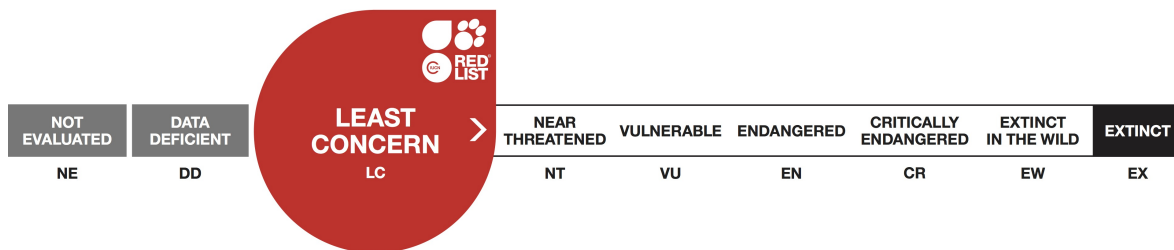


Paleosuchus palpebrosus, Dwarf Caiman

Assessment by: Magnusson, W.E., Campos, Z. & Muniz, F.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Reptilia	Crocodylia	Alligatoridae

Taxon Name: *Paleosuchus palpebrosus* (Cuvier, 1807)

Synonym(s):

- *Crocodylus palpebrosus* Cuvier, 1807

Common Name(s):

- English: Dwarf Caiman, Cuvier's Smooth-fronted Caiman

Assessment Information

Red List Category & Criteria: Least Concern [ver 3.1](#)

Year Published: 2019

Date Assessed: April 30, 2018

Justification:

The species occurs over a vast range in 11 South American countries. Habitats are relatively secure, exploitation minimal and threats not severe. The species remains widespread and remains locally abundant although quantitative data on trends is lacking. This may be the most abundant crocodylian in the world.

Previously Published Red List Assessments

1996 – Lower Risk/least concern (LR/lc)

<http://dx.doi.org/10.2305/IUCN.UK.1996.RLTS.T46587A11062803.en>

Geographic Range

Range Description:

The two species of *Paleosuchus* are very similar to each other and are often confused. They are small, secretive, frequently sympatric, and well adapted to swift running waters and to a terrestrial mode of life (Medem 1953). *Paleosuchus palpebrosus* is found in Bolivia, Brazil, Colombia, Ecuador, French Guiana, Guyana, Paraguay, Peru, Suriname, Venezuela, Trinidad and Tobago. *P. palpebrosus* occurs in the Amazon and Orinoco River drainages and the Atlantic coast drainages that lie between the Paraguay-Paraná River (except the Pantanal; Campos *et al.* 2013a) and the São Francisco River (Medem 1983). Small populations inhabit the upper Paraguay River drainage in Paraguay (Medem 1983; Scott *et al.* 1990). Recently, *P. palpebrosus* was reported for the first time on the island of Trinidad (Ali *et al.* 2016). Salas-Gismondi *et al.* (2015) recovered the first unambiguous fossil of the genus *Paleosuchus* from the Middle Miocene in the Pebas Mega-Wetland System in Peru.

Dwarf Caimans inhabit a range of aquatic habitats in the Central Amazon basin, including flooded forests

near major rivers and lakes (Magnusson 1985) and roadside borrow pits (Botero-Arias 2007). In the Guaporé-Madeira- Abunã River region in Brazil, the species occurs in quiet stretches of large rivers and around rapids. In Bolivia, the species occurs on the border with Brazil in the Beni River (Z. Campos, unpublished data). 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. The species occurs on the Brazilian shield (Rebello and Louzada 1984; Carvalho Jr. and Batista 2013) and in the Caatinga biome (Lima *et al.* 2011; Roberto and Albano 2014). In Venezuela it occurs in the *Mauritia* 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 1992). Ouboter (1996) considered it a species of the shallow margins of blackwater rivers in Suriname.

Hrbek *et al.* (2008) investigated the phylogenetic relationships of South American alligatorids and identified signs of strong population genetic structuring in *Paleosuchus* spp. in the upper Madeira River. Muniz *et al.* (2017) used a genomic approach to investigate the genetic structuring of *P. palpebrosus* along the Amazon and Paraguay River basins. They identified three deeply divergent lineages and proposed the existence of at least three evolutionary significant units (ESUs) - Amazon, Madeira-Bolívia and Pantanal. Researchers from the Universidade Federal da Amazônia, Instituto Nacional de Pesquisas da Amazônia and Embrapa Pantanal are undertaking morphometric, distributional and genetic studies (e.g. investigating multiple paternity in *Paleosuchus* spp. nests in the Amazon basin).

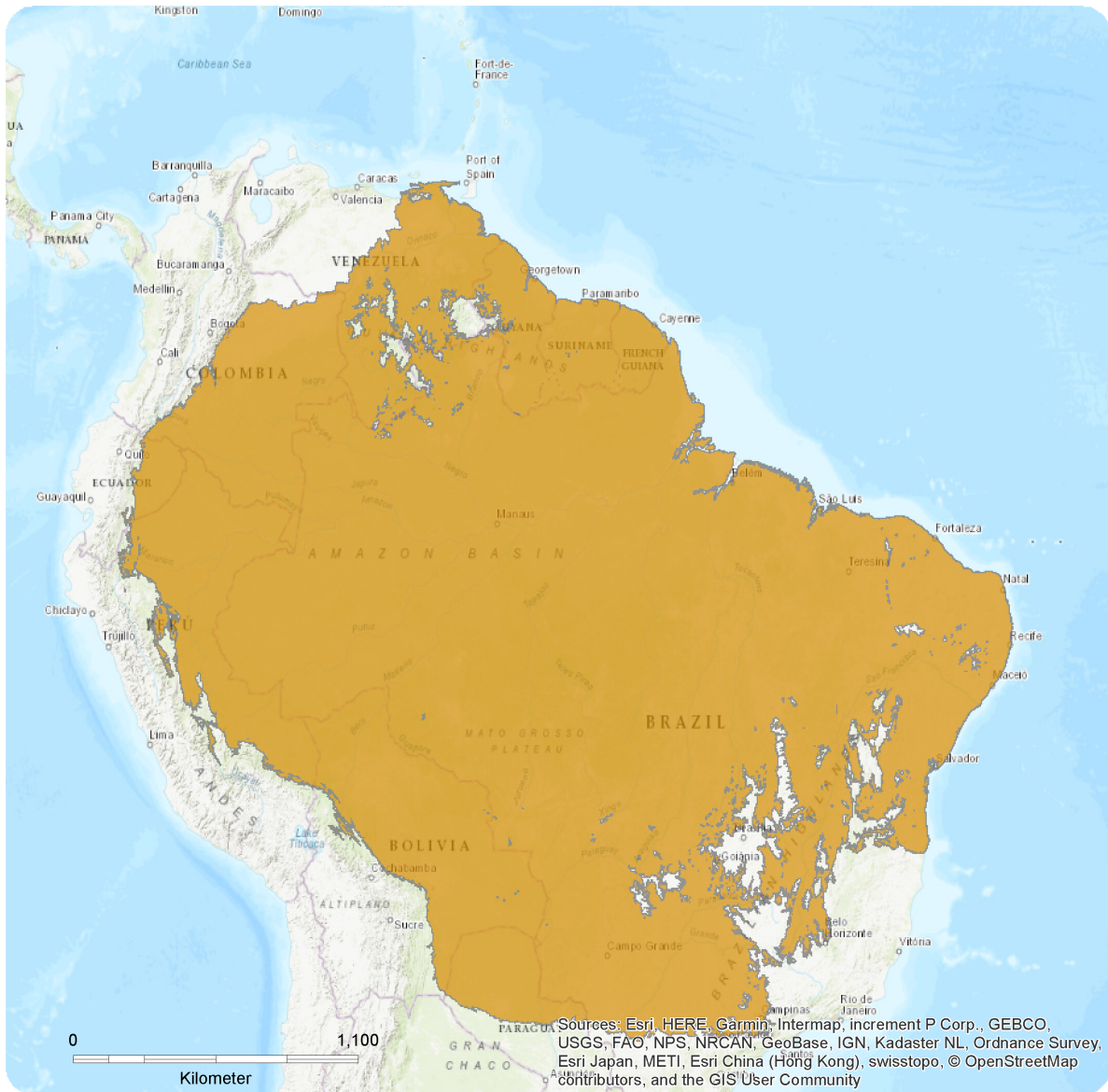
In Venezuela, *P. palpebrosus* occurs in lowlands (<400 m asl) in oligotrophic rivers and streams (Seijas 2007), and terrestrial movement may be extensive in order to reach ephemeral wetlands (Paolilla and Gorzula 1985). In Brazil, Dwarf Caimans move short distances to roadside borrow pits in the dry season (Botero-Arias 2007).

Country Occurrence:

Native: Bolivia, Plurinational States of; Brazil; Colombia; Ecuador; French Guiana; Guyana; Paraguay; Peru; Suriname; Trinidad and Tobago; Venezuela, Bolivarian Republic of

Distribution Map

Paleosuchus palpebrosus

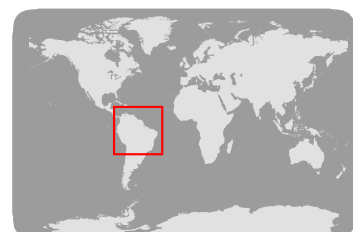


Range

Extant (resident)

Compiled by:

Magnusson, W.E., Campos, Z. & Muniz, F.



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.



Population

Basic surveys have been conducted in the majority (80%) of range states. Most surveys were undertaken to determine the status of other crocodylians, but report on *Paleosuchus* as well. Night-count densities of 0.83-2.20/km on the Rio Curaray in Ecuador have been recorded (T. Hines and P. Wilkinson, pers. comm. 2017). Alvarez (2009) reported densities of 0.28-2.3/km in the Venezuelan Llanos. In the areas surrounding the Pantanal and Brazilian Amazon, densities of 0.0-2.0/km have been recorded (Z. Campos, unpublished data; Campos *et al.* 1995; Muniz *et al.* 2015). Campos and Magnusson (2016) estimated the absolute densities of *P. palpebrosus* from a 5.6 km² area flooded by the construction of the Santo Antônio Dam on the upper Madeira River, Brazil. The authors reported a density of 28.5/km, and suggest that the species may be one of the world's most abundant crocodylians.

Current Population Trend: Stable

Habitat and Ecology (see Appendix for additional information)

The Dwarf caiman has been considered the smallest extant species of crocodylian, with the maximum size of males reported to be about 1.6 m total length (Medem 1981). Ouboter (1996) reported animals of 1.8 m in Suriname. However, the maximum size of Dwarf caiman in Brazil may exceed 2.0 m for males and 1.4 m for females (Campos *et al.* 2010). Reproduction in *P. palpebrosus* was first described by Medem (1971). Davenport (1995) reported evidence for a possible sperm storage event in a captive *P. palpebrosus* female. In the wild, females first reproduce at about 8 years and 60 cm snout-vent length (Campos *et al.* 2012b, 2013b). Females lay 6-21 eggs in mound nests at the end of the dry season in the Amazon and in the wet season in the Pantanal (Campos *et al.* 2015a). The number of eggs was correlated with body mass for 9 females at Amazonian sites (Campos *et al.* 2015a). Females attend nests during incubation (Campos and Sanaiotti 2006) and continue to provide parental care for groups of hatchlings for up to 21 months after hatching at three sites (Pantanal, Guaporé and Amazon) (Campos *et al.* 2012b). Nunes *et al.* (2011) recorded a *P. palpebrosus* nest with bivouacs of army ants in the Brazilian Cerrado, at which no parental care was observed. Campos *et al.* (2017) investigated the effect of dam construction on movements of *P. palpebrosus* on the upper Madeira River and found home ranges varied from >1 km² to 91 km².

Studies of diet in small individuals revealed a variety of vertebrate (mainly fish) and invertebrate prey (Magnusson *et al.* 1987, Campos *et al.* 1995, Botero-Arias 2007, Milàn *et al.* 2010, Dutra-Araújo *et al.* 2017). Villamarín *et al.* (2017) combined stable-carbon-isotope and spatial analyses and found evidence of dietary differences between the two species of *Paleosuchus* independent of habitat selection. Dwarf caiman aestivate during the winter/dry season in burrows and in this situation their body temperatures normally remains low (20°C) for many days (Campos and Magnusson 2013).

Systems: Terrestrial, Freshwater

Use and Trade

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 limited hunting pressure. The Dwarf caiman holds little potential for the development of management programs involving sustainable commercial use. The primary value in most countries is for subsistence hunting by rural inhabitants, and *Paleosuchus spp.* are sometimes taken preferentially over *Caiman spp.* In Guyana, capture and sale of Dwarf caiman for the pet trade, is conducted subject to a CITES annual

export quota of 500 live animals.

Threats (see Appendix for additional information)

In Brazil, threats identified for *P. palpebrosus* include habitat loss and hunting (Campos and Mourão 2006; Campos *et al.* 2012a, 2013c, 2015b; Muniz *et al.* 2015). Female *P. palpebrosus* and their eggs are eaten by people in Central Amazonia and areas surrounding the Pantanal. Surveys of the Lajeado Hydroelectric Dam and regions of the Tocantins River indicate that the species was little affected by river modification (Villaça 2004). Campos (2015) found dead *P. palpebrosus* due to hunting in the Santo Antônio Hydroelectric Dam area. Mudrek (2016) evaluated the effects of urbanization on some population parameters and reported on the diet of *P. palpebrosus* in urban streams in Central Brazil. Campos *et al.* (2015b) registered habitat loss in the Araguaia-Tocantins region. Road kills of *P. palpebrosus* suggest there may be a loss of connectivity between habitats (Campos *et al.* 2012a, 2013c). Subsistence hunting takes place widely, and can locally reduce *Paleosuchus* densities, but populations of this species do not appear to have been impacted significantly. However, gold mining activities, urbanization, and agricultural expansion with their resultant pollution are increasing and have an impact on the species in some areas, especially on the borders of the Pantanal.

Conservation Actions (see Appendix for additional information)

Conservation of *P. palpebrosus* is dependent on maintaining the forest and headwaters of the many watersheds in which it occurs. This is especially important in areas, such as the Pantanal, where there are evolutionarily significant units that are geographically restricted.

Conservation projects needed are:

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. While probably not threatened throughout its distribution, more complete surveys in all range states are needed to evaluate the conservation status of local populations and identify potential conservation areas.
2. Investigations on ecology and population biology. The species is perhaps the least known of the New World crocodylians. Basic topics such as prey, habitat preference, behaviour, survival rates, growth rates and reproduction are poorly known. There is limited information on ecological interactions with other crocodylians and the effects of subsistence hunting, both important to management. Areas where ecological investigations could be 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 should also be studied.

Credits

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Appendix

Habitats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Habitat	Season	Suitability	Major Importance?
5. Wetlands (inland) -> 5.1. Wetlands (inland) - Permanent Rivers/Streams/Creeks (includes waterfalls)	Resident	Suitable	Yes

Threats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Threat	Timing	Scope	Severity	Impact Score
1. Residential & commercial development -> 1.1. Housing & urban areas	Ongoing	Minority (50%)	Negligible declines	Low impact: 4
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
3. Energy production & mining -> 3.2. Mining & quarrying	Ongoing	Minority (50%)	Negligible declines	Low impact: 4
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.1. Intentional use (species is the target)	Ongoing	Minority (50%)	Causing/could cause fluctuations	Low impact: 5
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.1. Intentional use: (subsistence/small scale) [harvest]	Ongoing	Minority (50%)	Negligible declines	Low impact: 4
	Stresses:	2. Species Stresses -> 2.1. Species mortality		

Conservation Actions Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Conservation Actions Needed
1. Land/water protection -> 1.1. Site/area protection

Additional Data Fields

Distribution
Continuing decline in area of occupancy (AOO): No
Extreme fluctuations in area of occupancy (AOO): No
Continuing decline in extent of occurrence (EOO): No

Distribution
Extreme fluctuations in extent of occurrence (EOO): No
Continuing decline in number of locations: No
Extreme fluctuations in the number of locations: No
Lower elevation limit (m): 100
Upper elevation limit (m): 500
Population
Continuing decline of mature individuals: No
Extreme fluctuations: No
Population severely fragmented: No
Continuing decline in subpopulations: No
Extreme fluctuations in subpopulations: No
All individuals in one subpopulation: No
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: No
Generation Length (years): 25
Movement patterns: Unknown

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