

THE ECOLOGY OF LIONS (Panthera leo massaicus  
Neumann) IN THE MASAI MARA GAME RESERVE, KENYA.

by

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## Declarations

I, Abdul Rasheed Kolawole Saba, hereby declare that this thesis is my original work and has not been submitted for a degree in any other University.



A.R.K. SABA

I, Dr. J.B. Sale, Associate Professor of Zoology, hereby declare that this thesis has been submitted for examination with my approval as University supervisor.



Dr. J.B. Sale.

Nairobi, 5th December, 1974.

S U M M A R Y

Lions were studied in a 700 km<sup>2</sup> area of the Masai Mara Game Reserve. The study, carried out between June 1973 and July 1974, sought to investigate the utilization of lion prey species that include migratory as well as resident ungulates. Other aspects of the relatively unknown ecology of the lions that were studied include pride size and the distribution of prides within the study area. Changes in pride composition were also investigated.

The study method comprised mainly of tracking lions by driving round the study area in a motor vehicle. The location of lions was obtained by checking vulture roosts or areas with an unusually large assembly of tourist vehicles.

A total of 129 lions divided into seven prides were recorded up to the end of October, 1973. The population structure showed a high juvenile to adult ratio. The sex ratio was also found to be significantly different from unity in the adult age class, there being more females than males.

Thirty-eight new cubs in twelve litters were found in the second half of the study period. A total of nine lions were also found dead or missing. This meant that, at the end of the study period a surviving population of 158 lions were left in the area.

Though a complete study of habitat utilization by lions could not be made because of the nature of the terrain in some parts of the reserve, the available data suggested a restriction of the lions to the "Woodlands" section of the study area. The prides occupy ranges which varied from 15 to 63 Km<sup>2</sup>.

Lions' food in the Mara was studied by the direct observation method. The principal prey species were Buffalo, wildebeest and Zebra. Of the three, Zebra was not as heavily utilized as either of the first two. Wildebeest and buffalo were consumed in about equal numbers. Predation on the migratory herbivores - wildebeest and zebra - was therefore below expectation.

It was noted therefore, that the migratory ungulates represent a buffer food source for the lions. Buffalo, one of the locally available species, constituted the lions' main food resource. Giraffe, hartebeest and warthog were the other resident ungulates represented in the diet in relatively low numbers.

Certain characteristics of the animals eaten by lions were checked. For example, the overall sex ratio of the kills was found close to one, even though there were more males than females. Also, the adults of many of the prey species outnumbered their juveniles in the lions' diet. The Mara lions were also observed to be selecting their prey with little

regard for their state for health. Animals in good condition occur in the diet in about the same proportions as those in poor condition.

The probable interference of livestock with the complete habitat utilization by lions is discussed in the thesis. The occasional utilization of parts of the study area for pastoral purposes was found incompatible with predator management.

The habitat factor of cover is suggested as central to the successful exploitation of buffalo by Mara Lions. So management practices that would permit the survival of the vegetation types that provide such cover is advocated.

It is expected that this would facilitate increased reliance on the resident prey species. This, in turn, may encourage the establishment of a stable lion population.