
REVIEW AND OPINION

The Status of the Southern White Rhino (*Ceratotherium simum simum*) on Private Land in South Africa in 1999

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ABSTRACT

A survey to determine the status of white rhinoceros (*Ceratotherium simum simum*) on private land in South Africa was conducted during August and September 1999. A minimum total of 1,656 white rhino are in private possession on 161 ranches, which is an increase of 10.8% over 1997. The white rhinos present in the private nature reserves, which now have no fences between themselves and the Kruger National Park, have also increased to 266 this year. This brings the minimum number of white rhino under private management in 1999 to 1,922. A minimum estimate of 372 kg of horn is in private possession.

RESUME

Une enquête visant à déterminer la situation du rhinocéros blanc (*Ceratotherium simum simum*) sur les terrains privés d'Afrique du Sud a été réalisée pendant les mois d'août et septembre 1999. Un total minimum de 1 656 rhinocéros blancs est en propriété privée dans 161 ranchs, ce qui représente une augmentation de 10,8 % par rapport à 1997. Le nombre de rhinocéros dans les réserves naturelles privées n'ayant plus de clôtures les séparant du Parc National Kruger est également monté à 266 cette année. Ceci amène le nombre minimum de rhinocéros sous gestion privée à 1 922 en 1999. Un minimum estimé de 372 kg de corne est sous propriété privée.

INTRODUCTION

When the former Natal Parks Board (NPB) started translocating white rhinos from their reserves in 1961, the policy was to first of all send animals to *bona fide* nature conservation areas. (Brooks, 1989). In 1984 there were between 60 and 100 white rhinos on private land in the state of Natal. The criteria for possession of rhinos were somewhat relaxed, how-

ever, and by 1987 1,291 white rhinos had been moved to 149 privately owned properties all over South Africa, though not all came from the Natal Parks Board (Buijs and Anderson, 1989). At that time, the total number could have stood at 1,440 through natural breeding and taking natural and translocation mortalities into account, yet, in a survey conducted in 1987, only 931 white rhino on 103 properties could be accounted for.

One of the major causes of the state of affairs at that time was that rhinos were sold very cheaply by NPB. Therefore, a quick and very substantial profit could be made if an animal was sold by a private owner to a trophy hunter, which often happened within a few weeks after delivery. A bull which had been purchased for R 2,000 (US\$ 335, at a current exchange rate of US\$ 1 = R 6) could reach up to R 35,000 (US\$ 5,833) as a trophy (Buijs, 1988). These findings influenced the decision of the Natal Parks Board to reconsider the cheap dumping of rhinos, and in 1989 the first Parks Board auction was introduced.

The true value of the animals emerged when normal market forces were allowed to come into play (Du Toit, 1998). The average auction prices realized from 1986 onwards in South Africa are listed in Table 1, showing the increase in 1989, when NPB started its auctions. The drop in prices between 1991 and 1994 was due to political reasons, i.e. the Gulf war discouraged Americans to travel abroad, and people were reluctant to invest in rhinos due to the uncertainty of what the new South African dispensation would bring. After 1994, the demand increased and prices soared.

Previous surveys on private land

The first comprehensive survey of white rhino on private land in South Africa was conducted in 1987 by the Rhino & Elephant Foundation (Buijs, 1988). Subsequent surveys were con-

ducted in 1995 and 1997 under the auspices of the African Rhino Owners Association (AROA), a working group of the Rhino & Elephant Foundation, as summarized in Table 2 (Buijs and Papenfus, 1996; Buijs, 1998). Between 1987 and 1995, the Sabi-Sand, Timbavati, Klaserie and Buffelshoek private nature reserves removed the fences between themselves and the Kruger National Park (KNP). They now form a principal part of KNP and the total unit is referred to as the Greater KNP (GKNP). The results of the 1997 survey indicate that private owners had a total of 1,494 white rhinos, which is 18.9% of the total estimated South African population of 7,913 (Emslie, 1998). If the 248 white rhinos under private management in parks bordering the Kruger National Park (then Timbavati, Sabi-Sand and Klaserie) are added, 22% were in private hands.

METHODS AND OBJECTIVES

The goals of the survey were to establish the contribution of private rhino owners to rhino conservation and to gauge the opinion of rhino owners on responsible utilisation of white rhinos. For the first time an estimate of the number of rhino horns in private possession was also sought.

All known private nature reserves with white rhinos were contacted by telephone during the second half of 1999. The history of the rhino populations from the start of 1998 to July 1999

Table 1. Average auction prices for white rhinos in South Africa.

Year	US\$	R	Year	US\$	R
1986	10,167.00	1,694.50	1994	32,770.00	5,461.67
1989	48,732.00	8,122.00	1995	40,667.00	6,777.83
1990	48,524.00	8,087.33	1996	44,491.00	7,415.17
1991	44,188.00	7,364.67	1997	69,333.00	11,555.50
1992	29,230.00	4,871.67	1998	98,813.00	16,468.83
1993	28,350.00	4,725.00	1999	127,130.00	21,188.33

Source: Anonymous, 2000

Table 2. White rhinos on private land in South Africa, showing the total number of specimens and in brackets the number of populations.

Year	Private land	GKNP	Total	% growth
1987	931 (103)	Still fenced off	931 (103)	
1995	1,243 (150)	202 (3)	1,445 (153)	55.2
1997	1,494 (162)	248 (3)	1,742 (165)	20.5
1999	1,656 (161)	266 (3)	1,922 (164)	10.3

was recorded. A total number of about 200 people was contacted. They were not necessarily the owners or managers, and therefore did not always know the exact details of the history, age or sex structure of the population, but it was always ascertained that the total number was as accurate as possible. If there were any doubts, an effort was made to locate someone with better knowledge.

RESULTS

Rhino numbers

Table 2 shows the numbers of white rhino on private land in September 1999. A minimum total of 1,656 white rhino were in private possession, which is an increase of 10.8 % over 1997. The number of populations has decreased by one. Since 1997, at least 14 new populations were established, while 14 were deleted: six owners had sold all their rhinos, two could not be traced, two have been incorporated into other reserves by the removal of fences, and four populations have been moved to other ranches which already had other white rhinos. This makes a total of 161 ranches with white rhino in 1999. Of the 161 populations present in 1997, 147 still exist. Of these, 34 have decreased, 39 are the same and 74 have grown.

The white rhinos which are in the private nature reserves that have removed the fences between themselves and the Kruger National Park (KNP), have also increased to 266. This brings the minimum number of white rhino under private management to 1,922.

Age and sex structures

The age and sex age structure (excluding the reserves which form part of the GKNP) are shown in Table 3. In cases where the respondent did not know the exact composition of the population, all animals were recorded as adults of unknown sex. Using only those populations where age and sex structures were known, the ratio of adult males to adult females was 1:1.6 (38% : 62%); subadult males to subadult females 1:0.9 (53% : 47%); and adults to subadults 1:3.7 (79% : 21%).

Additions and losses to the population

At least 299 calves were born in 1998 and 1999, which represents 20% of the 1997 population. The known number of rhinos brought onto ranches as breeding stock was 141, i.e. 73 from private ranches and 68 from Kwazulu-Natal Conservation Services (KZNCS), whereas the rhinos leaving ranches alive numbered 189. This results in 116 rhinos of which the whereabouts are unknown (189 sold minus 73 bought). This figure does not include a few rhinos that left the country. The problem was that the sellers did not know the identities of the buyers because they worked through dealers, and the dealers were difficult to get hold of, or get information from. It is hoped that these discrepancies can be eliminated during future surveys.

Twenty deaths were caused by other rhinos, either through fights or when a bull wanted to mate with a female in oestrus and her calf got in the way. Unlike in the previous survey where 18

Table 3. Age and sex structure of the white rhino population on private land in South Africa, 1999.

	Males	Females	Unknown	Total
Adult (>6years)	337	557	269	1,163
Subadult	125	113	255	493
Total	462	670	524	1,656

rhinos died during, or shortly after, transportation, this year no such mortalities were reported. The number poached has risen from two during 1996-97 (on one property) to 12 during 1998-99 (on five properties).

Thirty-one white rhino were reported to have been hunted, with another 16 sold by KZNCS as trophies, thus totalling 47. Excluding the last 16, 1.9% of the present population was thus hunted over an 18 month period. A few of these were necessary hunts because the bulls regularly started killing other rhinos, especially calves.

Founder populations

It is widely believed that single bulls do not perform as well sexually as when there is a threat of competition. An analysis of founder populations, however, suggests that this is not the case in general. Thirty-seven founder populations were suitable for the calculations (all cows which could possibly have been pregnant when relocated had to be excluded). The data show that 22 populations with one bull bred successfully, whereas 15 populations have been unsuccessful over the last four years. Some of the latter animals were subadult when bought, and it is possible that they will breed as they are now reaching maturity. However, experiences in the various ranges differ. For instance, in one population, one bull and five cows had 11 calves since 1992, while in another one bull and five cows had 21 calves since they were bought (the exact year of introduction is uncertain), six of which were born since 1996. In both cases the male offspring were sold before maturity. On the contrary, a population of two bulls and two cows had no calves for five years, and another with two bulls and three cows have had no calves for four years.

Rhino horn

Thirty-three respondents reported that they had white rhino horn stocks. These totalled 80 adult front horns, 50 adult rear horns, 47 horns from young animals or fragments, and 132 kg of unspecified horns. If the assumption is made that an average front horn weighs 2.5 kg, a rear horn 0.5 kg, and the small horns 0.3 kg, an estimate of 372 kg of horn is in private hands. Some non-rhino owners must also have horns from inheritances or gifts.

All respondents, without exception, were in favour of a legal trade, and welcomed the idea of a privately run registry for rhino horn.

DISCUSSION

The survey was conducted over a period of two months and as this was a repeat of earlier ones, each person was contacted once only. The method of telephone contact implies that the information was not verified on the ground. In addition, the African Rhino Owners Association is reluctant to give names of the owners, making it even more difficult to verify the information. However, the figures obtained from this kind of survey are the best indications available with which the African Rhino Specialist Group has to work and hence the work itself deserves to be better known.

The increase of 10.8% in numbers on private land is an indication of the important role played by the private rhino owner in rhino conservation. Emslie (1998) estimated the total number of white rhino in South Africa as 7,913 in 1997. Therefore, the private sector owns 20.1% of the total South African population. When the rhinos

of the private GKNP reserves are included, it manages 24.3% of the white rhino in the country. These figures bode well for the future conservation of white rhinos. State land is reaching, and many reserves (especially in Kwazulu-Natal) have already reached, maximum stocking rates, implying that the private sector will control an ever-increasing percentage of the population. Although the record prices at the 1998 Natal auction show that the demand for white rhinos is still very high, it is inevitable that private land will also eventually become saturated. The prices, as well as the value of the investment in rhinos, could well decrease as supply starts to catch up with demand. The trophy hunting industry has stabilized and is unlikely to grow at the present prices, and other markets must be sought and developed if rhino ranching is to keep its momentum. These figures, coupled with the increase in poaching incidents, should indicate that the time is ripe to investigate the possibility of a legalized trade in rhino products.

It is envisaged that a privately managed registry for rhino horn will be founded in the near future, and that eventually all white rhinos will be fitted with microchips and individually registered (AROA, 1999). This should remove many misgivings about security and control should a legalized trade be considered. It will also enable future database managers to trace translocated white rhinos more effectively.

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