilca Campos.

Ecology and Natural History

The two species of *Paleosuchus* are very similar to each other and are often confused. They are both small, secretive and frequently sympatric. Until recently, very little work has been done on either species. Early ecological work on this genus was carried out by Medem (1953, 1967, 1981). *Paleosuchus palpebrosus* occurs in: the Amazon and Orinoco River drainages and the Atlantic coast drainages that lie between these two rivers; Paragay-Paraná Rivers (except the Pantanal); and, the São Francisco River (Medem, 1983). Small populations inhabit the upper Paraguay River drainage in Paraguay (Medem 1983; Scott *et al*. 1990).

Much of what is known concerning the ecology of the dwarf caiman is summarized in Magnusson (1989) and Ouboter (1996). Ecological studies are being undertaken in Brazil, within Central Amazonia (Botero 2007; Campos and Sanaiotti 2006), areas surrounding the Pantanal (Campos *et al*. 1995;

Magnusson, W.E. and Campos, Z. (2010). Cuvier's Smooth-fronted Caiman *Paleosuchus palpebrosus*. Pp. 40-42 *in* Crocodiles. Status Survey and Conservation Action Plan. Third Edition, ed. by S.C. Manolis and C. Stevenson. Crocodile Specialist Group: Darwin.

Campos and Mourão 2006) and the Guaporé-Madeira Rivers (Vasconcelos and Campos 2007). Hrbek *et al*. (2008) has investigated genomic evolution of *Paleosuchus* spp. in the upper Madeira River. Researchers from the Universidade Federal da Amazônia, Instituto Nacional de Pesquisas da Amazônia and Embrapa Pantanal are undertaking genetic, morphometric and distributional studies, and will investigate multiple paternity in nests in Central Amazonia.

The Dwarf caiman inhabits a number of aquatic habitats in the central Amazon basin, including flooded forests near the major rivers and lakes (Magnusson 1985) and roadside borrow pits (Botero 2007). In the region of the Guaporé-Madeira-Abunã Rivers, it occurs in quiet stretches of large rivers and around rapids. In Bolivia, the species occurs on the border with Brazil in the Beni River (Zilca Campos, pers. comm.). On the Brazilian shield (Rebelo and Louzada 1984). In Venezuela, the species occurs in the Mauritta palm swamps (Godshalk 1982) and streams lined by gallery forest (Thorbjarnarson 1992). It generally does not inhabit small forest streams that drain large rainforest tracts, a principal habitat for *P. trigonatus* (Magnusson 1992a). King and Videz-Roca (1989) report both species of *Paleosuchus* present in large rivers and small streams in Bolivia, usually along stretches of bare shore and frequently in association with dead trees. Ouboter (1996) considers it a species of the shallow margins of blackwater rivers in Suriname.

In Venezuela, terrestrial movement may be extensive in order to reach ephemeral wetlands (Paolilla and Gorzula 1985) and in Brazil dwarf caiman move small distances in the roadside borrow pits habitat in dry season (Botero 2007). There are ongoing radio-telemetry studies of movements and thermoregulation in small streams and rivers near the Pantanal. Dwarf caimans in these areas aestivate in the dry season in burrows, and in this situation their body temperatures normally remain low (22ºC) for many days (Campos, in prep.).

The dwarf caiman has been considered the smallest extant species of crocodilian, with the maximum length of males reported to be only about 1.6 m (Medem 1981). Ouboter (1996) reports animals of 1.8 m in Surinam. However, in Brazil, the maximum size of Dwarf caiman may exceed 2.0 m for males and 1.40 m for females (Campos, Sanaiotti and Magnusson, in prep.).

Little is known about reproduction, but females are known to make mound nests during the rainy season and lay 10-19 eggs. Females attend nests during incubation (Campos and Sanaiotti 2006). Female *P. palpebrosus* and their eggs are eaten by people in Central Amazonia and areas surrounding the Pantanal. The relationship between temperature and sex determination are topics for future research in Brazil. Studies of diet (Magnusson 1987; Campos *et al*. 1995; Botero 2007) in small individuals revealed a variety of invertebrate and vertebrate (mainly fish) prey. A biochemical study of the paracloacal gland lipids (Shafagatie *et al*. 1989) and the function these glands needs to be examined through behavioural studies in the wild.

Conservation and Status

Both species of *Paleosuchus* have well-developed osteoderms over most of the body. This characteristic, together with small size, make the skin virtually worthless commercially, and has resulted in only limited hunting pressure. Basic surveys have been conducted in a large majority (80%) of the countries containing this species. Most surveys were undertaken to determine the status of other crocodilians, but reported on *Paleosuchus* as well. Hines and Wilkinson (pers. comm.) report night count densities of 0.83-2.20/km on the Rio Curaray in Ecuador. In the areas surrounding the Pantanal and Central Amazon in Brazil densities of 0.0-2.0/km have been recorded (Zilca Campos, pers. comm.). Subsistence hunting takes place widely, and can locally reduce *Paleosuchus* densities, but populations of this species do not appear to have been impacted greatly. However, gold mining activities, urbanization, and agricultural expansion with their resultant pollution are increasing and have an impacted on the species in some areas.

The dwarf caiman holds little potential for the development of commercially-oriented management programs. The primary value in most countries is for subsistence hunting by rural inhabitants, and *Paleosuchus* spp. are sometimes taken preferentially over *Caiman* spp. Commercial exploitation in Guyana is based on the capture and sale of dwarf caiman for the pet industry.

Priority Projects

<u>High priority</u>

1. **Monitoring of abundance and habitat degradation**: *Paleosuchus palpebrosus* appears to resist the pressures of habitat destruction and hunting within the Central Amazon and the areas surrounding the Pantanal. Whilst probably not threatened throughout its distribution, more complete surveys in all countries are needed to evaluate the conservation status of local populations and propose conservation areas.

2. **Investigations on ecology and population biology**: This species is perhaps the least known of the New World crocodilians. Even such basic topics as prey, habitat preference, behavior, survival growth and reproduction are poorly known. Ecological interactions with other crocodilians and the effects of subsistence hunting would be important management topics to address. Areas where ecological investigations could be fruitfully undertaken include the headwater streams of the Pantanal, Brazilian Amazon, Guyana, and the Venezuelan-Guyana region. Bolivian populations have long been isolated from disturbance and would also be suitable for study.

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