

Central and South America

A Community Baboon Sanctuary in Belize

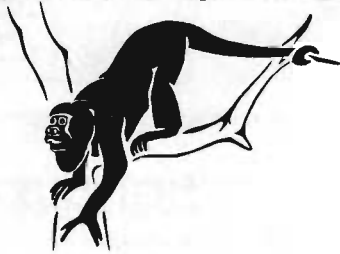
The Community Baboon Sanctuary has been established to conserve the black howler monkey (*Alouatta pigra*), locally called baboon in Belize. It is a grass roots community sanctuary based on pledges of private landowners. Each landowner agrees to follow management plans for their property, which will enhance the habitat of the howlers. They are then asked to sign formal pledges of their agreement. Their actions are completely voluntary and without compensation, so we have created a certificate as a small recognition of each landowner's conservation efforts (Fig. 1). At present, eleven landowners of 50-200 acre farms have signed, and we expect to have pledges from forty to sixty more. A 60 page illustrated guidebook by R. Horwich and J. Lyon, is to be sold to tourists and villagers. It contains the text of an "Audubon Weekly" radio program aired on Radio Belize in 1985 as an introduction, and the following chapters: Importance of Tropical Rain Forests, Initiation of the Sanc-

tuary, A Brief History of the Area, Forest Types and Ecological Succession within the Community Baboon Sanctuary, The Baboon or Black Howler Monkey (*Alouatta pigra*), and an illustrated key to over forty trees commonly found in the sanctuary, with their local names. The book also contains maps of the general area, the private land boundaries, the vegetation in the sanctuary and surrounding areas, and the howler population with approximate troop locations. Other line drawings which illustrate the text include the worldwide distribution of tropical rain forest, the ranges of the black howler in Central America and Belize and six other howler species in Central and South America, a copy of the signed pledge, and a number of howler behaviors.

The book was printed inexpensively using only line drawings to make it affordable for sale in Belize. The printing was financed by Jim Rowell of Hinsdale, Illinois and WWF-U.S.. It is currently being sold to tourists for US \$3.00 and to villagers at cost in order to refinance the book's updating and further printings. A small number are available from the author for US \$3.00 plus postage or from the Belize Audubon Society, 49 Southern Foreshore, P.O. Box 1001, Belize City, Belize, Central America.

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COMMUNITY BABOON SANCTUARY



Belize

In recognition and appreciation,
this certifies that

by voluntarily pledging the use of private land
for the conservation of
the black howler monkey, *Alouatta pigra*,
is an active participant in
the Community Baboon Sanctuary

Date _____

President - Belize Audubon Society

President - World Wildlife Fund

Chairman - Village Council of _____

Operation Raleigh Primate Census in the Maya Mountains, Belize

Between April and June 1985, Operation Raleigh visited Belize on the second stage of its around the world expedition. Three primate species, the howler monkey *Alouatta pigra*, the spider monkey *Ateles geoffroyi yucatanensis*, and the capuchin *Cebus capucinus limitaneus* have been recorded in Belize, but there is only limited information on their present distribution and abundance.



Fig. 2. The author and venturers using the Quebrada-de-Oro River as a route through the forest (photo by M. Blake).

Fig. 1. Certificate awarded to landowners participating in the conservation of the black howler monkey (designed by S. D. Nash).



Fig. 3. Location of the Quebrada-de-Oro camp in the Chiquebul Forest, Belize (map by S. D. Nash based on author's original).

One region of importance for primate conservation in Belize lies between the Bladen and Trio Branch Rivers (Fig. 3). It is currently a forestry reserve of particular value as the forest of the Bladen Branch River valley was one of the few broadleaved primary forests sheltered from the worst effects of Hurricane Hattie. This hurricane caused as much as 95% windthrow and considerable crown damage to the forests in Belize in October, 1961. Dahl (1984) reported plans to upgrade the area's status to that of a wildlife reserve. It is well suited for this purpose as the topography of the Maya Mountains in general is extreme with steep slopes comprising 52% of the region. Access is difficult and the area provides a natural refuge for wildlife. Dahl (1984) sighted spider monkeys in this region, but there are no previous census data on *Ateles g. yucatanensis* and Dahl discussed the need for further primate surveys. The visit by Operation Raleigh provided an opportunity to carry out a primate census in the basin of the Quebrada-de-Oro tributary to the north of the Bladen Branch River (16°32' N, 88°49' W). Expedition members walked over 60 km through forest while crossing the southeastern foothills to the Quebrada-de-Oro camp, and in the course of patrols. Watercourses were often the easiest routes (Fig. 2), but although these provided a good

view of the surrounding forest and canopy, primates were only sighted once from a watercourse and twice by patrols in the forest. In each case the primates were spider monkeys.

Having confirmed that spider monkeys were present in the area, transect lines were used to estimate their density. The ruggedness of the terrain caused some difficulties but three lines totaling 3.4 km were cut and marked with fluorescent tape at 20 m intervals. The lines ranged in altitude from 140 m to 380 m and gradients along the line were up to 60%. Tree height averaged 20 m, but some 60 m trees were measured. The techniques used for walking the lines and collecting data were as described by Eisenberg (1981). From both outward and return journeys along the transect lines, the average number of *Ateles* seen per sighting was 4.43 s.d. 2.39 (n=23). *Ateles* were sighted at heights of 6-40 m, $x = 20.3$ m. Perpendicular path distance ranged from 0-300 m, $x = 27$ m. A density estimate was calculated on the data from outward journeys only (Table 1) using a Fourier series expansion of the probability density function as described by Burnham *et al.* (1980). Over a total distance surveyed of 144.6 km, a density estimate of 4.4 ± 3.86 gps km² (mean \pm s.e.m.) was obtained. The large variation we observed

Table 1: Transect Line Sightings (outward journeys only)

Line	1	2	3
Length (k)	1.2	1.0	1.2
No. of times walked	43	45	40
No. of <i>Ateles</i> subgroups seen	4	11	0

(coefficient of variation = 87.4%) was probably due to the ranging behavior of the species. Little could be done to remedy this, given the limitations of time and the topography of the area. For example, extrapolating from the data as described by Burnham *et al.* (1980), to obtain a c.v. of 10% a total of 337 km would have had to be surveyed which was clearly impractical. Bearing in mind the large standard error, it is still of interest to compare the results with data from previous studies. In a recent review of data from various sites (Wolfheim, 1983), *Ateles* population density ranged from 1-45 animals km². This study's average of 19.6 animals km² suggest that there may be a reasonable sized population of *Ateles g. yucatanensis* in the Bladen foothills; a valuable finding in view of the supposed population reduction as a result of a yellow fever epidemic in 1958.



Fig. 4. A male *Alouatta pigra* from the Belize River (photo by R. Hubrecht).

Horwich and Johnson (1984) observed that the howler appeared to be doing well in riparian forest but seemed to be limited by altitude, usually to below 330 m. Many of the areas that we covered were below this altitude and we were fairly certain that howlers were not present in these foothills. It is thought that yellow fever cut the primate populations in Belize, but it is not certain that howlers were living in the area before the epidemic.

Table 2: Large Mammals Sighted During the Study

jaguarundi	<i>Felis yagouarondi</i>
puma	<i>Felis concolor</i>
ocelot	<i>Felis pardalis</i>
Deppes's squirrel	<i>Sciurus deppei</i>
neotropical river otter	<i>Lutra longicaudis</i>
tayra	<i>Eira barbara</i>
coatimundi	<i>Nasua nasua</i>
linkajou	<i>Potos flavus</i>
agouti	<i>Dasyprocta punctata</i>

Both McCarthy (1982) and Dahl (1984) have obtained second hand accounts of sightings of animals presumed to be *C. capucinus* in the Maya mountains, but there have been no recent authenticated sightings of this species. A particular interest of the expedition was to find whether *Cebus* was present, as this would have verified its most northerly location in Central America (McCarthy, 1984). No confirmed sighting was

made. However, one venturer who was familiar with both howler and spider monkeys, did report seeing a monkey which he thought was neither of these. His description was of an animal with a body length of about half a meter, front limbs approximately equivalent in size to back limbs, body black (including the ventral area) with a white face. The body size, coloration and proportion of the limbs was consistent with the animal being a capuchin. On the other hand, the fact that only one individual was seen does cast doubts on the observation. Although we found no evidence of primate hunting, we met hunters and found shot-gun cartridges downstream of the study site. Konstant, Mittermeier and Nash (1985) have shown how vulnerable the Central American spider monkeys are, and point out that "only 2 of the 9 recognised subspecies (*A. g. vellerosus* and *A. g. frontatus*) appear to have any protection in parks and reserves." The results of the present study emphasize the value of this proposed wildlife reserve in that it provides an excellent refuge for *Ateles g. yucatanensis* and other large mammals (Table 2).

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Monkeys of the Yucatán Peninsula, Mexico: Preliminary Survey of their Distribution and Status

The Yucatán Peninsula and adjacent areas to the immediate south and southeast are the home of two monkeys, *Alouatta pigra*, the black howler monkey (Horwich, 1983; Smith, 1970) and *Ateles geoffroyi yucatanensis*, the Yucatán black-handed spider monkey (Kellogg and Goldman, 1944). The taxonomic status of both species is controversial and little is known of their natural history and ecology. For these reasons, we undertook a survey of the remaining forested areas of the Yucatán peninsula (including the states of Campeche, Yucatán, and Quintana Roo) in order to gather information on the present distribution and conservation status of *Alouatta* and *Ateles* in this region of Mexico. Our study is complementary to those of Estrada and Coates-Estrada (1984) who report on the distribution of both genera in areas to the south and west