

## Conservation of large mammals in Africa. What lessons and challenges for the future?

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### INTRODUCTION

How can single species conservation efforts in Africa be given greater effectiveness? In this chapter, we ask what lessons might be learnt from past efforts spent on conserving specific populations of large mammals and suggest future conservation action. Our case studies are the elephant *Lophodonta africana* of Amboseli in southern Kenya; the mountain gorilla *Gorilla gorilla berengei* in the Democratic Republic of Congo (DRC), Rwanda and Uganda; black rhinoceros *Diceros bicornis* in Kenya; and the hirola antelope *Damaliscus hunteri* in Kenya. We have selected these particular case studies because they are familiar to us. Our organisation, the African Wildlife Foundation (AWF), has had a long-term commitment to the conservation of these species and their habitats. The four case studies illustrate successes and problems in African species and ecosystem conservation. With the exception of the hirola, all the study species have either stable or increasing populations after experiencing alarming declines in the recent past.

### CASE STUDY 1. ELEPHANTS AT AMBOSELI IN KENYA

The Amboseli elephant population has been monitored continuously since 1972. The population declined in the 1970s due to poaching and drought (C. Moss, 1988, 1994; unpublished data). A reversal in the downward population trend has occurred since the beginning of 1979 with the population now growing dramatically (Figure 11.1). The Amboseli elephant population is growing at an annual rate of 3.9% through breeding alone (C. Moss, unpublished data).

700  
300, 450

more or less uniform across the borders. Finally, gorilla tourism is an important source of revenue in each of the three countries, thus providing an opportunity for collaboration. The benefits of regional cooperation, be it a 'Peace Park' or a transfrontier protected area, are numerous (Kalpers and Lanjouw, 1997). The IGCP has supported regional and bilateral meetings, unofficial encounters and attendance at conferences/meetings to ensure that the protected area authorities are communicating at all levels.

The weak national economies of the three countries reduce the ability of the protected area authorities to be effective. The IGCP has provided equipment for both the field staff and offices, as in the case of Rwanda in August 1994 after the genocide and civil war. The IGCP provides technical assistance to develop policies for nature-based and gorilla tourism programmes and works towards increasing the involvement of local communities in conservation activities. In Rwanda, the IGCP has brought other partners (CARE-International) into the arena with the protected area authorities and ministries responsible for the environment, to link conservation activities with development for local communities. These activities aim at sustainable parks through bringing benefits of conservation to those upon whom it is ultimately dependent.

The IGCP has found that when providing technical advice and focusing on the development of institutional capacity, the long-term relationship of trust that it builds with protected area authorities is fundamental. After they lost most of their equipment and facilities during the genocide, Rwanda's Organisation de Tourisme et des Parcs Nationaux (ORTPN) contacted the IGCP for help in developing short- and medium-term plans for the authority. The IGCP facilitated a planning meeting, followed up by a 'partner meeting' involving other potential donors to ORTPN leading to the development of emergency programmes to protect parks and mountain gorillas. In DRC, after the change in government in early 1997, the IGCP performed the same role again for the Institut Congolais pour la Conservation de la Nature (ICCN).

### CASE STUDY 3. THE BLACK RHINO IN KENYA

The world population of black rhinos declined from around 65 000 in 1970 to 2400 in 1995, a fall of 96 % (Emslie, 1996). This decline was primarily due to poaching. The current world population of black rhino is about 2500 individuals in four strongholds – Kenya, Namibia, South Africa and Zimbabwe. Of the estimated 1500 rhino in Kenya in 1980, only 381 remained by 1987. As populations of black rhinos in Kenya continued to decline in spite

of intensive conservation measures, it became clear that only effective security of each population would provide long-term hope.

Subsequently, due to the intensified anti-poaching efforts and transfer of rhinos into secured sanctuaries begun in 1985 (Western, 1987), the population has risen to the present estimated 430 rhinos. Populations in sanctuaries have increased, through breeding at about 4 % per annum since 1991, while those outside sanctuaries have decreased during the same period (Brett, 1991).

The overall objective of the Kenya rhino programme is to manage the country's rhinos as a metapopulation thus maintaining long-term genetic diversity and demographic stability. A more immediate objective is to attain a population of 600 black rhino by the year 2000 (Emslie, 1996). Activities towards these goals are undertaken through cooperation between the Kenya Wildlife Service (KWS), non-governmental organisations (NGOs), and private landowners. Representatives of these organisations sit with KWS staff on the National Rhino Management Committee. This committee meets on all rhino conservation matters and agrees on subsequent conservation action to be undertaken by KWS as the implementing government agency. NGOs also provide assistance to the rhino programme through direct funding and supplying equipment for monitoring rhinos and maintenance of sanctuaries.

Monitoring is important in order to keep track of changes in the population and to act promptly if individual rhino are known to face a particular risk of being poached. It is also important that Kenya's rhinos are to be managed as a metapopulation. At present however, monitoring is far from perfect as the Kenya rhino programme suffers staff and vehicle shortages. Large areas may not be covered and individual rhinos not protected. Monitoring in the field is complicated because some rhinos are not marked and thus cannot be individually identified. Additionally, the difficult terrain and thick vegetation make it impossible to locate individuals at frequent intervals and make a quick and accurate assessment of the total number of rhino in an area.

There are 17 locations in Kenya with rhino, seven of which are unfenced. Of the country's 430 rhinos, 314 are found in fenced areas at an overall density of about 0.24 rhino/km<sup>2</sup>. The rest are found in unfenced areas at an overall density of 0.06 rhino/km<sup>2</sup>. With adequate security in place, the ultimate aim would be to move rhinos bred within sanctuaries to help repopulate areas where populations have been wiped out by poachers. After rhino numbers exceeded their carrying capacities in a few sanctuaries, Kenya undertook the first rhino 'free release' at Tsavo East National

Park in 1993 and 1994. This 'free release' has been successful and the population is increasing through breeding. Kenya's sanctuary approach to rhino conservation has reversed population declines and contributed to turning rhinos to areas where they can roam without the confines of fences.

Rhino populations that have shown no growth need special attention. Very small or fragmented populations show little prospect for growth. Isolated individuals should be captured and moved to other areas to augment the viability of existing populations. In other Kenyan rhino sanctuaries, numbers have not increased in spite of the absence of poaching. Rhinoceros populations in some newly established sanctuaries have shown no growth or no breeding at all. Finally, some populations such as those of Maasai Mara cross the international border into adjacent Tanzania. Their protection depends on collaboration between the two countries.

#### Lessons learnt

Security and monitoring remain by far the most important considerations for rhino conservation in Kenya. Security must always be high especially in fenced areas where many rhino are concentrated within relatively small areas making them vulnerable to poaching. Continuous monitoring and frequent censuses are necessary for effective rhino management. Monitoring must be made more effective, for example, by combining foot patrols with vehicle and aircraft patrols. Furthermore, there is need to research the use of modern technologies for tracking rhinos (du Toit, 1996). Towards this end, AWF has supported the design and field testing of a suitable radio collar for rhinos at Madikwe Game Reserve in South Africa and the use of Global Positioning Systems (GPS) for accurate patrol work in Natal. At the Waterberg Plateau Park in Namibia, AWF is supporting a creative scheme in which rhino monitors are paid incentive money commensurate with their productivity in rhino monitoring and surveillance.

Overall, Kenya's rhino programme should instigate priority activities that achieve the goal of attaining a population of 600 animals by the year 2000, before any genetic management of populations. The present population falls short of the 7.5% net annual growth rate necessary for the metapopulation to achieve the target for the year 2000. The programme should be managed flexibly, thereby assessing conservation actions and if necessary modifying approaches. Inadequate monitoring will result in an inability to manage rhinos as a metapopulation. Managing as a metapopulation will require good knowledge of sex-ratios, age structure and individuals. Managing rhinos to maintain genetic diversity will involve moving individuals between sites and might jeopardise their demographic performance

due to the potential negative effects of handling. Furthermore, experience shows that moving animals between established populations is a very high risk activity. With adequate monitoring in the field, a Population Viability Analysis (PVA) will help formulate a metapopulation strategy through which all rhinos would be managed interactively to maintain genetic diversity and demographic stability. Individuals from isolated small populations should be moved to sanctuaries for their safety and contribution to breeding.

We need to understand other factors limiting rhino population growth. It is suspected that declines in carrying capacity, especially in a few fenced areas, have led to a drop in reproductive rates (Brett, 1991). The assessment of carrying capacity for rhinos needs updating. This is also necessary if surplus rhinos are to be removed from areas where the population is approaching carrying capacity. To accomplish this, it is necessary to improve biological monitoring. Rhino sanctuaries should be managed even if it means removing other species, such as elephants, which from the rhino's perspective cause habitat deterioration.

Success in rhino conservation shows that pooling expertise, experiences and funds from many stakeholders is necessary to counteract threats to conservation. At the regional level, there is a need to facilitate the exchange of expertise and information between countries. Kenya's success with the sanctuary model shows that in-country breeding in almost natural conditions is possible and makes it easy to return rhinos to the wild when security permits.

#### CASE STUDY 4. THE HIROLA ANTELOPE IN KENYA

The hirola, a critically endangered antelope species, is confined to a small area of the plains in the Garissa district of southeastern Kenya (IUCN, 1994; East *et al.*, 1996). The status of the population in Somalia is not known (Magin, 1996). During the 1980s, conservationists noticed an impending crisis due to a marked decline in estimates of the hirola population (Hillman *et al.*, 1988: figure 2). However it was not until 1995 that the Kenya Wildlife Service conducted an aerial census specifically for the species. The Hirola Task Force (HTF) was formed in late 1995 as a response to the crisis. The HTF hired a consultant to the Species Survival Commission of IUCN who developed a recovery plan for the hirola (Magin, 1996). The recovery plan summarised available information on the ecology and status of hirola, and presented a strategy for its *in situ* and *ex situ* conservation.

Hirola are threatened by poaching, competition with livestock, range



Mountain gorilla, *Gorilla gorilla beringei*, Democratic Republic of Congo.  
 Photograph: Ian Redmond.

deterioration, disease and lack of information on population status (Magin, 1996). Faced with difficulties in conserving the hirola in its original range due to prevailing insecurity, the HTF resolved to translocate about 100 hirola to safer grounds and bolster the survival chances of the estimated 50 to 80 individuals in Tsavo East National Park.

The first translocation was completed successfully in August 1996 when 35 hirola were captured north of the Tana and 30 released in Tsavo

National Park. Subsequent translocation of hirola to Tsavo East National Park was stopped through a court injunction filed in the Kenya High Court by the local residents within the hirola's natural range who objected to the transfer of the species (*Daily Nation* newspaper, Nairobi, 30 August 1996). The survival of the population at Tsavo East is of interest. For reasons yet to be understood, the translocated hirola population experienced a mortality rate approaching 50% and had no surviving young (Soorae, 1997).

#### Lessons learnt

Hirola is facing the risk of extinction and more concerted national and international efforts are needed to avert this crisis. Implementation of the Hirola Recovery Plan (Magin, 1996) is a very high priority in international wildlife conservation. Meanwhile, frequent censuses and monitoring are necessary in order to understand the current population status. Security measures must be effective before threats to hirola conservation can be addressed in the original range.

With the prevailing bad security situation in the hirola's original range, the translocation to Tsavo East National Park may be critical to saving the hirola from extinction. Further translocations should be considered if and when finances, legal decisions and local community support allow. The support of local communities and politicians must be won before any future translocation is undertaken. Monitoring and research is needed to understand factors limiting hirola population growth in Tsavo East National Park and appropriate measures taken to remedy the situation.

An evaluation of past conservation efforts and the translocation of 1996 being prepared by the HTF will be very informative for future conservation action. There is a need to evaluate the success of the various methods used in capturing, moving and releasing the animals and documentation of the causes of mortality. Population and habitat viability modelling is necessary to allow an evaluation of the probability of extinction of the hirola populations and the likely impacts of management interventions.

### GENERAL LESSONS FOR CONSERVATION OF LARGE MAMMALS IN AFRICA

Lessons learnt through the four case studies show that the conservation of a large mammal species should be considered within an overall focus on conservation of habitats and the overall threats facing the species in the area. The approach must be multidisciplinary. To de-emphasise the boundaries between protected areas and surrounding pastoral lands with the aim

of ensuring that wildlife continues to have access to areas outside park reserves, landowners must be given incentives to tolerate or welcome their presence in such a situation. For the elephant, the two fundamental conservation concerns are how habitat can be effectively secured for elephants and how to manage human–elephant conflicts. An effective conservation approach has to integrate ecological knowledge, working with traditional Maasai institutions (starting at the neighbourhood level), training of individuals at all levels and capacity building of local Maasai communities to improve their ability to manage and benefit from wildlife/elephant conservation. This approach is working for the outreach project in support of elephant conservation in the Amboseli area being undertaken by AWF.

All these case studies show that political support is key to the success of large mammal conservation in Africa. All stakeholders should participate fully. The success of the ‘consolation scheme’ at Amboseli can be attributed to the participation of the local Maasai at all stages of its planning and implementation. On the other hand, the case of the hirola illustrates that poor security, and political pressures from local communities can hinder conservation efforts. The Hirola Task Force had garnered enough national and international resources to carry out the translocation in 1996, but it was impossible to complete the transfer without the approval of the local population.

Where the habitat spans international borders (e.g., with the mountain gorilla, black rhino and elephant), the approach should be regional. A common vision is needed between countries that share wildlife populations if conservation is to be effective. This vision should also be shared and encouraged by other partners in conservation as illustrated by the successful work of the IGCP.

Conservation of large mammals in Africa will benefit from innovative approaches such as those in monitoring and surveillance (black rhino), funding (mountain gorilla) and partnerships (all case studies). Where monitoring and surveillance are key to the survival of the species, there will be need to incorporate modern technology in conservation efforts to make them cost-effective and accurate. Working in a politically volatile region, the IGCP has found that it needs to have flexible funding in order to respond to crises. Financial diversity and flexibility reduce the vulnerability of the conservation programme and decrease its tendency of being ‘donor-driven’. The conservation programme needs to have a diversity of activities, so that it can concentrate on different approaches, objectives and needs at different times, responding to the situation and circumstances. Strategic partnerships formed in response to specific conservation needs are useful for large

scale conservation in Africa as illustrated by the IGCP, the Hirola Task Force and the Kenya Rhino Management Committee. Such partnerships should not be formed in response to crises, as they would also be very useful in undertaking preventative conservation.

Programmes for the conservation of African large mammals develop long-term relationships with the different partners and stakeholders to ensure their sustainability. For the IGCP, finding appropriate staff who know the region and can tolerate upsets is the key to success. Finally, a conservation programme should establish a permanent presence in its region of operation, and keep information flow open and multidirectional. The conservation of large mammals in Africa stands to benefit enormously from the exchange of experiences and lessons learnt from the various projects, as those in conflict mitigation, and application of research findings to management.

# Priorities for the Conservation of Mammalian Diversity

Has the Panda had its day?

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