



the territory. Only if strong action is taken will the rhinoceros be saved from extinction.

KENYA CONTROL MEASURES

by N. Sandeman

The Game Department of Kenya is well aware of the serious reduction in numbers suffered by rhinoceros in recent years and the urgent need to provide adequate protection to this species.

The increase in the cost of rhino licences from Shs. 400/- to Shs. 800/- brought into force on April 1st 1958, reduced the number of licences issued from 204 in 1957 to 130 in 1958 but this has not proved sufficient protection. Consequently, towards the end of 1958, Game Wardens were asked to state what degree of protection rhino—and other species as well—should receive in the hunting blocks for which they are responsible. As Game Department Headquarters are unable to operate a comprehensive system of quotas for all hunting blocks Game Wardens were asked to make their recommendations under three headings :

- (i) Blocks where protection should be complete, i.e. no hunting of rhino permitted;
- (ii) Blocks where semi-protection should be imposed, i.e. only one out of every pair of hunters in a safari should be permitted a rhino licence; and
- (iii) Blocks where no special protection is required.

The following summarises the Game Warden's recommendations. Some of these are already in force, and others will be implemented at once.

Total Number of Hunting Blocks	Blocks granted Complete Protection	Blocks granted Semi-Protection	Blocks where no special Protection will be given
60	37	16	7

Excluded from the above are Forest Controlled Areas for it is felt that the extremely difficult conditions under which hunting takes place in the forests gives the considerable number of rhino to be found there all the protection they need.

The risk that complete protection in a large proportion of blocks would concentrate hunting for rhino where it is still permitted, and thus lead to a further deterioration of the overall position, is removed by affording semi-protection to all areas other than those where protection is complete and by imposing a 7-day interval between the departure of a safari from a block and the entry of the next hunting party.

It may seem a little incongruous to apply protection now in Machakos District where until recently rhino could be hunted on cheap licences but, although rhino will eventually have to be removed completely from the two areas concerned because of necessary human settlement it is hoped that before this becomes necessary the use of "capture drugs" with which experiments are now being carried out will enable some, at least, of these doomed rhino to be removed elsewhere. Two trappers have been given permission to capture rhino in certain parts of Machakos District on condition that one out of every pair captured is transported to and released in the Northern Frontier Pro-

VANISHING RHINO

The one-horned rhinoceros, royal beast of Nepal, is facing extinction.

Poachers have been killing the rhinoceros for the sake of its single horn, which alone fetches between £400 and £1,000.

It is ground into a powder and widely used as an aphrodisiac and antidote to poison by the Chinese, Burmese, and Siamese.

In addition, rhinoceros blood is highly valued as a medicine.

The skin and horn are used to make vessels for Hindu worship.

Game experts believe that there are now fewer than 100 rhinoceros left in the forests of Nepal, on the Indian border—once the most famous big game hunting country in the world.

The giant one-horned rhinoceros, which is 14 ft. long and stands 6 ft. high at the shoulders, once roamed all over South-East Asia.

To-day it is found only in Nepal and in North-Eastern India.

The beast's main hope of survival is in Assam, where 250 of them are under protection in the game sanctuary.

The royal family in Nepal is particularly disturbed at the threatened extinction of the rhinoceros. It has long been the tradition for Nepalese royal and princely families to offer up rhinoceros blood to ensure a safe passage to heaven for their ancestors.

King Mahendra, the present ruler, recently organised a rhinoceros hunting expedition in south-west Nepal, to perform a libation of rhino blood in memory of his father, King Tribhuvan.

Nepalese authorities have taken strong action to try to protect the rhinoceros.

Game wardens have orders to shoot poachers at sight, and any poacher who is caught is liable to sentence of life imprisonment. Its habits have made it an easy prey for the poacher.

When it leaves its jungle shelter to browse among the 20 ft. high grass and reeds of marshy country in search of food, it is guided on its return by its own smell. Poachers merely have to dig pits to trap it, or lie in wait with guns.

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vince. It is also hoped by the use of these drugs to capture rhino of breeding or near breeding age.

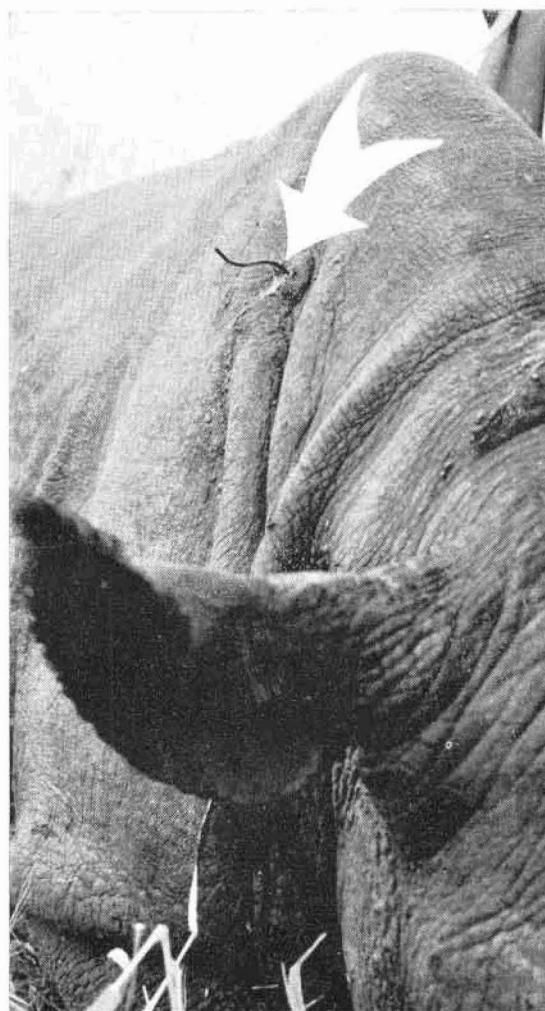
There are various ways in which protection can be given to a species :

- (a) By making a species Royal Game;
- (b) By assessing the licence fee at a high level;
- (c) By affixing conditions to Controlled Area Permits.

(a) Making a species Royal Game is the highest degree of protection that can be given but it is not considered that in the case of Rhino this is either desirable or necessary. The question of making female rhino Royal Game is a diffi-

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Below: Poaching takes a heavy toll of rhino. This animal shot by a game warden had the shaft and head of a poisoned arrow still embedded in its shoulder.



AMBOSELI

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Is there any possibility of sufficient water arriving to start refilling the dry Lake Amboseli? Very, very much more water has to arrive before any permanent water will appear on this Lake. The amount at present observed would be sufficient, when canalised, to bring water to the fringe of the Lake, but it could make no impression on the Lake itself. The Lake was a true lake when this area had very much more rainfall than it does at present. What is now being observed is probably the result of a very small climatic change, aided possibly by a minor seismic disturbance, but certainly no more than this.

In an area where water has been a problem difficult of solution for decades, even a minor change is very welcome.

These observations are one facet of the hydrologic studies carried out in this area. Finding groundwater has been successful although the main problem is finding water which is not highly mineralised and thus useless to man and beast.

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FLAMINGOES

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Lesser Flamingo colony in the same detail, and this is an objective for the future. There is of course much else to be learned about both species of flamingo here, such as how long they live (possibly 20 years is my most recent guess), what causes them to move about from one lake to another, what triggers off the breeding cycle, and so on. The ringing station which has been set up on Lake Nakuru may help to elucidate some of these problems, and we need a body of interested investigators, knowledgeable about algae, the analysis of water, and other abstruse matters, so that in the end we can piece together what remains to be learned about these extraordinary and beautiful birds.



BLACK RHINO

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cult one to which consideration is being given. (b) In Kenya, where the fees for Special Licensed animals such as rhino are the same for a visitor as for a resident, it is not practicable to raise fees to a level high enough to give effective protection without making it impossible for the resident sportsman to hunt rhino. What is aimed at is to assess a fee at which commercialisation of the trophies becomes unprofitable but which is not so high that the genuine sportsman cannot afford the licence fee.

The following figures show that this policy has proved successful. Resident hunters are affected by price changes but in general visiting hunters are not. In 1957 the fee for a rhino licence was Shs. 400/-. In that year 127 rhino licences were issued to visitors and 67 to residents. In 1958 the fee was raised to Shs. 800/- and 114 licences were issued to visitors and 16 to residents, of the latter only 4 were issued after the fee was raised.

(c) Affixing conditions to Controlled Area Permits is the simplest, quickest and most flexible way of giving protection. It requires the passing of no legislation, and no gazetting of notices. Protection can be imposed to any degree considered necessary and to any locality or part of a Controlled Area immediately it becomes evident that some additional protection is required.