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PRIMATE CONSERVATION IN EASTERN BRAZILIAN AMAZONIA

The recent discovery of the Ka'apor capuchin (*Cebus kaapori* Queiroz, 1992) has put a very different light on primate conservation in eastern Brazilian Amazonia, defined here as the region to the east of the Rio Tocantins (eastern Pará and western Maranhão). In addition to five relatively widespread species (*Alouatta belzebul*, *Aotus infulatus*, *Cebus apella*, *Saguinus midas* and *Saimiri sciureus*), this region's primate fauna includes the endemic southern bearded saki,

Chiropotes satanas satanas. This pitheciine was considered by Johns and Ayres (1987) to be Amazonia's most endangered primate taxon, given both its vulnerability to habitat degradation and hunting pressure, and the degree of deforestation within its geographical range.

Queiroz (1992) restricted the present-day range of *Cebus kaapori* to the western portion of Maranhão, a much smaller area than that of *Chiropotes s. satanas*, although recent fieldwork¹ (Lopes, 1993; Lopes and Ferrari, submitted) has shown that this species is found as far west as the Rio Tocantins, in the state of Pará. The lack of records from the region of Tucuruí (Mascarenhas and Puerto, 1988) nevertheless indicates that the geographical distribution of *Cebus kaapori* is smaller than that of *Chiropotes s. satanas*. Surveys at five sites in Pará and Maranhão also indicated that *Cebus kaapori* is significantly rarer locally than *Chiropotes*. The presence of both primates was reported by residents at all five sites, although *Cebus kaapori* was recorded just three times over a total of 1404 km of trails censused, while bearded sakis were observed on forty-two occasions. Although data are limited, group size also appears to be significantly smaller in *Cebus kaapori*, in comparison with *Chiropotes*. These findings appear to leave little doubt that the situation of *Cebus kaapori* is even more precarious. The study also revealed that populations of *Alouatta belzebul* are being decimated by hunting at many sites.

With its long history of colonisation, eastern Brazilian Amazonia is not only the basin's most densely-populated region, but has also suffered its highest rates of deforestation (Johns and Ayres, 1987). In the present day, little more than half of the original forest cover may survive (Lopes, 1993). Much of this remaining forest is subject to selective logging, and hunting is almost universal. The region's only protected area, the Gurupi Biological Reserve (GBR), receives little or no fiscalisation and is regularly encroached by squatters and loggers (Oren, 1988; Queiroz, 1992; per. obs.). Such encroachment is also frequently a serious problem on both indian reservations and private land.

Nevertheless, adequate protection of the contiguous area of more than 1,000,000 ha encompassed by the GBR and adjacent indian reservations (Alto Turiaçu, Awá, and Carú) in western Maranhão will be crucial for the conservation of the region's primates. Extrapolating cautiously from the results

of the 480 km census at the GBR, this area alone may hold viable populations (v. Mackinnon *et al.*, 1986) of up to 50,000 *Chiropotes s. satanas* and 3-10,000 *Cebus kaapori*. Hunting cannot be prohibited in indigenous areas, although Queiroz and Kipnis (1991) found that the traditional exploitation of fauna (including *C. kaapori*) by local Guajá indians is probably sustainable over the long term.

Both hunting pressure and habitat disturbance are greater in other areas (Lopes, 1993), but the evidence suggests that the total number of *Chiropotes s. satanas* existing in the wild ranges in the tens of thousands, perhaps even surpassing a hundred thousand individuals, given that at least 100,000 km² of the original forest cover may still remain in Maranhão alone. Similarly, the total population of *Cebus kaapori* is likely to exceed 10,000 individuals. While both these primates are among the most highly endangered of the Amazon region, surviving populations appear to be significantly larger than those of Atlantic forest forms such as *Brachyteles* (v. Mittermeier *et al.*, 1987) and *Leontopithecus* (v. Rylands *et al.*, 1993). However, the long-term situation of *Chiropotes s. satanas* and *Cebus kaapori* cannot be seen as promising, especially because the region's timber industry continues to expand (see, for example, Uhl *et al.*, 1991).

Ironically, major landowners, or *latifundiários*, may play an increasingly important role in the conservation of the region's flora and fauna (Lopes, 1993), given the lack of effective government protection. Many *latifundiários* not only control the use of relatively large tracts of native forest habitat big enough to support viable populations of medium-sized primates such as *Cebus* and *Chiropotes*, but are also aware of the importance of preserving this habitat and have the resources to do so. The study revealed, in addition, that hunting pressure may be reduced significantly where residents are paid employees (for example, ranch hands), rather than smallholders dependent on local resources (Lopes, 1993).

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