

# THE NUMERICAL STATUS OF SIXTEEN GAME SPECIES IN THE TRANSVAAL, EXCLUDING THE KRUGER NATIONAL PARK

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## ABSTRACT

The paper describes the results of a survey to determine the numbers of the following game species in the Transvaal: springbok, blesbok, zebra, blue wildebeest, black wildebeest, red hartebeest, gemsbok, eland, nyala, buffalo, elephant, giraffe and square-lipped rhinoceros. The distribution of each species is discussed and the different localities of occurrence are illustrated. The growing concern for the conservation of wildlife in the Transvaal has resulted in an increase in the numbers of most of the species during the past decade. The roan antelope remains the scarcest of the ungulate species in the Transvaal, while the sable antelope and tsessebe numbers show little or no improvement since 1962.

## INTRODUCTION

Reliable estimates of game numbers are important for management purposes. For this reason a survey was undertaken between May 1970 and January 1971 to determine the numbers and distribution of sixteen game species in the Transvaal, excluding the Kruger National Park. The species were: springbok, *Antidorcas marsupialis*; zebra, *Equus burchelli*; giraffe, *Giraffa camelopardalis*; roan antelope, *Hippotragus equinus*; sable antelope, *H. niger*; tsessebe, *Damaliscus lunatus*; blesbok, *D. dorcas phillipsi*; blue wildebeest, *Connochaetes taurinus*; black wildebeest, *C. gnou*; red hartebeest, *Alcelaphus buselaphus*; gemsbok, *Oryx gazella*; eland, *Taurotragus oryx*; nyala, *Tragelaphus angasi*; buffalo, *Syncerus caffer*; elephant, *Loxodonta africana*; and white or square-lipped rhinoceros, *Ceratotherium simum*.

Kettlitz (1955, 1962) reported on two previous surveys to determine the status of certain ungulate species in the Transvaal. Concern about the status of the black wildebeest led to surveys by Bigalke (1947), Brand (1965, 1967) and Von Richter (1971a, 1971b).

## METHODS

Each magisterial district in which any of the species under consideration were known to occur was visited. Existing records of the Transvaal Nature Conservation Division gave a good indication of which farms to visit. Additional information was also obtained through discussions with Nature Conservation Officers and landowners. Although it is probable that certain herds of game were overlooked, the present estimates are probably the most comprehensive study undertaken in this field in the Transvaal to date.

Most of the estimates were based on information obtained from the landowners themselves. Where small localised herds were concerned this was often the only method that could be successfully applied. The owner estimate also proved the quickest method and was reliable enough for species occurring in highveld areas. The accuracy of owner estimates in the bushveld was probably influenced by the movement of species like the sable antelope, which resulted in the same herds sometimes being reported more than once, but by different owners. The road-strip census technique (Hirst 1969) was successfully applied to estimate giraffe, zebra and blue wildebeest numbers in the Pilgrims Rest district, where the animal numbers are so high that densities may be estimated to an acceptable level of accuracy from strip sample counts. In open grassveld areas, total counts were made of species such as springbok and blesbok. This method was considered very accurate provided the area was adequately covered. Although Young (1972)

regarded the method as inaccurate, waterhole counts over a 24 hour period proved valuable in checking owner estimates, particularly where the game was secretive and avoided motor vehicles. A helicopter count of sable antelope over certain areas of the Letaba district proved useful.

## RESULTS

A brief discussion of each of the 16 species under consideration is given below. Any herds that were artificially established are regarded as introduced to the locality, even though the species may still occur naturally on neighbouring areas. No animals kept in zoological gardens in the Transvaal have been included in the survey. On the accompanying maps the distribution of herds is shown according to a condensation (Table 1) of Acocks' major veld types (Acocks 1953). Each dot or triangle represents one locality. The range of nomadic herds is either illustrated in black or the appropriate dots or triangles indicating the area are encircled with a solid line. District boundaries for the magisterial districts as on April 1, 1969 and the main rivers in the province are shown in Fig. 1. The Witwatersrand area on Fig. 1 includes only the Krugersdorp, Nigel and Oberholzer districts as distribution localities.

### Blesbok

There are approximately 29 000 blesbok in the Transvaal, an increase of 4 000 over the 1962 figure (Kettlitz 1962). Blesbok can easily be confined by ordinary livestock fences. Only a few herds that moved over more than one owner's farm were encountered. Blesbok also grow accustomed to humans and are easy to handle and transport after they have been caught. They seem to adapt well to varying climatic and vegetational conditions. All these factors have led to their almost Transvaal-wide distribution (Fig. 2). Blesbok presently occur on 500 farms, compared to approximately 120 farms in

TABLE 1. Major veld types in the Transvaal used for plotting ungulate distribution.

Code on distribution maps	Veld type <sup>+</sup>
1	Tropical Inland Forest
2	Lowveld Bushveld
3	Bushveld
4	Short Grassveld
5	Mixed Grassveld
6	Long Grassveld
7	False Grassveld

<sup>+</sup>Derived from Acocks (1953).



Fig. 1. Main river systems and magisterial districts of the Transvaal.

1954 (Kettlitz 1955). Where more than one owner on a specific farm owns blesbok it is still regarded as one locality, and sub-divisions of a registered farm are ignored in adding up localities.

The predominantly mixed grassveld areas of the southwestern districts — Christiana, Bloemhof, Wolmaransstad, Schweizer-Reneke, Delareyville, Lichtenburg, Coligny, Ventersdorp, Marico and Klerksdorp — have 11 percent of the Transvaal blesbok total and the south-central districts — Potchefstroom Vanderbijlpark, Vereeniging, Heidelberg, Nigel and Balfour, mainly false and short grassveld — have 13 percent. The false and long grassveld areas of the southeastern districts, namely Standerton, Volksrust, Amersfoort, Wakkerstroom, Piet Retief, Ermelo, Bethal, Witbank, Middelburg, Belfast and Carolina, still carry the biggest herds making up 51 percent of the Transvaal total. Approximately 5 250 occur in the Ermelo district and 2 200 and 2 300 in Standerton and Carolina respectively. Other districts with good populations include Middelburg (1 200), Pretoria (2 000) and

Kruggersdorp and Balfour with approximately 1 000 each.

On 67 of the localities the herds are smaller than 10 animals each, 19 herds number between 200 and 400 and 13 herds contain more than 400 blesbok. The biggest single herd, with a total of 1 300, occurs on the Van Riebeeck Nature Reserve near Pretoria. By far the most important area comprises a block of 38 farms on the long grassveld, partly in the Ermelo and partly in the Carolina districts, where more than 4 000 blesbok are found. Ermelo district consists mainly of natural grassland, a fact reflected by its blesbok total of 5 250. Habitat competition with livestock, especially in districts with big areas under cultivation, is a factor limiting herd size and total numbers. Unless more land can be made available for game, the average herd size as well as the Transvaal total are bound to level off soon. At present the biggest blesbok herds belong either to public organizations that do not use the area for anything else, or to wealthy landowners who do not need the land for livestock.

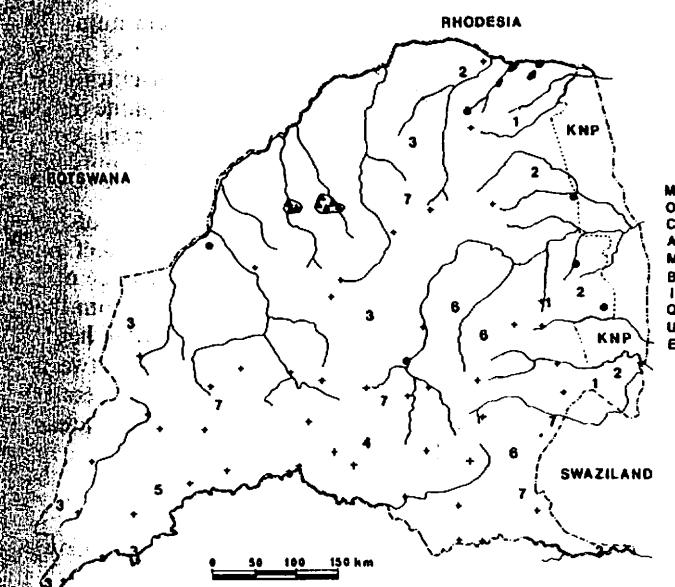


Fig. 10. Distribution of roan antelope (▲) and nyala (●) in the Transvaal, 1971. See text and Table 1 for explanation of symbols and veld types.

and on the Loskop Dam Nature Reserve. The present total of 150 shows an increase of 50 over the 1962 figure (Kettlitz 1962). This improvement can directly be attributed to the introduced herds. The existence of the naturally occurring herds is still very precarious. The total disappearance of the 25 in the Sibasa district can hardly be averted. None of the nyala in the Messina district are protected within fenced enclosures.

### Sable antelope

Though the present estimate shows no increase since 1962, the general position of the sable antelope has improved somewhat. In contrast to only one introduced herd (on Loskop Dam Nature Reserve) in 1962, about 100 of the present 800 animals occur as introduced herds in nine localities. The division of Nature Conservation has established herds of 43 on Loskop Dam Nature Reserve, 16 on the Percy Fyfe Nature Reserve, and five animals on the Rustenburg Nature Reserve. The herd of 55 sable on the Hans Merensky Nature Reserve can be regarded as being partly introduced because it has been strengthened with animals from outside the reserve. Other small introduced herds occur in the Krugersdorp Game Reserve, Vesco Private Nature Reserve near Vanderbijlpark and in the Sabi Sand Wildtuin and Umbabat Private Nature Reserve in the Pilgrims Rest district. With approximately 560 animals, the Letaba district is by far the most important area of natural occurrence. About 70 occur naturally on four areas in the Pilgrims Rest district, and a few can be found in the Waterberg district.

Though these herds are generally strictly protected, increasing farming and especially mining activities in the Letaba district may constitute a grave danger in future. Sable antelope seem to avoid contact with cattle and the resulting human activities. They also appear to be habitat selective which may be a reason for their continued low numbers and limited distribution.

### Gemsbok

There are now approximately 400 gemsbok in the Transvaal, compared to only 15 in 1962 (Kettlitz 1962). Introduced herds are already established on 37 localities

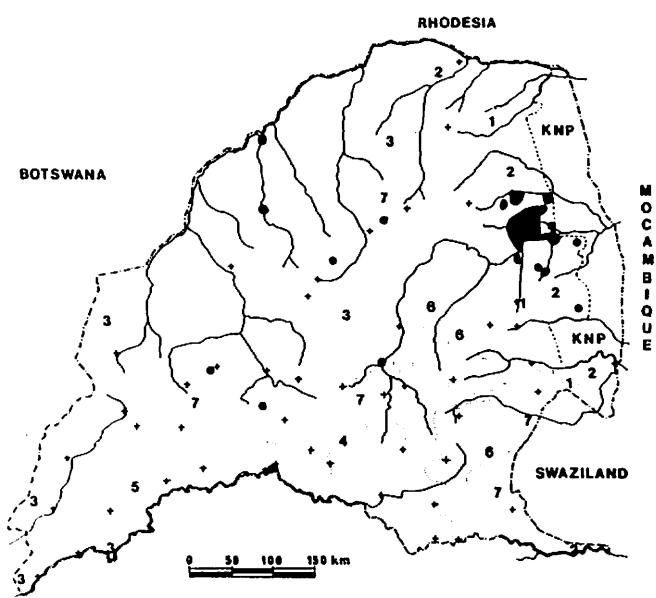


Fig. 11. Distribution of sable antelope in the Transvaal, 1971. See text and Table 1 for explanation of symbols and veld types.

with the biggest numbers in the Thabazimbi, Lichtenburg, Waterberg, Soutpansberg, Rustenburg and Krugersdorp districts. In 1954 (Kettlitz 1955) there were still 28 naturally occurring gemsbok in the Langjan Nature Reserve. The herd declined to such an extent, however, that animals had to be introduced. With the possible exception of this one herd, all the gemsbok can be regarded as being introduced. The present supply of gemsbok in the Transvaal is still very limited, and they can only be imported at big expense over long distances.

### Square-lipped rhinoceros

Although the square-lipped rhino disappeared from the Transvaal towards the end of the 19th century (Bigalke 1963), re-introductions have led to the present total of 130. The Sabi Sand Wildtuin is the most important area with a total of 55, followed by the Loskop Dam Nature Reserve with 20. The rest occur as small

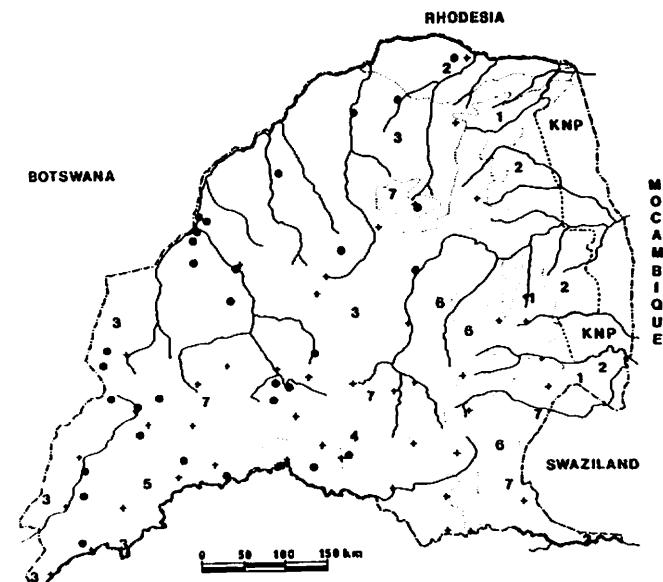


Fig. 12. Distribution of gemsbok in the Transvaal, 1971. See text and Table 1 for explanation of symbols and veld types.

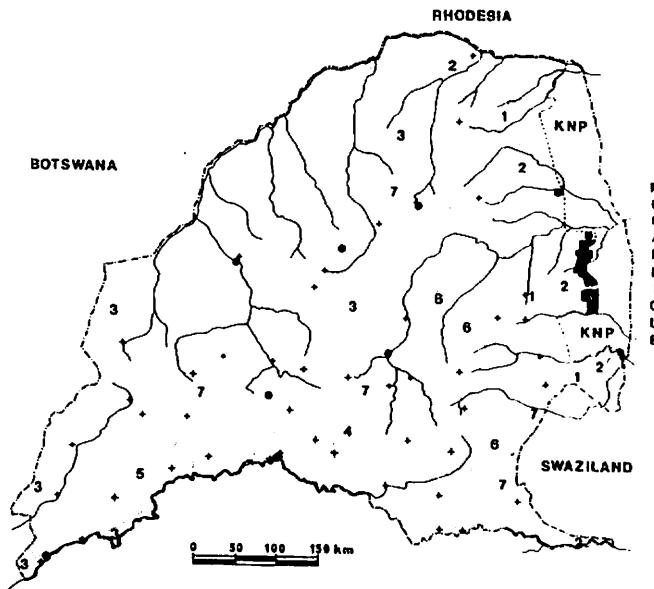


Fig. 13. Distribution of square-lipped rhinoceros in the Transvaal, 1971. See text and Table 1 for explanation of symbols and veld types.

herds in the Pilgrims Rest, Letaba, Barberton, Thabazimbi, Pietersburg, Vanderbijlpark, Christiana and Krugersdorp districts. The distribution of the animal is restricted by the fact that special fences are needed to confine it.

## DISCUSSION

With the possible exception of the roan antelope, sable antelope and tsessebe, all the species under consideration show either an increase in numbers or an extension of distribution, or both, since 1962 (Kettlitz 1962).

This general improvement can probably be attributed to the growing concern for and interest in the cause of nature conservation during the past decade. Large tracts of land, especially in the eastern Transvaal low-veld, are today being exclusively used as game reserves, while many landowners throughout the Province are setting aside areas for the use of game animals.

It is possible that the numbers of certain species like the springbok, zebra and blue wildebeest will decline further in areas where they are regarded as competitors with modern agriculture. Those game species which tend to move from farm to farm are usually over-estimated in number by landowners and are thus hunted too heavily. Furthermore, such local movements of game often bring the animals into contact with land-

owners who do not value wildlife and their numbers may thus be further decimated. The depletion of available rangeland for game by intensive agriculture is likely to prove the primary limiting factor on game numbers. General ignorance amongst landowners concerning wildlife and wildlife management also limits the extension of game populations.

Though the fencing of the western boundary of the Kruger National Park had no far-reaching effect on game numbers, it possibly led to the disappearance of a few herds of roan antelope, tsessebe and eland from the areas outside the Park. Except for the roan, these herds occurred along the Park's western boundary between the Groot Letaba and Shingwidzi rivers in the Letaba district (Kettlitz 1962). Bantu settlement in these areas probably accelerated their disappearance.

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