
3. HABITAT PREFERENCES

3.1. Preferences for Different Forest Types

Where little or no hunting has taken place, *Ateles p. paniscus* can be quite abundant in tracts of high forest. It also occurs in riverbank high forest but this habitat has often been subjected to severe hunting by Bushnegroes and/or Amerindians been subjected to. Even in uninhabited stretches of riverbank high forest, there has usually been at least some hunting by occasional field crews from the Meteorological, Geological and/or Mining Services. I never observed spider monkeys right at the river's edge. The reasons may be unpleasant hunting experience in the past, tendency of the monkeys to avoid edge habitats, and/or lack of preferred food plant species at the river margins. Aside from the preferred habitats, *Ateles* was seen in Surinam only once in marsh forest, once in high savanna forest growing on the Coesewijne formation and three times in *Eperua falcata* savanna forest (Mittermeier, 1977).

Ateles also apparently prefer undisturbed high forest in other parts of South America (e.g., Janson, 1975; Bernstein, et al., 1976; Hernández-Camacho and Cooper, 1976). They are usually not found in areas where human activity has resulted in forest destruction. Their absence from most areas where there has been human activity may be a result of the hunting pressure that frequently accompanies partial habitat destruction, rather than the monkeys' inability to survive in isolated patches of habitat. *Ateles geoffroyi* from Central America is apparently more flexible in choice of habitat than most of its South-American relatives. Freese (1976) observed it in evergreen, semi-deciduous and sometimes even deciduous forest in Costa Rica, and Eisenberg and Kuehn (1966) and Alvarez del Toro (1977) report it even from mangrove forest in Chiapas, Mexico. The available evidence indicates that all *Ateles* species prefer undisturbed high forest. However, where such habitat is limited in extent, where hunting pressure is light or non-existent, and where other primate competitors are few in number, it appears to be able to live in several other forest types as well.

In the Voltzberg region, *Ateles* is predominantly seen in high rain forest (fig. 18A). Of all first sightings, 92.6% occurred in high

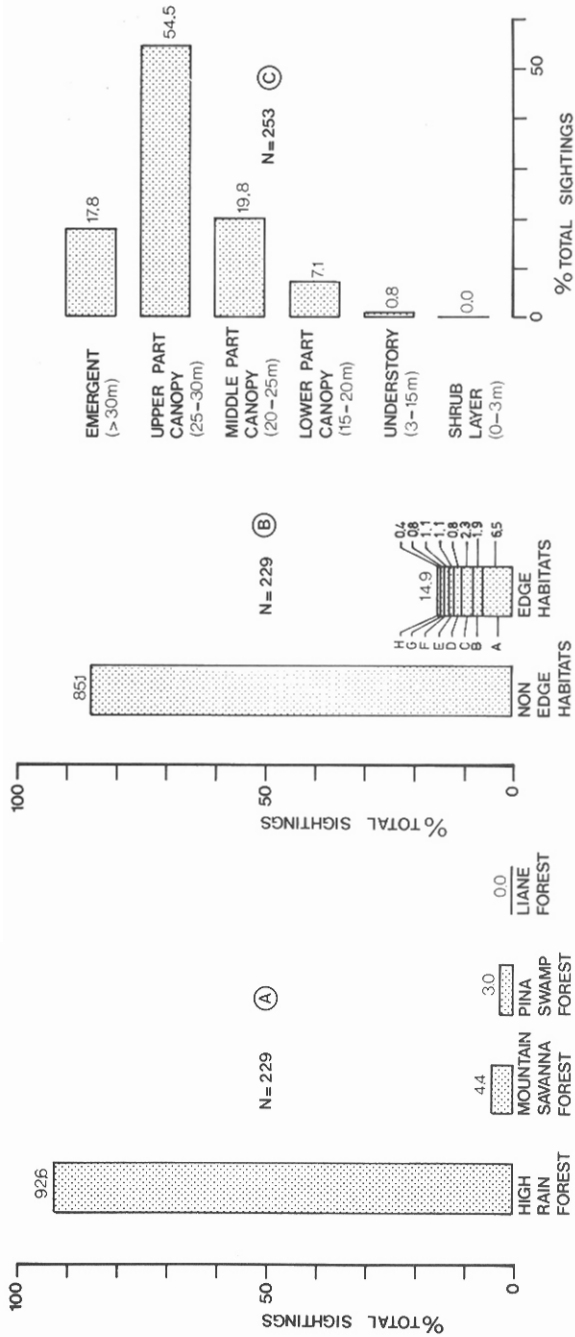


Figure 18. Habitat preferences of *Ateles p. paniscus* in the Voltzberg study area. Data are based on first sightings only.
 A. Forest type preferences - B Utilization of edge habitats (A = high forest, edge pina swamp forest; B = high forest, edge liane forest; C = high forest, edge clearing; D = high forest, edge mountain savanna forest; E = pina swamp forest, edge high forest; F = mountain savanna forest, edge clearing; G = mountain savanna forest, edge liane forest; H = mountain savanna forest, edge high forest) - C. Utilization of forest strata.

forest. It entered high mountain savanna forest only occasionally (4.4%), particularly when some food species typical of this formation was fruiting. During the long dry season, this vegetation type had almost nothing to offer for spider monkeys and consequently they were very rarely seen there at this time of year. The third forest type in which *Ateles* was occasionally seen was pina swamp forest (3.0%). *Ateles* did not avoid this type of forest while traveling; instead it used the flexible stems of the pina palms (*Euterpe oleracea*) as jumping-poles while hanging in the small crowns. Several tree species typical of pina swamp forest (e.g., *Carapa procera*, *Eperua falcata*, *Euterpe oleracea*, *Pterocarpus officinalis* and *Virola surinamensis*) provide seasonal sources of food for *Ateles*, and consequently the animals visit this formation more often during certain times of the year. I never observed *Ateles* in the other habitats available in the Voltzberg region (e.g., liane forest, low forest and 'rocksavanna'). In the Lolopasi area, *Ateles* was seen in riverbank high forest many times, but never within 150 m of the riverbank itself. However, its home range was situated with its long axis perpendicular to the riverbank and its center beyond the boundary-line between riverbank high forest and high forest, at about 700 m inland. Whether this was the original situation resulting from the habitat being relatively poor in nutritious fruits or whether it has been influenced by light hunting pressure was not clear.

Of all Surinam monkey species, *Ateles paniscus* is the most restricted in habitat (Mittermeier and Van Roosmalen, 1981). Only the bearded saki (*Chiropotes satanas*) shows a somewhat similar restriction in habitat choice. All other Surinam monkey species visit liane forest and/or low forest with some frequency.

3.2. Edge Preferences

At the Voltzberg study site, an area rich in edge habitats, *Ateles* did not show any preference for these situations (fig. 18B). In 85.1% of all first sightings, it was seen in non-edge habitats and only in 14.9% was it seen in edge habitats. Of these, only 6.1% were in edges with clearings or liane forest. Where hunting had not taken place in the recent past, spider monkeys did not appear to be afraid of exposing themselves at edges of open areas. Several of the sleeping trees, which were greatly preferred at a particular time of the year, were situated at the very edge of clearings and/or

liane forest. The only reason for their apparent avoidance of edge habitats may be that these habitats do not offer them appropriate food resources. Fruits found at edges are mostly of the low-nutritious berry type or dry wind-dispersed, which are not of particular interest to a predominantly frugivorous species such as *Ateles* (Van Roosmalen, in prep.).

Of the eight Surinam monkey species, only *Saguinus midas* was seen more often in edge habitats than in non-edge habitats (Mittermeier and Van Roosmalen, 1981). *Saimiri sciureus* and *Cebus apella* are also apparently partial to edge habitats. They tend to follow the edges of liane forest complexes in search of insects. *Alouatta seniculus* and *Pithecia pithecia* occurred somewhat more often in edge habitats than *Ateles* did and *Chiropotes satanas* and *Cebus nigrivittatus* less often.

3.3. Vertical Stratification

Ateles is primarily an animal of the upper levels of the forest with 17.8% of total first sightings in emergents and 54.5% in the upper part of the canopy. The middle levels of the forest were less frequently used, with 19.8% of total first sightings in the middle part of the canopy and only 7.1% in the lower part of the canopy. *Ateles* very rarely entered the understory and never descended below 12 m, and was seen in the understory in only 0.8% of total first sightings (fig. 18C).

Of the other Surinam monkey species, only *Chiropotes satanas* shows a vertical distribution very similar to that of *Ateles*, with 60.2% of total first sightings ($n=93$) in the two uppermost strata. All other Surinam monkey species prefer the middle and/or lower strata (Mittermeier and Van Roosmalen, 1981).

In summary, *Ateles* is the most restricted species in the Voltzberg area. It occurs almost exclusively in high forest, rarely enters edges and occurs primarily in the upper levels of the canopy and in emergents. Given the abundance of edges in the Voltzberg area (fig. 17), it actually seems to be avoiding these situations, which is probably due to low supply of preferred fruit.