Conservation assessment of Taï monkey fauna from two survey methods and a bushmeat market study: How hunting impacts Taï National Park

Ryan Covey
rmc4conservation@hotmail.com

Department of Anthropology & Geography
Oxford Brookes University
Gipsy Lane, Oxford OX3 OHP UK

Awarded a PSGB Conservation Grant in March 2009-11-17

Abstract

Primates throughout Côte d'Ivoire are at risk of being hunted to extinction. The national park status afforded to Taï National Park and its inclusion on UNESCO's World Heritage List has failed to protect its biodiversity. In addition to hunting, deforestation, gold panning, and overuse of the buffer zone by locals threatens many species with extinction. In order to assess the threats facing Taï National Park's primate fauna, I used two survey methods to determine density and distribution of eight diurnal monkey species adjacent to a protected research area. In addition, I assessed the most significant threats facing these primates, and analyzed the impact of a local bushmeat market.

My study was conducted at the Taï Monkey Project field site, located in Taï National Park, Côte d'Ivoire. Line-transect distance sampling was used to determine group density of eight monkey species within a protected research area and the surrounding non-protected forests. Twenty 500 m transects were walked four times each within a protected 2 x 1 sq km grid and six 3 km transects were walked three times each outside of the protected area. Occupancy modelling was tested within the protected research area to determine its accuracy in detecting primate fauna. Over the course of nine weeks I visited a local bushmeat market seven times. Meat from all animal species observed at the market was recorded.

Cercopithecus diana (5.84 groups/km²) and *Procolobus badius* (6.02 groups/km²) had the highest group density estimates determined from line-transect sampling in the research grid. Outside the protected area, group density could only be calculated for three monkey species because of the significant decrease in monkey observations (i.e. *Cercopithecus diana* - 3.4 groups/km²; *Procolobus badius* – 2.75 groups/km²). Based on the frequency of detections, ranging patterns, and vocal repertoire of the monkey species, occupancy modelling was reliable in determining primate presence. The most numerous and vocal monkeys were *Cercopithecus diana* and *Procolobus badius*, and thus had the highest detection probability (0.55 & 0.67 respectively). *Cercocebus atys* (large home ranges) and *Procolobus verus* monkeys (few vocalizations) had the lowest detection probability (0.09 & 0.07 respectively). A total of 634 animals were observed at the bushmeat market. A weekly average of 33 primates (1,716/year) reveal unsustainable hunting is occurring in the adjoining forests of Liberia.

The protection afforded to primates within the Taï Monkey Project research grid from the presence of researches has allowed them to flourish. The observed drop-off in detections and calculated group densities reveals that where hunting occurs, group densities are significantly lower than in areas where protection occurs. Occupancy modelling appears to be a reliable method in detecting primate presence. The number of primates harvested from the forests of Liberia, which could form a natural corridor to Taï National Park, reveals the degree of unsustainable hunting occurring. Conservation efforts in this area should focus on the immediate protection of the animal fauna within Taï National Park. Protection efforts need to begin in Liberia to prevent genetically isolated populations from occurring.