

FIELD NOTES

Reconnaissance survey of human–elephant conflict in the Dadieso area, western Ghana

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Abstract

A reconnaissance study was carried out to determine historical elephant occupation as well as the nature and extent of human–elephant conflict in the Dadieso area of western Ghana. Because no crop raiding occurred during the period of study, there are no quantitative data; therefore, the study used social science methods to achieve its objectives. A questionnaire developed and administered in 14 villages around the two forest reserves during the survey indicated that elephants dwelt in the area before 1957. Since then they have gradually disappeared, starting from north of the Dadieso Forest Reserve, until recently they can be seen only south of the Disue River Forest Reserve. Since 2000, no village has seen signs of elephants in their area.

Villagers mentioned that elephants had raided crops since colonial times. Plantain, cassava, cocoa, oil palm, cocoyam and yam were the foods that they most often ate or destroyed. The last crop-raiding incident in any village in the area was in the year 2000. Generally, it appeared that crop raiding has not been as serious as around Kakum National Park or the Red Volta Valley in Ghana.

Résumé

On a réalisé une étude de reconnaissance pour connaître l'histoire de l'occupation des éléphants ainsi que la nature et l'étendue des conflits hommes-éléphants dans la région de Dadieso à l'ouest de Ghana. Comme il n'y a eu aucun dommage aux récoltes pendant la durée de l'étude, il n'y a pas de données quantitatives. C'est pourquoi l'étude a utilisé les méthodes des sciences sociales pour arriver à ses fins. Par un questionnaire mis au point et distribué dans 14 villages situés autour des réserves forestières, l'étude a appris que les éléphants étaient bien installés dans la région avant 1957. Depuis lors, ils ont peu à peu disparu, en commençant par le nord de la Réserve Forestière de Dadieso, et aujourd'hui, on ne les observe plus qu'au sud de la Réserve Forestière de la rivière Disue. Depuis 2000, aucun villageois n'a observé de traces d'éléphants dans la région.

Des villageois ont mentionné le fait que des éléphants avaient encore ravagé des récoltes après l'époque coloniale. Les plantations les plus souvent mangées et détruites étaient les bananes-plantain, le manioc, le cacao, les palmiers à huile, les taros et les ignames. Le dernier incident connu avait eu lieu en 2000. Il semblait qu'en général les dommages causés aux récoltes n'étaient pas aussi graves qu'autour du Parc National de Kakum ou de la Vallée de la Volta Rouge, au Ghana.

Introduction

Conflict between elephants and humans has been a serious issue in many parts of Africa, leading to loss of life and damage to property (Sam 1998). Conservation and political circles increasingly agree on the need to mitigate the negative effects of this conflict between humans and elephants (Hoare 2001).

In Ghana, crop raiding by elephants has been the major human–elephant conflict issue that has been recorded in most elephant ranges. The nature and extent in the Dadieso area (Dadieso and Disue River Forest Reserves) has not been documented. The primary objective of this study was, therefore, to collect data on human–elephant conflict in the area. However, since there were no elephants in the field during the study, we undertook a social survey to determine what history there was of crop raiding in the villages bordering the two forest reserves. As this technique is emerging, it is worth noting the value of the qualitative methods we used in assessing areas where no data had previously been collected.

The specific objectives were to determine 1) the history of elephants occupying the Dadieso area and 2) the nature and extent of human–elephant conflict in the area in the recent past.

Study area

The study site is located in the south-western portion of Ghana (fig. 1) in the moist evergreen vegetation zone, between latitudes 5°51' and 6°05' N and longitudes 3°05' and 2°54' W. It comprises areas around two contiguous forest reserves, the Dadieso Forest Reserve and the Disue River Forest Reserve, both managed by the Enchi Forest District of the Forest Services Division.

The Disue River Forest Reserve covers an area of 24 km². It was last logged in 1978 and the canopy in the logged areas is now open. The hilly portion of the reserve is designated as Hill Sanctuary and most of the canopy is closed. The Dadieso Forest Reserve covers 171.2 km² of which 4.5 km² is admitted farms. More than one-third of the reserve boundary lies on the Ghana–Côte d'Ivoire frontier.

The reserve is an important ecological site with a moderately high genetic heat index due to its flora diversity of up to 170 plant species per hectare and has since 1998 been designated a globally significant

biodiversity area (Hawthorne and Abu-Juam 1995). With the exception of nine compartments logged to construct the Enchi-Dadieso road, the reserve has never been logged. It therefore largely remains an undisturbed forest (FSD 2000).

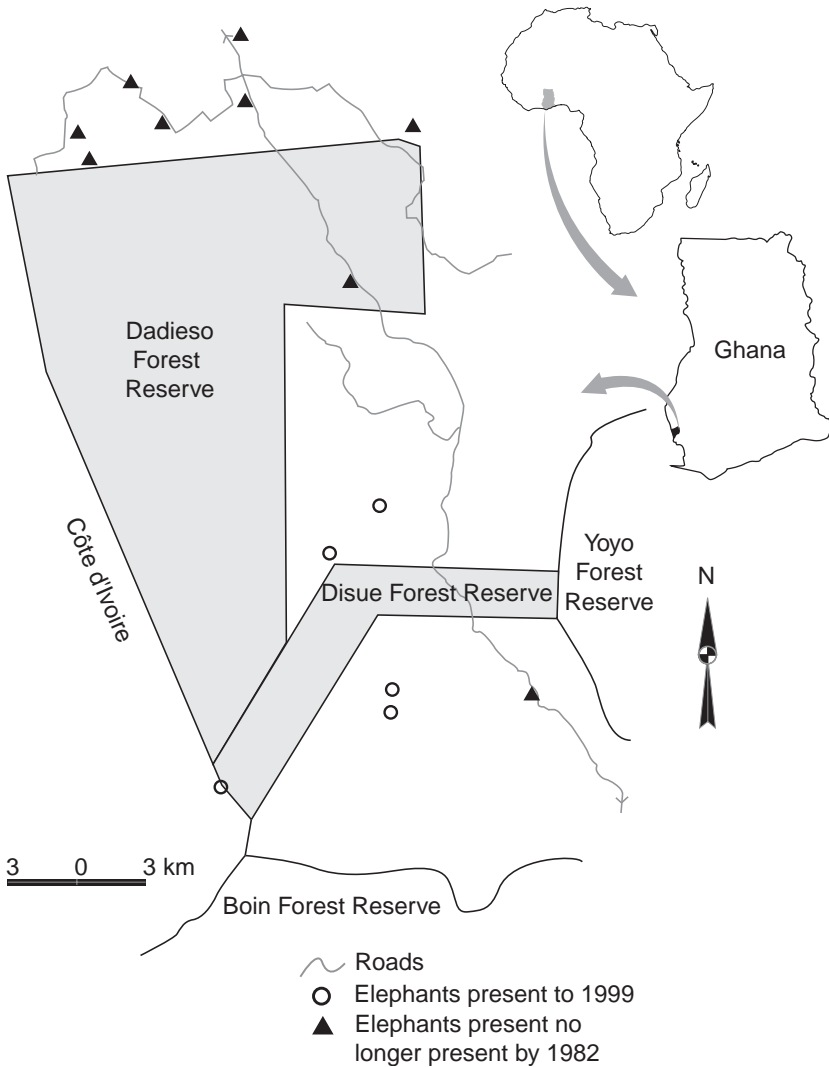
Methods

We drew up a list of villages lying within about 5 km on the Ghanaian side of the Dadieso and Disue River Forest Reserves and compiled a list of questions. As the amount of time available was limited, we randomly selected 14 villages, which was two-thirds of the total, and conducted interviews using the questions. Depending on the answers, other questions could be asked beyond the predetermined ones. At each village we contacted the chief or headman, who then organized a meeting. There was usually an attempt to rally the village elders and if possible, the hunters. At some villages, younger men and women were also present.

The interviews were conducted as an informal conversation in a local dialect (Twi) with one member of our team asking the questions and other team members joining in where appropriate (Sam et al. 1997). Usually the elders were the ones who replied to the questions. We tried to ensure through counter-questions that they did not control the information given because of a hidden agenda. As in all such surveys, the validity of the data collected depends upon the honesty of the respondents and their willingness to be interrogated by a team of students.

The questions were designed to uncover the history of elephant occupation of the areas around the villages, and the time of the year they appeared. Regimes of governance were used to differentiate three distinct periods—the period before Ghana's independence (1957), the period up to the overthrow of the Third Republic (1981), and the year before the new millennium (1999). This year of 1999, when voter registration reopened in Ghana, was used as the upper limit of the third period.

We also tried to find out what kind of conflict existed between elephants and people. If farms were damaged, we asked what crops the elephants ate on the farms. We enquired about trends in game populations. Occasionally people volunteered information on how many elephants had been shot for raiding crops and other similar information.



Map of survey area indicating the 14 villages where response were interviewed.

Results

During the interviews, 134 people, including 32 women, were present (see table 1). Elephants have occurred around Dadieso and Disue River Forest Reserve since colonial times until 2000. Since that time villagers reported no sign of elephant presence on their farms. Figure 1 shows in which villages within the study area elephants were seen up to the year 1982 and in which they were still present by 1999.

Ten of the 14 villages said elephants had come into the area since the colonial period. All 10 said they came

either from Côte d'Ivoire or the nearby forest reserves.

All 10 communities cited crop raiding as the major conflict that existed between humans and elephants. Six villages said that the elephants actually stopped to feed while four said they simply trampled crops as they passed through the farms. Villagers in the six villages said that a herd of about six elephants could destroy almost half of a 3-acre farm in one raiding event. Some farms suffered repeated raids that resulted in especially heavy losses. Eight villages named cassava and plantain as the crops most often destroyed. Other crops mentioned by at least half of the villages were cocoa (pods and beans), oil palm, yam, cocoyam and maize. Two villages mentioned banana, rice and pineapple as being delicacies for the elephants.

Elephant movement appeared to be year round although much occurred during the major harvesting period. Groups of up to six elephants were mentioned as involved in crop raiding. Three villages also mentioned seeing one or two bulls around their area. Half

of the villages where crop raiding occurred mentioned seeing calves or their signs among herds that visited their farms.

All villages, even those in areas where no elephants visited, mentioned using elephant dung as medicine. Measles and skin rashes were the ailments most often mentioned that the dung is believed to cure. Only Tawiakrom village added that elephant meat also served as food for the villagers when available.

Villagers usually used traditional methods such as making noise and setting fires to ward elephants off their farms, trying to prevent crop raiding (Sam et

Table 1. Information from villages interviewed

Village	Inter- viewed (no.)	Elephant presence around fields			Calves	Crop raiding	Elephants last observed	Stop/ Pass
		to 1957	1958– 1981	1982– 1999				
Adonkrom	9 (0)	yes	yes	yes	no	yes	2000	S
Afrimkrom	5 (2)	yes	yes	yes	–	yes	2000	P
Asuo Pokua	10 (0)	yes	yes	no	yes	yes	1995	S
Bediaben	7 (3)	no	no	no	–	no	–	–
Fawokabra	5 (0)	yes	yes	yes	yes	yes	2000	S
Ganyo	15 (6)	no	no	no	–	no	–	–
James Adom	10 (2)	no	no	no	–	no	–	–
Kaalo	38 (2)	yes	yes	no	yes	yes	1983	S
Kooboy Nokwanta	10 (7)	no	no	no	–	no	–	–
Maame Yaa Nsia	6 (2)	yes	no	no	yes	yes	1978	S
Nsiakrom	4 (0)	yes	yes	yes	no	yes	2000	P
Obengkrom	9 (6)	yes	yes	no	yes	yes	1994	P
Susan	5 (1)	yes	yes	no	no	yes	1992	P
Tawiakrom	2 (1)	yes	yes	yes	no	no	2000	S

Numbers of other animal species were all decreasing
 Numbers in parentheses are the number of women present
 S – stop to feed
 P – disturbance through passage only

al. 1997). On a few occasions, the Wildlife Control Unit at Goaso was called upon while in other cases experienced hunters were hired to shoot crop-raiding elephants. The people mentioned that the last time elephants were shot in Nsiakrom was in 1999, and in Tawiakrom it was 2000.

All 14 villages mentioned that the numbers of other animals in general in their lands have declined. They attributed this mainly to excessive hunting by both Ghanaian and Ivorian hunters.

Discussion

Historical perspective of elephant occupation and crop raiding

Elephants have occurred around the Dadieso area since colonial times but they had been wiped out from the northern part of the area by 2000, when they were seen only around the Disue River Forest Reserve in the south of the area. The impression gathered from the survey is that the elephants in this area were part of a large ranging population, which had been severely attacked by hunters and hence left the area. Excessive hunting had been

reported in the area (ECONS 2003), believed to have occurred especially over the last two decades. The hunting has been linked to the opening of the Elubo–Enchi–Dadieso–Juabeso road, which links southwestern to midwestern Ghana, and also the apparent absence of the Wildlife Division, the agency responsible for enforcing wildlife laws in Ghana.

Elephant movement within the area was year round. However, a lot of movement coincided with the major harvesting period in the rainy season, when crop raiding peaked. Elephant movement was significant in the dry season (November–April) when water was limiting in many places. A large portion of the movement in the dry season is also probably to feed in cocoa farms, as this time is one of the cocoa-harvesting seasons.

Calves participating in crop raiding in half of the afflicted communities probably indicates that elephants did not find crop raiding a risky venture (Sam et al. 1997). This is buttressed by the repeated raiding attempts at particular farms.

Whatever variable drew the other animals such as duikers and bushbucks out of the reserves probably affected elephants as well (ECONS 2003) and

contributed to elephants lurking around the boundaries and getting into nearby farms to feed on more nutritious and succulent plants such as cassava and plantain than foliage of a matured forest vegetation as found especially in the Dadieso Forest Reserve.

It did not appear that crop raiding was as great as it is elsewhere in Ghana, such as in the Kakum Conservation Area (Dickinson 1998), where several farmers and hectares of farmland are affected every harvesting season. Besides, the survey results gave an impression that although an appreciable number of farmers were affected, farmers in the area did not see crop raiding as burden. This could probably be attributed to little regard for wildlife and forestry laws and inadequate enforcement of them, as the farmers could arrange among themselves to eliminate any elephants they considered a nuisance on their farms.

We recommend that the Forestry Commission collaborate with the district administration to plan and execute a comprehensive awareness programme emphasizing wildlife and forestry laws to avert the indiscriminate and unsustainable exploitation of the forest and wildlife resources in the area.

Conclusion

No crop raiding took place during the survey. However, interviews indicated that crop raiding had been a serious issue in the area, occurring not just when most food crops were harvestable but also during the dry season. It did not appear burdensome, because farmers themselves killed the elephants when problems arose.

This paper has demonstrated how a social science survey can be used as a method to evaluate conflict in areas where no data have previously been collected.

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