

RHINO WORKSHOP Mankwe Camp, Pilanesberg National Park, Bophuthatswana. 15, 16 and 17 February 1984



The Endangered Wildlife Trust



RHINOCEROS IN SOUTH AND SOUTH WEST AFRICA

Workshop held at Pilanesberg Game Reserve,
Bophuthatswana, 15th and 16th February 1984.

Organised by the Endangered Wildlife Trust.

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M. Brooks (Natal Parks Board)
R. Collinson (Pilanesberg Game Reserve)
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A. Hall-Martin (National Parks Board, South Africa)
K. Hillman (IUCN/SSC African Elephant and Rhino Specialist Group)
E. Joubert (S.W.A. Directorate Nature Conservation)
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D. Mathee (South African Police)
T. Mostert (National Parks Board)
P. Mulder (Transvaal Nature Conservation Division)
P. Mundy (Endangered Wildlife Trust) (Secretary)
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(Organisation)

Objectives:

1. To determine the distribution, status, and population trends of rhinos in the Republic of South Africa and South West Africa.
2. To discuss the international and local trade in rhino products, and the effects of this trade on rhino populations in R.S.A. and S.W.A.
3. To identify current problems for rhino survival, and measures to control these.
4. To discuss the conservation action necessary for the two species in the R.S.A. and S.W.A., and to make appropriate recommendations.

STATUS OF BLACK RHINO

The primary aim is to increase the numbers and distribution of the black rhinoceros in southern Africa. The classification of Groves (1967), as to subspecies, will be followed.

That is:-

<u>Diceros bicornis minor</u>	- Zululand, and reintroduced elsewhere.
<u>Diceros bicornis bicornis</u>	- S.W.A.
<u>Diceros bicornis michaeli</u>	- Addo Elephant National Park (introduced from Kenya).

Natal (Brooks):

By the 1930's, the black rhino had disappeared from South Africa (excluding South West Africa) except in the Zululand reserves of Hluhluwe-Umfolozi and Mkuzi. They then numbered 150. This increased to 480 by end-1983, distributed as follows-

Hluhluwe-Umfolozi	ca 300 - natural population at 0.33 per sq. km.
Mkuzi	120 - natural population at 0.39 per sq. km.
Ndumu	30 - reintroduced.
Itala	25 - reintroduced.
Weenen	4 - reintroduced.

The overall density is 0.31 per sq. km, or one animal per 3.23 sq. km.

The policy has been to spread animals around, and since 1962, 131 have been moved. The rate of increase of the rhinos through reproduction is estimated at 4.5%, which allows 19 animals per year to be taken off the three populations at ecological carrying capacity (Hluhluwe-Umfolozi, Mkuzi and Ndumu). The sex ratio in both of the two largest populations is 1:1, and at Hluhluwe-Umfolozi the population comprises 84% adult/subadult (older than 3 and a half years) and 16% immature. Over the last decade, however, the proportion of immatures has declined from 22% to 16% in Hluhluwe-Umfolozi and this obviously affects the policy on removal. For a number of years, Hluhluwe has had a poor recruitment rate. No intent as yet to maximise production of young rhinos.



The potential expansion of the Zululand population itself is limited to a maximum of about 90 in the Eastern Shores Nature Reserve (St Lucia), 35 in Itala, and 6 in Weenen; about 130 in all. Forestry permission is still needed for the first introduction.

"Carrying capacity" is a difficult figure to calculate. The ecological carrying capacity of an area is assumed to have been reached when negative feed-backs (from food and social pressures) result in a stable population size. Black rhinos indicate clearly when they have reached carrying capacity - among other things, calves have an increased mortality rate, calving intervals are increased, the age at puberty is delayed, and there is intensified aggression among adults.

There is very little competition between other browsers and the black rhino, but in Etosha there is competition between rhinos and elephants.

Kruger National Park (Hall-Martin):

When the Kruger National Park was proclaimed in 1926 only 4 or 5 black rhino remained, and by 1940 the species was extinct. Reintroduction began in 1971 with 20 animals from Zululand, and 12 in 1972 from Rhodesia (now Zimbabwe). By 1982, 70 animals had been moved to the Kruger National Park, including two in 1981 from Addo (these two had originated in Zululand and were both minor). The sex ratio of these introductions was 38 males to 32 females. Animals have moved up to 70 km from their release point, with subadult males moving the furthest.

Recruitment rate is about 9% p.a., and there is on average one immature animal with every adult female. The population comprises about 39% immatures - this is a "young" and expanding population. By end-1983, the total population was estimated at 104 (Hitchins had estimated 113). At a density of 0,19 animals per sq.km, the Kruger National Park could hold 3 500 animals in suitable habitat; the population west of Skukuza is "fairly dense" at 0,19 per sq. km. The Kruger National Park and two reserves in S.W.A. (Etosha could carry 1 000 and Bushmanland 500) are the only places in the R.S.A. and S.W.A. that could therefore hold a genetically viable population if this is one holding a minimum of 500 animals.

The Kruger National Park rhinos are genetically "mixed" as they originate from Zululand (mostly) and Zimbabwe, in the proportion of 57 to 13 of the initial introductions. However, once upon a time the rhinos of these two areas were genetically continuous and so a mixing in the 1970's in a third area is not foolish. [In fact, artificially keeping them apart would rather be considered foolish - Collinson].

Pilanesberg Game Reserve (Anderson):

Nineteen animals have been introduced, first 11, then 8, all from Hluhluwe-Umfolozi. No mortality in the translocation process. There are 8 males and 11 females, and two calves (possibly a third) have been born - thus a current population of 21. There has been an improvement in physical condition. The Reserve intends to introduce 35 animals. Two estimates of carrying capacity for Pilanesberg are both 120 (Hitchins, Goodman).

If black rhinos are ever removed, the policy would be to send animals first to Zululand, then to other conservation areas, and lastly to private land owners.

South West Africa (Joubert):

No physical differences, particularly with regard to skull measurements, could be discerned between bicornis and minor animals.

In 1965 there were fewer than 100 black rhinos in the whole of the country, and less than 30 lived in Etosha. Fifty animals were then translocated to Etosha from private farms along the Ugab river (now Damaraland) and private farms south of Etosha. At end-1983, there were a known 302 and an estimated 350 rhinos in Etosha, a safe environment. This population is expanding, and animals could be removed to the existing Mahango and Khaudum Game Reserves in north-east S.W.A. and to the proposed Bushmanland Game Reserve.

There are an estimated 41 desert rhinos in Damaraland in four areas, of which two are considered relatively safe (Ungab River catchment, lower Hoanib River), comprising 25 animals. These, with ten others, are north of the veterinary fence (the "red line"). The 6 animals south of the fence and the estimated three in the western Caorivi are in danger, as are the estimated five animals in north-west Kaokoland.

Thus, S.W.A. has a minimum number of 351 rhinos, and an estimated population of 400.

The carrying capacity of white rhinos in South West African reserves is approximately 1 000 plus.

THERE IS CONSIDERABLE CONCERN OVER THE FUTURE OF THE DAMARALAND BLACK RHINOS.

South West Africa (Owen-Smith):

In times gone by, black rhinos occurred throughout the country. By 1970, they had been exterminated south of the Ugab River; some remained in Etosha. Then, it is estimated that Kaokoland held between 40 and more than 120 rhinos (but estimates were surely under-estimates?), and a minimum of 100 in Damaraland. By 1982, only about five survived in Kaokoland (none confirmed in Marienfluss), and 40 to 45 in the concession zone of Damaraland and six on the farmland (outside of the "red line"). There has been individual identification of rhinos in Damaraland, and so far there are 40 known animals in the concession zone. Most known home ranges seem to be small.

Thus there has been a considerable decline in rhinos outside of Etosha in the years 1970 - 82, but there is no indication of disease being a cause. The years 1979 - 82 were the worst drought on record, during which three-quarters of the Kaokoveld's springbok, zebra and gemsbok died. But rhino calves were born in this period, they were also conceived in this period, and they survived. Thus drought is not a cause of the desert rhino's decline. In 1982/83, five calves were born. [But drought reduced the vegetation which caused the death of several rhinos by starvation - Joubert].

All rhinos in the east of Kaokoveld have disappeared; most of 40 carcasses found were poached (bullet holes, no horns). Today, the desert rhino survives only below the 100mm isohyet. It is not a unique subspecies, it is the same as Etosha rhinos, but a viable population in Damaraland will not survive two more years without protection. And to remove them would be to harm our cause - the Damaras consider the desert rhinos to be theirs, they are not out to kill them, indeed the Damara government has banned all hunting two years ago.

Addo Elephant National Park (Hall-Martin):

Animals of the michaeli subspecies were introduced from Kenya in the early 1960's. Unfortunately three minor bulls were added in 1977 which created the problem of genetic mixing of subspecies. However it is relatively easy to distinguish rhinos of the two subspecies from the air and from the ground - minor animals are smaller and have a smoother skin than do michaeli animals. In May 1981 two minor bulls were removed (the third had earlier been castrated) and in May 1983 three hybrid calves were captured and sent to the National Zoological Gardens (Pretoria).

activities.

The argument that rhinos cannot be protected outside of nature conservation areas, and particularly not in farming areas (because the rhinos use the water holes used by livestock), does not apply to the desert rhinos as most of them do not live on farm land (in communal area) anyway. The few that do live on farm land, outside (i.e. south and east) of the "red line" (foot-and-mouth veterinary fence), could in fact be translocated to the area inside (the concession zone). Rhinos in the area have not been shot because of their "nuisance" value to herdsmen but because of their horns - that is, for their economic value. In the 1970's, Kaokoland lost its rhinos (and elephants) because there was no Department of Agriculture and Nature Conservation manpower in the area, nor even any law and order, and some of the people involved in the poaching were of high standing [Owen-Smith]. The Department was allowed into the area by legislation only in 1980; prior to that the R.S.A.'s Department of Bantu Affairs controlled Kaokoland.

General:

There needs to be one law on rhino products for all the provinces. In fact, there needs to be a general rationalisation of nature conservation legislation.

At the moment horns are identified as follows:-

- | | |
|-------------|---|
| Natal | - numbered with a steel punch, front horn measured along the front edge. rear horn measured vertically; |
| Transvaal | - number painted on base, horn weighed; |
| Pilanesberg | - number painted on base, horn weighed and measured; |
| S.W.A. | - weighed and measured; |
| Zimbabwe | - a master card per horn is also kept at head office. |

In an effort to clean the slate, perhaps all horn receipts could be recalled, the horns individually identified, and then new receipts issued. The police regard this step as very important.

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FUTURE CONSERVATION ACTION

Natal (Brooks):

The Natal Parks Board will continue to relocate black rhinos in southern Africa - only one possible new area in Natal, the Eastern Shores (St Lucia), but discussions with Forestry still continuing. Guidelines are needed for rhino management - so far the policy is to set up various populations throughout the subcontinent.

There is a need to be able to determine the geographical origin of a horn, such as perhaps by analysing trace elements.

Some black rhinos are destined for Texas, but as yet the AAZPA is not satisfied with the arrangements.

National Parks (Hall-Martin):

More minor are needed for the Kruger National Park. New sub-populations need to be established in the park: one of the existing three populations already has a skewed sex ratio - this is at Sweni, which has 14 males and six females. Our objective is to spread the black rhino throughout the Kruger National Park.

At Addo, we estimate that between 40 and 60 rhinos can be accommodated. We do not want a second michaeli population in southern Africa as it is not indigenous. Surplus animals from Addo could be returned to Kenya.

There are only a few areas available for black rhino conservation. Eventually, the Kruger National Park will be culling white rhino as they will reach saturation point.

South West Africa (Joubert):

Etosha is a source of animals for translocation. The policy is to put rhinos onto government land first, then onto private ranches, then to export them if necessary. If relocation of Etosha and Damaraland rhinos is necessary, it is probably a good idea to keep them separate.

In the latter instance, the Damara authorities must be included in the negotiations, though translocation should not be seen as an alternative to proper conservation [Owen-Smith].

Research on the desert rhinos needs to continue [Hitchins].

Zoos (Ebedes):

It is important to get a breeding nucleus of black rhinos into captivity. [But consideration must be given to keeping hybrids out of any breeding plans - Wilkinson]. Over 200 000 children go through the National Zoological Gardens at Pretoria annually, and about three-quarters are Africans. Therefore a good educational effort is possible at zoos. Because of zoo economics, the animals should come from the Republic of South Africa (i.e. Zululand) itself and not from Zimbabwe as was suggested. At present there are only single animals at Johannesburg and Pretoria zoos and Potgietersrust Breeding Centre.

General:

There remain many unknowns in rhino biology, let alone in rhino management. Why do we have a criterion of 50 animals in an area as a viable group - surely a smaller group at high density could be monitored more easily and more accurately? Whereas a larger area is "better" in terms of being more resilient, on the other hand we do not want all our eggs (=rhinos) in one basket, such as the Kruger National Park. We must spread them around. In this respect the long-term prospects of an area become very important - and only national and provincial parks and reserves can offer these.

Whilst a suggested national committee on rhino management is not an urgency (what to do with rhinos and where to send them), nevertheless, arrangements should be started immediately due to the bureaucratic procedures. At the same time it is recognised that Natal has the primary responsibility as this Province has surplus animals for removal and distribution - about 19 black and 130 white per year. South West Africa has been working separately hitherto, and perhaps this country could be included, and the same could be said for Botswana. The committee could deal with questions of habitat, population size, etc.

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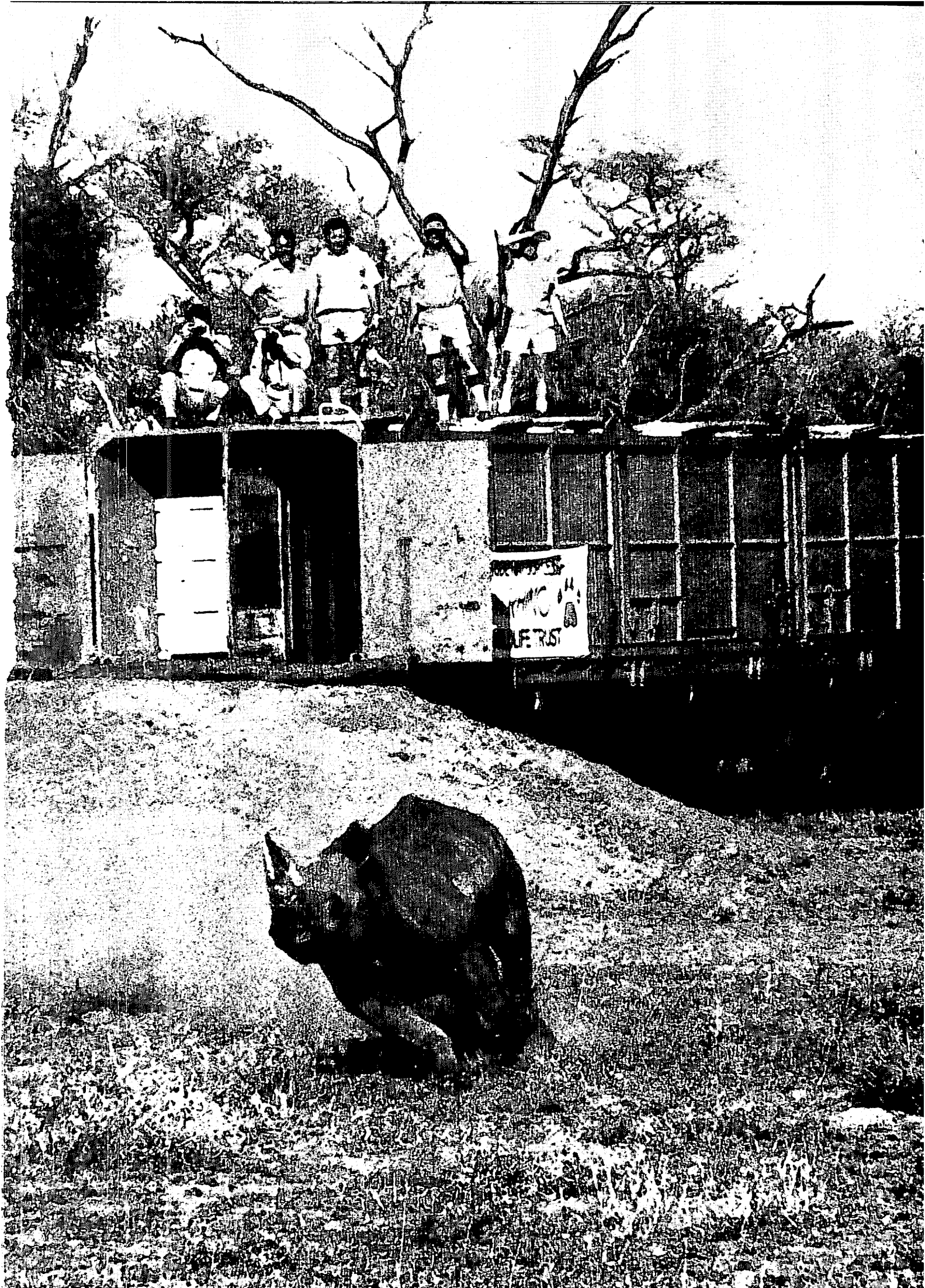
CONCLUSIONS

- 1(a) In the Republic of South Africa, black rhinos of the subspecies minor minor number about 610. There are five potential new areas for reintroduction.
- (b) In South West Africa, black rhinos of the subspecies bicornis bicornis numbers about 400. There are five new areas for possible introductions.
- (c) There are three black rhinos in two zoos, but only one animal is a pure minor.
2. The desert rhinos of Damaraland should receive special attention, and be conserved in situ rather than be translocated. Manpower currently deployed in the area should be maintained.
- 3(a) In the Republic of South Africa and South West Africa there are about 3 250 white rhinos (with only 70 in the latter). The Republic of South Africa has one new area for introduction, and South West Africa has three (these three total 2 000 sq.km).
- (b) Surveys of white rhinos on private land in the Transvaal and Cape Provinces should be completed.
4. Zoos have a definite role to play in the conservation of rhinos both with regard to public education and to the increase and maintenance of a viable captive population. If breeding is contemplated then hybrids must be excluded.
5. Several resolutions are suggested with regard to the trade in rhino products. These are:-
 - (a) IUCN should continue to monitor the international trade.
 - (b) A wildlife trade investigating officer be set up in southern Africa (or the Republic of South Africa), and this be recommended to NAKOR.
 - (c) The province's nature conservation ordinances need to be rationalised (via NAKOR).
 - (d) The Republic of South Africa representative to CITES should be asked to request more interest in the rhino trade.



- (e) Also, the independent homelands be asked to comply with CITES regulations (asked via NAKOR?).
 - (f) Zimbabwe be asked to raise with CITES the aspect of using disciplinary action against members not conforming.
 - (g) All rhino products in the Republic of South Africa and South West Africa be stockpiled until further notice.
 - (h) No rhinos be relocated into independent states unless there is a written understanding that the state abide by the CITES agreement.
 - (i) All fines should be made uniform in all countries of southern Africa.
6. It be recommended to NAKOR that a standard marking technique be used for rhino horns.
7. A committee be set up to guide rhino management, but particularly translocations, in southern Africa. A MUNC subcommittee of SARCCUS be asked to support this. Some questions to be addressed are the following:-
- (i) The validity of subspecies, especially minor and bicornis.
 - (ii) Should the black rhino be managed regionally, or provincially?
 - (iii) How to maximise genetic diversity, e.g. promote maximum calf production for a short time?
 - (iv) What to do with "surplus" rhinos - distribute them or shoot them? Or should there be a stud-book approach?
 - (v) Should our trade regulations refer to local rhinos only, or should the regulations take all of Africa's rhinos into account?
8. Advice is needed from the translocating authority as to how best to keep rhinos on private land. Some follow-up (by Natal Parks Board, or via the appropriate provincial authority) is required on translocated rhinos.

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