

SURVEY : WHITE RHINOS ON PRIVATE LAND (OCTOBER 1999)

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INTRODUCTION

When the former Natal Parks Board started translocating white rhinos from their reserves in 1961, the policy was to send animals to *bona fide* nature conservation areas first (Brooks, 1984). In 1984 there were between 60 and 100 white rhinos on private land in Natal, and the Natal Parks Board had a strict policy that only farms that met certain criteria, were allowed rhinos (Brooks, 1984). These criteria were somewhat relaxed, however, and 1 291 white rhinos had been moved to 149 privately owned properties all over South Africa by 1987, though not all came from the Natal Parks Board (Buys and Anderson, 1989). Through breeding, the total number could have stood at 1 440, taking natural and translocation mortalities into account, yet only 931 white rhino on 103 properties could be accounted for (these included provincial, municipal and defence force reserves, but excluded national and Natal parks).

One of the major causes of the state of affairs at that time was that rhinos were sold very cheaply, and a quick, very substantial profit could be made if the animal was sold to a trophy hunter, often within a few weeks after delivery. A trophy bull which cost about R2 000, could reach up to R35 000 as a trophy (Buys, 1988). These findings had an influence on the decision of the Natal Parks Board to reconsider the cheap dumping of rhinos, and the first Parks Board auction was introduced in 1989.

The true value of the animals emerged when these normal market forces came into play (Du Toit, 1998). The average auction price of a white rhino was R10 167 in 1986 (6 specimens). This average increased to R48 732 in 1989 when Natal Parks Board started auctioning, but dropped to a low of R28 348 between 1991 and 1994 because of political reasons (the Gulf war discouraged Americans to travel abroad, and there was a reluctance to invest in rhinos due to the uncertainty of what the new political dispensation in South Africa would bring). The demand increased after that period and prices soared to R82 051 in 1997 (Du Toit, 1998). At the Natal game auction held on 20 June 1998, 45 white rhinos were sold at an average price of R116 311, with the highest price of R235 000 for a cow with a calf (Anon. 1998c). The total turnover of all species was R12 241 300 (3 364 animals), of which the rhinos contributed R5 234 000 (22 buffalo at an average price of R92 750 contributed another R2 039 000).

A survey conducted by Buijs (1998) revealed that private owners had a total of 1494 white rhinos at the end of 1997, roughly 18.9% of the total estimated South African population of 7913 (R.H. Emslie *pers. comm.*) of the southern race. If the 248 white rhinos under private management in reserves bordering the Kruger National Park (Timbavati, Sabie-Sand and Klaserie), which have removed the fence between themselves and the Park, are added, 22.0% were in private hands.

The numbers on private land, excluding the Greater Kruger National Park (GKNP) private reserves, have increased by another 10.84% over the two years since the 1997 survey, through both reproduction and acquisitions. This bodes well for the future conservation of white rhinos. State land is reaching, and many reserves, especially in Kwazulu-Natal, has already reached, maximum stocking rates, and 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 reach saturation, and 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 stabilised 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.

THE STATUS OF THE SOUTHERN WHITE RHINOCEROS ON PRIVATE LAND IN SOUTH AFRICA

The first comprehensive survey on the status of white rhino on private land in South Africa was conducted in 1987 by the Rhino and Elephant Foundation; 637 rhinos were accounted for on 87 properties (Buys, 1988). The Sabie-Sand, Timbavati and Buffelshoek private nature reserves had an additional 187 white rhinos, adding up to a total of 824. Since then the latter reserves have removed the fences between themselves and the Kruger National Park (KNP).

The second survey was commissioned in 1995 by the African Rhino Owners Association (AROA), a working group of REF (Buijs and Papenfus, 1996). A total of 1243 white rhinos on 150 ranches were recorded, with an additional 202 on the reserves mentioned above which are now in principle part of the KNP, and the total unit is referred to as the Greater KNP (GKNP).

A third survey was conducted by AROA at the end of 1997, and the numbers had grown to 1494, with another 248 in the GKNP reserves (Buijs, 1998).

This report summarises the findings of the fourth survey conducted during August and September 1999.

Aims and objectives

The goals of the survey were to establish the contribution of private rhino owners to rhino conservation, to gauge the opinion of rhino owners on responsible utilisation of white rhinos, and to provide official nature conservation authorities, the IUCN Rhino Specialist Group and the South African CITES authority, with accurate information.

Methods

All known white-rhino owners were contacted telephonically. The history of the rhino populations from the start of 1998 to July 1999 were recorded. It was also the first time that data on private rhino horn stocks was gathered.

Results

A total number of about 200 people were contacted. They were not necessarily always the owners or managers, and therefore did not always know the exact details of the history or age and 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, although this was seldom necessary. Updating the database regularly is an enormous advantage, since one gets to know the case histories, the owners and managers get to know you, and the data gets more refined after each survey.

Rhino numbers

Table 1 shows the regional numbers of white rhino on private land at the start of 1998 to September 1999, as well as the percentage growth over the period. A minimum total of 1656 white rhino are in private possession, which is an increase of 10.84 % over 1997. The number of populations has decreased by 1.

At least 14 new populations have been established since 1997, and 14 have been removed from the database (6 owners have sold all their rhinos, 2 could not be traced, 2 have been incorporated into other reserves by removal of fences, and 4 populations have been moved to other ranches which already had other white rhinos).

Of the populations present in 1997, 147 still exist. Of these, 34 have decreased, 39 are static and 74 have grown.

The survey results have been grouped into broad regional categories. The Lowveld includes parts of both Mpumalanga and the eastern Northern Province, the Highveld includes southern Gauteng, and the parts of Mpumalanga and North-West Province that are located in the vicinity of the Vaal River,

Table 1: White rhino numbers on private land in South Africa, October 1999

REGION	1995		1997		1999		%
	RHINOS	RANCHES	RHINOS	RANCHES	RHINOS	RANCHES	GROWTH
NORTH/NORTH-WEST	665	68	731	69	911	77	24.62%
LOWVELD	264	38	345	41	299	32	-13.33%
KWAZULU-NATAL	160	17	194	20	213	20	9.79%
NORTHERN CAPE	23	5	68	6	85	7	25.00%
HIGHVELD	64	9	72	10	69	11	-4.17%
FREE STATE	47	9	59	10	44	7	-25.42%
EASTERN CAPE	20	4	25	6	35	7	40.00%
TOTAL	1243	150	1494	162	1656	161	10.84%

DIFFERENCE

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PRIVATE RESERVES INCLUDED IN THE GREATER KRUGER NATIONAL PARK

	202	4	248	3	266	3	7.26%
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TOTAL UNDER PRIVATE MANAGEMENT	1445	154	1742	165	1922	164	4.57%
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e.g. Standerton and Christiana. The western and northern regions of the Northern Province, North-West, as well as northern Gauteng are treated as one region.

The white rhinos in the private nature reserves which have removed the fences between themselves and the KNP, have also increased to 266 this year. This brings the minimum number of white rhino under private management to 1922.

Age and sex structures

The sex/age structure (excluding the reserves which form part of the GKNP) was as follows

	MALES	FEMALES	UNKNOWN	TOTAL
ADULT (> 6 years)	337	557	269	1163
SUBADULT	125	113	255	493
TOTAL	462	670	524	1656

Where only a population total was given, i.e. the person spoken to did not know the exact composition of the population, all animals were recorded as adults of unknown sex. The ratios of the total known population (only those populations with accurate age and sex structures were used) were: adult males to adult females 1:1.653 (38% : 62%); subadult males to subadult females 1:0.904 (53% : 47%); and adults to subadults 1:3.756 (79% : 21%).

If we use these ratios on the rhinos of which the age and gender were not known, a hypothetical total population would look like this:

	MALES	FEMALES	TOTAL
ADULT (> 6 years)	440	723	1163
SUBADULT	260	233	493
TOTAL	700	956	1656

A summary of the known additions and losses to white rhino populations (excluding the reserves which form part of the GKNP) is given in the form of a balance sheet (Table 2). At least 299 calves were born, which represents 20% of the 1997 population.

Table 2: White rhino balance sheet 1999

	ADDITIONS	SUBTRACTIONS	
BOUGHT PRIVATELY	73		
BOUGHT FROM KZN*	68		
TOTAL BREEDING STOCK	141		
KZN TROPHIES BOUGHT	16		
BIRTHS	299		
DEATHS			67
SOLD		189	
SOLD OVERSEAS		20	
TOTAL SOLD		209	
HUNTED		31	
SOLD KZN AS TROPHIES		16	
TOTAL HUNTED		47	
TOTALS		456	323
DIFFERENCE			133

*KZN = KwaZulu-Natal Nature Conservation Service

The known number of rhinos brought onto ranches as breeding stock was 141 (73 from private ranches and 68 from Kwazulu-Natal Nature Conservation Service (KZNNCS), 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 rhinos that left the country. The problem was that the sellers did not know who the buyers were because they worked through dealers, and the dealers were difficult to get hold of or to get information from.

Twenty deaths were caused by other rhinos, either through fights or when the calf got in the way when the mother was in oestrus and a bull wanted to mate with her (Table 3). Unlike in the previous survey where 18 rhinos died during, or shortly after, transportation, this year none such mortalities were reported, which is a very encouraging development.

Worrying, however, is that the number poached has risen from 2 during 1996/97 (on one property) to 12 during 1998/99 (on 5 ranches).

Table 3: Causes of mortality in white rhinos (1999)

CAUSE	BULLS	COWS	SA* BULLS	SA* COWS	CALVES	TOTAL	RANCHES
Killed by bull		2	3		6	3	16
Back injured by bull		2					2
Internal injuries							
Killed by mother							
Poached		2				9	5
Unknown	3	4			5		10
Lightning						3	
Killed by elephant						3	3
Old age		2				3	3
Stillborn						2	2
Cow dry					2	2	
During birth							
Stuck in mud							
Stress							
Stuck in fence							
Meningitis							
<i>Streptococcus</i>							
Disappeared							
Wire in feed							
Killed by hyaenas							
Immobilisation						1	
TOTAL	9	22	4	1	17	14	67

*SA = Subadult

Thirty-one white rhinos were reported to have been hunted, with another 16 sold by KZNNCS as trophies, thus totalling 47. Excluding the last 16, 1.87% of the present population was thus hunted over an 18-month period. A few of these were necessitated hunts because the bulls regularly started killing others, 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. Analysis of founder populations, however, suggest 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 populations were subadult when bought, and it is possible that they will breed as they are now reaching maturity.

Some examples of the inconsistencies are of 1 bull and 5 cows which have had 11 calves since 1992, while another consisting of 1 bull and 5 cows had 21 calves since being bought (the exact year of

introduction is uncertain), 6 of these calves were born since 1996. In both cases the male offspring were sold before maturity.

To the contrary, a population of 2 bulls and 2 cows have had no calves for 5 years, and another with 2 bulls and 3 cows have had no calves for 4 years.

It thus seems that breeding very much depends on the temperament and/or fertility of individual bulls.

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 broken-off 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 (see below). Some non-rhino-owners must also have horns from inheritances or gifts.

	FRONT	BACK	SMALL	WEIGHT	TOTAL
NUMBER	80	50	47		
WEIGHT (kg)				132	
ASSUMED WEIGHT (kg)	2.5	0.5	0.3		
TOTAL ESTIMATE (kg)	200	25	15	132	372

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

Conclusions

The increase of 10.84% in numbers on private land is once again an indication of the important role played by the private rhino owner in rhino conservation. The latest estimate of the total number of white rhino in South Africa was 7913 (December 1997). If we use this figure, the private sector owns 20.1% of the total SA population, and when the rhinos of the private reserves which are part of the GKNP are included, manages 24.3% of the white rhino in the country.

THE FUTURE OF RHINO RANCHING

The rate at which the South African white rhino population is increasing (Buijs, 1998), holds certain future implications for rhino management, both on state and on private land. The largest implication which affects both is that the market for live animals could decrease because of the population growth (increasing supply) and a shortage of suitable land (diminishing demand), and secondly that the trophy market, which only consumes about 1% of the population per annum (Du Toit, 1998), is close to its ceiling.

The alternative, trade in rhino products, is presently banned by CITES.

THE DEMAND FOR RHINO HORN

Rhino horn has been an ingredient of traditional Chinese medicine for many centuries (Sung-Hoon, 1997), especially in remedies for bleeding, fever and leukaemia. Although Sung-Hoon states that rhino horn is no longer used (it was probably for political correctness), much evidence points to the contrary. Reliable data are difficult to get, but a survey in Korea in 1993 revealed a retail value of US\$13 383/kg (Du Toit, 1998). The media also often quote prices ranging from US\$2 000 to US\$10 000, but it is difficult to establish their sources. Ko (1994) quoted an average price of US\$24 500/kg in Hong Kong, and that 59 out of 90 Chinese pharmacies sold rhino horn, hide and medicine. The

market for traditional Chinese medicine is vast, as there are over 1.2 billion potential consumers worldwide (Anon, 1997).

Another market where rhino horn is still in demand is in Yemen where it is used for decorative dagger handles. Where previously only the very wealthy elite could afford these, the oil boom of the 1970's has put money in the pockets of the population at large, and the price of rhino horn in 1979 was more than 20 times that of 1971 (Anon, 1997). At the peak of the trade, in the mid-1970's, the number of imported rhino horns reached 12 000, at US\$500/kg (Martin, Vigne and Allan, 1997). All horns were from African rhinos, since they were larger, and approximately 10 times less expensive than Asian horn, which is perceived to be more efficacious. During the 1970's, almost 40% of all the rhinoceros horn in the world market was imported into Yemen, making it the largest consumer of that period (Martin, Vigne and Allan, 1997). After 1982 no records were kept, as imports were banned during that year. Although almost all daggers are now fitted with wooden, water buffalo horn, camel nail or plastic handles, nine daggers with handles made from rhino horn were documented by local investigators in late 1996 (Martin, Vigne and Allan, 1997), at an average price of US\$286. The estimated imports are the horns of 25 rhinos, with a combined mass of 75 kg.

The prices of rhino horn in US\$ currency in Yemen have actually decreased since 1985, firstly because the devaluation of the local currency, and also because the per capita income had fallen by 50% since 1990. Secondly, all evidence suggested that people with larger incomes preferred to buy old rhino horn daggers, which are more esteemed (Martin, Vigne and Allan, 1997).

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