

Assessment of an unprotected forest corridor for the dispersal of isolated Cross-River gorilla and Nigeria-Cameroon chimpanzee populations in Southwest Cameroon

Lucy d'Auvergne
lucydauvergne@mac.com

Oxford Brookes University
School of Social Sciences and Law
Oxford
OX3 0BP
UK

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Abstract

Despite the significance of forest corridors for the dispersal and long-term survival prospects of the Critically Endangered Cross River gorilla (*Gorilla gorilla diehli*) and the Endangered Nigeria-Cameroon chimpanzee (*Pan troglodytes ellioti*), fieldwork has only recently been initiated to characterise and review management options in these areas. This project contributes to this through detailed assessment of the unprotected Mawambi Hills area. Mawambi is home to an important population of gorillas and sympatric chimpanzees, connected to the Takamanda National Park, Southwest Cameroon via a contiguous forest corridor. In addition to ongoing human encroachment, the integrity of this corridor is under threat from a proposed motorbike road, which will bi-sect the area and could seriously curtail future ape dispersal. While the project did not aim to prevent the building of the road, swift assessment and analysis of the area was needed to: (i) establish the key factors that define ape ranging; (ii) ascertain the value of the corridor as a dispersal route for apes; and (iii) measure both current anthropogenic activity and potential impact of the motorbike road.

An 80km² area was comprehensively surveyed, with data collected on topography, habitat type, 25 important gorilla/chimpanzee food/nesting tree species, and all ape, large mammal (>1kg), and human sign. Farms and major paths were also mapped. Results concur with Cross River gorilla studies in other areas, revealing a correlation between ape nesting and degree of slope, with apes found to prefer steeper slopes (graded 2 or more) for both ranging (73.7% of all sign) and nesting (94.12% of nests). Rocky areas were found to be preferred over other habitat types (31.58% of all sign and 41.18% of nests), despite the low occurrence of this kind of habitat (5.44%). The opposite human preferences were revealed with 74.96% of human sign found on slopes graded 1 or less, and rocky areas are avoided (0.82% of sign). This suggests that apes are selecting areas with less anthropogenic interference. Gorillas were found to range over a wider area (29km²) than previously recorded (16-20 km²), however despite almost continuous canopy cover and abundant food sources in the corridor, no evidence of apes was found in this area. The rocky habitat types preferred by apes were almost entirely lacking in the corridor and the flatter ground preferred by humans predominated (slope classed 0-1 =

71.67%), which could factor in making this area less attractive to apes. With a mean encounter rate of 9.36 per km, human presence was also found to be higher here than in any other part of the forest which could also deter apes and other wildlife, indeed mammal encounter rates at the heart of the corridor in the vicinity of the path (site of the proposed road) were also found to be lower than elsewhere (5.78 per km, compared to 8.72 per km in the ape range). However, in the absence of major physical barriers to dispersal within the corridor (i.e. major rivers, roads or other obstacles) ape use of this area cannot be entirely ruled out, and as the only remaining viable corridor connecting the Mawambi gorillas to other Cross River gorilla populations, the imperative must be to maintain the integrity of this corridor.

Also considered was the value of the proposed road for local communities in terms of improved farm to market access, and better access to health care and schools. While the current road plan would deliver no such benefits, it is apparent that an alternative road-route to the east of the Mawambi Hills, away from the current ape range would fulfill these criteria. Furthermore, this alternative route would also preserve the integrity of the corridor, and would thus better serve both human and ape conservation goals in this area. This revised plan has been proposed to the Cameroonian authorities.