

The Balance between Human Resource Use and Primate Conservation within Iwokrama Forest and the North Rupununi, Guyana.

Tallulah Bygraves

Tallulah_z@yahoo.co.uk

Department of Anthropology and Geography
School of Social Sciences and Law
Oxford Brookes University
Oxford, OX3 0BP
U.K.

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Abstract

Unique within the Neotropics, Guyana still retains 86% of its pristine rainforest and has been named as one of only eight countries in the world where the sustainable management of natural resources is deemed realistic on a large scale (Sizer, 1996). Iwokrama Forest was established in 1996 for the specific purpose of furthering global conservation and national development needs (Singh, 2006). However, baseline data on the resident primate communities are currently lacking, limiting the potential of management to assess effectively the long-term viability of subsistence and commercial activities.

Despite the reserve's rich faunal diversity, only four of Guyana's nine primate species can be found within Iwokrama. These are the red howler monkey (*Alouatta seniculus*), the red-faced spider monkey (*Ateles paniscus*), the wedge-capped capuchin (*Cebus olivaceus*) and the white-faced saki (*Pithecia pithecia*). Studies documenting the biogeography of Guyana's primates indicate species may be particularly vulnerable to environmental degradation as a result of their geographically restricted range and specific habitat and dietary requirements, which are limited by riverine and montane barriers in the first instance, and low tree heterogeneity and nutrient-poor soil in the latter (Lehman, 2002).

The current study explores three major anthropogenic pressures facing human and non-human primate populations within Iwokrama Forest and the North

Rupununi: habitat loss through Reduced Impact Logging; habitat fragmentation as a result of the soon to be completed road to Brazil; and indigenous use of the forest.



The Georgetown-Lethem Highway which bisects Iwokrama Forest
Image courtesy of Raquel Thomas, www.iwokrama.org

Preliminary findings based upon 106 km of line transect sampling indicate that a high variance in response exists between species. In contrast to the relatively constant incidence of howler monkeys in response to a range of threats (ANOVA: $F = 0.194$, $p = 0.825$), the observation rate of both spider and capuchin monkeys varied according to anthropogenic disturbance. Spider monkeys were not observed within a 3km radius of the road, whilst capuchins were found to occur at relatively high frequencies within such edge habitat (6.7 groups /100km, $N=7$), possibly as a result of competitive release. However, within the active RIL site sightings of *A. paniscus* were limited to just one lone male (1.6 groups /100 km); and the sighting frequency of *C. olivaceus* was greatly reduced at just 2.9 groups /100 km, $N=3$.



Adult female red-faced spider monkey (*Ateles paniscus*) within forest fragments surrounding Wowetta village, Central Guyana.

The support and involvement of local communities is an essential ingredient of conservation management and at present Iwokrama's success in both aiding and involving the resident villages in land use and resource management initiatives is to be commended. Semi-structured interviews conducted with household representatives in three Makushi communities (N=44) identified a number of potential future conflict issues. Based upon local knowledge, 25 plant species within the primate diet were identified as important to local livelihood economies. The abundance and accessibility of fruiting trees is an important factor to species survival, efforts should be made to ensure that adequate reserves are maintained within the forest, and human resource use is limited. From such findings, recommendations have been proposed highlighting key flora that would warrant regular monitoring to facilitate effective management of sustainable use.