What Makes Good Quality Mandrill (*Mandrillus sphinx*) Habitat?

Liz White. University of Exeter in Cornwall, UK and the Station d'Études des Gorilles et Chimpanzés, Gabon.
Supervisors: Dr K. A. Abernethy (Centre International de Recherches Médicales de Franceville, Gabon and University of Stirling, UK)
Prof. D. M. Bryant (University of Exeter in Cornwall, UK)

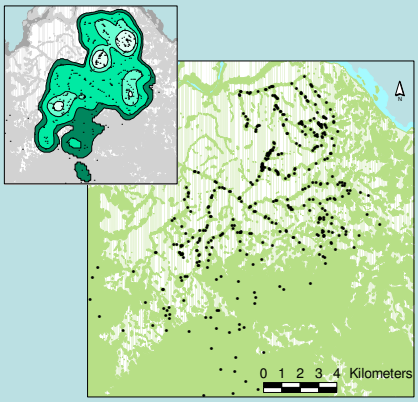


Fig. 1. Radio-telemetry locations of the Lopé mandrill horde, 1998-2004. Inset: Fixed kernel contour home range.

INTRODUCTION

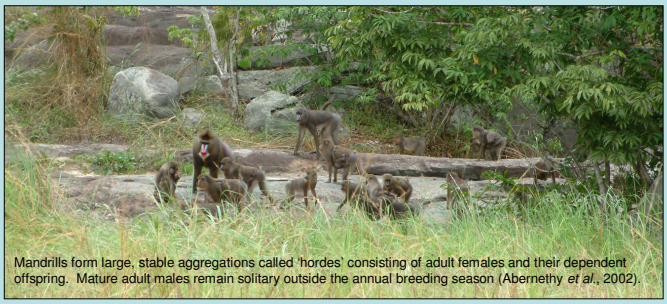
• Mandrills are a highly social, omnivorous primate found in the rain forests of central Africa.

• An understanding of their ecological requirements is essential if we are to conserve this 'vulnerable' primate.

• Radio-tracking of a single horde of >700 mandrills revealed this horde to occupy a home range of over 100 km^2, which it utilises in a highly uneven manner (Fig. 1).

• I propose that habitat selection in *Mandrillus sphinx* is primarily related to fruit resource distribution.

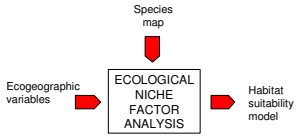
Study site: the north of Lopé National Park, Gabon.
Habitat: a mosaic of gallery forests enclosed within ancient savanna grasslands, grading into continuous rain forest in the south.



Mandrills form large, stable aggregations called 'hordes' consisting of adult females and their dependent offspring. Mature adult males remain solitary outside the annual breeding season (Abernethy *et al.*, 2002).

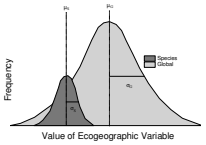
METHODS

• Using maps of fruit-tree distribution and other habitat and landscape variables, I use Ecological Niche Factor Analysis (Hirzel *et al.*, 2002; 2004) to investigate the ecological requirements of the Lopé mandrill horde.



Flow chart for the ENFA model

• ENFA considers two aspects of the data for each variable:



Marginality – difference between the mean value in cells occupied by mandrills, to that of the whole study area

Specialisation – difference between the range of values in cells occupied by mandrills to that of the whole study area

RESULTS

• Mandrills select habitats with the highest basal areas of the three fruit-tree species most important in their diet (Table 1).

• The highest quality habitat is located in the gallery forests (Fig. 2).

• Global values for marginality (1.9) and specialisation (1.7) indicate that mandrills live in both a very particular habitat, and a fairly specialised habitat, relative to what is available.

Table 1. Results of the first 4 factors produced by ENFA

Ecogeographic Variables	Marginality 35%	Spec. 1 18%	Spec. 2 11%	Spec. 3 10%
BA *Antidesma vogelianum*	**0.59**	0.01	0.01	0.02
BA *Uapaca guineensis*	**0.48**	0.12	0.08	0.01
BA *Elais guineensis*	**0.38**	0.08	0.03	0.04
BA TOP 20 FRUIT-TREE SPP.	0.29	**0.38**	0.26	0.02
FOREST EDGE (r 200 m)	0.20	**0.34**	**0.32**	0.22
FOREST EDGE (r 100 m)	0.20	0.20	0.02	0.04
FOREST FREQUENCY (r 100 m)	0.19	0.16	**0.60**	**0.60**
ALTITUDE	-0.15	0.15	0.05	0.01
DIST. CENTRE	-0.15	0.07	0.01	0.01
BA ALL TREES	0.13	0.01	0.23	0.28
DIST. TOWNS	-0.11	0.17	0.02	0.01
FOREST FREQUENCY (r 200 m)	0.09	**0.76**	0.08	-0.02
DIST. ROADS	-0.06	0.06	0.04	0.01
DIST. SAVANNA	0.00	0.13	**0.63**	**0.71**

EGVs are sorted in order of importance along the marginality factor.
Numbers in red are coefficients with an absolute score ≥ 0.30, indicating their important contribution to that factor.

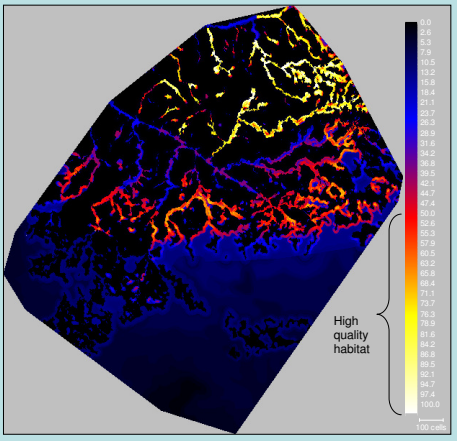


Fig. 2. Habitat suitability map for the Lopé mandrill horde, 1998-2004.

CONCLUSIONS

• Habitat selection is most influenced by the distribution of important fruit-tree species.

• For the Lopé mandrill horde, protection of the gallery forests should be of high conservation priority.

Contact details:
Liz White, Centre for Ecology and Conservation, University of Exeter, Cornwall Campus, Penryn, TR10 9EZ. Email: white_liz@hotmail.com

References

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