



***Darwin Initiative for the Survival of Species
Annual Report***

Wildlife & People: Conflict & Conservation in Masai Mara, Kenya

Durrell Institute of Conservation & Ecology,
University of Kent

Darwin Project Information

Project title *Wildlife and People: Conflict and Conservation in Masai Mara, Kenya*

Country(ies) *Kenya*

Contractor *DICE, University of Kent*

Project Reference No. *162/6/131*

Grant Value *£122,854*

Start/Finishing dates *July 1997/September 2001*

Reporting period *April 2000 - March 2001*

Project Background

The project is based in the Serengeti-Mara ecosystem, in and around the Masai Mara National Reserve in south-west Kenya, on the border with Tanzania. It is a collaboration between DICE, Moi University, WWF, Kenya Wildlife Service, the Department of Resource Surveys and Remote Sensing, and the two local country councils of Narok and Trans Mara that administer the Reserve and surrounding areas.

The project focuses on human-wildlife conflict in the Serengeti-Mara ecosystem. In an area where pastoralism and wildlife coincide, but where human population growth and agricultural expansion are rapidly occurring, the interests of wildlife and people often conflict. This project aimed to tackle various aspects of human-wildlife conflict from the perspectives of both people and wildlife.

Project Objectives

The original proposal had no statement of overall aim, but this can be summarised as:

To train Kenyans at all levels to undertake monitoring and research into various forms of human-wildlife conflict in the Serengeti-Mara ecosystem, and to use the results of such research to advise the relevant authorities on the management and mitigation of human-wildlife conflict for the benefit of both people and wildlife.

The specific objectives of the project were:

- 1. Quantify the scale and impact of two contrasting forms of human-animal conflict, and identify ways of resolving these conflicts to the benefit of wildlife, local Maasai and tourists.*
- 2. Investigate the perceptions of local Maasai towards these human-animal conflicts and integrate local attitudes and perspectives into long-term solutions for conservation.*
- 3. Identify ecological factors affecting the recovery of endangered large mammal populations that are so attractive to tourists.*
- 4. Train Maasai rangers and Kenyan research students in relevant ground-based survey and research techniques, and establish a methodology for ongoing monitoring of human-animal conflicts.*

5. Use the research results to build a model and prepare a management plan for large mammal conservation that will provide a lasting benefit for local Maasai.

Objective 5, regarding the development of a management plan, has been modified to instead focus on participatory planning and the development of management recommendations through a series of stakeholder workshops to be held in summer 2001. This amendment has been approved.

Progress

The project began, somewhat delayed, in January 1998, with fieldwork commencing in May 1998. Two PhD students were recruited in July 1998, and the project officer worked alongside these students undertaking both training and research activities over the following two years. Two MSc students, additional to the original planned outputs, also worked alongside the Darwin Initiative staff and students during this period.

The fieldwork element of the project was wrapped up in August 2000, and in September 2000 both PhD students travelled to DICE to begin writing up their PhD theses. This is in accordance with the revised timetable agreed in 1998. In addition, a Maasai MSc student at DICE, funded separately, worked on a research project with the Darwin project officer, gaining practical and analytical experience and submitting a thesis which was awarded a Merit in November 2000.

Between April and August 2000, both PhD students finished the field research elements of their PhD programmes. This involved the continuation of work started in 1998 as outlined in their PhD proposals approved by the university. In addition, the project officer finished his own research activities during the same period and during a brief return visit in early 2001. To summarise the research methodologies used in this period:

Human-elephant conflict: Conflict incidents were recorded using GPS. A joint questionnaire/field survey of raided and non-raided farms was implemented to assess the effects of a variety of variables including methods of crop protection on the likelihood of raiding. Monthly records of rainfall, grass biomass and elephant diet (from dung analysis) were performed to assess seasonal trends.

Tourism impacts: Tour drivers were given GPS units to map their routes around the Reserve for subsequent GIS analysis. Flight distance experiments were conducted on a number of herbivore species to assess the effects of vehicle speed and approach angle. Data on visitation were collected from lodges and ranger posts.

Black rhino feeding ecology: 100 plots of 20*30m were surveyed for evidence of rhino feeding. Each plant was identified to species, its height and phenology recorded, along with evidence of rhino feeding and damage by other browsers.

Browser competition: In September 2000 a further year of field research by a Maasai MSc graduate was instigated whereby direct observations of the major browser species feeding behaviour are being made for comparison with black rhino feeding behaviour.

As mentioned, the students travelled to UK to analyse and write up their results. The project officer has spent much time (despite being out of contract since July 2000) giving the students advice and training on the use of GIS and appropriate statistical methods for the analysis of their data. Results will be submitted after completion of the theses and their presentation at stakeholder workshops. A final report to include results is scheduled for submission in January 2002.

No significant difficulties were encountered during the year.

The design of the project has not altered in any significant way, although two issues can be reported. The first is some methodological enhancement to both the tourism study and the rhino study. In the tourism study, the idea of giving tour drivers GPS units was devised as a means of generating data quickly and unobtrusively. By programming the GPS in an appropriate way it was simply a case of training drivers to switch the GPS on and off at the beginning and end of each excursion, and data were collected automatically. The use of GPS technology was central to the approach of the project from the outset, but this modification to incorporate self-collection of data by subjects rather than by observers has helped to speed up data collection, and remove observer effects from the data. In the rhino study, after a grid based approach to siting vegetation plots yielded poor returns in terms of rhino feeding evidence, a focused study was designed whereby GPS location of rhinos collected in the previous two years was used to site plots. This yielded much more data on rhino feeding preferences, and in comparison with the grid based data should yield some information on food-based habitat choice. The second issue to report is the successful development of an exit strategy for the project. In a three year research and training project such as this it is rarely possible to implement findings, for both time and financial reasons. In such a scenario it is necessary to develop follow-on proposals for implementation projects that will use the findings of the original project and put them into practice. In our case, we have been successful this year in securing two significant grants, one from the Darwin Initiative and one from WWF, to implement community-based tourism and human-elephant conflict mitigation respectively. These very practical projects have arisen directly from the original Darwin Initiative project being reported on here.

A workplan for the next reporting period, to the end of the project, is presented below:

June 2001 Project officer returns to Kenya to plan workshops;

July 2001 PhD students submit theses, and return to Kenya;

Aug 2001 Project leader travels to Kenya, dissemination and planning workshops held;

Sep/Oct 2001 PhD students travel to UK for viva voce examination of their theses;

Jan 2002 Final report submitted

Partnerships

Under difficult political circumstances the project achieved good local collaboration with all the appropriate partners, although manpower changes within some of these partners resulted in continuity problems in terms of steering committee members. However, apart from annual meetings most partners did not participate greatly in day to day running and activities of the project officer and students. The host country partners attended a steering committee meeting in Nairobi in June 2000 at which progress was presented by the project officer and the PhD students, along with plans for the final period of fieldwork. The partner representatives offered useful comments and advice which helped to shape the final period of fieldwork. The local county councils were very forthcoming with tourism visitation data which has helped the tourism study immensely. By compiling and analysing these data, the project is directly benefiting park tourism management. WWF have been very supportive throughout the year, particularly with regard to their part funding of the PhD students. Both WWF and Kenya Wildlife Service have assisted with the development of grants for follow-on implementation projects. WWF have offered funding for one such project whilst KWS remain a partner in both follow-on projects, besides offering field staff support.

The project officer participated in a rhino planning workshop in September 2000. Through this participation, several links were made to other rhino projects in Kenya on private ranches, including a project using Earthwatch volunteers. Some collaborative work is planned for the future. Through one such link, a connection was made with a community-based tourism and conservation initiative in northern Kenya, which offers promising comparison with our efforts on the follow-on Darwin Initiative project. A scoping visit to this initiative is planned.

Impact and Sustainability

Local impact could have been increased by greater press coverage, but a decision was made to keep the project fairly low key because of the political sensitivity of the area and to some extent the subject matter. However, locally the project was well known, and this was evinced by the approach made to the project officer by one local community for assistance with the development of sustainable wildlife management and conservation which resulted in a successful application to Darwin in the current round. This and a further grant from WWF mean that, in terms of direct local exit strategies, we have a firm basis of implementation to carry forward over the coming 2.5 years. On a wider level, the academic training offered to PhD and MSc students will have a lasting impact because each candidate has returned or is returning to an active role in conservation research and management in Kenya.

Outputs, Outcomes and Dissemination

Table 1. Project Outputs (According to Standard Output Measures)

Code No.	Quantity	Description
2	1	Wellcome Trust funded Maasai student who was supervised by the Darwin project officer
5	1	Maasai research assistant trained in both tourism and rhino research and monitoring for the whole year
8	25	Project officer in Kenya
8	2	Project leader in Kenya
11a	2	See table 2
11b	1	See table 2
14a	1	Steering committee meeting, June 2000
14c	1	National rhino planning workshop, September 2001

The final planning workshops, press releases and handover of project equipment were planned for September 2000. These have been delayed until August 2001 to allow for the PhD students to complete their analyses and write-ups. Additional outputs not originally planned were the MSc student, the year of on the job training by a Maasai research assistant, and the presentations of results at meetings. In addition, some peer reviewed and other publications were produced earlier than expected.

Table 2: Publications

Walpole, M.J. (2000) GIS as a tool for rhino conservation. *Pachyderm* **28**:33-39. Journal published by IUCN

Walpole, M.J., Morgan-Davies, M., Milledge, S., Bett, P. & Leader-Williams, N. (2001) Population dynamics and future conservation of a free-ranging black rhinoceros population in Kenya. *Biological Conservation* **99**(2):237-243. Journal published by Elsevier Science.

Walpole, M.J. (in press) Factors affecting black rhino monitoring in Masai Mara National Reserve, Kenya. *African Journal of Ecology*. Journal published by Blackwell Science.

Besides the meetings described above, no dissemination was undertaken locally. After the workshops in August a press release will be made, and a popular article for the East African Wildlife Society magazine, *Swara*, will be submitted.

Project Expenditure

- Please expand and complete Table 3.

Table 3: Project expenditure during the reporting period

Item	Budget	Expenditure £
<i>Salaries (M.J.Walpole)</i>		
<i>Rent ,rates heating lighting etc</i>		
<i>Office administration costs</i>		
<i>Capital items/equipment</i>		
<i>Students</i>		
<i>Travel</i>		
Total		

Monitoring, Evaluation and Lessons

The project has been continually overseen by the project officer, who continued to work on the project beyond the end of his contract in July 2000. Although this project did not have a logical framework from which to work, there were clear objectives which, although the timetable has slipped, have been constantly referred to throughout the project to ensure that it meets its objectives.

The indicators of achievement are the successful completion of project objectives and milestones on time. Although some of these have slipped, all the original objectives and milestones will be reached, and some additional ones have also been achieved. On this basis we judge the project to have been a success.

Author(s) / Date

M.J.Walpole
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31st May 2001