

Endangered rhino outside national parks and reserves have been captured and translocated into the sanctuary. So far 11 have been moved into Ngare Sirigoi. Three calves have been born. The sanctuary has demonstrated the feasibility of raising rhinos and cattle together, and it has been agreed to extend the reserve by another 2000 ha.

Project 3703

Black Rhino Protection and Conservation

WWF Expenditure 1986/87 — US\$81,285

(Project initiated January 1986)

Black Rhino Protection

Project Executants: C. Francombe, General Manager, Laikipia Ranching Co. Ltd (Ol Ari Nyiro Ranch); in association with the Gallmann Memorial Foundation.

Participating Organizations: Laikipia Ranching Co. Ltd; in association with the Gallmann Memorial Foundation.

Objectives: To protect the rhinos in Laikipia Ranch, Kenya, by supporting patrols as part of a programme to preserve an environment where wildlife and domestic animals can live together.

Black Rhino Conservation

Project Executant: Dr Robert Brett, Institute of Zoology, Zoological Society of London, UK.

Participating Organizations: Gallmann Memorial Foundation, Nairobi, Kenya; Wildlife Conservation and Management Department, Kenya.

Objectives:

- 1) To determine the status of the black rhino population on Laikipia ranch;
- 2) To study in detail their home range movements and breeding biology and the implications for management of black rhino in fenced sanctuaries;
- 3) To develop reliable ground census techniques.

Over the past decade, a number of wild animal species in Africa have been decimated by human activities. The rhino has undoubtedly suffered the most due to human greed for rhino horn. However, Laikipia Ranching Co. Ltd, also known as Ol Ari Nyiro Ranch, is one of the few places where the rhino, along with other species, is able to live at peace in the wild.

The 400 sq km ranch, situated in the semi-arid northern ranching land of Kenya, occupies an area on the eastern edge of the Rift Valley escarpment overlooking Lake Baringo. The ranch has an indigenous population of black rhinoceros (*Diceros bicornis*) and forms an ideal habitat for many other wild animal species such as elephant, Cape buffalo, greater kudu, eland, giraffe, and impala, and predators such as lion, leopard, cheetah, hyaena and Cape hunting dogs.

The more than 50 black rhinos form one of the largest natural groups left of free-ranging indigenous wild rhino. There are also more than 300 elephants and over 100 leopards.



Skulls of poached rhinos on Laikipia Ranch, Kenya before the start of patrols. With WWF help, the ranch is now radio-tagging the animals to help keep them inside the protected area. The last time rhinos were killed by robbers on the ranch was 1980.

Photo: WWF/Mauri Rautkari

The ranching operation carries 6000 head of boran beef cattle and 4500 head of dorper mutton sheep. Camels, donkeys and horses are used for ranch transport. It is the policy of the ranch to allow wild and domestic stock to live together. The Gallmann Memorial Foundation was founded to further this concept along with the preservation of this environment.

Protection Activities

This wildlife policy requires an intensive anti-poaching and security programme. Apart from a general manager, the unfenced ranch has 25 guards, selected for their loyalty, bravery and knowledge of the bush.

Patrol groups of five to six armed men are placed strategically throughout the ranch so that the entire area can be covered on foot. The main unit of six men occupies a hidden camp in the bush. This is moved frequently to maintain secrecy. All security units report regularly by radio to the main ranch office so that reinforcements can be sent immediately to deal with any illegal activity.

The poaching originates from the tribes around the ranch borders, which are often infiltrated by outsiders. The poachers use spears or illegal firearms. The general manager maintains an information network outside the ranch which can warn him of any intended incursions along with descriptions of the people involved.

Thanks to the guards, 1980 was the last year a rhino was poached on this ranch and the last elephant killed for its ivory died in 1978.

During 1986 two incursions by poachers were repulsed, and two arrests made. During 1987 there were no serious incursions by poachers. Rising costs, along with a deflated beef industry, have made it difficult for the ranch to meet the security expenses. However, once control is lost it is almost impossible to regain, making the present effort of utmost importance.

Scientific Activities

In the research section of the project, the social organization, breeding behaviour and reproductive physiology of the Laikipia black rhino are being studied and compared with those of other small populations confined and protected within fenced sanctuaries. The hope is to provide information for the long-term management of black rhino in sanctuaries and to develop calibrated census techniques, based on sign, for black rhino in Kenya and elsewhere in Africa.

Aerial counting of rhino is notoriously unreliable, particularly of rhino populations inhabiting areas of dense scrub. The rhinos are identified, sexed and their age determined from the size and characteristic wrinkles on their footprints and occasional visual sightings, which are recorded in a continuously updated photographic identification catalogue. The movements and behaviour of identified rhinos are plotted in order to generate home range maps and examine the interactions between individuals, in particular the dominance relationships between bulls, and the breeding performance of cows.

Using footprint identification techniques, the researchers in Laikipia have now counted 47 animals, a young and apparently healthy population, though males heavily outnumber females. The monitoring and census techniques developed are now being applied to other rhino populations in Kenya.

Three rhinos have been darted on the ranch and fitted with radio transmitters in order to track and obtain systematic data on their movements and behaviour. The transmitters also act as an additional security system for rhino that occasionally choose to wander (dangerously) over the ranch boundaries. The first animal was fitted with a transmitter implanted inside its rear horn. The next two were fitted with ear tags which contain transmitters, the first time this has been attempted with black rhino. It is planned to immobilize and fit eight more rhino with ear-tag transmitters in 1988. These units prove far easier to fit and more successful in operation. The radio signal has a very long range even through dense bush.

The technique also proved useful against poachers. The radio signal from one radio-tagged male was detected outside the ranch boundary in an area regularly used by poachers. The early alert enabled ranch security to chase the rhino back to safety within the ranch.

It has been confirmed that the largest dominant bulls at Laikipia do not totally monopolize breeding. They do not exclude other dominants from well-defined territories in the manner of white rhino (*Ceratotherium simum*). Like the white rhino, the dominant bulls often have several subordinate males living within their home

ranges. Differences in the size and use of home ranges by bulls of different ages and status are now being studied using radio-tracking.

Project 3715

Lake Nakuru Environmental Education Centre

WWF Expenditure 1986/87 — US\$71,539

(Project initiated March 1986)

Project Executant: Tony Potterton, WWF Regional Office for East and Central Africa.

Participating Organization: Wildlife Clubs of Kenya.

Objectives: To develop programmes for an Education Centre managed by the Wildlife Clubs of Kenya, thereby encouraging local participation in conservation, and developing guidelines for the educational centres elsewhere.

Lake Nakuru National Park is a world-famous bird sanctuary in addition to having a wide variety of other African wildlife. It is a major tourist attraction and has also recently been developed as the Government of Kenya's first rhinoceros sanctuary, into which a number of black rhinos have been moved.

Next to the park is the rapidly growing agricultural and industrial centre of Nakuru, the fourth-largest town in Kenya. Whilst posing a number of potential problems, such as pollution, this situation offers a rare opportunity for local people to be involved in educational activities in the park.

This project has been based at an existing hostel and education centre located within the park. Project activities have been coordinated with the Wildlife Clubs of Kenya (WCK), which manages the centre.

WCK is a non-governmental organization, almost 20 years old, dedicated to the promotion of conservation education. It consists of a network of over 1000 clubs in educational institutions throughout Kenya. The main aim of the project is to explore the potential for using the park and the centre as educational resources and, through contacts with the community, to provide a link with the town. Programmes of activities have been developed.

Teachers from all 20 secondary schools in the area have participated in programme development through meetings, working groups and workshops. They identified priority environmental issues which can be addressed in the park and at the centre. Trial materials for activities have been produced. They have been evaluated and tested with groups visiting the centre. In this way a full introductory programme with supporting materials and resources has been established. This includes a teachers' park guide, slide presentation, displays and worksheets, which all address the main teaching points identified during the teachers workshops. Plans for future programme development have also been drawn up. The teachers brought together for the project have formed their own association, hold regular