Report for Rhino and Elephant Foundation
1987.

(4355)

A SUMMARY OF THE INTRODUCTION OF WHITE RHINO ONTO PRIVATE LAND IN THE REPUBLIC OF SOUTH AFRICA

D. Buys
Rhino & Elephant Foundation

INTRODUCTION

Concern has recently been expressed by some members of the IUCN's African Elephant and Rhino Specialist Group that perhaps the situation regarding white (square-lipped) rhino on private land in South Africa was being regarded with some degree of complacency. This survey was undertaken in order to provide the factual information which would enable an objective assessment of the situation.

METHODOLOGY

The survey took place between September and December 1987. With the help of staff of the Natal Parks Board, the data on the numbers of animals captured, and the destinations to which they were translocated were obtained from the Board's records. Thereafter wherever possible the owners, or managers of each property were approached and information on the current status of their rhino population obtained. The more important properties were identified, and most of these were visited.

RESULTS

The information on each property is summarised in Tables 1(a), 1(b), 1(c), 1(d) and 1(e).

Since 1961 when the Natal Parks Board started translocating white rhino, 1291 (723; 553; 15) have been relocated on 149 privately owned properies (this figure includes rhino from sources other than N.P.B.). Forty three (15; 21; 7)* were lost during or shortly after delivery. Births numbered 316 (80; 67; 169)* of which 284 (79; 65; 141)* survived the weaning period.

A total of 1533 (787; 597; 149) was thus successfully established. Of these 92 (42; 47; 3) were sold or removed alive and included in the total of deliveries and births, thus the actual number of white rhino successfully established outside the Natal Parks, the Kruger National Park and Pilanesberg National Park was 1441 (745; 550; 146) on 149 properties and reserves.

The results of the 1987 survey showed that only 931 (204; 287; 440) on 103 properties or reserves could be accounted for. The large number of unknown sex/age rhino (440) is largely accounted for by those in the Sabi Sand, Timbavati and Loskop Dam Game Reserves, which have a combined total of 220

and on 6 private ranches (Joubert W. - 24; Joubert R.M. - 25; Cruse - 15; Erasmus B.D.T. - 26; Shaw - 12 and Marais - 14) with 116 rhino. The remainder, 112, are all young animals which have not been sexed yet.

(* Numbers recorded in sequence refer to male; female; sex unknown.)

This data shows an unexpected decrease of 510 rhino and the loss of all rhino on 45 ranches (inclues unknown destinies) to which rhino have been delivered. The fate of the rhino of 21 of the ranches could not be established and of the other 24 all the rhino were shot, lost or sold (not always known to whom).

If the number of births on reserves like the Sabi Sand and Timbavati (figures indicate at least 150 births for these two reserves) were to be added the decrease in the number of rhino is even more dramatic. This situation gives cause for concern when one looks at the converse situation in National Parks and N.P.B. reserves. About 250 males were delivered by the N.P.B. to ranches in Natal for hunting, but even when this figure is subtracted from the difference between deliveries and present numbers there is still a nett decrease even with the births being taken into account.

For the following discussion the figures have been split into seven categories according to the available data (see Appendix A for breakdown into provinces).

1. **Populations with Known Histories**

The histories of 86 populations (excluding provincial reserves) were accurately established although exact dates for births and deaths could not always be determined. These ranches received 591 (293; 287; 11) white rhino from various sources (private purchases, auctions, Pilanesberg) but mainly from N.P.B. Mortality during transport and release amounted to 7.1% of the deliveries. A total of 203 (60; 38; 105) births were recorded of which 5 were stillborn and 12 died within a year. The total of surviving deliveries and relocations was 736 (337; 304; 95) which at the end of 1987 had been reduced to 443 (161; 216; 66) on 72 ranches, this being a nett loss of 39.8% of the population. Of the mortalities 45.9% (26.5%; 76.8%; 88.5%) were natural deaths and the rest were all shot 54.1% (73.5%; 23.2%; 11.5%).

Editor's note: Information received indicates that some of the animals reported as "natural deaths" were in fact shot.

2. **Unknown Histories - Present Composition Known**

Ten properties are placed in this category in which most have changed hands. One ranch has lost all its rhino through natural causes.

A total of 308 (235; 69; 4) white rhino were released on these ranches. It is not known how many have died during relocation or how many were born, but there are 25 recorded births of which 3 have died

due to the poor condition of their mothers. Records of only 4 live removals were found. The total of releases and births has been reduced by 71.2% to 91 (21; 35; 35) plus 4 (2; 2; 0) live removals.

Eighteen males are known to have died (7 natural and 11 shot) but there has been a nett reduction of 212. The balance has almost surely all been shot, but it must be kept in mind that most of those rhino were specifically sold for hunting purposes. This is well illustrated in Natal where five of the ranches in this category are located. These ranches received 252 (210; 41; 0) white rhino and have 57 (13; 20; 24) today. The remaining males are thus only 6.2% of the deliveries, a reduction which is much higher than the shooting of surplus males should account for. (The 6.2% also includes 3 sub-adults). What is extremely disconcerting is that the number of females which were supplied has been reduced by 52.4%. The present number includes 2 sub-adults born on the ranches (this in effect increases the actual reduction to 57.1%). The remainder have most likely been shot, but there is unfortunately no proof of this as there is no obligation to record the sex of an animal hunted.

(Addendum: There is evidence that animals reported to the author as having died naturally were in fact shot. For example, the three rhino reported by Fletcher to have died are known to have been shot. K. Mieklejohn pers. comm.)

3. **Reliable Estimates - Composition Unknown**

This category includes 3 private reserves in the Eastern Transvaal (Sabi Sand, Timbavati and Buffelshoek) where numbers were determined through aerial and ground counts. There are presently about 187 white rhino on these three reserves after 62 were relocated. Seventeen males were hunted and 3 males were sold alive for hunting. The number of deaths and births is unknown but at least 150 rhino must have been born.

The fourth population in this category is at Mabula Lodge which has 24 rhino but the composition in not known.

4. **Unknown Composition - Uncertain Numbers**

Two populations in Transvaal total 51 according to the owners, but real figures are probably lower. In Natal two ranchers have about 28 rhino on their properties. The rhino have had calves on all four properties during the last three years.

5. **Provincial Reserves**

Orange Free State

The Willem Pretorius Game Reserve received 2 males and 2 females in 1962 and 1965 from the N.P.B. Twenty eight (9; 19; 0) calves have been born since and no natural deaths have occurred. Six (5; 1) have

been hunted and 2 (1; 1) sold live. Eleven (4;7) were moved to the Tussen-die-Riviere Game Farm where 13 calves were born of which 2 have died, two males were hunted and 11 died. The present numbers are 17 (3; 12; 2) at Willem Pretorius and 7 (3; 4; 0) at Tussen-die-Riviere. The total for the O.F.S. is 24 (6; 16; 2).

Cape

The Leon Taljaard Nature Reserve received 6 (2; 4) rhino between 1974 and 1982. Five calves were born of which one was stillborn. One female died from parasites in the boma and 2 males were sold.

Presently there are 7 (3; 4) white rhino.
The Thomas Baines Nature Reserve received 5 (2; 3) white rhino in 1974. Two calves were born, four rhino were lost and one sub-adult female was sold. The present number is 2 (1; 1).

The Rolfontein Nature Reserve received 8 (2; 6) white rhino between 1975 and 1978. Four females died shortly after delivery. Ten calves were born of which one died and three were stillborn. One bull was hunted and 3 (2; 1) were sold. The present number is 6 (3; 3; 0).

The total for the Cape is 15 (6; 9).

Transvaal

The D'Nyala Nature Reserve was previously owned by a Mr. van Schalkwyk who received 24 (10; 14) white rhino from N.P.B. In 1986 there were 14 (6; 8) of which the T.P.A. sold 10 (4; 6). The present number is 4 (2; 2).

The complete data for the Loskop Dam Nature Reserve has not been received yet, but N.P.B. records show that 24 (12; 12) were delivered between 1963 and 1979. One female died during transport, 9 (3; 6) were sold and 6 (3; 3) were moved to Bloemhof Dam Nature Reserve. Four young males were killed in fights during 1987 and the present number is 48.

The 6 rhino which were sent to Bloemhof Dam were kept in the bomas for 16 months due to bad grazing conditions. One female gave birth to a stillborn calf in the boma and died shortly afterwards. One female had to be shot because of injuries. The remaining female gave birth in 1986 and the present number is 5 (3; 1; 1).

6. Other

The Johannesburg Zoo has had 5 (3; 2) white rhino of which 1 male died and 1 male was sold. They presently have 3 (1; 2). The National Zoo in Pretoria received 7 (2; 5) and presently has 1 male. The fates of the other are unknown except for one male which was sent to Lichtenberg.

The Bloemfontein Zoo received 4 (2; 2) white rhino. The fates of two (1; 1) are unknown, 1 female died and was replaced in 1982 and a female calf was born in 1986. The present number is 3 (1; 2).

Two owners could not be traced. Mr. A. Webster bought 2 (1; 1) rhino from Iscor (Thabazimbi) at an auction in 1985/6 and Mr.Howell bought 2 (1; 1) from D'Nyala in 1986. It is not known if these rhino are still alive or not.

7. **Bophuthatswana**

Pilanesberg National Park received rhino from Natal. This population is being managed at a level of 200 animals. Surplus animals have been translocated to three other parks in Bophuthatswana, others have been sold to private landowners, and trophy bulls have been shot. The population in Pilanesberg is stable and those in Botsalano ( ) Thaba Nchu ( ) and Borakalalo National Parks ( ) are increasing.

REGIONAL FACTORS AFFECTING THE RE-ESTABLISHMENT OF RHINO

The success of the establishment of a breeding group of rhino is as much dependant on the management of the ranch under consideration as it is on the climatological and geographical features of the region. It would therefore not be fair to totally exclude some areas from the allocation of white rhino, but there are regions which should only be considered under very special circumstances.

The different regions involved are discussed with references to examples of specific properties.

1. **Far Northern Transvaal** (North of Louis Trichardt and westwards to Swartwater.)

This area has suffered from the severe drought experienced during the past few years and the rhino would not have survived without feeding, e.g. Bezuidenhout, Perskor, Streicher, van der Meulen. Even large ranches (Knott 8800 ha) could not support rhino without additional feeding and the surviving rhino on this ranch were ultimately sold.

Although conditions have improved during the present rainy season this is a dry region and subject to periodic severe droughts. Drought conditions will inevitably again be experienced in the near future. This area should therefore not be regarded as suitable for any future relocation of white rhino, even though there are exceptions where rhino were only fed during the really extreme dry period of 1983 and 1984 (Streicher). It is reasonable to assume that given the present climatic conditions that white rhino cannot survive in the area unless supplementary feeding is a part of their management.

2. **Northwestern Transvaal** (South of Swartwater, west of Pietersburg and north of Rustenburg)

This region was also subjected to the drought and many rhino had to be fed, especially in the western parts near Ellisras and the Botswana border. This was often caused by overstocking rather than low rainfall (e.g. Terblance A.C. and H.A. have adjoining farms of about equal size, A.C. had to feed and H.A. not; Du Toit had to feed but the adjoining Lapalala and Dercksen not; Greer does not feed 2 rhino on 500 ha but Lamprecht has to feed 4 rhino on 3000 ha, etc.).

The region has the potential of carrying many more white rhino provided that proper veld management is applied. There are also good examples of successful breeding in this region (e.g. Iscor (Thabazimbi); Pieterburg Town Council; Steenkamp; Vastapane (after 1983)).

3. **Eastern Transvaal** (East of Warmbaths, north of Loskop Dam and around Kruger Park)

With the exception of the area around the Kruger National Park, few white rhino are found in this region. The drought was also thoroughly felt in this area and even large reserves like the Timbavati and Klaserie private game reserves which have had good recruitment over the past few years, were forced to put out supplementary feed during 1983.

Rhino reproduce well in this area (e.g. Erasmus; Gioia; Sabi Sand P.G.R.; Timbavati P.G.R.; van Niekerk) although the exact figures could not always be obtained due to a lack of records or a lack of co-operation from the owner. Feeding was however necessary in many cases as a result of overstocking (e.g. Du Plessis, 21 rhino and 64 buffalo on 1400 ha, had to feed up to 70 bales of lucerne per day in winter; Erasmus; Transvaal Suiker Beperk; van Niekerk) while the S.A. Airforce and Gioia did not have to feed. Near Gravelotte Weber (1300 ha) also came through the drought with 6 rhino. The drought was also named as a cause for the death of 5 out of the 7 rhino delivered to Otto and released during a very unfavourable period.

The region as a whole can be regarded as suitable for the relocation of white rhino although bad management of the veld has been responsible for the deterioration of veld conditions on many properties.

4. **Southeastern Transvaal** (East of Pretoria)

The Loskop Dam area seems to be very suitable rhino habitat as the populations of the Loskop Dam Nature Reserve and private ranches (Gaddin, Swart, Vermaas) show.

The rest of the region has few rhino and conclusions cannot be drawn about their suitability (De Beers near Balmoral, Witbank, and Labuschagne, Piet Retief), although the rhino of Davies-Webb (Schoemanskloof) cannot be expected to do well on a ranch which slopes from 3000 to 600 ft.

5. Southwestern Transvaal

A good example of what good management can accomplish can be found at the Overvaal Rob Ferreira resort situated in a dry region near Christiana. Six rhino (3 + 3) were introduced in 1970 and 1972 on 1860 ha. The rhino are never fed and 19 calves have been born of which only 2 died. The National Zoological Gardens' game farm near Lichtenburg has also had good success with 13 calves from 3 females over the past 10 years. Other populations which have done well are those of Englezakis and Joubert J.S.A., both in the Zeerust/Mafikeng area.

Other populations in the region include Klerksdorp Town Council which has not done well (only 2 stillborn calves) and young populations (Keely, Beneke and de la Rey) all in the Brits area. The latter two had their first calves in 1986 and 1987 respectively.

Some areas in this region are thus suitable for the relocation of white rhino and can be identified with the help of the local nature conservation officer.

6. Cape Province

Most of the Cape is unsuitable for the relocation of white rhino. The rhino of De Beers (42000 ha near Kimberley) have all died of natural causes and other introductions have also been unsuccessful (De Bruijn, Bedford, Fletcher, Vryburg, Thomas Baines Nature Reserve, Grahamstown). The last property still has a pair but no further additions are planned.

Successful recruitment has taken place at Miles (2 surviving calves and one stillborn), Rolfontein Nature Reserve at the P.K. le Roux Dam (6 surviving calves from 2 females) and the Leon Taljaard Nature Reserve near Vryburg (4 surviving calves from 3 females).

There are a few young populations which cannot be commented upon at this stage (Burchell; Iscor, Sishen; Kuruman Town Council and Schneider where a calf was born in 1987).

The Cape, with a few exceptions, should therefore not be considered for the relocation of white rhino if more appropriate properties are available elsewhere.

7. Orange Free State

Only three private properties have white rhino in the O.F.S. Calves have been born on all three but the single calf at Visser (Harrismith) died during an unusually cold spell 8 months after birth. The other two populations (Botes near Kimberley; Wille, Ficksburg) have had more calves of which 4 out of 6 and 5 out of 5 have survived on the respective properties.

The population at the Willem Pretorius Game Reserve has done extremely well and since the introduction of 4 females between 1962 and 1965 a total of 28 calves have been born. No losses from natural causes have been recorded. In 1972 eleven (4 + 7) rhino were taken to the Tussen-die-Riviere Game Reserve where 11 calves were born of which 2 died.

Certain parts of the O.F.S. can thus be recommended for rhino introduction, but the Division of Nature Conservation should be consulted first.

8. Natal

Nothing need be said about the suitability of Natal, and specifically Zululand. Unfortunately the province has a sad record concerning white rhino on private properties.

Examples of shortsighted management are rife. Meintjies received 56 (50 + 6) rhino between 1972 and 1983, but when the ranch was sold only 2 females were present. Butler received 29 (20 + 9) and left 5 (1 + 4). Besters and Shaw have received 48 (35 + 13) between them, but today only about 10 adults are on the ranch (the owner says he does not know exactly how many). Vermaak received 24 (18 + 6) and has only 5 (2 + 2 + 1) today.

Another example of the attitude of some ranchers was where an American hunter shot a cow and his son shot her calf (horn approx. 6 inches). This was confirmed by both a Natal Parks Board officer and a taxidermist, but unfortunately the relevant CITES export licence numbers were not known.

Populations which are known to have reproduced during the last few years are Havemann, Herbert (Ubizane), Kelly (but no adult male present now), Landman (shot 2 of his 3 adult males in 1986 and 1987), Marais (exact figures are not known), Rattray and Wilkenson (only 1 male present after shooting 3 males in 1984 and 1985).

Although a large number of males were sold specifically for hunting purposes, the disappearance of a large number of females should, however, have been a cause for concern.

DIFFERENCES IN RECORDS OF DELIVERIES

The data from the survey was used for the calculations, but does not always correspond to the figures from the Natal Parks Board.

Differences between the two sets of data could have been caused by several factors like the death of rhino shortly after delivery which was then recorded as delivered by N.P.B. but not as received by the rancher. Where rhino were acquired through a third person the latter would appear in N.P.B. records and not the purchaser. This will also account for a number of rhino which could not be traced. On a few occasions the sex ratio of

actual deliveries differed from N.P.B. records probably due to the loading of the wrong animals and not correcting the records, although the number of rhino was correct.*

The N.P.B. records do not differentiate between adults and sub-adults and unless the manager or owner of a ranch could give information on the ages all rhino were regarded as adult on delivery. The differences encountered are illustrated in Table 2.

*The N.P.B. records also include rhino which were only moved by them but which did not originate in N.P.B. parks but that is unfortunately not specified.

REPRODUCTIVE SUCCESS AND SEX RATIOS

Excluding those populations whose present status cannot be determined, the results confirm the findings of Lindemann (1982), in that the breeding success in populations of females with only one male is significantly lower than that in populations with more than one male. Of 25 populations with only one adult male, only 9 recorded the production of calves. (It must also be appreciated that some of the females in this group could have been pregnant before their relocation.)

CAUSES OF MORTALITY

The results summarised in Table 2 and Table 3 are confined to those populations on private properties for the which the histories are known.

This data illustrates a number of points. Firstly, even if no animals had been hunted, there is a nett decrease in numbers. This obviously questions the ability of most of the private landowners to successfully manage rhino in order to maintain or improve the status of the species. Secondly, the fact that 10% of the natural deaths have been attributed to disease whereas disease has never been recorded as a mortality factor by the National Parks Board, Natal Parks Board or any other conservation agency. This suggests that deaths due to other factors have been attributed to disease rather than the true cause. The number of deaths due to unknown causes should therefore be increased to 42.9%.

SIZE OF FOUNDER POPULATION

What is perhaps also related to the success or failure of populations is the size of the founder populations. Smaller founder populations obviously do not have as many advantages as larger ones. The results shown in Table 4 are revealing in that 20.5% of the founder populations of less than ten animals are extinct and a further 51.8% have decreased in size. There are however many other variables which do not allow any clear conclusions as to the size of founder populations.

Table 4

CHANGES IN SIZE OF SQUARE-LIPPED RHINO POPULATIONS WHERE THE FOUNDER POPULATION IS LESS THAN TEN ANIMALS

POPULATION TREND	NO.	%
Populations which have increased	23	27.7
Populations which have decreased	43	51.8
Populations now extinct	17	20.5

In view of the above, and the demonstrated inability of the majority of landowners to successfully manage their rhino, there is no evidence to suggest that the population trend on privately owned land will remain stable, let alone increase. This situation is likely to persist unless there are changes in policy on the part of the Provincial authorities.

DISCUSSION

Despite the fact that over the last 20 years more than 1500 white rhino ave been distributed to private landowners in South Africa, there has been a nett decrease in the number of rhino and the number of properties on which rhino are present. Only 26 populations have increased, 16 populations are the same number as that introduced, 52 have decreased and the remainder are extinct.

What is clearly apparent from the above results is that with few exceptions, the distribution of white rhino to private landowners in South Africa is not the most effective means of enhancing the status of the species. The disquiet which gave rise tothis survey therefore appears to have been justified.

In contrast the rhino numbers distributed to the official conservation bodies (National Parks Board, Provincial, National and Independent States) have increased. This situation parallels the experience in the distribution of disease-free (foot and mouth and corridor disease) buffalo from Addo National Park. (de Vos pers. comm; Hall-Martin pers. comm.).

The reasons for the disappointing record in management of white rhino are:

a. Animals have been introduced onto properties where the conditions are unsuited for their survival. Unless supplementary feeding has been implemented, most of these populations have become extinct.

b. Overstocking by other more adaptable species, e.g. Impala, has led to conditions unsuited to the survival of rhino.

c. It has been well established that rhino populations with only one adult bull rarely, if ever, produce calves (Lindemann 1982). There

are innumerable cases of landowners shooting all but one of their adult males, thereby effectively bringing recruitment to a halt.

d. Over the last decade the safari industry in South Africa has experienced an almost exponential growth, and the square-lipped rhino is perhaps the premier trophy which the country can offer. This, and the decline in the value of the rand, have enhanced the economic value of the species of a trophy animal. With the value of trophy square-lipped rhino at an average of about R35 000,00 each, the incentive to harvest rhino at a rate greater than the rate of increment or that at which the Natal Parks Board can provide animals, has proved to be irresistible. The consequence is that the demand for square-lipped rhino now far exceeds the Natal Parks Board current rate of removal.

   Many landowners have allowed all their adult males to be shot by trophy hunters, and in many instances have also provided breeding females for hunting. This has been in many cases justified by the view that they would again be allocated more rhino by the Natal Parks Board. In some cases, safari operators in Natal maintained it was the Province's obligation that they should be provided with more rhino for hunting.

RECOMMENDATIONS

Over the period during which most of the translocation to private land took place, the Natal Parks Board was faced with the dilemma of controlling its rhino population in the face of a limited demand by purchasers. This situation has now changed.

The recommendations made below relate only to the management of the species on private land in South Africa. However, in doing so, the situation regarding rhino populations throughout the rest of Africa has been borne in mind.

a. It is recommended that the Southern African members of the IUCN African Elephant & Rhino Specialist Group consider this report and determine whether the current situation on private land in R.S.A. is acceptable or that a change is desirable. The necessity of developing a national plan for square-lipped rhino should also be considered by the Southern African members of the IUCN African Elephant & Rhino Specialist Group.

b. It is recommended that Provincial conservation bodies review the criteria under which permits to introduce rhino are allocated. Suggested criteria should include minimum populations which the area can sustain, minimum population to be introduced, habitat suitability and quality of management and the objectives of the owner in introducing animals.

   Areas which can hold large populations and whose owners are prepared to acquire large founder populations, should rank higher than properties which can only sustain small populations. Furthermore the

ability of the applicant to manage rhino populations should be taken into account. An objective system of ranking applications for rhino would be far preferable to the current "first come, first serve" procedure.

c. There is no readily accessible system to determine the numbers of animals hunted each year, and the number of trophies exported. In Natal, where most of the trophy hunting has taken place, the records available are carbon copies which are in most cases illegible. It is recommended that the Provincial authorities, particularly in Natal and Transvaal, institute a system whereby they have a more readily available record of animals hunted each year.

d. It is recommended that, on the basis of their past record in management, certain landowners are "blackballed" from receiving further allocations of rhino at subsidised prices. Many of these landowners are again on the waiting list for the allocation of animals, and under the present system will in due course receive more rhino. The summary of allocations to specific landowners, and their current rhino population status, provides a clear guide as to where such action is warranted.

e. Because of the species' importance to the safari industry, and the fact that the South African population is less than 4000 animals, it is important that the resource is managed to the optimum benefit of both the species and the tourist industry.

Some of the poor performance in management may be attributed to lack of knowledge on rhino management. For example, it is a well etablished fact that single male populations seldom produce calves (Lindemann 1982). Also there is no awareness of ages of sexual maturity of males, as landowners will shoot all adult bulls in a population before any juveniles have reached puberty. The consequence of this is an inevitable reduction in the birth rate.

It is recommended therefore that a brochure on the managment of the species is compiled and distributed to all landowners who have, or intend acquiring, the species.

f. Whether the Natal Parks Board should continue to supply animals at a heavily subsidised price to properties where the population will not be managed in the conservation interests of the species needs consideration.

ACKNOWLEDGEMENTS

The survey could not have been carried out without the support of the Provincial Conservation bodies, in particular the Natal Parks Game & Fish Preservation Board and the Transvaal Division of Nature Conservation. Staff of the above organisations who were of particular help were Dr. P.M. Brooks, Dr. D. Rowe-Rowe, K. Mieklejohn, W. Kanfer and D. Carr. The willing help of those landowners who provided information is greatly appreciated.

Transport, in order to undertake the survey, was provided by Nissan S.A. (Pty) Ltd., and the funds required were generously donated by R.J. Reynolds International (Camel). To these major sponsors, the project owes a special debt of gratitude.

REFERENCES

Lindemann H. (1982), African Rhinoceroses in Captivity. M.Sc. Thesis, University of Copenhagen 122 pp.

SUMMARY OF DELIVERIES, BIRTHS, LOSSES AND PRESENT NUMBERS

OF WHITE RHINO IN THE R.S.A.

(Excludes Kruger National Park, Natal Parks Board Reserves and Pilanesberg)

a. Known figures - real numbers will be higher
b. Figures concluded from other data
c. Estimate

1. Populations with unknown histories and known present composition
2. Population size known - composition unknown
3. Uncertain population size
4. Fates of rhino unknown

The numbers of rhino are written in each column as follows: M - Male; ? - Sex Unknown; F - Female

TABLE 1a

NORTHERN & WESTERN TRANSVAAL

OWNER	RECEIVED									BIRTHS			DEATHS			SHOT/ *SOLD LIVE			PRESENT						
	ADULT			YOUNG			TOTAL												ADULT			YOUNG			TOTAL			
	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	
Atherstone			2	1			1		2												2	1			1		2	3
Bothma	5		4	1			6		4		2						1		4		4	1	2		5	2	4	11
De Jager	5		5				5		5		1			9			2											0
De la Rey	1		2				1		2		1								1		2		1		1	1	2	4
Du Toit	6		6				6		6		3		1	3	2	4		1			3	1			1		3	4
Erasmus	3		3				3		3		8			1			1		2		3		7		2	7	3	12
Greer	3		3				3		3			1			2	3					1			1			2	2
Iscor (Thaba)	2		2				2		2		16			4		1* 2		1* 3	5		2			2	5		4	9
Lamprecht	2		4				2		4									2	2		2				2		2	4
Lombard	2		2				2		2	1			1		1				1		1	1			2		1	3
Maggs	1		2				1		2	1									1		2	1			2		2	4
Malan	5		5				5		5							3		2	2		3				2		3	5
Parker	6		7				6		7	1	1		3		4				4		3		1		4	1	3	8
Perskor				3		3	3		3	1									3		3	1			4		3	7
Pietersburg TC	2		2				2		2	3		3	1			1		1	2		3	1		1	3		4	7
Pistorius	3		2	1		1	4		3		3					2			1		2	1	2	1	2	3	3	8
Ravazotti				2		2	2		2							2		2*										0
SADF (Pietersburg)	1		2				1		2	3			2						1		2	1			2		2	4
Steenkamp		13						13			12			8					5		6		6		5	6	6	17
Streicher	5		5				5		5		1		3						2		5		1		2	1	5	8
Terblanche A.C.	3		3				3		3		4			1					3		3		3		3	3	3	9
Terblanche H.A.	3		3				3		3	1		2	1			1			1		3	1		2	2		5	7
Theron			3	2			2		3				1								3	1			1		3	4

OWNER	RECEIVED ADULT M	?	F	YOUNG M	?	F	TOTAL M	?	F	BIRTHS M	?	F	DEATHS M	?	F	SHOT/ *SOLD LIVE M	?	F	PRESENT ADULT M	?	F	YOUNG M	?	F	TOTAL M	?	F	
Thomas	1						1												1						1			1
Van der Meulen			2	3			3		2	1									1		2	3			4		2	6
Vastapane/Kotze	10		9				10		9	2	2	1	1	1	3	1* 7		2*	2		4	1	1	1	3	1	5	9
Venter	4		4				4		4										4		4				4		4	8
Boshoff & van Eeden	1		1	1		1	2		3										1		1	1		2	2		3	5
Besterecta/van Tonder	1		3				1		3	1		1				1			1		3			1	1		4	5
Besterecta	1		2	2		2	3		4				1						1		1	2		2	3		3	6
Knott	4		8				4		8							2* 2		8*										0
Bezuidenhout	2		4				2		4						2	1			1		2				1		2	3
Bottero	1		3				1		3				1		2			1*										0
Englezakis	11		6	3		5	14		11		5		3		1	3* 6		6*	2		5		4		2	4	5	11
Fourie	2		3				2		3						1	1*			1		2				1		2	3
Nat. Zoo Potgietersrus				2		2	2		2							1*					2	1			1		2	3
	96	13	112	21		17	117	13	129	15	59	8	19	27	18	37 9*	2	9 20*	55		84	19	29	13	74	29	97	
TOTAL	221			38			259			82			64			48 29*			139			61			200			200
Fourie/Snyman	5		4				5		4	2[a]									1		3	1	2		2	2	3	7
Joubert	13		13				13		13	5			3			4			9		11		4		9	4	11[b]	24
Joubert R.M.	7		13				7		13				9			5		1										25[c]
Dercksen	3		3				3		3										2		4	1		1	3		5	8[a]

OWNER	RECEIVED									BIRTHS			DEATHS			SHOT/ *SOLD LIVE			PRESENT									
	ADULT			YOUNG			TOTAL												ADULT			YOUNG			TOTAL			
	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	
Howell	1		1				1		1																1		1	2?
Webster	1		1				1		1																1		1	2?
✓ Johannesburg Zoo	3		2				3		2				1			1*			1		2				1		2	3
National Zoo Pretoria	2		5				2		5							1[a]			1						1			1

Table 1b

EASTERN TRANSVAAL

OWNER	RECEIVED									BIRTHS			DEATHS			SHOT/ *SOLD LIVE			PRESENT									
	ADULT			YOUNG			TOTAL												ADULT			YOUNG			TOTAL			
	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	
Davies-Webb	1		1	1	3	1	2	3	2					3	1				1		1	1			2		1	3
Du Plessis	9		12	2			11		12	2	1	2	3	1	3				6		9	4		2	10		11	21
Els				1		1	1		1										1		1				1		1	2
Gioia	5		5	2		2	7		7		2	2	3		2	1			3		5		2	2	3	2	7	12
Klaserie PNR	7		9		2		7	2	9		12		3		3				5		6		13		5	13	6	24
Labuschagne	2		2				2		2		1			1	1	1			1		1				1		1	2
Möller	3		6				3		6						3				3		3				3		3	6
Mostert	1		1				1		1						1	1												0
Otto	2		5				2		5				2		3						2						2	2
Sumerly/Phelps	3		3				3		3				2		3				1						1			1
SADF (Hoedspruit)				1		1	1		1										1		1				1		1	2
Sussons	2		2				2		2	1						1			1		2	1			2		2	4
T.S.B.	2		4				2		4	1	1		1	1	1	1		1	1		2				1		2	3
Van der Merwe	1		2				1		2	2									1		2	2			3		2	5
Vorster	4		2				4		2							1			3		2				3		2	5
Weber	2		2				2		2	1		1							2		2	1		1	3		3	6
Van Niekerk	6		6				6		6	3	5		2			6			1		6		5		1	5	6	12
	50		62	7	5	5	57	5	67	10	22	5	16	6	21	12		1	31		45	9	20	5	40	20	50	
TOTAL	112			17			129			37			43			13			76			34			110			

OWNER	RECEIVED									BIRTHS			DEATHS			SHOT/ *SOLD LIVE			PRESENT						
	ADULT			YOUNG			TOTAL												ADULT			YOUNG			TOTAL			
	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	
Cruse [2]	3		2				3		2							2												15[c]
Sabi Sand PNR[2]	25		18					43								4*	2*	2*										
																15												112[c]
Timbavati PNR[2]	7		9				7		9							2												60[c]
Erasmus[3]	12		9				12		9	16					3	5												26?

Table 1c

SOUTHERN TRANSVAAL

OWNER	RECEIVED ADULT M	?	F	YOUNG M	?	F	TOTAL M	?	F	BIRTHS M	?	F	DEATHS M	?	F	SHOT/ *SOLD LIVE M	?	F	PRESENT ADULT M	?	F	YOUNG M	?	F	TOTAL M	?	F	
Beneke	1		1	2		2	3		3			1				1			2		3			1	2		4	6
Joubert J.S.A.	1		4				1		4		2				1				1		3		2		1	2	3	6
Keely	2		1				2		1				1						1		1				1		1	2
Klerksdorp T.C.	3		2			1	3		3		2		1	2		1			1		2			1	1		3	4
Krugersdorp T.C.	2		2				2		2		6			4			2*		1		3				1		3	4
Rob Ferreira	3		3				3		3	10	2	7	1	2	1	4		1	2		6	6		2	8		8	16
Tweedsmuir Ranch	1		1				1		1							1*		1*										0
Van Zyl	3		3				3		3							2 1*		3*										0
Swart	2		2				2		2	2	2	2				2		1	1		2	1	2	1	2	2	3	7
Vermaas (Sebaka)	2		5			1	2		6		3				1	1*	1*	2*	1		3		2		1	2	3	6
National Zoo Lichtenb.	4		4				4		4	9		4	1		2	10*		2*	2		3			1	2		4	6
	24		28	2		4	26		32	21	17	14	4	8	5	10 13*	3*	2 8*	12		26	7	6	6	19	6	32	
TOTAL	52			6			58			52			17			12 24*			38			19			57			
Grobler/De Beers	3		2				3		2										1		1				1		1	2
Enslin/Gaddin[1]	7		9	4			7	4	9		10[a]					4	4*		2		6		9		2	9	6	17
Springs T.C.[4]	1		1				1		1																			0
Van der Bylpark T.C.[4]	3		3				3		3																			0

TABLE 1d

CAPE

OWNER	RECEIVED ADULT M	?	F	YOUNG M	?	F	TOTAL M	?	F	BIRTHS M	?	F	DEATHS M	?	F	SHOT/ *SOLD LIVE M	?	F	PRESENT ADULT M	?	F	YOUNG M	?	F	TOTAL M	?	F	
Burchell	1		1				1		1										1		1				1		1	2
De Bruijn	2		3				2		3				1	2	1		1											0
Grates (Cantor)	1		1				1		1						1				1						1			1
Kuruman T.C.	1		1				1		1										1		1				1		1	2
Miles	4		6				4		6	1	1	1	1	1	1	1*			1		4	1		1	2		5	7
																1		1										
Schneider	5		2	1			6		2		1					3			2		2	1	1		3	1	2	6
Fletcher	3		3				3		3		1			1	2	3*		1*										0
Iscor (Sishen)	1		1	2			3		1							1*					1	2			2		1	3
	18		18	3			21		18	1	3	1	2	4	5	4	1	1	6		9	4	1	1	10	1	10	
																5*		1*										
TOTAL	36			3			39			5			11			6			15			6			21			
																6*												
De Beers[1]	7		9				7		9		?		16 + ?															0
Tygerberg[4]	1		1				1		1																			0
High Noon[4]	3		3				3		3																			0
Mills[4]	2		2				2		2																			?

TABLE 1e

ORANGE FREE STATE

OWNER	RECEIVED									BIRTHS			DEATHS			SHOT/ *SOLD LIVE			PRESENT								
	ADULT			YOUNG			TOTAL												ADULT			YOUNG			TOTAL			
	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	
Visser (+Lombard)	3		4				3		4	1			1	1	1				2		3				2		3	5
Wille	4		4				4		4	5			1						3		4	5			3	5	4	12
Botes	4		4				4		4	6			1	2	1	2			1		3	4			1	4	3	8
	11		12				11		12	12			3	3	2	2			6		10	9			6	9	10	25
TOTAL	23						23			12			8									9			25			
Bloemfontein Zoo	2		3				2		3			1	1		2				1		1			1	1		2	3

TABLE 1f

NATAL

OWNER	RECEIVED ADULT M	?	F	YOUNG M	?	F	TOTAL M	?	F	BIRTHS M	?	F	DEATHS M	?	F	SHOT/ *SOLD LIVE M	?	F	PRESENT ADULT M	?	F	YOUNG M	?	F	TOTAL M	?	F	
Boswell	1		3				1		3				1		2						1						1	1
Deane	12		1				12		1						1	12												0
Haveman	1			2		2	3		2	4		3	1		2	2			2		2	2		1	4		3	7
Kelly	11		4				11		4	2		1	2			9					4	2		1	2		5	7
Lister	15						15									15												0
Landman	3		3				3		3	2						2			1		3	2			3		3	6
Meyer				3		4	3		4				2		2							1		2	1		2	3
Wilkinson	4		3	1		2	5		5	1	1	1	1		3	3			1		2	1	1	1	2	1	3	6
Zietsman	2		2				2		2				1		1	1*		1*										0
Scott-Barnes	1		1				1		1							1*		1*										0
Van den Berg	1		1				1		1				1					1*										0
	51		18	6		8	57		26	9	1	5	9		11	43 2*		3*	4	16	12	8	1	5	12	1	17	
TOTAL	69			14			83			15			20			43 5*			16			14			30			

TABLE 1f (Cont.)

OWNER	RECEIVED									BIRTHS			DEATHS			SHOT/ *SOLD LIVE			PRESENT									
	ADULT			YOUNG			TOTAL												ADULT			YOUNG			TOTAL			
	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	
Ubizone (Herbert)	92		14				92		14	6[a]						4[a]		1[a]	4		4	2	9	2	6	9	6	21
Butler/De Buffanas	20		9				20		9										1		3				1		3	4
Meintjies/AAC[1]	51		6				51		6										1		2				1		2	3
Nyalaveld/Rattray	29		7				29		7	7[a]						3			3		7		14		3	14	7	24
Vermaak	18		6				18		6										1		2	1	1		2	1	2	5
Besters/Shaw	35		13				35		13										+10				2					12[c]
Marais[3]	10		8				10		8	6[a]						6[a]												10[c]
Simpson[4]	1		1				1		1																			0
Armstrong[4]	3		3				3		3																			0
Solana Game Park[4]	3		2				3		2																			0
Subuzi Game Park	2		2				2		2																			0

TABLE 1g

PROVINCIAL

OWNER	RECEIVED ADULT M	?	F	YOUNG M	?	F	TOTAL M	?	F	BIRTHS M	?	F	DEATHS M	?	F	SHOT/ *SOLD LIVE M	?	F	PRESENT ADULT M	?	F	YOUNG M	?	F	TOTAL M	?	F	
ORANGE FREE STATE																												
Willem Pretorius	4		4				4		4	9		19				5 5*		1 8*	1		11	2		3	3		14	17
Tussen die Riviere	4		7				4		7	5	3	3	4	3	6	2			3		4				3		4	7
CAPE																												
Leon Taljaard	2		4				2		4	3		1			1	2			1		3	2		1	3		4	7
Thomas Baines	2		3				2		3		2		1	2	1			1	1		1				1		1	2
Rolfontein	2		6				2		6	3		3			4	1 2*		1*	1		2	1		2	2		4	6
TRANSVAAL																												
D'Nyala	10		14				10		14		?			?		4*		6*	1		1	1		1	2		2	4
Bloemhof Dam	2		2	1		1	3		3		1				2				2		1	1	1		3	1	1	5
Loskop Dam	12		12				12		12		?		4[a]		1[a]	6*		9*										48
BOPHUTATSWANA																												
GAZANKULU																												
CISKEI																												

TABLE 1h

FATES OF RHINO UNKNOWN

OWNER		RECEIVED ADULT M	?	F	YOUNG M	?	F	TOTAL M	?	F	BIRTHS M	?	F	DEATHS M	?	F	SHOT/ *SOLD LIVE M	?	F	PRESENT ADULT M	?	F	YOUNG M	?	F	TOTAL M	?	F	
Brooker	1981							1		1																			
Graham	1974							1		1																			
Green	1977							1		1																			
Malan	1978							2		2																			
Pienaar	1982							3		3																			
Rundgren	?									1																			
Stone	1974							2		2																			
Van der Merwe	?							1		1																			
Van Vuuren	1980							3		3																			
Pontdrif	?							1		1																			
Naboomspruit	?							2		2																			
Vaalwater	?							2		2																			
Ellisras	1973							2		2																			
Ellisras	1974							1		5																			
Naboomspruit	1974							1		1																			
								23	51	28																			
De Jager	1974							2		2																			
Doyer	?							1		1																			
Webb	?							1		1																			
Rasenta Farm	?							1		1																			
								5	10	5																			

TABLE 1h(Cont.)

OWNER	RECEIVED									BIRTHS			DEATHS			SHOT/ *SOLD LIVE			PRESENT						
	ADULT			YOUNG			TOTAL												ADULT			YOUNG			TOTAL		
	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F	M	?	F
Vasco·PNR									1																		
Rondali							2		2																		
							2	5	3																		

KNOWN NUMBERS OF RHINO SHOT ON PROPERTIES AND THE PRESENT NUMBER OF MALE ANIMALS ON EACH PROPERTY.

TRANSVAAL

		MALE	FEMALE	SEX ?	TOTAL	MALES PRESENT		
						ADULT	SUB ADULT	
N.Tvl	Bezuidenhout	1(82)			1	1		
	Bothma	1(87)			1	4	1	
	De Jager			2	2	0	0	Other rhino died - last 2 shot before they also died.
	Dercksen	?				2	1	
	Du Toit	4(82-85)			4	-	1	
	Englezakis	1(83) 3(86) 2(87)			6	2	?	
	Erasmus JA	1(82-87)			1	2	?	
	Greer	1(84) 2(85)			3	0	0	1(85) accident
	Iscor	2(85-6)	3(85/6)		5	5	-	Old females
	Joubert RM	5(83-6)	1(83-6)		6	1		
	Joubert W	±4(84-87)			±4	1	?	
	Knott	2(82)			2	0	0	Could be more
	Lamprecht		2(85-7)		2	2	-	
	Malan	3(83)	2(83)		5	2	-	NPB advice broke fences
	Pietersburg TC	1(87)	1(86)		2	2	1	Female old
	Pistorius	2(83-87)			2	1	1	
	Ravazotti	1(86)1(87)			2	0	0	
	Fourie (Snyman)	1(80-85)			1	1	1	Suspect
	Terblanche HA	1(83-87)			1	1	1	
	Bester(V.Tonder)	1(82)			1	-	1	Became dangerous to tourists.
	Vastapane/Kotze	6(80-84)1(87)			7	2	1	1(87) kept breaking fence between Kotze.
		47	9	2	58			

/2...

E.Tvl	Cruse	2(87)			2	1+		From Manyaleti-money used to buy buffalo.
	Erasmus BDT	5(81-87)			5	1+		
	Gioia	1(86)			1	3		Chased in from outside by TPA.
	Labuschagne	1(86-7)			1	1	0	
	Mostert	1(87)			1	0	0	
	Sabie Sand	15(85-87)			15	1+	1+	
	Sussons	1(86)			1	1	1	
	Timbavati	2(87)			2	1+	1+	
	TSB	1(?)	1(±70)		2	1	0	
	Van Niekerk	6*(83-86)			6*	1	?	
	Vorster	1(87)			1	3	0	Broke fences.
S.Tvl	Beneke	1(86-7)			1	2	0	
	Gaddin	4(83-87)			4	2	?	
	Klerksdorp TC	1(82)			1	1	0	Fighting.
	Rob Ferreira	2(85)2(87)	1(86)		5	2	6	Female old.
	Swart	1(84)1(86)	1(86)		3	1	1	Female - accident.
				CAPE				
	De Bruijn			1(83-6)	1	0	0	
	Miles	1(84-5)	1(84-5)		2	1	1	Broke fences.
	Schneider	3(82-6)			3	2	1	1 broke out shot by Mrs. S. in road.
				OFS				
	Botes	2(86/7)			2	1	?	
		54	4	1	59			
				NATAL				
	Meintjies	50*(72-85)	4*		54*	0	0	
	Deane	12(80-84)			12	0	0	
	Butler	19*(72-86)	5*		24*	1	0	
	De Buffanos		1(87)		1	1	0	
	Havemann	2(81+87)			2	2	1	

/3...

Herbert (Ubizane)	88*(68-87)	10*		98*	4	2
Lister	15(76-82)			15	0	0
Kelly	9(83-84)			9	0	2
Landman	2(86+87)			2	1	2
Marais	6(81-87)			6	3	?
Rattray	3(83-87)			3	3	?
Nyalaveld	22*(78-83)			22	7	?
Besters/Shaw			38*	38*	?	?
Vermaak	17*(79-87)	4*		21*	1	1
Wilkensen	1(84)2(85)			3	1	1
	248	24	38	310		
			PROVINCIAL			
Willem Pretorius	5(?-87)	1		6	1	2
Tussen die Riviere	1(83)1(86)			2	3	0
Rolfontein	1(86)			1	1	1
	8	1		9		

* Real figures not known - these are differences between deliveries and present numbers (births not taken into account).

PRICES:

N.Tvl: Iscor: 1985 R5 500 live
Joubert RM: 1986 1 male R30 000
Perskor: was offered R25 000 for males in 1987 - not accepted
Pistorius: 1987: offered 30 000 dollas for his only bull - not accepted (yet?)

E.Tvl: Gioia: 1986 or 87 1 male R30 000
Sabie Sand: 1987 9 males 10 000 dollas each
Timbavati: 1987 2 males ± R24 000 each (part of big 5 package)
Van Niekerk: 1987: 2 males R24 000 + R10 000 fees each - not confirmed! Heard from neighbour.

S.Tvl: Rob Ferreira: 1987: 2 males 1 x R25 000, 1 x R30 000

/4...

Natal: Havemann: 1987: will have males (26") shot before end of year R35 000 (Aggressive towards other)

Cape: Rolfontein: 1986: 1 male R21 000

More information should be asked from Spud Ludbrook.