



## **Southern Extension of the Geographical Range of the Pygmy Marmoset *Cebuella Pygmaea Niveiventris* (Lönnerberg, 1940) in the Southwestern Amazon Basin, State of Rondônia, Brazil**

Authors: Messias, Mariluce Rezende, Coragem, Juliano Tupan, Gomes, Ivonete Santa Rosa, Oliveira, Marcela Alvares, Bonavigo, Paulo Henrique, et al.

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**SOUTHERN EXTENSION OF THE GEOGRAPHICAL RANGE OF THE PYGMY MARMOSET *CEBUELLA PYGMAEA NIVEIVENTRIS* (LÖNNBERG, 1940) IN THE SOUTHWESTERN AMAZON BASIN, STATE OF RONDÔNIA, BRAZIL**

Mariluce Rezende Messias  
 Juliano Tupan Coragem  
 Ivonete Santa Rosa Gomes  
 Marcela Alvares Oliveira  
 Paulo Henrique Bonavigo  
 Samuel dos Santos Nienow  
 Eduardo Santos de Souza

In this paper we identify a southern extension of *Cebuella pygmaea niveiventris* in the upper reaches of the Rio Madeira basin, State of Rondônia, located in the Southwestern Amazon Biome, Brazil. This includes the first registered sighting of *Cebuella pygmaea niveiventris* within the State of Rondônia. We adopt the taxonomic guidelines of Lönnberg (1940) and consider the *Cebuella pygmaea* specimen collected from Lago Ipixuna (on the southern banks of the Rio Solimões) with a white chest, belly, inner surface of forelegs and hindlegs, as a subspecies (*C. p. niveiventris*). Hershkovitz (1977), on the other hand, argues that the color of the underparts in this specimen is an individual characteristic and varies locally in the *C. pygmaea* population, and so does not justify the status of subspecies.

*Cebuella pygmaea niveiventris* was previously thought to occur in the following locations: in Eastern Peru south of the Rio Marañon and east of the Rio Huallaga, and in the Brazilian state of Amazonas, south of the Rio Solimões and west of the Rio Purus. Its geographical distribution was later found to include the interfluvium Purus-Madeira to the southern limits of the Rio Ipixuna (or Paranapixuna) by Roosmalen and Roosmalen (1997). The presence of *C. p. niveiventris* in northern Bolivia reported by Heltne *et al.* (1976), Izawa (1979), Izawa and Bejarano (1981) and Brown and Rumiz (1986) suggests its occurrence in the upper Rio Madeira basin, as well as the eastern part of the State of Acre including the upper reaches of the Rio Abunã, a tributary of the Rio Madeira, as argued by Rylands *et al.* (1993). Ferrari (1993, 1996) also suggested that it was likely to occur along the upper reaches of the Rio Madeira basin, as local residents had reported its presence near to the Serra dos Três Irmãos Ecological Station in northwestern Rondônia. In addition, according to Messias (2002, 2004), a total of 18 out of 66 interviewees living between the Santo Antônio rapids and the convergence of the Rio Abunã with the Rio Madeira confirmed the presence of *Cebuella pygmaea niveiventris* when shown a selection of photos of various neotropical mammal species.

Sightings by riverine communities indicate that the occurrence of *Cebuella pygmaea niveiventris* is always found in *terra firme* (non-flooded) riparian forests of the Rio

Madeira and those of its major tributaries near to their confluence (Messias, 2004). The upper reaches, with high, steep banks have *terra firme* forest right up to the edge of the riverbank along almost all of its length. Interviewees explained that *Cebuella pygmaea niveiventris* visits fruit trees at the height of the rainy season, however the number of sightings has drastically decreased over the last ten years. In these interviews, the occurrence of *Cebuella pygmaea* was particularly high among the “Jatuarana” and “Cachoeira do Macaco” riverside communities, where pygmy marmosets were frequently observed eating the *Inga edulis* fruits (Messias, 2004) and associated ants (M. A. Oliveira personal observation).

*Cebuella pygmaea niveiventris* has never been sighted by researchers in the upper reaches of the Rio Madeira before, although several groups have been registered at the construction site of the Santo Antônio hydroelectric dam near the Santo Antônio rapids, located approximately 9 km upstream from the city of Porto Velho, Rondonia’s State capital, and the first of 16 rapids that present a major obstacle to navigation of the upper reaches of the river. Here we report a specimen that was rescued during the clearing of the Santo Antônio hydroelectric dam construction site (08°46’46.4” S; 63°58’14.0” W) and deposited at the scientific collection of the Federal University of Rondônia (UNIR), in the Reference Mammal Collection (CRMRO) (museum catalogue: UFROM 175, adult male, skull, skin and skeleton, collected by Juliano Coragem and Ivonete Santa Rosa Gomes, October 10, 2009). The specimen is yellowish grey with a white chest, belly and inner surface of forelegs and hindlegs, and is similar to the Lönnberg description of the subspecies *Cebuella pygmaea niveiventris*.

We also report that two *Cebuella* groups were observed after the Santo Antônio hydroelectric dam construction site had been cleared; both groups were in a very small forest patch with a high density of *Cecropia* sp. trees (two individuals at 08°46’53.9” S; 63°56’11.9” W and four at 08°47’05.3” S; 63°56’11.9” W, J. Coragem, personal observation). This corroborates the ecological data from *Cebuella pygmaea niveiventris* from the lower reaches of the Rio Madeira basin, where locals reported *C. p. niveiventris* to be common but confined to *terra firme* forest (van Roosmalen and van Roosmalen, 1997).

The newly registered sightings and the collected sample confirm the southern extension of the geographical range of *Cebuella pygmaea niveiventris* to the upper reaches of the Rio Madeira basin (an area that has been highly impacted by the recent construction of two hydroelectric dams: Santo Antônio and Jirau). The preferred habitat of *Cebuella* in this region – the riparian forest of the Rio Madeira and major tributaries – is directly affected by the dam’s reservoirs, and although information is lacking in terms of the distribution and density of groups in this area, reports by local people indicate a sharp population decrease in the last 10 years. This, together with the synergetic impact of

deforestation of the reservoir areas, merit further research and monitoring in order to establish the consequences for *Cebuella pygmaea niveiventris* in the upper reaches of the Rio Madeira basin.

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**Mariluce Rezende Messias**, Universidade Federal de Rondônia – UNIR – Mastozology Laboratory. BR 364, Km 9,5. CEP 76900–000. Porto Velho, Rondônia, Brazil, e-mail: messias.malu@gmail.com, **Juliano Tupan Coragem**, **Ivonete Santa Rosa Gomes**, **Marcela Alvares Oliveira**, **Paulo Henrique Bonavigo**, **Samuel dos Santos Nienow** and **Eduardo Santos de Souza**, Environment Basic Program (PBA) of “Faunal observation and rescue from the construction site (dry areas) of the Santo Antônio hydroelectric dam – Santo Antônio Energia Sustentável Consortium (SAE).

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## OBSERVATIONS OF A FIGHT BETWEEN TWO ADULT MALE MANTLED HOWLER MONKEYS (*ALOUATTA PALLIATA*)

Christopher Meyer  
Orrey P. Young

### Introduction

The mantled howler monkey (*Alouatta palliata*), in the initial studies by Carpenter (1934), was considered to have very low social interaction rates and very rare aggressive behaviors. Forty years later, Klein (1974) was still able to claim that howlers exhibited the lowest levels of conspecific aggression among social primates. More recently, reports of male-male fights (Glander, 1992) and chases (Young, 1981), female-female fights (Zucker & Clarke, 1998), male-female fights leading to death of the female (Mendez-Carvajal et al., 2005), and infanticide by males (Clarke, 1983), have changed that perception. The actual observation of these aggressive interactions, however, continues to be a rare event, and has led to various indirect measures documenting aggression, such as bodily injuries of live animals in the field (Cristobal-Azkarate et al., 2004) and skeletal pathologies of collected skulls from one location (DeGusta & Milton, 1998).

Considering just potential aggressive interactions between males, individuals within the same troop may fight over access to an estrous female (Jones, 1980), or a solitary male may fight the alpha male of a troop either for control of the troop (Glander, 1992) or just to become a troop member (Estrada, 1982). If the relationship of the two males had been father-son, there probably would not have been a fight, with the displaced father either leaving or becoming a subordinate (Glander, 1992). Numerous observers have indicated the take-over of mantled howler troops by solitary males (e.g. Young, 1982). Only one publication, involving