Living on the edge: Critically Endangered San Martin titi monkeys (*Callicebus oenanthe*) show a preference for forest boundaries in C.C. Ojos de Agua, Peru.

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The San Martin titi monkey (*Callicebus oenanthe*) is a medium sized arboreal primate that lives exclusively in the department of San Martin, Peru. Its small distribution range together with numerous threats, including habitat fragmentation and hunting, severely imperil this Critically Endangered species. However, little is known about the habitat requirements of the species. Even though many animals seem to avoid forest edges, it has been suspected that the San Martin titi monkey might have a preference for this type of habitat.

Figure 1. *Callicebus oenanthe*. By Eduardo Pinel.

This three-month study, conducted from April 16 to July 14 2013, tested one main hypothesis: San Martin titi monkeys in conservation concession Ojos de Agua prefer the boundary of primary and secondary forest over forest interior. This hypothesis was tested by estimating population density in the area using a triangulation survey method. Population density estimates were compared between primary and secondary forest. The density in the boundary between primary and secondary forest was 26.1 groups/km^2, compared to a density of 3.6 groups/km^2 in forest interior, confirming these cryptic primates have a preference for the forest boundaries in Ojos de Agua.

The differences found in group density led to the idea to examine the possible differences in vocal behaviour of the primates between areas with different population density. We found no difference in length of the singing events and in both areas the maximum number of singing events is recorded approximately an hour after they started duetting. However, *C. oenanthe* in areas with high population density start their duets about half an hour earlier than the titi monkeys in low density areas. This shows that the vocal behaviour of these primates is influenced by population density.

Ojos de Agua is one of the few larger areas where *Callicebus oenanthe* is still found. Consequently, the area is of great importance to the conservation of the species. Even though the secondary forest adjacent to the conservation concession is not part of the protected area, it is a crucial factor to the survival of the species. If all secondary forest will be cleared, all preferred habitat for the

species will disappear. It is consequently important to determine how adaptable the species is to large changes in their habitat. Only then will we know if the San Martin titi monkeys in C. C. Ojos de Agua have a chance of survival in the near future.

Figure 2. Poisonous frog, endemic to the area.

Figure 3. Guide Joaquin learns how to use the compass with the help of my assistant Jaime (who took the picture). All the guides that helped us throughout the study are members of ABOFOA, a local association of farmers managing conservation concession Ojos de Agua. Our guides and president of the association were taught how to conduct density measurements. We also taught the president how to use his newly acquired GPS device (a donation from a Peruvian conservation NGO, supporting the association in their work).