

# Ages of Black Rhinos killed by drought and poaching in Zimbabwe

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In the 1982/83 wet season, rainfall in the Zambezi Valley in northern Zimbabwe was only 430 mm (compared with the 17 year mean of 783 mm). During the following dry season, at least 23 black rhinos, 104 elephants, 120 impala and 100+ buffalo died in the northern section of Mana Pools National Park, mainly within a few kilometres of the Zambezi River (Fig. 1). Some animals died when they became stuck in mud as inland pools dried up, but it was assumed that most of the deaths resulted from malnutrition. Deaths were also reported in the Safari Areas surrounding the Park. Rainfall in the 1983/84 wet season was again low (399 mm), but the dry season mortality of all species was low and only 15 rhinos were found dead throughout the Valley. Most rhino skulls found were collected by management staff. The approximate age of each animal was determined on the basis of tooth eruption and wear (Hitchins 1978).

The age structure of the drought victims was compared with that of rhinos shot by poachers: thirteen skulls came from animals shot in the Chewore/Dande region in late 1983/early 1984, two skulls were from the north of Chewore Safari Area and sixteen skulls were from rhinos shot by Zambian poachers in the Urungwe Safari Area in the first half of 1985.

The age distributions are presented in terms of 5 year age classes (Fig. 2). In the 1983 drought, many of the rhinos which died were less than 10 years old. The numbers dying increased with age in animals over ten years of age to reach a second peak amongst the 30-40 year olds. In 1984, the pattern was somewhat different, with most dead rhinos being under ten years of age. Foster (1965) reported the age structure of rhinos which died in the 1961 drought in Tsavo East

N.P. When his age classes are approximated to those used here, it is found that the number of dead rhinos is about equal in all age classes.

The age structures of the two samples of poached rhinos were similar (Fig. 2): there was a peak in the number of animals killed in the 6-10 year class. Since poaching is probably non-selective (except for a possible bias against juveniles), this peak may indicate a high proportion of immature and young adult animals in the population. If so, the fact that a relatively large number of rhinos in this age class died during the drought may simply reflect their abundance in the population. Alternatively, it could be argued from these data that 6-10 year olds have a high death rate and are particularly susceptible to drought, poaching and, probably, other causes of mortality. However, a life table for the Tsavo rhino population showed that mortality was at a minimum in this age class (Goddard 1970) and it is unlikely that the reverse is true in the Zambezi Valley. A high proportion of 6-10 year olds in the population may be a reflection of the relatively high degree of protection from poaching and disturbance which the rhinos enjoyed in the Valley during Zimbabwe's pre-independence war.

It is interesting to compare the age structure of the rhinos dying in the 1983 drought with that of the dead elephants. Whereas the numbers of under 10 and over 30 year old dead rhinos were about equal, far more young elephants died than old ones (of 104 dead elephants, 67% were under five and only 9% over 40 years old). The elephant population in the Valley is believed to have been increasing over the past half century and there are probably relatively few animals in the oldest age groups, compared with the more stable rhino population.

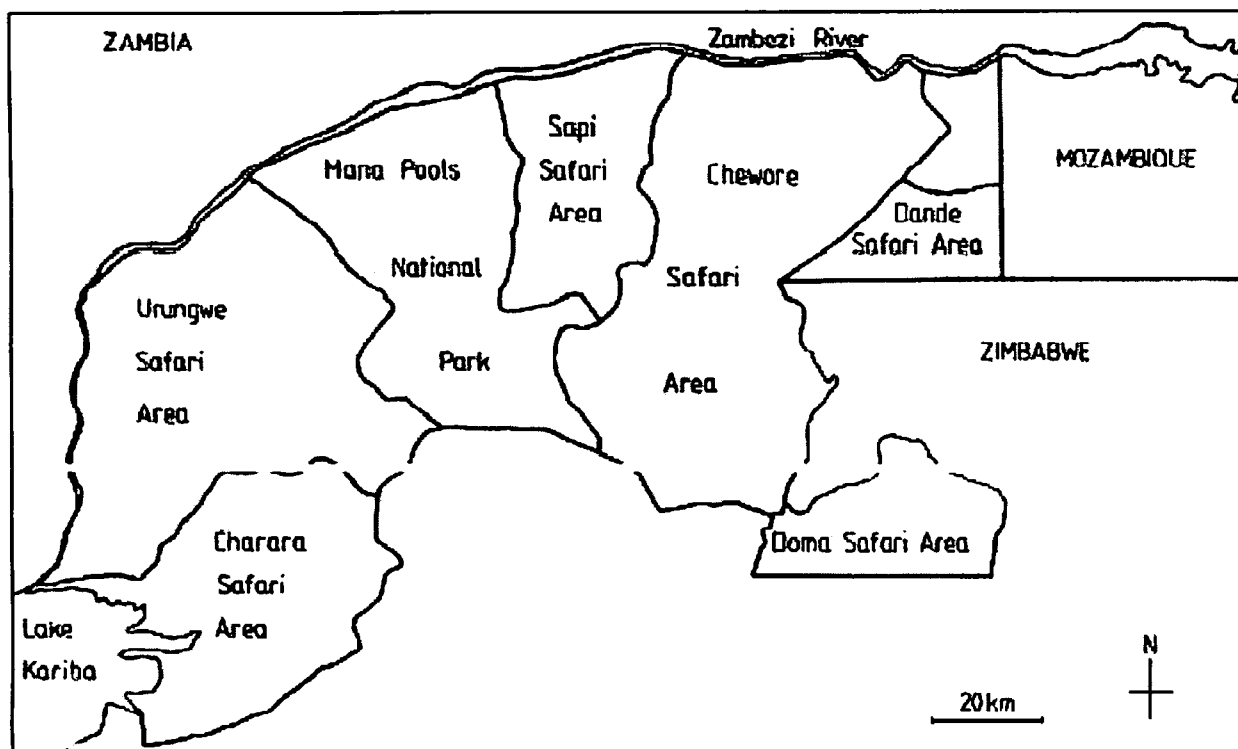


Fig. 1 Map of northern Zimbabwe showing Mana Pools National Park and the surrounding Safari Areas

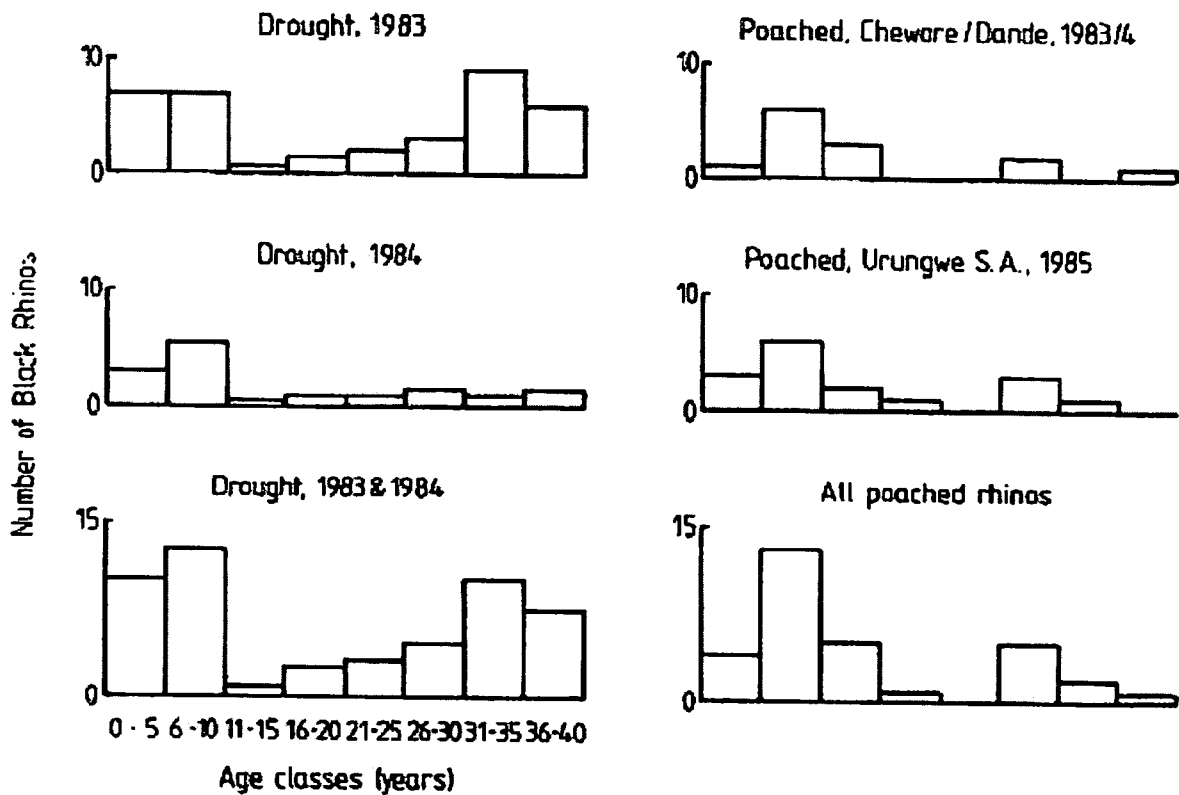


Fig. 2 Numbers of black rhinos of different ages dying from drought and poaching in the Zambezi Valley

References

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Black rhino death at a waterhole during the 1982/83 drought in the Zambezi Valley. (Dick Pitman)