A Survey of Primate Populations in Northeastern Venezuelan Guayana

Author: Urbani, Bernardo

Source: Primate Conservation, 2006(20) : 47-52

Published By: Conservation International

URL: https://doi.org/10.1896/0898-6207.20.1.47
A Survey of Primate Populations in Northeastern Venezuelan Guayana

Bernardo Urbani

Department of Anthropology, University of Illinois at Urbana-Champaign, Urbana, Illinois, USA

Abstract: The region of the Guiana Shield is extraordinarily rich in biodiversity. Little is known, however, of the biogeography and conservation status of its diverse primate taxa. The aim of this study was to conduct a rapid survey of primate populations in the northeastern-most part of the state of Bolivar, Venezuela, near the border with Guyana. Previous studies had indicated that the white-faced saki (Pithecia pithecia), wedge-capped capuchin (Cebus olivaceus), and red howler monkey (Alouatta seniculus) were present in this area. It had also been suggested that spider monkeys (Ateles paniscus), golden-handed tamarins (Saguinus midas), and night monkeys (Aotus) may be present in this part of the Venezuelan Guayana. Forty-nine sites of the Río Cuyuní basin were surveyed. Pre-existing forest trails were walked and the Río Cuyuní was also censused by boat. Interviews with local people at all the sites indicated that the only primates inhabiting this region are A. seniculus, C. olivaceus, and P. pithecia. S. midas is not present (or is extremely rare) in the northeastern part of the state of Bolivar. References to night monkeys may well refer to Potos flavus. The presence of an isolated population of Ateles remains uncertain. Cattle ranching, mining, hunting, logging, and the pet trade are major threats to the primates in this part of Venezuela. Further primate surveys should be conducted in the western Guiana Shield.

Resumen: El macizo de las Guayanas representa una de las regiones de mayor biodiversidad en el Neotrópico. Sin embargo, aún es poco conocido la biogeografía y estado de conservación de sus diversas especies de primates. El objetivo de esta investigación fue conducir un reconocimiento de poblaciones de primates en la parte más noreste del estado Bolivar (Venezuela), cerca del borde internacional con Guyana. Un estudio previo indicó que monos viudita (Pithecia pithecia), monos capuchinos comunes (Cebus olivaceus), y araguatos (Alouatta seniculus) estaban presentes en esta área. Posteriormente, se sugirió la posible existencia de monos arañas negros (Ateles paniscus), titíes manos doradas (Saguinus midas) y monos de noche (Aotus spp.) en esta parte de la Guayana venezolana. Cuarenta y nueve sitios de la cuenca del Río Cuyuni fueron reconocidos. Se caminaron trillas pre-existentes en el bosque además de navegar el Río Cuyuni con fines de censar dichas poblaciones de primates. Además, se realizaron entrevistas con habitantes de cada sitio. Los resultados indican que las especies de primates identificadas para esta región son A. seniculus, C. olivaceus, y P. pithecia. S. midas no parece estar presente en la parte más noreste del estado Bolivar, y si existe debe ser extremadamente raro. Por otra parte, las referencias de la existencia de Aotus spp. pueden reflejar confusión con otros mamíferos nocturnos como el cuchi-cuchi (Potos flavus). La presencia de alguna población aislada de Ateles permanece incierto. Finalmente, la ganadería extensiva, minería, cacería, tala, y comercio de monos como mascotas representan las mayores amenazas de los monos de esta parte de Venezuela. Más reconocimientos de poblaciones de primates deben ser realizados en el oeste del escudo guayanés.

Key Words: Alouatta seniculus, Pithecia pithecia, Cebus olivaceus, distribution, conservation, Guianas

Introduction

Neotropical forests are areas of high biodiversity (Mittermeier et al. 2002) but are threatened due to human activities such as logging, hunting, and deforestation (Chapman and Peres 2001). There, primates represent a major group of vertebrates that play a fundamental role in forest regeneration (Heymann 1993). In the Guianas, the biogeography and conservation status of the primates are still poorly known, although the eastern part of this region has been better documented in recent years (Sussman and Phillips-Conroy 1995; Lehman 2000; Boiniski 2002). The main goal of this research was to survey primate populations in the northeastern-most
part of the state of Bolívar, Venezuelan Guayana, in the western Guiana Shield (Fig. 1).

In a previous review, Bodini and Pérez-Hernández (1987) suggested that red howler monkeys (Alouatta seniculus), white-faced sakis (Pithecia pithecia), and wedge-capped capuchin monkeys (Cebus olivaceus) were present in this region. Ten years later, Linares (1998) reported the existence of golden-handed tamarins (Saguinus midas) and black spider monkeys (Ateles paniscus) there, although the evidence for the occurrence of these two primates remains unclear. That for S. midas is restricted to a general map and the name of Bochinche (Bolivar state) as the locality. Similarly, Kinzey et al. (1988) reported the possible presence of the night monkey, Aotus, in Venezuelan Guayana, but there has been no additional field research to confirm this. Kinzey et al. (1988) observed Alouatta seniculus, Cebus olivaceus, and Pithecia pithecia during their surveys in the Lago Guri–El Callao area (Venezuelan Guayana) (Fig. 1B), and local people reported what may be the night monkey Aotus and an Ateles-like monkey, but not tamarins.

The region I surveyed, located between that visited by Kinzey et al. (1988) and the Venezuelan–Guyanese border, represented a gap in our knowledge of the primate populations of the Guianas (Fig. 1). A survey of the Sierra de Imataca was of considerable importance due to increasing cattle ranching, agriculture, logging, and illegal mining that will result in significant forest loss and fragmentation over the coming years. My particular goals were to: a) determine the presence or otherwise of Saguinus midas, Ateles paniscus, Aotus and other primates; b) collect data on group size and the habitats occupied by primate species in the survey area; and c) interview local people to update our knowledge of the geographic distribution of Guayanen primates and document the human activities that may threaten them.

Methods

The reconnaissance sites were located mostly in the forested region of the Río Cuyuni basin. From north to south this area includes Río Grande, Altiplanicie de Nuria (Imataca), Tumeremo, Bochinche (Imataca), Anacoco–San Martín de Turumbán (Río Cuyuni), and El Dorado–La Fé–San Isidro; all in the northeastern part of the state of Bolivar, Venezuela, near the border with Guyana (Table 1, Fig. 1). The survey covered the Venezuelan drainage of the Río Cuyuni, one of the main tributaries of the Essequibo River in Guyana (Ven-

Figure 1. Location of sites surveyed in northeastern Venezuelan Guayana (see Table 1).
The survey was conducted from 30 June to 21 July 2003. A total of 49 sites were visited. Interviews were conducted at each site, and I walked pre-existing trails in secondary and primary forests, besides carrying out river censuses on the Rio Cuyuni (Table 1, Fig. 1C). No transects were cut and only pre-existing trails were used (each walked just once) with the due permission of the owners or land managers. This field survey method (and the type of information recorded, see below) has been used in other rapid primate surveys in lowland South America (e.g., Heymann et al. 2002). Surveys covered approximately 790 km of roads, 55 km along the Rio Cuyuni, and 22 km on pre-existing forest trails. When primates were seen, I recorded data on the behavioral activity, group size, height in the canopy, and sex/age composition of the group. Because of the large area to be covered in this rapid survey and the little time available, a more systematic census technique was impractical. Playback calls were used as an aid in locating tamarin populations, particularly in the Bochinche area where Linares (1998) reported them.

Interviews were conducted in 49 sites — towns and small caseríos (villages) located with a global positional system portable unit (Garmin GPS III) (Fig. 1C, Table 1) — to obtain information on the primate species present at each, their use by local communities (hunting, pets, use of body parts), and on perceptions of the behavior and ecology of the species. I avoided leading questions in order to avoid bias in the responses of the informants. In the initial questions I asked about the primates of the area, and their behavioral and physical descriptions, and only subsequently showed laminated color photocopies of primates in order to clarify their identity. I also included primates that have never been reported for this part of the Venezuelan Guayana (e.g., Callibeus lugens and Saimiri sciureus) to test the interviewees’ knowledge. The informants were adult residents, including Amerindian capitanes (community leaders of the ethnic groups Karína and Pemón), Amerindian and criollo (Venezuelan Creoles) local hunters, campesinos (criollo farmers), miners, loggers,
local traders, Venezuelan national guards, Venezuelan and Guyanese Army soldiers, and Guyanese Carib Amerindians and Creoles.

Results

Only five primate groups were seen during the survey (Table 2). Four of these were *A. seniculus* and one *P. pithecia*. I heard red howler monkeys calls at six sites (Fig. 1C: numbers 1, 7, 21, 35, 39, and 47). The calls were heard mostly in the morning between 05:51 and 06:26, and later in the afternoon between 15:12 and 17:53. Ninety-seven people were interviewed at the 49 sites (Fig. 1C: 1–49; Table 1). All informants indicated that the only primate taxa in the region were *P. pithecia*, *C. olivaceus* and *A. seniculus*.

The following common names were obtained from the interviews:


Discussion

There was universal agreement among the informants as to the relative abundance of the three species: red howlers (*Alouatta seniculus*) > wedge-capped capuchin monkeys (*Cebus olivaceus olivaceus*) > white-faced sakis (*Pithecia pithecia*). The single saki sighting I achieved was of a multi-male and multi-female group of eight in an extremely degraded forest. There was an abandoned mining camp and evidence of a recent fire near the road. I was also told of *P. pithecia* living in a degraded forest on the outskirts of Tumeremo (c.10,000 inhabitants). The red howlers were seen in evergreen primary forests as well as in highly disturbed forests. These taxa were reported as the only primates present on the Guyana side of the Rio Cuyuni. The informants indicated that white-faced sakis live in groups of two to nine individuals, while red howlers and wedge-capped capuchins form larger groups. I was also told that *C. olivaceus* and *P. pithecia* exploit *guama* trees (*Inga* spp., Leguminosae), and that wedge-capped capuchins tend to feed in slash-and-burn plantations.

Following the recommendation of Kinzey *et al.* (1988), I resurveyed an area they visited in 1988, on the upper Río Grande (Fig. 1C: 1–3). At the time of their study, they found white-faced sakis there. Fifteen years later, however I failed to observe any primates. I heard red howlers, and locals said that sakis and wedge-capped capuchins are often seen in the logged forest.

There was no evidence of the presence of *Saguinus midas* in the Bochinche area as reported by Linares (1998) (Fig. 1C, number 20 and adjacent sites). Here, local Kariña and criollos identified just three primates, *A. seniculus, C. olivaceus*, and *P. pithecia*, with no reference of any animal similar to *S. midas*. Corroboration for the inexistence of *S. midas* in the region comes from Ochoa (2000), who worked on small mammal community structure in the Imataca region. He set up a trapping schedule for didelphids and small rodents that resulted in 10,320 trap nights (arboreal and terrestrial) using bananas as bait. The traps and bait were suitable for tamarins, but trapped none. He also spent 567 hours surveying mammals (diurnal and nocturnal) and his easternmost site was about 10 km west of Bochinche and found no evidence for the occurrence of tamarins. My attempts to locate them using *Saguinus* spp. and *S. midas* playback calls in secondary and primary forest around Bochinche also failed to detect any groups. A Guyanese Amerindian informant clearly indicated that tamarins occurred near the Essequibo River in Guyana, but not in the Rio Cuyuni basin. This lends support to Sussman and Phillips-Conroy's (1995) statement that this species does not occur west of the Essequibo River. Based on my survey, I suggest that *S. midas* is not present in the northeastern part of the state of Bolivar in Venezuela.

The possibility of *Aotus* occurring in the region, as was suggested by Kinzey *et al.* (1988) for the area of Rio Grande, might be a reference to another nocturnal mammal. In many of the sites I surveyed the kinkajou (*Potos flavus*) was classified as a monkey. In the Venezuela Guayanana region it is referred to as the *mono goinche* and *neshe* (in Kariña), while on the Guyanese side of the Rio Cuyuni it is called night monkey or night traveler. In many cases, it was described as nocturnal, solitary, or living in pairs, *marroncito* (light brown) or *amarillento* (yellowish) and with *cara de perro* (dog-face), clearly indicating the kinkajou. An informant who knew this

Table 2. Description of primate sightings (abbreviations: A = Adult, J = Juvenile, I = Infant, F = Female, M = Male, U = Unknown).

<table>
<thead>
<tr>
<th>Site #</th>
<th>Species</th>
<th>Behavior</th>
<th>Group size</th>
<th>Age/sex</th>
<th>Height in tree</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td><em>A. seniculus</em></td>
<td>Moving</td>
<td>1</td>
<td>A/M</td>
<td>24 m</td>
</tr>
<tr>
<td>27</td>
<td><em>A. seniculus</em></td>
<td>Resting</td>
<td>5</td>
<td>A/M, A/F, A/U, I/U</td>
<td>20 m</td>
</tr>
<tr>
<td>28</td>
<td><em>P. pithecia</em></td>
<td>Moving</td>
<td>8</td>
<td>3xA/M, 4xA/F, I/U</td>
<td>18 m</td>
</tr>
<tr>
<td>31</td>
<td><em>A. seniculus</em></td>
<td>Resting</td>
<td>6</td>
<td>2xA/M, A/F, 2xA/U, I/U</td>
<td>20 m</td>
</tr>
<tr>
<td>39</td>
<td><em>A. seniculus</em></td>
<td>Moving</td>
<td>2</td>
<td>2xA/U</td>
<td>22 m</td>
</tr>
</tbody>
</table>
animal from western Venezuela called it cuchi-cuchi, which is the common name for *P. flavus* in the country. I also presented photographs of *Aotus* to the informants and they failed to recognize it. Bodini and Pérez-Hernández (1987) and Ford (1994) reported that the range of *Aotus* does not extend to this region. In two interviews, the three-toed sloth (*Bradypus tridactylus*) and the silky anteater (*Cyclopes didactylus*) were also classified as monkeys.

Linares (1998) indicated the presence of black spider monkeys (*Ateles paniscus*) in the Rio Cuyuni area. He reported a sighting of four individuals in 1967 on the upper Rio Cuyuni, and an observation in 1979 of a solitary individual near San Martín de Turumbán (Fig. 1C: number 29), which is very close to Anacoco (Fig. 1C: numbers 27, 28). In Anacoco, I saw wild *P. pithecia* and *A. seniculus* (Fig. 1C: Table 2). All informants in Anacoco and San Martín de Turumbán indicated that *Ateles* did not occur in the area. They included two Guyanese who knew black spider monkeys from the Potaro and Essequibo rivers in Guyana, but said they did not occur in Venezuela. One informant I interviewed on the upper Rio Cuyuni clearly identified the three common primates of the area: *P. pithecia*, *A. seniculus*, and *C. olivaceus*, and the spider monkey. He said he had seen a pair in 1996 (Fig. 1C: number 36) and clearly described them as an *Ateles*, emphasizing their particular physical characteristics, a grayish color, and giving the Spanish name, mono araña. In El Dorado, I was also informed of a spider monkey-like primate, which was very rare but apparently existed in the Alto Paraguán of the Rio Yuruán, a tributary of the upper Rio Cuyuni (Fig. 1C). Kinzev et al. (1988) reported the possibility of *Ateles* near the Rio Supamo, a tributary of the Rio Yuruán, between the Rio Caroni and the Rio Cuyuni. Considering the color description of the Rio Cuyuni specimen, its proximity to the Rio Supamo basin, and the distribution of *A. paniscus* in Guyana, it is probable that rare, small, isolated populations of spider monkeys inhabit the Venezuelan Rio Cuyuni basin, but this demands further investigation. Although reported absent from the Iwokrama Reserve west of the Essequibo River by Lehman (2000), a large population of black spider monkeys was studied in this reserve by Barth Wright (pers. comm. 2005), indicating that northwestern Guyana may be more densely populated with *A. paniscus* than previously believed, and that this species may well have crossed into this part of Venezuela (B. Wright pers. comm. 2005).

The only records of pet monkeys were four wedge-capped capuchins (*C. olivaceus*). Two were found in criollo villages (Fig. 1C: numbers 17, 24): an infant and an adult owned since it was young. A juvenile was being kept as a pet in a *Pemón* village, and another was in a *Kariña* village where I obtained the partial skeletal of an immature *C. olivaceus* pet (Fig. 1C: numbers 44, 18). Capuchins are the preferred primate pets in the region, and generally captured when young, after killing the mother. I was also told of a female *P. pithecia* that had been sold for about US$25, and another person informed me that white-faced saki tails are used for making key chains. Based on my interviews, primates were rarely preferred bush meat. Some locals argued that they look too much like humans, and informants alleged that rodents and ungulates, particularly agoutis (*Agouti paca*) and tapirs (*Tapirus terrestris*), were relatively abundant and preferred game animals in the region. Gold miners, on the other hand, reported hunting red howler because of its carne roja (red meat), but indicated that they tend to be rare near the mines.

Cattle ranching and habitat fragmentation are widespread in the region, especially in the area of Altiplanicie de Nuri-Tumeremo and the middle Río Botanamo. Forest patches are common, as are recently burned clearings. Mining and logging are apparently reducing primate populations from the Río Botanamo to the Venezuelan-Guyanese border due to habitat loss and the creation of roads and trails in the Imataca forest, which provide for incursions of human disturbance and hunting. The consequences of such activities need to be studied in order to evaluate their effects on the primate communities and the implications for the conservation of the primate species and forests of the Guianas in general.

Primate biogeographic studies are particularly needed in different areas of western Guyana, particularly in the Baramera, Down Cuyuni, and Mazaruni river basins. This region is located between the east of the surveyed area in this project (the Venezuelan-Guyanese border in the Rio Cuyuni basin) and the Potaro and Essequibo Rivers (Guyana), west of the regions surveyed by Lehman (2000) and Barnett et al. (2000). As such it fills a gap in our knowledge of the distribution and conservation status of the primates in the western Guianas. My findings reinforce the observed pattern of a gradual drop in primate diversity from east to west in the Guiana Shield, probably because of the existence of major rivers acting as biogeographic barriers such as the Essequibo (see Sussman and Phillips-Conroy 1995). It was possible to fully document the presence of only three primate species (*A. seniculus*, *C. olivaceus* and *P. pithecia*) in the northeastern part of the Venezuelan Guayana (= western Guianas), contrasting as such with the eight primates reported for eastern Guyana and Suriname (Lehman 2000; Boinski 2002). More surveys in isolated areas of the Guianas should be conducted to fully understand the primate biogeography of this broad region.

**Acknowledgments**

Thanks to Carlos Bosque, Henry Briceño, Armando J. Madero, Jorge Moreno, Carlos Gabriel Morillo, Sarah J. Smith, Eugenio Szczesner, Franco Urbani, and Stanford Zent for their cooperation. The Corporación Venezolana de Guayana, Guardia Nacional de Venezuela, and Ejercito de Venezuela provided fundamental logistic aid. In the field, special thanks to Pereira, Linares, Andrew, and Miguel. Paul A. Garber, Barth Wright, Anthony Rylands, Barry Lewis, and an anonymous reviewer provided valuable suggestions. I am grateful to Marilyn A. Norconk for her confidence in me over
the years and for being one of my first mentors in my primatological career, and also to Tania Urquiza-Haas for her love. This research was funded by a Conservation International (Margot Marsh Biodiversity Foundation) grant and a Lewis A. Tyler Fund (LASPAU) award. The author is currently supported by a Fulbright–OAS Fellowship.

Literature Cited


Author’s address:

Bernardo Urbani, Department of Anthropology, University of Illinois at Urbana-Champaign, 109 Davenport Hall, 607 S. Mathews Ave., Urbana, Illinois 61801, USA. E-mail: <burbani@uiuc.edu>.

Received for publication: October 2003
Revised: January 2006