

FIELD NOTE

Field notes about Human-Elephant Conflict in the southern buffer zone of the Okavango Delta, Botswana

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In 2004 and 2003, Living with Elephants Foundation conducted a human-elephant conflict (HEC) survey in a community-based natural resource management area in Ngamiland, Botswana. The area is located in the southern part of the Okavango Delta and identified as the Wildlife Management Area NG32. A community of six villages, the Okavango Kopano Mokoro Community Trust, governs the area which is bordered by the southern Okavango Delta veterinary fence and by the Moremi Game Reserve to the north. Two of the villages are located inside the fence (one in NG32 itself, one in NG27b); the other four villages are just outside the veterinary fence in NG35.

We conducted our research during the planting season of 2003 and 2004 between January and June, by monitoring 59 fields (29 inside the veterinary fence and 30 outside), interviewing farmers, and using a Geographical Information System for spatial analysis.

Main discoveries were as follows: According to interviews with farmers, (quantitative enumeration of damage was not employed in the study):

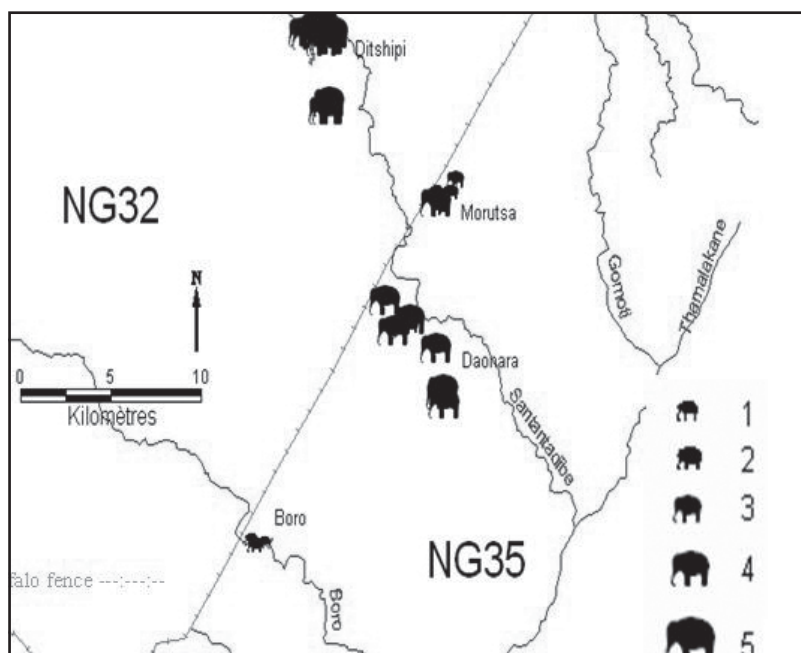
1. HEC occurs in this area with the main problem being crop raiding (others include water access restriction, sleep disturbance, threats to human safety and competition for wild plants).
2. Information provided by farmers shows that HEC is increasing in this area and affects over 80% of sampled fields, with an average of two to three crop raids per field annually. However, HEC in this area cannot be considered severe, and no injuries were recorded in the human population during the preceding five years.
3. Elephants cause very limited problems among herders of domestic stock in this community.
4. HEC occurs inside and outside the veterinary fence. The intensity, slightly less severe outside, is on average more than two elephant incursions per field annually, according to the farmers. HEC outside the fence occurs in areas south of the veterinary fence (see map). The buffalo fence was designed mainly to prevent contact between domestic livestock and wild ungulates (buffalo mainly). The fence does not prevent elephant movement. Bulls can easily trample on it or walk over it. Breeding herds would have to destroy the fence to let their calves cross it. Farmers report fence destruction but field investigators did not observe any during the study.
5. An elephant migratory pattern from north to south in NG32 can be detected during the rainy season. This pattern, which needs to be confirmed by further investigation, could help explain the spatial and temporal distribution of HEC in these communities.
6. Crop raids occur mainly at night, 91.7% of fields versus 26.7% of fields during the day among farms sampled.
7. Male elephants seem to cause more damage than breeding herds (89.2% of fields raided by bulls versus 47.5% by cows). This was especially true outside the fence, where 90% of fields were raided by bulls versus less than 40% by cows. The fence itself and higher human density outside the fence might be deterring breeding herds from crossing the veterinary fence. No data show that breeding herds are resident outside the fence.
8. Although most complaints are about elephant incursions, elephants probably cause no more crop damage than species such as baboons, vervet monkeys and porcupines.

9. Mitigation strategies utilized in this area include both passive methods (guarding fields, palm front lines with plastic bags) and active (clapping, drumming etc.). Fields inside the fence are clustered together and create a clear boundary. Palm frond lines with cans and plastic bags are utilized inside the fence, and may prove at least partially effective. Outside the fence, fields are much more isolated making them an easier target for wild animals. Frequency of use of human guards is comparable outside and inside the fence during the daytime, but at night 92.9% of farmers employ this method inside the fence versus 9.7% outside).
10. Complaints about HEC (hence data collected) in this area are probably exaggerated. Villages face other problems such as unemployment and bad harvests, but tend to focus on HEC.

In conclusion, it seems that HEC occurs in this community both inside and outside the veterinary fence at comparable levels. However, proximity of fields and increased utilization of mitigation strategies inside the fence may explain why crop raiding levels are not much higher than outside the fence, where fields are less protected. The pressure is probably a lot higher inside the fence, where villagers are using mitigation strategies more intensely (e.g. palm front lines).

In the southern region of the Okavango Delta, HEC probably occurs at lower levels than in northern areas. Relatively simple measures could be employed to handle elephant-related problems. We would like to suggest the following additional considerations:

- Inside the fence, ecotourism should be encouraged, to create job opportunities other than agriculture, which will always result in some conflict between villagers and wild animals. There are already several Mokoro trip operators, as well as a small basket-making industry that could be further developed.



- The fence itself could be used to create a hard edge between the rural and wild-life areas. Fields outside the fence should be clustered together, and both passive and active mitigation strategies could be implemented to a greater degree. Agricultural yields could also be improved through education to make agriculture more viable, and create greater incentives for farmers to protect their fields.

The map shows the intensity of HEC in the surveyed area in 2003 (for fields experiencing between one and five elephant incursions per year according to farmers).

Full research report available on request:

Marchais J et al. 2005. Research Report on Human Elephant Conflict in the Okavango Kopano Mokoro Community Trust Villages (NG 32), Ngamiland, Botswana. Living With Elephants Foundation.