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**IUCN ELEPHANT SURVEY & CONSERVATION PROGRAMME:
SUMMARY OF INTERIM REPORT ON ELEPHANTS IN KENYA***

by Alison K. K. Hillman

INTRODUCTION

The objectives of the IUCN Elephant Survey and Conservation Programme are to assess the current status and future prospects of elephants in Africa and Asia and to recommend an action programme to IUCN/WWF for improving the conservation of these species. We aim to present a balanced and objective view of the elephants' status, based, as far as possible, on scientific facts.

This report is a preliminary summary of evidence on the status and population trends of elephants in Kenya. Kenya is of special interest because:

1. There is a background of data from past and on-going scientific studies greater than that available for most other African countries.
2. Kenya is the only country in Africa where a nation-wide wildlife and livestock aerial monitoring programme is taking place, carried out by the Kenya Rangeland Ecological Monitoring Unit (KREMU), at a 2% sampling intensity. This report can provide a base line of past and current work against which results can be assessed to establish trends.
3. A decline of elephants in Kenya has been frequently reported. In 1973 the Game Department held a seminar, which established the status of elephants from data available then. Legal hunting of elephants was banned in 1973, and in May 1977 hunting of all species was banned.
4. Kenya can be taken as an example of many developing countries, where the expanding human population creates an increasing demand for land, which in some areas induces direct competition with wildlife. This leads to the need to define priorities and to find compromise solutions, both nationally and specifically.
5. Detailed studies based in Kenya are being carried out by the IUCN Elephant Group in conjunction with other workers in the field. It is hoped these will define methods that can be applied elsewhere.
6. The research section of the Wildlife Management and Conservation Department is presently carrying out a review of all research activities and results in Kenya, of which this report forms part.

The report is divided into subsections. Each subsection covers an area of Kenya which approximately encompasses the range of a population of elephants, or it covers a defined study area which relates directly to a conserved area. These are summarized, followed by a discussion of overall trends for the country as a whole.

*Condensed from the original

METHODS AND SOURCES

The following types of data have been used in compiling the report:

- (1) Published literature.
- (2) Personal reports.
- (3) The results of censuses both published and unpublished.
- (4) The results of surveys carried out by the IUCN Elephant Group, of live and dead elephants.

DISCUSSION AND CONCLUSIONS

Reports of early travelers indicate that, in the first half of the nineteenth century, elephants were widespread in Kenya. Toward the end of the century, however, reports of drastic reductions in numbers and range of elephants in Eastern Africa were common (Krapf, 1860; Thompson, 1878-80; Lydekker, 1894; Elliott, 1886). For example, Thompson commented "People talk as if the ivory trade of Africa were inexhaustible. Let me simply mention a fact. In my sojourn of 14 months during which I passed over an immense area of the Great Lakes region, **I never once saw a single elephant**. Twenty years ago they roamed over those countries unmolested, and now they have almost been utterly exterminated." The decline was attributed to an increase in the exploitation of ivory, which occurred between 1840 and 1890 (Spinage, 1973).

Protective legislation was introduced at the turn of the century. Since then, there appears to have been a steady increase of elephants in Kenya until the 1970s. In certain areas, particularly in Tsavo, the increase in elephant density was so great that it resulted in widespread reduction of woodland. This increase is thought to have been caused by range reduction and compression, as well as by natural recruitment.

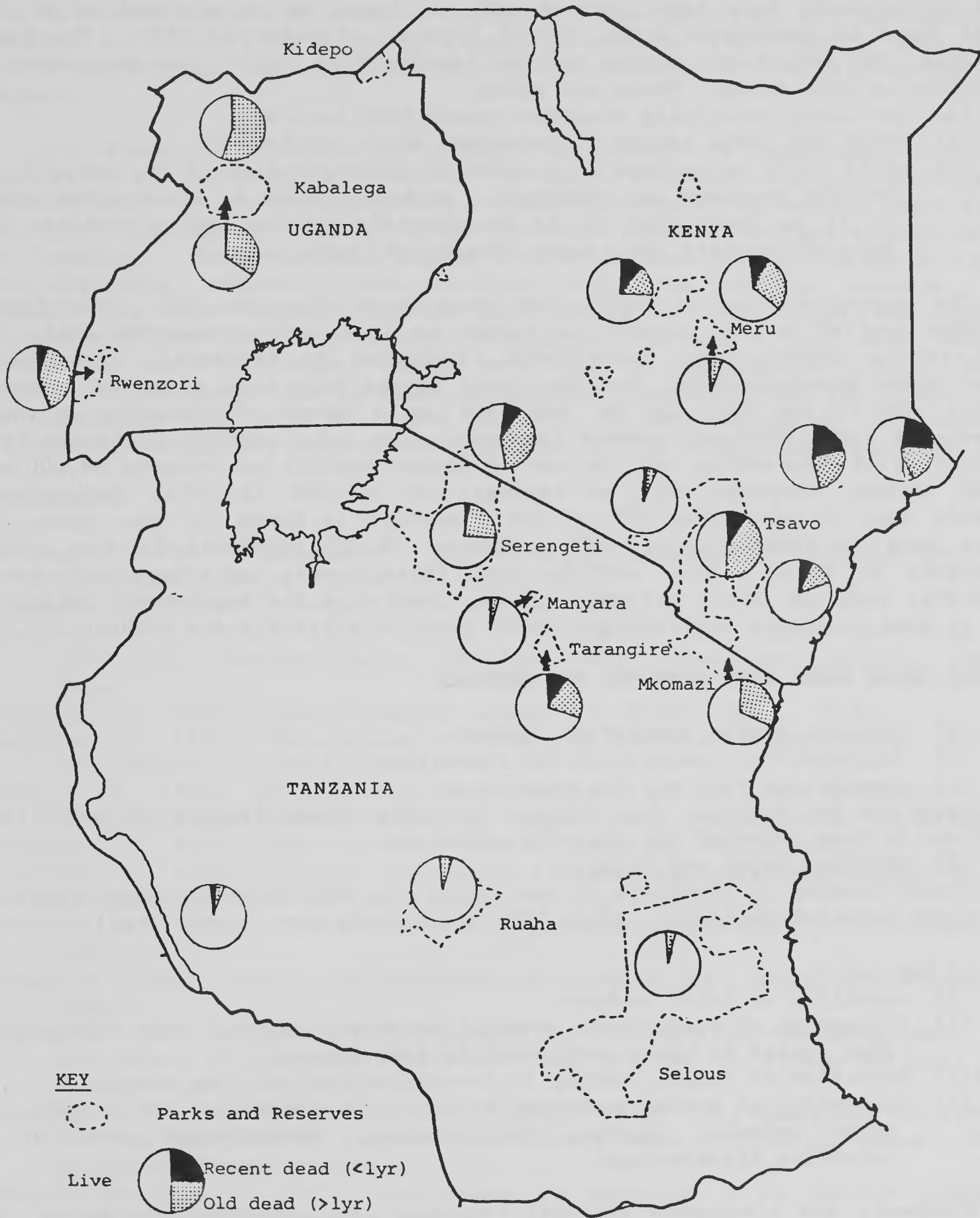
Local reductions of elephant numbers have been recorded in recent years; for example, in the 1970/1 drought in Tsavo and the 1973/4 drought in the Amboseli region. Since about 1972, however, widespread declines have been noted. Prior to this period, the price of ivory had been relatively stable. Between 1972 and 1973 it more than trebled, and has remained high ever since.

In 1973, the recent reduction in numbers was sufficient enough to precipitate the need for a seminar to assess the status of elephants in Kenya, and a subsequent ban on the hunting of elephants. The numbers of elephants estimated in conserved areas and districts of Kenya in 1973 are tabulated (Table). Figures for a number of the unconserved areas where census had not been carried out are rough estimates only, based on informed guesswork and extrapolation from known densities. However, they were accepted at the time as the best available information.

Since 1973, numbers of elephants have continued to decline over the country as a whole, but they have remained relatively stable in areas such as the forested mountain parks (Aberdares, Mt. Kenya, Mt. Elgon, and in Amboseli). Numbers have shown no major trend in Mara Game Reserve, but there has been an apparent decrease in the surrounding areas. Numbers have increased due to compression and immigration in Meru National Park and on the Laikipa ranches, but these are complemented by decreases in adjacent areas. The table gives

ELEPHANT NUMBERS IN KENYA ESTIMATED IN 1973 (KENYA GAME DEPARTMENT) AND 1976/7 (IUCN ELEPHANT SURVEY)

<u>CONSERVED AREAS</u>	<u>AREA (KM²)</u>	<u>ESTIMATED NUMBERS</u>		<u>DENSITY (E/KM²)</u>	
		<u>1973</u>	<u>1976/7</u>	<u>1973</u>	<u>1976/7</u>
<u>National Parks</u>					
Mt. Elgon + Forest	500	500	(1,200 - 1,500)	1.00	(2.40 - 3.00)
Mt. Kenya + Forest	2,000	2,500	(3,000)	1.25	(1.50)
Aberdares + Forest	2,000	3,000	(3,000)+	1.71	(1.50)
Meru Park	844	1,500	1,328 - 2,122	1.72	1.57 - 2.52
Tsavo + Galana ecosystem	39,500	35,000	19,370	0.89	0.49
Amboseli & dispersal area	8,700	1,000	613	0.11	
<u>National Reserves</u>					
Marsabit	2,088	300	(300)	0.14	(0.14)
Shimba Hills	192	200	(200)	1.04	(1.04)
<u>Game Reserves</u>					
Maasai Mara	3,780	2,500	703	1.50	(0.19)
Samburu + Isiolo Reserves	10,500	2,500	531	0.24	0.05
TOTAL UNDER CONSERVED STATUS:		<u>49,000</u>	<u>24,845 - 25,839</u>		
<u>DISTRICTS</u> (Excluding conserved status areas)					
Mandera	26,470	500	(225)	0.018	0.01
Wajir	56,501	1,000	(450)	0.017	0.01
Garissa & Lamu	50,437	43,000	9,897	0.085	0.20
Tana River	38,695	32,000	13,000 - 15,000	0.082	0.34 - 0.39
Kilifi	12,414	1,000	(450)	0.081	0.04
Kwale	8,065	2,000	(900)	0.025	0.11
Kitui, Machakos, Embu and Meru	46,926	1,200	(450)	0.002	0.01
Isiolo	25,605	2,000	(100)	0.008	0.04
Marsabit	70,284	1,000	(450)	0.001	0.01
Turkana	60,824	1,500	(675)	0.002	0.01
Samburu	20,209	9,000	(4,050)	0.045	0.20
Laikipia	9,702	1,000	(450)	0.010	0.05
Narok	16,847	5,000	(2,250)	0.030	0.13
TOTAL UNCONSERVED:		<u>118,000</u>	<u>33,347 - 35,347</u>		
COMBINED TOTAL:		<u>167,000</u>	<u>58,192 - 61,186</u>		



RATIOS OF LIVE TO DEAD ELEPHANTS IN EAST AFRICA

CENSUSES 1976/7

current estimates of elephant numbers (1976/7), and the distribution of elephant densities in Kenya is shown on the map. These are preliminary. Accurate figures are available for limited areas only. Estimates for areas where no censuses have been carried out are based on an application of the trends found in comparable areas to the figures estimated in 1973. The Tsavo ecosystem, the Tana River region and the Lamu/Garissa region have been used as indicators of this trend. These are areas:

- (a) for which relatively accurate counts have been made.
- (b) which are large enough to encompass whole populations.
- (c) which could on average be considered representative of the overall hunting pressure on elephants. Although Tsavo is a conserved area, it is so large that it is inadequately policed and a probable 10% only of poachers are caught (Sheldrick, pers. comm.).

The average decline in density for these three areas was 55%. This figure was then applied to the numbers estimated in 1973 for unconserved areas for which census figures were unavailable (indicated by brackets). This is a rather broad generalization, but the trend agrees with that given by personal reports and it was felt to be justified as a means of obtaining a rough estimate of total elephant numbers in Kenya. The total numbers estimated by a combination of this method and the use of census results are between 68,000 and 72,000, which, compared with an estimate of 167,000 in 1973, indicates a possible loss of more than 50% of the elephants in Kenya in four years. A census made by KREMU during 1977 estimated 59,770 elephants in the entire rangelands of Kenya. This excludes the forest areas and therefore agrees favourably with the above estimation. Pie charts on the map relate ratios of live to dead elephants and indicate where rates of mortality are highest.

FACTORS WHICH COULD HAVE AFFECTED THE NUMBERS:

- (a) Climatic and/or vegetation changes.
- (b) Intraspecific competition for resources.
- (c) Competition with man for resources.

There is no evidence for changes in those three factors of sufficient magnitude to have affected the observed reduction.

- (d) Hunting, legal and illegal.

Direct hunting of elephants by man appears to have been the major cause of the recent reported declines. Since 1973 it can only have been illegal.

It has led to:

- (i) Reduction in total numbers.
- (ii) Disruption of traditional movement patterns (although this effect is also caused by human settlement in some places).
- (iii) Reduction of range, leading to concentrations in a few areas.
- (iv) Disruption of social groupings by selective removal of the larger, older animals, leaving the younger, inexperienced ones at a selective disadvantage.

Elephants are a valuable national resource. To a country like Kenya, for which tourism is an important industry, the value of elephants in non-agricultural areas, when diluted to the common man, is minimal. He may even suffer a disadvantage if his crops are damaged. The value of a pair of

elephant tusks is considerably greater to the individual poacher concerned, far more so than to the dealer. It is, however, a limited resource, and poaching neither exploits it for the common good nor utilizes it at a rate at which it can be a self-sustaining economic resource. Some policies, such as those being adopted in Amboseli of bringing financial returns from wildlife back to the local people, may help to foster attitudes that favour live rather than dead animals.

In summary, it seems that Kenya experienced a reduction of elephant numbers to a relatively low level at the end of the last century, followed by a gradual recovery until about 1971/2. Since then there has been a rapid drop in the total population, although a few protected populations have stayed the same or increased. The relatively secure areas that show no decline are Mt. Kenya, the Aberdares, Amboseli, Meru National Park, and Laikipia ranches. While drought has been responsible for some deaths in arid areas and expanding agriculture has inevitably removed elephants from others, the major cause of decline is human predation, caused by a rise in the price of ivory. Today's total elephant population in Kenya is probably between 55,000 and 75,000, which is less than half that estimated in 1973 in the seminar on the status of elephants, convened by the research division of the Kenya Game Department.

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