

THE ROLE OF TROPHY HUNTING IN WHITE RHINO CONSERVATION, WITH SPECIAL REFERENCE TO BOP PARKS

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INTRODUCTION

This paper examines the role of trophy hunting in white rhino conservation by attempting to answer some key questions:

HAS TROPHY HUNTING BEEN SUSTAINABLE?

HAS TROPHY HUNTING BENEFITED WHITE RHINO CONSERVATION?

HAS IT BENEFITED THE COUNTRY AND CONSERVATION IN GENERAL?

The information in this paper is based on interviews with hunters and game farmers; on TRAFFIC data, CITES reports, WCMU data, Bop Parks records, Natal Parks Board records (Keith Meiklejohn)⁶, and Daan Buys's¹ report of 1987. Much of the information was gathered by Richard Emslie for a 1994 cost-benefit survey of rhino conservation, sponsored by the Wildlife Conservation Society (WCS) and the World Wide Fund for Nature, International (WWF).

HAS TROPHY HUNTING BEEN SUSTAINABLE?

Approximately 820 white rhino have been hunted in South Africa since 1968, when white rhino hunting began in earnest. Table 1 shows that over this time, the numbers of white rhino in SA have increased from 1 800 to over 6 370. Table 2 shows how white rhino numbers on private land (where most hunting occurs) have also increased to well over 1 000. The average rate of hunting as a percentage of all white rhino in SA, was about 0,93% per year up to 1987 (24,8 rhino/year); and has averaged 0,81% of the population per year since then (43 rhino/year) - see table 1.

Out of private-owned animals prior to 1988 (see table 3), hunting rates were *ca* 10,5% per year - however, rhino numbers in private hands were mainly being bought from the much larger pool of Natal Parks Board (NPB) animals at low, fixed prices. In 1989 rhino prices throughout SA reached a realistic market value when NPB, the major suppliers, began to auction their rhino. Since then, hunting rates out of privately owned animals have dropped to approximately 3% per year.

Bop Parks' hunting, which has been based on the original founder stock of 212 animals introduced in the early 1980's, has been conducted at an average yearly rate of about 3%. Figure 1 summarises the history of these animals, discussed more fully below. (Note: 248 rhino were obtained from NPB from 1978-82, but due to the country-wide drought and the poor physical condition of the rhino, 36 died shortly after release).

In conclusion, trophy hunting has been and still is highly sustainable.

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Table 1: White rhino population size and growth estimates from 1960-94; and hunting rates from 1968-94 in South Africa

YEAR	Modelled population at lambda+1 of 1.0633	modelled population using estimates (bold)		
60	840	840	1.1	
61	893	924	lambda+1	
62	950	1016		
63	1010	1118		
64	1074	1230		
65	1142	1353		
66	1214	1488		
67	1291	1637		
68	1373	1801		
69	1459	1981		
70	1552	2179		
71	1650	2397		
72	1754	2480	1.021	
73	1866	2532	lambda+1	
74	1984	2585		
75	2109	2640		
76	2243	2695		
77	2385	2752		
78	2536	2809		
79	2696	2868		<i>HUNTING: 1968-87</i>
80	2867	3020	1.04	Tot rhino years: 53712.5
81	3048	3141	lambda+1	Tot hunted: 497
82	3241	3266		Average hunt rate: 0.93%
83	3446	3330	1.06	Avg No./ year 24.85
84	3665	3530	lambda+1	
85	3896	3742		<i>HUNTING: 1987-94</i>
86	4143	3966		no. rate
87	4405	4126	1.08	42 1.02%
88	4684	4456	lambda+1	42 0.94%
89	4981	4813		39 0.81%
90	5296	5198		1987-94 40 0.77%
91	5631	5613		34 0.61%
92	5988	6062		42 0.69%
93	6367	6376		39 0.61%
94	6770	6770		69 1.02%
				Average hunt rate 0.81%
				Avg No./ year 43

* Note: Actual National white rhino population growth has exceeded 6.33% per year, as the +- 820 hunts and the >1200 live removals from the country (Mieklejohn 1992, plus calculations), have not been included in this table.

HAS WHITE RHINO TROPHY HUNTING BENEFITED WHITE RHINO CONSERVATION?

Trophy hunting of white rhino has influenced their numbers and population performance in many direct and indirect ways:

1. As a population management tool, it eliminates "surplus" males that would otherwise use grazing resources of breeding animals, or would fight and kill other rhino. Without removals (live and dead), rhino soon breed up to capacity, reducing the overall productivity of a population, especially on smaller reserves and ranches (< 5 000 - 20 000 ha).

Land capable of holding white rhino (ie. with game farming / tourism / conservation objectives; suitable grazing habitat, security and fencing), has had to be developed since the 1960's, prompted by the supply of rhino from the NPB and the potential profits of hunting, live sale and tourism. The rate of this development has possibly been a limitation on the growth of rhino numbers in SA, especially in the years prior to 1980 (see table 1).

Without removing surplus males and other surplus rhino, theoretically, populations would reach states of zero growth; rhino supply would decline, as would incentives to open new rhino areas or keep existing rhino.

The history of Bop Parks' white rhino demonstrate this point. Bop Parks' reserves and National Park were set up with the *raison d'être* of promoting conservation and sustainable use of resources to the benefit the country's people: Figure 1 shows how managing white rhino at ca 30% below their estimated carrying capacity has controlled rhino numbers within Bop, while still generating sustainable revenue from sales and hunting; and how the opening of new parks has increased the overall numbers of white rhino in Bop Parks from the original stock. The effective founder population has performed at an average annual population increase of about 7%, with 95 hunts, 47 live removals out of Bop parks; and a current founder-derived total population of ca 320 rhino in six Bop Parks.

2. Trophy hunting has moved the economics of many ranching/game park enterprises towards profitability, and has thus promoted the continued existence of their rhino populations. Without such hunting, farmers may return to cattle farming without rhino, or to pure tourism which needs fewer rhino.

One hunting outfit estimated that profit margins on hunting since 1991 have been around US\$6000, but have dropped to \$1-2000 / rhino due to rising costs and lower prices. Luckily the de-valuing of the Rand against the Dollar has helped compensate for these factors and has kept hunting profitable.

Estimated average turnover per rhino hunted in the last four years (trophy fee plus daily rates for 10 days for hunter plus two observers) is about \$27 250 (using yearly average prices and exchange rates)³.

Hunting also helps drive the live-sale industry, providing another way for owners to finance and justify their populations, and realise a return on their investment in rhino. Table 3 shows average live-sale prices and numbers of rhino sold within South Africa (but excluding Bop Parks sales and private non-auction sales), from 1986-1994. With Bop Parks sales, there have been at least 774 white rhino sold over this period, involving R 25-26 million in turnover.

3. Hunting has increased the value of rhino, enabling police to increase their efforts at cutting down illegal trade in rhino products, and helping persuade magistrates to give convicted middle-men and poachers meaningful penalties. The security of white rhino populations have thus been improved.

4. Hunting generates valuable income. When this income returns to the conservation organisation (as happens with Parastatal bodies like NPB and Bop Parks), and not to central government, it can be (and has been) used to contribute to improving white rhino reserve management and security, and to the development of new reserves with white rhino (see figure 1 for Bop example).

Problems affecting the rhino and the rhino hunting industry

1. In the early years when white rhino were sold by NPB at very low prices to private ranchers, the benefits of hunting to rhino conservation were fewer, *although at no time were SA rhino near being over-hunted as a whole*: However, conservation organisations earned little; while many new white rhino owners exploited the situation, as highlighted by Buys¹:

They conducted "put and take" hunts without attempting to breed up their own rhino;

They hunted all their males; or only left one male (unaware that breeding seems to be more effective when two or more males are present);

They hunted breeding females. (This was and still is rare, though, with <40 females old and young being hunted over all the years in SA).

Many owners managed their rhino poorly, without seeking expert advice: people with unsuitable habitat bought and lost rhino. Some overstocked and lost them during the drought or due to fighting. In general, many owners put little effort into monitoring their rhino, and did not even know how many they had or what had happened to them over the years.

Since 1986, demand for hunts drove the live rhino prices sharply upward. This, together with NPB's move to auction rhino at market-related price in 1989, prompted more owners to managed their rhino more responsibly, and the overall SA population has grown at 8% since then. For example, breeding females received higher prices on the auction than trophy bulls for the first time. The higher prices also squeezed out many of the more disreputable operators from the rhino trade.

2. The Professional Hunters Association of South Africa (PHASA) unfortunately has no decent records on white rhino populations on private land; or of hunted numbers and prices. The authors feel their role should be to keep these records, so that they can advise on sustainable economic strategies; and demonstrate to critics that sport hunting of white rhino is done with a view to promoting wise use of natural resources on a sustainable basis. They need to show that they are a responsible self-regulating industry who are protecting the resource they depend on.

3. The CITES permit system, which is ultimately aimed at providing data to prevent over-exploitation of the rhino, is based on rhino products and not numbers of rhino. Two or more permits can be issued for different parts of the same rhino that are exported at different times, without clarifying that only one rhino is involved. TRAFFIC's role in monitoring the trade is made difficult; and demonstrating the sustainability and wise use of rhino from CITES records to international critics has not been facilitated. Emslie³ has recommended some alterations to solve these and other problems with this system.

Some conservation authorities, such as Transvaal Nature Conservation, do not issue permits for rhino hunting, and do not keep track of rhino hunting on private land - again there is room for improvement here in the interests of demonstrating responsible use of rhino.

HAS TROPHY HUNTING BENEFITED THE COUNTRY AND CONSERVATION IN GENERAL?

1. One of the great benefits of trophy hunting to the country is the bringing in of foreign exchange. For example, an estimate of the total turnover value of the 820 hunts since 1968 is US\$22,3 million³.

For 1991-94, at average yearly hunt prices, the estimated value of the 184 hunts/proposed hunts in SA is \$4,457 million US (R13,04 million at yearly average exchange rates), equal to a mean of R3,35 million per year. This money, although not large compared to some industries, is nevertheless a valuable addition to the national economy.

3. The hunting and associated capture industries, generate and contribute to many jobs in South Africa. Professions benefit greatly from the rhino hunting industry include

Professional hunters, Skinners, Trackers, Admin / marketing staff;
Camp managers, cooks and cleaners; The hotel industry;
Taxidermists and their support staff; Butchery staff;
Firearms and ammunition companies;
Airlines, Transport companies; Food/drinks suppliers;
Safari equipment manufacturers; Curio makers/sellers;
Capture industry staff, Makers of capture equipment and vehicles
Auctioneers and their staff
Veterinarians
Capture drug and darting equipment manufacturers

One example from a hunting/capture outfit is that it employs 14 full-time local African workers and 15 other seasonally for seven months a year. This amounts to about 24 full-time jobs, and if each of these workers support five other people, about 120 local people alone are supported by that operation. The sale and hunting of white rhino is vitally important to such operations.

3. Profits from hunting can be used by the State-funded conservation agencies that generated them, helping to reduce government spending and the income tax burden of the man in the street. This could release government finances for education, housing etc. In future, State areas may be required more and more to generate their own income to cover their running expenses as funds are diverted to the Reconstruction and Development Program.

4. The benefits of white rhino hunting to the conservation of all species and natural areas, are that the profits can and do contribute to the upkeep, security, and management of Reserves; and help pay for new conservation tourism developments that will bring in further income to the regional economy; and increase the number of conserved natural areas.

The future?

There are moves afoot internationally to close down rhino hunting, especially by the animal rights and liberation movements that are pressurising WWF and IUCN. Cutting off rhino hunting as an avenue of generating funds would be disastrous for State conservation agencies and rhino:

Yearly government grants have been declining in real terms. In order to maintain the current high standards of conservation management vital to the security and health of the rhino populations, about US\$1 071 to US\$1 218 /km² is needed for large (eg. 600km²) areas²⁴. A greater percentage of running costs need to be generated by the parks; or staff must be laid off. Without this, salaries will eat into park expenditure, and standards will decline (eg. as happened in Zimbabwe).

Another factor to consider for the future of rhino hunting is that more and more rhino could come on to the market, while prices seem to be dropping. This decline in marginal utility of rhino hunting may make it unprofitable in future. The key importance of rhino supply; the uncertain future demand for such hunting; and the fluctuating Rand/Dollar exchange, need to be evaluated by the hunting industry.

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Table 2: White rhino numbers in South Africa on private and State land: 1960-1994

YEAR	NUMBER	STATE	PRIVATE
1897	50-100	50-100	0
1953	ca 550	ca 550	0
1960	ca 840	ca 840	0?
1972	ca 2 480	ca 2 380	ca 100
1980	3 020	ca 2 900	ca 120
1984	3 330	ca 3 000	ca 330
1987	4 126	3 346	780
1993	6 376	5 330	1 046 +

(Extracted from Emslie³, Buys¹, Bop Parks, IUCN, Player⁷, Western & Vigne⁸, Owen-Smith⁶.)

Table 3: Hunts on Private and State land up to 1987

HUNTS ON PRIVATE LAND 1968 to beginning of 1987		HUNTS ON STATE LAND 1982 - 1987	
N TVL	58	OFS	8
E TVL	38	BOP*	57
S TVL	16	TOTAL	432
CAPE	8		
OFS	2		
NATAL	310		
TOTAL	432		

*Bop Parks hunts as a percentage of SA hunts were:
up to 1987, 15%; and from 1987 to present 16,7%

Table 4: Average live-sale prices and numbers since 1986 (excluding Bop Parks data and private non-auction sales). Fixed price sales are conducted by the NPB, while the auction sales are for all of SA, both private and State. (Source: Meiklejohn⁶).

YEAR	Mean Price Fixed (R)	No. of Rhino Fixed	Mean Auction Price (R)	No. of Rhino Auction
1986	3 700	19	10 167	6
1987	4 500	26	14 190	10
1988	10 000	3	34 714	14
1989	25 000	24	48 732	41
1990	40 000	30	48 524	42
1991	40 000	48	44 188	32
1992	40 000	61	29 230	64
1993	20 000	50	28 348	56
1994	20 000	60	32 767	30

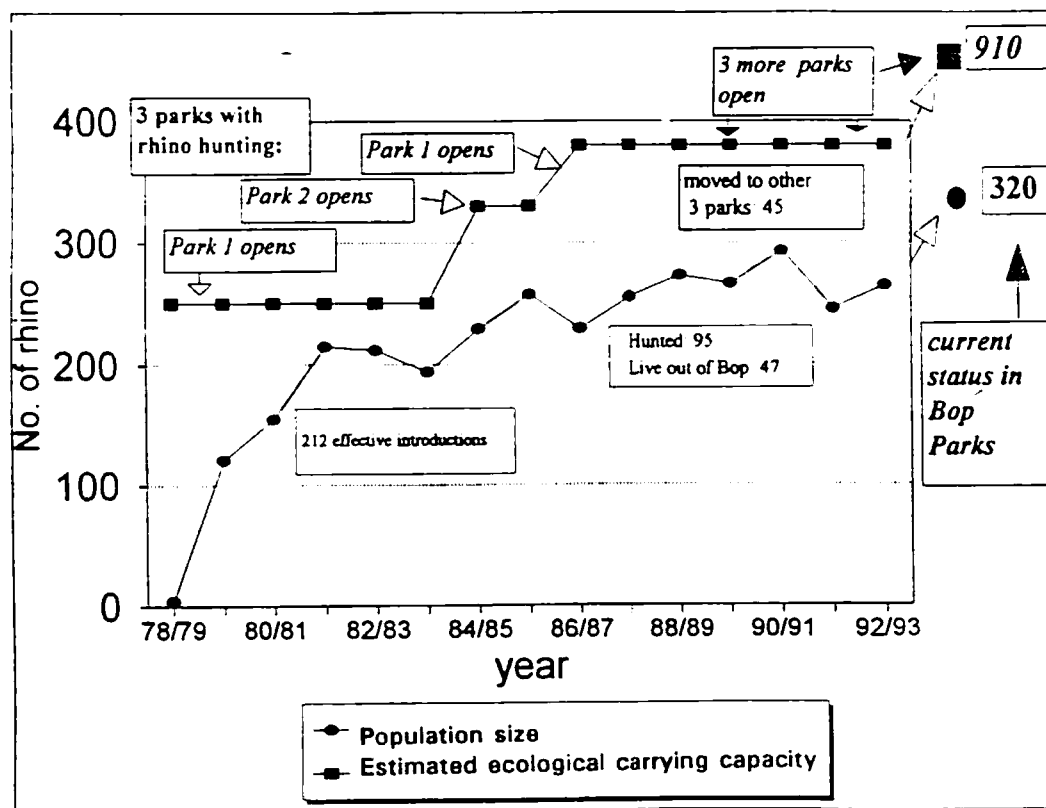


Figure 1: Bop Parks: Management history of 212 founder rhino during park development