

Training as a critical component of elephant research and management in Ghana

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Introduction

Institutional weakness prevents elephant management programmes in West Africa from becoming established and functioning efficiently. Most government wildlife departments lack the personnel needed to carry out their mandate, as existing personnel frequently do not have the necessary technical and professional training (AfESG 1999). Consequently, parks and reserves are not effectively protected from poachers and farm encroachment. Surveys cannot be conducted and there are no monitoring programmes.

Most research on elephants in Ghana, over the years, has been undertaken by staff of the Wildlife Division in collaboration with visiting researchers and students, both local and international. However, the increasing problem of human–elephant conflict stemming from shrinking habitats and other factors, with limited capacity and financial resources of the Wildlife Division (2000), has shown that the division cannot single-handedly shoulder the responsibility of elephant conservation and management.

The Eden Conservation Society through the IUCN/SSC AfESG Small Grants Programme initiated a training programme to build a work force for undertaking various elephant biology and management activities. Eden is a young, environmental, non-governmental organization in Ghana that is membership-based. It intends to be a strong partner of the Wildlife Division in implementing Ghana's Elephant Conservation Strategy.

The specific objectives of the project were to

- train 12 wildlife and forestry students of Kwame Nkrumah University of Science and Technology, Kumasi, in various aspects of elephant biology and management techniques
- determine the population size and distribution of elephants in the Dadieso area

- determine factors affecting elephant conservation in the area
- determine the nature and extent of human–elephant conflicts in the area.

The objective of this field note is not solely to bring this information to the knowledge of readers. We hope countries, institutions and other organizations that similarly lack funds, staff and know-how will be encouraged to undertake similar capacity-building programmes. We also hope that the content of the course will serve as a template for training in other countries.

Methods

An initial two-week theoretical training course was held in Ankasa Conservation Area, where elephants occur. This course was reinforced with an additional two weeks of actual fieldwork in and around Dadieso and Disue River Forest Reserves in Dadieso area.

The course was designed to provide a continental overview of the status of elephants, problems of elephant management and human–elephant conflict, the biology of elephant populations and individuals, and census methods. Classroom work consisted of lectures, discussions, paper exercises, group syndicate work, case studies and plenary sessions. A typical day comprised four main classroom and field sessions of 1½ to 2 hours, in addition to 1 to 2 hours of individual or group assignments in the evenings.

Various census methods were taught. The pattern was usually to introduce the topic in the classroom and then conduct a series of exercises of increasing complexity. Field trials with compass, tape measures, GPS (global positioning system) and camera were undertaken to equip the students to handle the field work later at Dadieso.

Literature in the form of books, journals and reprints, the core being AfESG products, were assembled for the students to use.

During the second phase of the project, the standard line-transect method (Buckland *et al.* 1993) was used to survey elephants and other animals on 45 1-km transects, while questionnaires were administered in 14 randomly selected villages within 7 km around the two reserves. [Ed. note: See also proceeding note]

The topics treated in the theoretical section are given in table 1.

Results

The preliminary elephant survey showed that few elephants were using the area at the time of the study.

The questionnaire survey also indicated that elephants had gradually disappeared, starting from the northern part of the study area, and their signs are now found only in the south. The full results of these studies have been documented elsewhere (Eden Conservation Society 2003).

Discussion

The capability of a workforce of 12 young scientists working with elephants was improved through the training. The first-ever baseline information on elephants for the Dadieso area and historic information on elephant crop-raiding issues have been documented.

Although the actual contribution of the training to elephant conservation in particular and wildlife man

Table 1. Topics covered in the training course for wildlife managers

Topic and no. of sessions used	Skills	Emphasis
Behaviour (6 sessions)	Morphology and behaviour to aid identification, differentiation and education activities	Age and sex categories, social behaviour, musth and mating, feeding and foraging, differences between forest and savannah elephants
Population dynamics (6 sessions)	Determining age: using tusk growth, tooth wear and eruption, sex ratio, age distribution, tusk measurement	Population trends and influencing factors: conception rate, birth and death rates, conservation and management of elephants
Counting elephants (12 sessions)	Conducting reconnaissance surveys, sampling, variation; calculating estimates, standard errors, confidence limits	Direct and indirect counting methods, total and sample counts, aerial and ground counts, strip and line transects; registering individuals in a population
Crop-raiding (14 sessions)	Defining the problem, collecting data, judging incidents, considering management options, disseminating information; using diplomacy, patience, and communication skills in dealing with complaints	Causes of crop raiding; locating and mapping incidents; evaluating frequency and severity, identifying problem elephants, deterrent methods
Elephants in Ghana (3 sessions)	Assessing current status of elephants as enumerated in the elephant strategy for Ghana	Strategy for the conservation of elephants: current status, opportunities for research, monitoring, census plan for both savannah and forest zones
Grant proposal writing (3 sessions)	Equipping students to be able to prepare their own projects: planning and implementing projects	Conceptualization and development of projects, logical framework and budgeting
Field trials and practice (6 sessions)	Reading maps, using compass, tape measures, hip chain, GPS, camera	Learning to use field instruments

agement in general will become more evident after evaluation in a few years to come, five months after the training, the following benefits can be attributed to the training:

- The project has provided insight into the current status of elephants, the history of elephant occupation and the status of human–elephant conflict as well as factors militating against biodiversity conservation in general.
- Participants' knowledge of the species has been improved, which will particularly boost research and public education about the species.
- Analytical skills of the participants have been improved considerably.
- Participants' ability to plan and implement a project has been developed and improved.
- Participants obtained training in writing project proposals.
- Two participants have been motivated by the training to work on elephants for their final-year thesis.
- Some participants have led two groups of Ghanaian students to write two project proposals on elephants for student BP Conservation project awards for the year 2003. Both projects passed through the first phase of assessment with one of them finally winning a bronze award.

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