Census of primates in the *Jungla de los Monos* proposed Conservation Concession, El Tambo, San Martin, Peru

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The Alto Mayo region lies within the Peruvian department of San Martin, which experiences one of the highest levels of deforestation and fragmentation in the country. It is home to, amongst others, the Critically Endangered, endemic San Martin titi monkey (*Plecturocebus oenanthe).* We surveyed primate populations in the 257 ha "Jungla de Los Monos" a locally protected remnant of the naturally diverse primate community of the Alto Mayo in one of the last remaining mid-elevation seasonally flooded forests in the region.

We carried out diurnal surveys using line transect methodology. Eight transects were opened, measured and tagged with foresters' tape, totalling 7,500 metres (avg 0.94 km/transect). Two transects were walked each day between 07:00 and 09:00 h and between 16:00 and 18:00 h at ~ 1km/h. Repeat samples were made no less than 72 hours apart to ensure independence. Nocturnal surveys were made to sample the presence/density of *Aotus* cf. *nancymaae* using fixed point sampling methods along the same transects used in diurnal surveys. Points were located at 200 m intervals along each transect and observations were made starting at 19.00 h for 20 minutes on each point.

Density estimates were made using Distance sampling software and Krebs' [1999] formula:

$$Group\ density = G_t/(L_t 2(ESW))$$

wherein *Gt* = total number of sightings, *Lt* = total sampling effort, and *ESW* = estimated strip width. Crude biomass estimates were calculated using the formula:

$$Bio_c = W*D$$

where Bio_c = crude biomass, *W* = average adult body weight (kg) and *D* = population density of species (/km^2).

We also conducted presence/absence surveys of *P. oenanthe* in surrounding riverine forests and forest fragments. We made a total of 173 transect walks, totalling a distance of 274.7 km. We detected primates on 287 occasions. The most commonly encountered species were *Saimiri macrodon* and *Alouatta seniculus.* The species with the lowest encounter rates were *P. oenanthe,* only one detection, and *Aotus cf. nancymaae*, with 2 detections during transect surveys. Using Krebs formula, densities of primates varied widely. *Saimiri macrodon* was by far the most common species with almost 150 individuals/km^2, followed by *Alouatta seniculus* with just under 50 individuals/km^2 (Table 1). Overall primate density was 256.43 individuals/km^2, with an estimated biomass of 563.70 kg/km^2. Using Distance 7.2 Program we calculated primate density and individual densities for each species separately. As with estimates using Krebs method, densities varied widely, but were consistently higher using Distance than with Krebs method. Again, the species found at the highest density was *S. macrodon*, and over half of all primate biomass was made up by *A. seniculus* (Table 1). We did not encounter *Aotus cf. nancymaae* during any of the night surveys (Although we did record the species during diurnal surveys, see above), probably due to the low number of points surveyed and the disturbance (splashing and falling) caused during night walks.

One of the principle aims of this survey was to evaluate the population of the San Martin titi monkey (*P. oenanthe*). Unfortunately, we recorded the presence of this species only once on the transects. We did observe the species on several occasion in forests along the river banks when travelling towards the study site. Additionally, we made several presence/absence surveys of *P. oenanthe* in surrounding forest patches. Of seven patches surveyed we found the species in five.

The area of “La Jungla de Los Monos” holds a surprisingly high diversity and density of primates, most notable considering its proximity to population centres. Conservation of the area should be a regional priority, especially as we found evidence of anthropogenic hunting and disturbance.

Table 1) Species densities recorded during field work.

Species	Red list status	Ind/Km^2 (Ha) using Krebs (1999) formula	Ind/Km^2 using Distance 7.2	Biomass (Kg/km^2) using Distance 7.2
A. seniculus	LC	47.28	64.758	420.93
L. leucogenys	VU	17.72	26.727	10.42
S. macrodon	NT	149.81	220.738	207.49
C. yuracus	CR	14.75	16.599	44.82
S. macrocephalus	VU	23.65	28.074	81.70
Primates	-	256.43	333.145	765.36

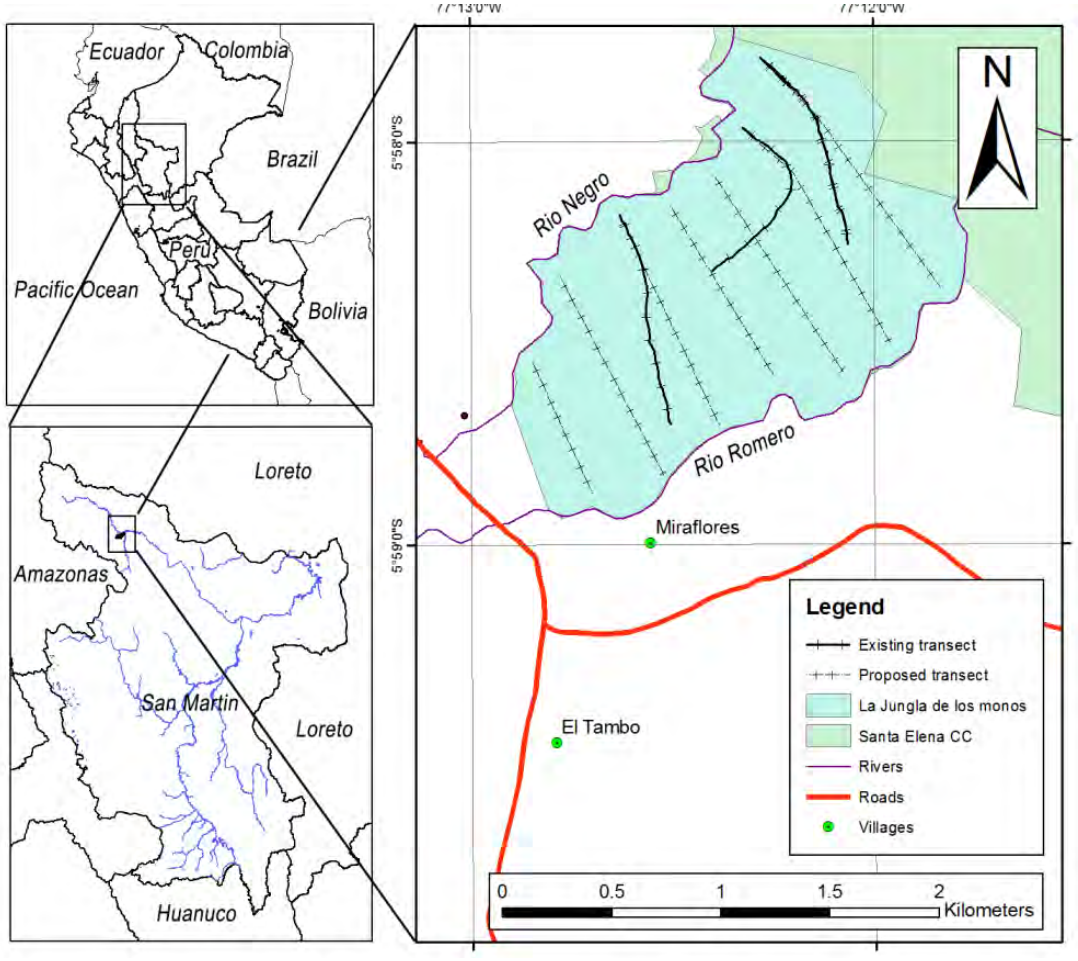

Figure 1 Map showing study sight location within Peru and transects used in surveys.