

Mammal survey in the Rio Jauaperí region, Rio Negro Basin, the Amazon, Brazil

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SUMMARY

The Brazilian part of the Rio Negro Basin, a major region of the Amazon, is one of the least studied regions of the Amazon rainforest. An intensive, four months inventory of the medium to large, non-volant mammal species was conducted in the area encompassing the lower Rio Xixuaú, a minor tributary to the Rio Jauaperí river, to the north of Rio Negro. The main habitats of the study area were seasonally flooded *igapó* forest, riparian vegetation, higher-lying *terra-firme* forest, secondary forest, minor water courses and lakes. Using walked transects, camera trapping, observations from canoe, nightspotting, interviews, and identification of skulls, it was possible to list 42 species for the study site, including 8 xenarthrans, 7 primates, 11 carnivores and 5 ungulates. The habitat use of the primate species is analyzed.

KEY WORDS

Mammal inventory,
camera trapping,
primate habitat use,
Rio Negro region,
the Amazon, Brazil.

RÉSUMÉ

La partie brésilienne du bassin du Rio Négro, une région majeure du bassin amazonien, est l'une des moins connues quant à la faune des mammifères. Quatre mois d'inventaires des mammifères non-volants de taille moyenne à grande ont été réalisés dans la zone du fleuve Rio Xixuaú, un petit affluent du Rio Jauaperi, à env. 400 km au nord de Manaus. En fonction de la saison, les principaux habitats concernés par l'étude ont été des forêts inondées « igapo », des forêts riveraines, des forêts jamais inondées « terra firme », des forêts secondaires, des petits cours d'eau et des lacs. À l'aide d'observations effectuées à pied (transects diurnes), tant diurnes que nocturnes, de caméras automatiques (*camera trapping*), en utilisant des canoës, en pratiquant des interviews, et en examinant des crânes, il a été possible d'identifier 42 espèces différentes sur le site d'étude, parmi lesquelles 8 xénarthes, 7 primates, 11 carnivores et 5 ongulés. De plus, de nombreuses observations de primates ont permis de décrire sommairement l'utilisation préférentielle de leur habitat.

INTRODUCTION

The majority of the mammal surveys of the Brazilian Amazon has been carried out to the south of Rio Amazonas and on tributaries to Rio Solimões (Voss and Emmons 1996; Patton *et al.* 2000), and mainly on *white water* rivers. The *black water* Rio Negro Basin is one of the least studied regions of the Amazon rainforest. The first collections on the Rio Negro were conducted by the expedition of A. Rodrigues Ferreira in the end of the eighteenth century, and later, in the nineteenth century, also A.R. Wallace visited the region. Avila Pires (1964) published a paper on mammals collected on the Rio Negro close to Manaus. The only recent intensive mammal inventory of a delimited study site in the Brazilian part of the Rio Negro region was carried out in the Parque Nacional do Jaú, situated at Rio Jaú, to the south of Rio Negro (M.N.F. da Silva, personal communication). This study focused on small mammal trapping (Patton and da Silva, unpublished species list). Rio Jauaperí, where this study took place, runs to the north of Rio Negro, which is a major distribution barrier for many mammal species (Emmons and Feer 1997; Eisenberg and Redford 1999).

An intensive, four months mammal inventory was conducted in the Xixuaú Nature Reserve, situated on the western side of the middle Rio Jauaperí, Roraima state, Brazil (headquarters at GPS position S 0°48.023', W 61°33.476'). Xixuaú Nature Reserve is an area of approximately 150,000 ha of mostly pristine rainforest. The study area consists of the typical forest habitat types of the region: higher-lying unflooded *terra firme* forest, lower-lying seasonally flooded *igapó* forest and riparian vegetation, as well as secondary forest at various successional stages, a few minor plantations, minor water courses and lakes. During the floodseason the area receives 'black'water from Rio Jauaperí, and the *igapó* is flooded by black water, however, a couple of months a year, during the low water season, the water courses inside the Nature Reserve are exceptionally clear and the water less acidic. The study focused on the area encompassing the lower Rio Xixuaú, a narrow river in the southern part of the Nature Reserve.

The study was conducted starting at the peak of the low water season in January 2001 when all the *igapó* forest was dry. During the study period, the rainy season began and waters rose considerably, and at the end of the study period (March/April) the *igapó* was starting to flood. Observations from an earlier one-month visit to Xixuaú in August 1996, at the peak of the flood season, are included.

The area was traditionally inhabited by indigenous people, who must have carried out subsistence hunting. For more than three decades, the area has been inhabited by only a few *caboclo* families and, besides poaching of cats and otters, hunting pressure was probably light. Hunting ceased with the establishment of the Xixuaú Nature Reserve about 10 years ago (C.R. Nascimento and J.S.G. da Silva, personal communication).

The main aim of this study was to inventory the medium to large, non-volant mammal species of the area. In addition, the habitat use of primates in the area was studied in more detail.

MATERIALS AND METHODS

The following methods were used: camera trapping, diurnal and nocturnal walked transects, diurnal and nocturnal observations from canoe, identification of tracks, interviews of knowledgeable reserve staff, and, in the case of one species, identification of skull and skeletal parts.

Six TrailMaster camera traps with infrared trigger mechanism were used (TM 550 Passive Infrared Trail Monitor + TM35-1 Camera Kit) (Goodson and Associates, USA). Trap stations were often baited (Table 3).

A system of nine transects of 3-6 kilometres was established and used for the daily surveys. The trails were situated along an 8 km stretch of the lower Rio Xixuaú and its tributaries. The trail system covered all of the above mentioned major terrestrial habitat types. On the walked transects, observations of animals heard close to the trail were included (typically flushed animals and monkeys). Animal signs that could be identified to species level, such as armadillo burrows and tapir droppings, were also recorded.

For the interviews I relied mostly on two very knowledgeable locals: Carlos Roberto Nascimento who has lived for 25 years in Xixuaú, and worked for many years as a poacher of wild cats and Giant Otters (*Pteronura brasiliensis*), and João Soares Gomes da Silva, who has spent his entire life working inside the forest, and has lived about 10 years in Xixuaú. Both men have worked extensively as guides in the reserves.

RESULTS

Records of mammals

More than 750 records of mammal were obtained by sightings, acoustic records and camera trapping. The inventory includes 42 species (Table 1), out of which 23 were recorded during diurnal and nocturnal census, 13 were recorded by camera trapping, and an additional 13 'reliable' species were reported by the locals of Xixuaú (Table 2). Table 3 gives information on the sites of and bait types used for the captures of the various species.

Primate observations

The only monkeys observed frequently in the igapó forest during the survey were Red Howler Monkeys (*Alouatta seniculus*) and Brown Capuchin Monkeys (*Cebus apella*). During the low water season the diverse and abundant primate fauna is found in the terra firme.

In order to analyze the habitat use of the primates in the terra firme forest, the four most walked transects were chosen, representing a grade from very tall, open, undisturbed primary forest to forest with many tree falls and much natural secondary vegetation. Two measures were calculated: a sighting index (i.e. the frequency of recording a species per walked kilometer), and the number of records of a species on a trail divided by the total number of primate records on that trail (i.e. how frequently a species was observed on a trail in comparison to the other species) (Table 4).

All seven species of primates were observed carrying young in all months of the study period (January-April).

Common Squirrel Monkeys (*Saimri sciureus*) and Brown Capuchin Monkey are known to commonly associate (Emmons and Feer 1997). During our study, we saw 22 examples of such mixed troops. The only other species often seen associating was the Brown Bearded Saki Monkey (*Chiropotes satanas*). We had several observations of a single Brown Bearded Saki Monkey traveling with either Black Spider Monkeys (*Ateles paniscus*) (n = 3) or mixed Brown Capuchin Monkey/Common Squirrel Monkey troops (n = 3).

DISCUSSION

When opossums (Didelphidae), spiny rats (Echimyidae), and rats and mice (Sigmodontinae) are excluded, the long-term study at the MSCE Reserves north of Manaus recorded 31 species of non-volant mammals (Voss *et al.* 2001). In our study, we found 40 species within this category. The following species recorded in this study were not found in the MSCE reserves: *Saimri sciureus*, *Herpailurus yaguarondi*, *Leopardus wiedii*, *Pteronura brasiliensis*, and *Hydrochaeris hydrochaeris*, along with the aquatic species *Inia geoffrensis*, *Sotalia fluviatilis*, and *Trichechis inunguis* (Voss *et al.* 2001). All non-aquatic species of this study occur in French Guiana (Voss *et al.* 2001), and, as one would expect, the mammal fauna of the Xixuaú area is typical of the Guianan subregion of the Amazon rainforest (Voss and Emmons 1996; Voss *et al.* 2001). Emmons (1984), Voss and Emmons (1996) and Voss *et al.* (2001) present a more detailed analysis of the similarities between the mammalian faunas of the Guianan subregion and other Neotropical rainforest sites of the Amazon, the coastal Venezuelan/Colombian rainforest, and the trans-Andean rainforest.

A number of additional medium-sized mammal species could be expected in the Xixuaú/Jauaperi area: the opossums *Caluromys lanatus*, *C. philander*, *Philander opossum*, and *Metachirus nudicaudatus* (found in the MCSE Reserves; Voss *et al.* 2001); Naked-tailed Armadillo (*Cabassous unicinctus*) (recorded north of Manaus; Rittl 1998; Yabe *et al.* 1998), and the tree porcupine *Coendou melanurus* (widespread

TABLE 1. – List of mammals of the lower Rio Xixuau area.

DIDELPHIMORPHIA		
Didelphidae	<i>Didelphis marsupialis</i>	Common Opossum
XENARTHRA		
Myrmecophagidae	<i>Cyclopes didactylus</i> <i>Myrmecophaga tridactyla</i> <i>Tamandua tetradactyla</i>	Pygmy Anteater Giant Anteater Southern Tamandua
Bradyrodidae	<i>Bradypus tridactylus</i>	Pale-throated Three-toed Sloth
Megalonychidae	<i>Choloepus didactylus</i>	Southern Two-toed Sloth
Dasyrodidae	<i>Dasyurus kappleri</i> <i>Dasyurus novemcinctus</i> <i>Prionomys maximus</i>	Great Long-nosed Armadillo Nine-banded Long-nosed Armadillo Giant Armadillo
PRIMATES		
Callitrichidae	<i>Saguinus midas</i>	Golden-handed Tamarin
Cebidae	<i>Alouatta seniculus</i> <i>Ateles paniscus</i> <i>Cebus apella</i> <i>Chiropotes satanas</i> <i>Pithecia pithecia</i> <i>Saimiri sciureus</i>	Red Howler Monkey Black Spider Monkey Brown Capuchin Monkey Brown Bearded Saki Monkey Guianan Saki Monkey Common Squirrel Monkey
CARNIVORA		
Canidae	<i>Speothos venaticus</i>	Bush Dog
Procyonidae	<i>Nasua nasua</i> <i>Potos flavus</i>	South American Coati Kinkajou
Mustelidae	<i>Eira barbara</i> <i>Lontra longicaudis</i> <i>Pteronura brasiliensis</i>	Tayra Neotropical Otter Giant Otter
Felidae	<i>Leopardus pardalis</i> <i>Leopardus wiedii</i> <i>Herpailurus yagouaroundi</i> <i>Panthera onca</i> <i>Puma concolor</i>	Ocelot Margay Jaguarundi Jaguar Puma
CETACEA		
Platanistidae	<i>Inia geoffrensis</i>	Pink River Dolphin
Delphinidae	<i>Sotalia fluviatilis</i>	Tucuxi Dolphin
PERISSODACTYLA		
Tapiridae	<i>Tapirus terrestris</i>	Brazilian Tapir
ARTIODACTYLA		
Tayassuidae	<i>Pecari tajacu</i> <i>Tayassu pecari</i>	Collared Peccary White-lipped Peccary
Cervidae	<i>Mazama americana</i> <i>Mazama gouazoubira</i>	Red Brocket Deer Brown Brocket Deer
SIRENIA		
Trichechidae	<i>Trichechus inunguis</i>	Amazonian Manatee
RODENTIA		
Sciuridae	<i>Sciurus cf. aestuans</i>	Guianan Squirrel
Erethizontidae	<i>Coendou prehensilis</i>	Brazilian Porcupine
Hydrochaeridae	<i>Hydrochaeris hydrochaeris</i>	Capybara
Cuniculidae	<i>Cuniculus paca</i>	Paca
Dasyproctidae	<i>Dasyprocta leporina</i> <i>Myoprocta acouchy</i>	Red-rumped Agouti Red Acouchy
Echimyidae	<i>Proechimys sp.*</i>	Spiny rat

* Identified by J.A. de Oliveira and L.M. Pessoa from camera trap photo.

Note: the scientific family and species names follow Voss *et al.* (2001), the vernacular names follow Emmons and Feer (1997).

TABLE 2. – Summary of records at Xixuaú by species and method.

	Camera trapping (no. of photos)	Diurnal/ nocturnal census	Miscellaneous	Total	Interviews
<i>Didelphis marsupialis</i>	175	4	0	179	-
<i>Cyclopes didactylus</i>	0	0	0	0	Yes
<i>Myrmecophaga tridactyla</i>	3	0	0	3	-
<i>Tamandua tetradactyla</i>	0	3	0	3	-
<i>Bradypus tridactylus</i>	0	1	0	1	-
<i>Choloepus didactylus</i>	0	0	Skull/skeleton	1	-
Sloth sp.?	0	2	0	2	-
<i>Dasybus kappleri</i>	3	0	Some burrows	3 (excl. burrows)	-
<i>Dasybus novemcinctus</i>	?	1	Some burrows	1 (excl. burrows)	-
<i>Dasybus sp.?</i>	15	0	0	15	-
<i>Priontontes maximus</i>	13 ¹	0	Some burrows	13 (excl. burrows)	-
<i>Saguinus midas</i>	0	54	0	54	-
<i>Alouatta seniculus</i>	0	46	0	46	-
<i>Ateles paniscus</i>	0	33	0	33	-
<i>Cebus apella</i>	0	63	0	63	-
<i>Chiropotes satanas</i>	0	12	0	12	-
<i>Pithecia pithecia</i>	0	15	0	15	-
<i>Saimri sciureus</i>	0	41	0	41	-
<i>Speothos venaticus</i>	0	0	0	0	Yes
<i>Nasua nasua</i>	0	0	0	0	Yes
<i>Potos flavus</i>	0	0	0	0	Yes
<i>Eira barbara</i>	1	4	0	5	-
<i>Lontra longicaudis</i>	0	0	0	0	Yes
<i>Pteronura brasiliensis</i>	0	Many ²	Several burrows	Many	-
<i>Leopardus pardalis</i>	0	0	0	0	Yes
<i>Leopardus wiedii</i>	0	0	0	0	Yes
<i>Herpailurus yagouaroundi</i>	0	0	0	0	Yes
<i>Panthera onca</i>	0	1	Scratchin trees	1	-
<i>Puma concolor</i>	1	0	0	1	-
<i>Inia geoffrensis</i>	0	Many	0	Many ⁶	-
<i>Sotalia fluviatilis</i>	0	Few	0	Many	-
<i>Tapirus terrestris</i>	11	2	Many signs	13 + misc.	-
<i>Pecari tajacu</i>	43	2	0	45	-
<i>Tayassu pecari</i>	0	0	0	0	Yes
<i>Mazama americana</i>	6	5	0	11	-
<i>Mazama gouazoubira</i>	0	0	0	0	Yes
<i>Mazama sp.?</i>	0	17	0	17	-
<i>Trichechus inunguis</i>	0	0	0	0	Yes
<i>Sciurus cf. aestuans</i>	0	3	0	3	-
<i>Coendou prehensilis</i>	0	0	0	0	Yes
<i>Hydrochaeris hydrochaeris</i>	0	0	0	0	Yes
<i>Cuniculus paca</i>	6	10	0	16	Yes
<i>Dasyprocta leporina</i>	14	53	0	67	-
<i>Myoprocta acouchy</i>	1	48	0	49	-
<i>Proechimys sp.*</i>	1	0	0	1	-

1. Photos from two captures.

2. A Giant Otter pair with a young lived close to the headquarters and they were seen frequently. In addition, two larger groups were observed further away.

TABLE 3. – Summary of camera trapping results.

Abbreviations. Fish bait = fish bait covered by leaves; veg bait = vegetarian bait (banana, manioc, food left overs, salt); nat trail = natural trail; hum trail = human trail; mud = mud wallow/watering hole; trunk = hollow trunk

<i>Didelphis marsupialis</i>	Fish bait 150; veg bait 18; hum trail 6; mud 1
<i>Myrmecophaga tridactyla</i>	Fish bait/scratching tree 2, mud/salt 1
<i>Dasybus kappleri</i>	Cavity in trunk/nat trail 3
<i>Dasybus</i> *	Mud 9; hum trail 2; nat trail 4
<i>Prionomys maximus</i>	Burrow 6; dug up termite nest 7
<i>Eira barbara</i>	Veg bait
<i>Puma concolor</i>	Hum trail/fish/bait/scratching tree
<i>Tapirus terrestris</i>	Nat trail 1; veg bait 1; salt 4; mud 5
<i>Pecari tajacu</i>	Fish bait 7; mud 4; water 11; bed 21
<i>Mazama americana</i>	Hum trail 3; salt 2; bed of peccaries 1
<i>Cuniculus paca</i>	Veg bait 1; hum trail 3, mud 1, trunk 1
<i>Dasyprocta leporina</i>	Nat trail 1; veg bait 3, salt 2; mud 4; trunk 4
<i>Myoprocta acouchy</i>	Mud

*Photos where it was not possible to distinguish between *D. kappleri* and *D. novemcinctus*

in the Guianan subregion; Emmons and Feer 1997; Voss *et al.* 2001). The two latter species are both extremely difficult to record. Neither L.H. Emmons or J.R. Malcolm, some of the most experienced field workers in the region, found *Cabassous unicinctus* during their extensive studies at the MSCE Reserves (Voss and Emmons 1996), and only later has it been recorded in the area by camera trapping (Rittl 1998; Yabe *et al.* 1998). Locals of Xixuaú did not know of the easily recognizable Crab-eating Raccoon (*Procyon cancrivorus*), a widespread but uncommon species in the Amazon (Emmons and Feer 1997).

Habitat use and seasonal local migration of primates

The data in Table 4 should be viewed with caution, but nevertheless give a good indication of various trends. Using these results along with the rest of our observations, in Table 5 a summary of the overall habitat use of the primate community is given. The following forest strata classifications for the terra firme were used: A stratum = tall emergents; B stratum = the continuous canopy; C stratum = smaller trees (and palms) below the canopy.

During the dry season when fruit is scarce inside the seasonally flooded igapó the only com-

mon monkeys found in this part of the forest are Red Howler Monkeys (specialized folivores) and Brown Capuchin Monkeys (omnivores) (Emmons and Feer 1997), both able to get by without fruit. During my flood season visit in 1996 I recorded also Guianan Saki Monkey (*Pithecia pithecia*), Brown Bearded Saki Monkey and Common Squirrel Monkey in the igapó. My own observations combined with information from locals indicate a strong migration of many of the primate species from the terra firme to the igapó during the flood season, when the amount of fruit increases substantially. However, I never saw Black Spider Monkeys in igapó, and according to the locals, this species stays in the terra firme. This may also, at least to some extent, be the case with the Golden-handed Tamarin (*Saguinus midas*).

Additional comments

On many of the camera trap records of *Dasybus armadillos* it was not possible to unambiguously identify *D. novemcinctus*, however, it is likely that most of the photos are of this species. An all yellow Tayra (*Eira barbara*) was camera trapped. This rare form is mentioned in Emmons and Feer (1997). The one observation of Jaguar (*Panthera onca*) was of an animal travelling

TABLE 4. – Occurrence of primates in various types of terra firme forest.

Data from four terra firme trails grading from very tall and open to relatively disturbed forest with much undergrowth. Sighting index = no. of obs. of sp./km walked; % = no. of obs. of sp./total no. of primate obs. on trail (see text for explanation).

Trail habitat	Very tall, open, many thick trees, little secondary vegetation		Tall, relatively open, relatively little secondary vegetation		Part of trail tall, relatively open forest, other part of trail with much secondary vegetation		Diverse mixture of tall primary and many patches of secondary vegetation around tree falls	
Total length of transects walked (km)	30		45		81		45	
Total no. of primate obs.	26		37		90		34	
	Index	%	Index	%	Index	%	Index	%
<i>S. midas</i>	0.30	34.6	0.07	8.1	0.17	15.5	0.24	32.3
<i>A. seniculus</i>	0.23	27.0	0.20	24.3	0.19	16.7	0.16	20.6
<i>A. paniscus</i>	0.27	30.8	0.29	35.2	0.14	12.2	0	0
<i>C. apella</i>	0.03	3.8	0.13	16.2	0.28	25.6	0.20	26.5
<i>C. satanas</i>	0.03	3.8	0.04	5.4	0.07	6.7	0.04	5.9
<i>P. pithecia</i>	0	0	0.02	2.7	0.01	1.1	0.02	2.9
<i>S. sciureus</i>	0	0	0.07	8.1	0.25	22.2	0.09	11.8

around midday. The one photo of Puma (*Puma concolor*) was of a mother with a large, spotted juvenile. The Tucuxi Dolphin is common in the large Rio Jauaperi, but rarely enters the small Rio Xixuaú. The Pink River Dolphin may be absent from the Rio Xixuaú during the peak of the low water season, but is common in oxbow lakes of the Nature Reserve most of the year. The Brown Brocket Deer (*Mazama gouazoubira*), although reported by the locals of Xixuaú, was never unambiguously recorded. All safe records of *Mazama* deer were of the Red Brocket Deer (*M. americana*; n = 11), and the Brown Brocket Deer seems to be rare. The Amazonian Manatee was observed just prior to our study period a couple of kilometres up the Rio Xixuaú (Line Friis Møller, Copenhagen Zoo, personal communication), however, the species was never seen during our many hours on the river from January-April. The species evidently migrates locally in response to change in water levels and/or the clear water/black water fluctuations. These seasonal changes probably affects the availability of the aquatic plants the Manatee feeds on.

Camera trapping

Camera trapping has been used successfully for mammal studies in tropical forests of Asia and Africa (Griffiths and van Schaik 1993; Karanth and Nichols 1998; Franklin *et al.* 1999). This survey, along with the studies of Rittl (1998), Yabe and Higuchi (1998), and Yabe *et al.* (1998), has shown that also in the Amazon camera trapping is a highly efficient way to relatively quickly record a number of shy and secretive terrestrial mammal species, and survey a fauna that may otherwise take years to inventory. The above mentioned camera trapping studies north of Manaus recorded also Jaguarundi, Ocelot (*Leopardus pardalis*), Margay, Grison (*Galictis vittata*), South American Coati (*Nasua nasua*), and a range of smaller species of opossums and rodents.

Ants and termites are known to be a major problem for field workers camera trapping in rainforest in Asia, since they use camera traps as nesting sites. To solve this problem I recommend a simple solution: wrap adhesive tape around the base of the pole on which the camera trap is pla-

TABLE 5. – Resume of primate habitat use in Xixuaú.

Species	Habitat use
<i>Saguinus midas</i>	According to Emmons and Feer (1997), unlike other callithrichids this species tends to frequent open, high forest formations. This concurs with the observations from Xixuaú. Quite common in both tall, open mature terra firme forest and terra firme forest with many patches of natural secondary vegetation. In tall forest they seem to favour trees with relatively dense foliage. The most commonly observed species in secondary forest. Strata B-C.
<i>Alouatta seniculus</i>	Seems to be the most evenly distributed primate species in the various terra firme forest types, being common in all parts of the terra firme. Rarely seen in secondary forest, but relatively common in igapó forest, both during the low water and the flood season. Strata A-B.
<i>Ateles paniscus</i>	Seems to be the most specialized primate habitat wise; almost exclusively recorded in tall, open mature forest with relatively little disturbance, and were never recorded in secondary forest or igapó. In their preferred habitat they may be the most commonly recorded monkey. Strata A-B.
<i>Cebus apella</i>	The most recorded of all the primates, partly due to its relative abundance in the igapó, where, during the low water season, it is the most abundant species. Relatively uncommon in tall, open mature terra firme forest, but very common in the more heterogeneous terra firme with tree falls, and also relatively common in disturbed forest. When in mixed groups with Common Squirrel Monkeys, they are on average higher up in the forest. Strata B-C.
<i>Chiropotes satanas</i>	The least commonly observed monkey, and half of the observations were of single individuals. This may be partly explained by the fact that troops use large areas of several square kilometres (Emmons and Feer 1997), and, next to Common Squirrel Monkeys, this was the species seen in the largest groups. One troop of at least 45 individuals was encountered. They were found in the whole range of terra firme forest types. Never recorded in secondary forest, but, observed in igapó during the flood season. Strata B-C.
<i>Pithecia pithecia</i>	Another less commonly recorded species, which may be partly due to its generally shy, silent and secretive behavior. Rarely observed deep in the mature terra firme forest, and prefers secondary forest and edge habitats (e.g. between igapó/terra firme and secondary/primary forest). During the flood season, the species enters the igapó. Strata B-C.
<i>Saimri sciureus</i>	Uncommon in tall, undisturbed terra firme forest, and favoured terra firme forest with a high degree of natural disturbance to an even greater extent than the Brown Capuchin Monkey, with which it often associates. Often seen in palms. This is a common species in secondary forest and was also observed frequently in riparian vegetation at the edge of rivers and clearings, both during the low water and flood season. Strata C.

ced with the sticky side facing outwards. Above this, the bark can be peeled upwards with a machete so that an 'umbrella' is constructed; this umbrella protects the tape against rain and probably works against rodents (like the system used on ropes on ships, to prevent rats from entering).

In Trolle (in press) more detailed recommendations for camera trapping in the Amazon and the Pantanal are given. Trolle and Kéry (in press) show that individual recognition of Ocelot from camera trap photos is possible and estimate density of Ocelot using capture-recapture analysis of camera trapping data.

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