



# On THE HORN OF A DILEMMA

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*"All God's creatures have  
a place in his choir  
Some sing low and some  
sing higher  
Who are we then, to  
decide  
Which one of us will be  
chosen  
To sing the solo's".*

Ivor Pennock

The Black Rhinoceros is at present threatened with extinction throughout most of Africa. In the southern part of the continent it is endangered and on the threshold of survival. Its accelerated demise over the last 15 years from an estimated 65000 to about 6000, due mainly to poaching for its horn, has been of great concern both locally and internationally. The increased destruction of this species highlights the need for an improved and enlightened approach towards its conservation, more so now than ever before as the populations south of the Limpopo river may become the last strongholds.

By the early 1930's the Black Rhinoceros *Diceros bicornis minor* in the Republic of South Africa had been reduced to two relic populations in Zululand: one in the Hluhluwe/Corridor/Umfolozi Game Reserve complex and the other in Mkuzi Game Reserve. Little is known about the history of the Black Rhinoceros populations in the complex prior to the first population estimate in 1935 when Professor Henkel estimated 115 animals in Hluhluwe Game Reserve. It was not until 1961 that the Black Rhinoceros received any significant attention as far as numbers were concerned, although it was accepted that the Hluhluwe population was the largest in Zululand and that the density of Black Rhinoceros probably exceeded that

of anywhere else in Africa. After a ground count initiated and supervised by Norman Deane in February 1961, 300 animals were counted where previously it was estimated that the population numbered just over 200. During the same year, 46 Black Rhinoceros died in the North-east section of the reserve over a four month period; the cause of this die-off is still unknown but is thought to be related to the high density. Similar ground counts in 1967 and 1968 revealed a population of 195.

Between 1968 and 1973 a more accurate Black Rhinoceros population estimate was obtained based on recognisable individuals throughout the complex, a technique developed by the author since 1961. The results gave a total population of 328 (Hluhluwe 199, Corridor and Umfolozi 129); which indicated that a marked decline of about 100 animals had occurred in Hluhluwe over the 12 year period from 1961 to 1973. During this period 36 Black Rhinoceros were removed for relocation to other suitable conservation areas; and taking these remarks into account, the Hluhluwe population suffered a nett loss of some 65 animals, that is 22% at a rate of 1.8% per annum.

In 1973 the Black Rhinoceros recruitment rate was substantially higher in the Corridor and Umfolozi than in Hluhluwe. It was believed that



the already lower rate in Hluhluwe had decreased even further to a point where the population was probably stable. Factors such as the relatively late attainment of female sexual maturity, a calving interval longer than that recorded in other populations and high calf mortality, suggested that the Hluhluwe population was at or near its asymptote. The reason for the contrasting demography of these sub-populations is not clear, although it appears that the availability of browse (woody plants and forbs) has been reduced through various veld management practices.

Between 1975 and 1977 the population was found to be healthy with no indication that the mortality rate had increased; in fact a decrease in mortality rate was suggested. It was believed that the numerical status of the Black Rhinoceros in the complex had remained unchanged since 1972.

In 1980 a capital removal of about 10% of the Black Rhinoceros population was undertaken, followed by annual removals equivalent to the annual rate of increase of a healthy population, calculated at 4%. These 'excess' animals were relocated in other conservation areas.

During 1981 both Black and Square-lipped Rhinoceros were poached in Hluhluwe Game Reserve and the Corridor; the first time any organised poaching of any significance had taken place on rhinoceros populations in Zululand.

In 1984 both field and capture staff in the Complex expressed concern at the apparent low number of Black Rhinoceros in the Corridor and Hluhluwe Game Reserve. As a result a short-term one year project was initiated to determine the size of the Black Rhinoceros population in the Complex.

The aim of the project was to identify as many individual Black Rhinoceros as possible and to collect this information in a form that would allow analysis using mark-recapture techniques. This was achieved through a series of ground and aerial surveys of the population conducted between February 1985 and January 1986. Every Black Rhinoceros encountered was identified by horn and other characteristics, sexed and aged. A total of 3590 km (requiring 9 pairs of tackies!) were walked in Hluhluwe, Corridor and Umfolozi Game Reserves; in addition data was also collected from a Hughes 300 helicopter during 26 hours of observation in September.

Preliminary population estimates of Black Rhinoceros for 1985 based on the number of individual animals as well as the 1973 estimates are as follows:

	1973	1985
Hluhluwe	199	69
Corridor	69	37
Umfolozi	60	85
TOTAL	328	191

The size of the Black Rhinoceros population in the complex is currently estimated at 191. Improved estimates, which will include the mark-recapture results will only be available following the additional helicopter surveys planned for September 1986.

These preliminary results indicate a major decline in the complex from 328 to about 191 between 1973 and 1985. This is most marked in Hluhluwe where numbers have dropped from 199 to 69 (65% decrease) while the Umfolozi population has increased by 42% from 60 to 85. Numbers in the Corridor have declined from about 69 to 37, a decrease of 46%. It is interesting to note that from 1974 — 1985, 88 Black Rhinos were removed from the Complex for relocation purposes so if mortalities had been balanced by recruitment, the 1985 population would stand at about 240.

Previous studies by the author on home range and territoriality have shown that the Black Rhinoceros is a sedentary species in Hluhluwe Game Reserve, with no records of movements out of their home ranges or territories, although slight increases in range size have been recorded in females, apparently in response to the reduced availability of food. This is confirmed in the present study, as all 74 individuals that had been known from 1973 or before were still occupying the same areas, and some of these home ranges/territories had been occupied for 28 years. There is therefore no evidence to suggest that the decrease in numbers of the Black Rhinoceros in Hluhluwe and the Corridor can be attributed to movement into Umfolozi Game Reserve.

Although not actively investigated here, it is suggested that the decline from the high densities of 1961, and continued through 1973 to 1986, might be related to habitat change brought about, at least in part, by the controlled reduction of large grazers. The resultant increased grass cover would be expected to depress the abundance and availability of forbs, an important Black Rhino food item,

and fire would have encroached further into the thicket communities to the detriment of some of the highly-palatable, but fire sensitive, woody plants. In 1973 the author predicted that the Hluhluwe population would decline should the practice of encouraging fire-maintained wooded grasslands continue. On the other hand the Corridor and Umfolozi Black Rhinoceros populations were expected to increase as they were below the carrying capacity of the vegetation.

Other factors contributing to the decline in numbers in Hluhluwe and the Corridor are: the level of poaching may have been significantly higher than recorded; predation of young calves and the loss of animals through being burnt in veld fires might also be much higher than generally thought.

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This presents the preliminary results of the survey and acts as an interim document pending completion of follow-up work planned for September 1986.

