

South African Mammal CAMP 2002/3

Critically Endangered

Black Rhinoceros - arid ecotype

Diceros bicornis bicornis

This is a National Assessment

Taxonomy

1. Scientific Name / Ambiguities Authority (Date)

Diceros bicornis bicornis (Linnaeus, 1758)

LEVEL: Subspecies
 FAMILY: Rhinocerotidae
 ORDER: Perissodactyla
 CLASS: Mammalia

Common Names	Language
Black Rhinoceros	English
Swart Renoster	Afrikaans

3 subspecies currently found in South Africa. By far the most abundant is *Diceros bicornis minor* with isolated populations of *Diceros bicornis bicornis* and the extralimital *Diceros bicornis michaeli*.

2. Area of Assessment: South Africa

Provinces:	
	Eastern Cape
	North West Province
	Northern Cape
	Western Cape

Historical and Current Extent

HISTORICAL DISTRIBUTION: Widespread, occur over a bigger range than white rhinoceros throughout Sub-Saharan Africa. - See AfRSG action plan. This ecotype restricted to the western regions of Namibia and South Africa.

CURRENT DISTRIBUTION: Indigenous populations in a number of countries including SA, and Namibia.

CURRENT GEOGRAPHIC EXTENT: Northern Cape savanna / thornveld shrublands through the arid karoo and into the thickets of the Eastern Cape.

MIGRATION REGIONS: Nonmigratory.

HABITAT: 2-Savanna, 2.1 all latitudes, 3.5-Subtropical/Tropical Dry, 3.6-Subtropical/Tropical Moist. - **NICHE:** Browser occurring in the arid and semi-arid regions of the Northern and Western Cape extending into the xeric and mesic thicket of the Eastern Cape, sufficient browse and permanent water.

3-4. Occurrence and Occupancy

EXTENT OF OCCURRENCE: > 20,000 sq km. - **OCCURRENCE NOTES:** Although previously widely distributed the species now only exists in a few isolated pockets within its former range. The majority of these are on formal conservation areas although some Black Rhino are also held on private lands. The extent of occurrence for *D.b.bicornis* would be confined to that of the western portion of the country.

OCCUPANCY AREA: 501-2,000 sq km. - **OCCUPANCY NOTES:** Currently restricted to national parks in Vaalbos National Park, Karoo NP, Addo Elephant NP and suitable habitat in the AFNP previously.

5. Subpopulations

- NUMBER OF SUBPOPULATIONS: 1. - **NOTES ON FRAGMENTATION:** Isolated areas managed as metapopulations. Currently the subspecies is only present on Two of potentially 5 areas (AENP and VNP).

-A continuing decline in subpopulations? No

-Extreme fluctuations in Number of subpopulations? No

5b. Description of Subpopulations

Addo Elephant National Park		Area	142	km ²
GIS Latitude	Longitude			
Population 29	Low	High:	34	
Habitat:				
Comments: Mesic and xeric thicket of the Eastern Cape				

Vaalbos National Park		Area	220	km ²
GIS Latitude	Longitude			
Population 7	Low	High:		
Habitat:				
Comments: Kimberley thornveld habitats and shrublands				

6. Habitat status:

STATE OF HABITAT: Fragmented. **CHANGE IN HABITAT SIZE:** Decrease in Area. - **RECENT CHANGE:** < 20%. - **DURING HOW MANY YEARS?** 20.

- **PRIMARY CAUSE OF CHANGE:** Some increase in areas as rhino relocated to additional suitable areas. Possible loss of available habitat beyond current area of occupancy through agriculture and livestock ranching (specifically desertification in thicket habitats of the Eastern Cape).

CHANGES IN QUALITY: Stable.

NOTES ON QUALITY: Changes in habitat quality are variable and vary from region to region. Consolidation of areas into protected areas may improve quality of habitat

HABITAT NOTES: Favours dense thickets in the Eastern Cape and small acacia and riverlines elsewhere < 1m, not hidden by grass, also Euphorbiaceae. Prefer dense cover with sufficient browse in terms of palatable forbs, and broadleaved shrubs. Intra and inter specific conflict between rhino may increase in areas where densities are too high.

7. Threats:

Threat	now	future	under	rever-	have	rank
			stood	sible	ceased	

Habitat Loss (Human Induced)

1.1. Agriculture

Livestock ranching	Y	Y	N	N	N	3
Conversion of habitat by livestock (goats and sheep) in prime habitats adjacent to existing protected areas.						

Direct Loss/Exploitation

2.2. Trade

Illegal: Commodities	N	Y	N	N	N	5
Poaching is a concern but has as yet not affected these populations as there is adequate security. Demand for rhinoceros horn could fuel poaching effort						

Indirect Effects

3.3. Ecological imbalance

Competitors	Y	Y	N	N	N	1
Loss of individuals through conflict with elephant and other black rhino in high density situations. The ECC of areas needs to be carefully determined and managed through metapopulation management.						

Pathogens/parasites	Y	Y	N	N	N	2
Disease can cause local declines in the population (Babesia outbreaks have resulted in the loss of individuals at AENP). Could recur in future but possibly linked to drought and food availability as well settling in after translocation						

South African Mammal CAMP 2002/3

Diceros bicornis bicornis

Critically Endangered

Black Rhinoceros - arid ecotype

Intrinsic

7.4 Genetic

Inbreeding	N	Y	N	N	N	N	4
------------	---	---	---	---	---	---	---

Possible inbreeding with small founder populations, requires management as a metapopulation. Possible genetic research required.

Number of locations for serious threat: 0

Notes: Biggest threat remains illegal demand for rhino horn which feeds the poaching of the species. Adequate security and intensive monitoring can counter the effects of poaching incidents, but this is dependant on continued conservation effort and sufficient resources. There are localised concerns over habitat modification in the Eastern Cape as well as the outbreak of disease and inter and intra-specific conflict.

8. Trade:

Trade described as commercial; international

Parts in Trade: Horn
 Live animal

Effects: The continued trade in rhino horn may have a detrimental effect on local populations (particularly elsewhere in Africa). On the other hand the free trade in live animals has seen black rhinoceros established on private land in South Africa. There are small populations of *D. b. bicornis* on private land. A number of black rhinoceros has also been relocated to zoos across the world (largely *D.b.minor* and *D.b.michaeli* from SA). There is no legal trade permitted in rhinoceros horn which requires that animals are either poached or horn stocks raided. Unfortunately limited numbers of black rhino available result in low founder population sizes on private land. Populations need to have founder numbers of 20+ animals on land with an est. carrying capacity of 50+. Currently no hunting.

9-10. Population: numbers and trends

9A. Length of generation: 14 years - breeding pairs:

	Total Pop.	Mature
9B. Total Population:	< 50	< 50
10A. Recent past trends:	Stable	Increasing
10B. Will population decline?	No	No
Rate of decline (past)		For years
Predicted Rate (future)		For years

Percentage of mature individuals in one subpopulation: 81

The number of *D.b.bicornis* in SA is extremely low and there are currently less than 50 individuals on only two protected areas and a single private reserve at present. See 1999 records from Emslie & Brookes. There are currently efforts to increase numbers within national parks through the introduction of further individuals from Namibia.

11. Data Source

DATA SOURCE: Census Monitoring; Field Study; DATA QUALIFIER: Estimated; NOTES: The data are based on intensive surveys and monitoring of these populations as required for metapopulation management. Individual animals are identified and known to record lineage within the population. Info on private land from Hall-Martin & Castley 2001.

12. Recent Field Studies

Hall-Martin & Castley 2001 - survey on private land
Adcock - 2001 RMG carrying capacity models

Knight et al 1998 - species management plan within SANParks
Linklater, W. 2002 - dispersal success
Emslie, R. - Ongoing AfRSG monitoring
Buk, K. ongoing - diet and habitat use in the VNP, KRNP, and AFNP.
Wilson, S. 2002, Browse efficiency (AENP)

13. Status (Red List)

Assigned status Red List version Ver 3.1

Global: Criteria:
National: Critically Endangered Criteria: D

- NOTES ON STATUS: The status has been assessed globally by the African Rhino red list authority as CR A2abc. However, the trends in South Africa differ to those globally and the population is increasing even within the small subspecies population. The numbers of *D.b.bicornis* also appear to be relatively secure in Namibia.

Previous status

Global: Critically Endangered Date/ver. 2000
National: Vulnerable Date/ver. 1986

CITES: Appendix I. - NATL RED DATA BOOK: Vulnerable (1986).
OTHER LEGISLATION: Provincial ordinance, and CITES regulations.
PROTECTED AREA: Primarily but also on private land (recently increases in number of properties). - PROTECTED PLAN: See AfRSG Action Plan (Emslie and Brookes 1999).

Regional Assessment Data:

Regional population is % of global population
Is the regional population isolated? Yes
Migration between regional & neighbouring populations? No
Barrier between regional and neighbouring populations? Yes
Regional population enhanced by in-migrations? No
Regional population stabilised by in-migration? No
Is Regional population a sink? No

Notes: Isolated in national parks and a single private reserve. Supplementation only by further importation from Namibia and recruitment.

14. Research Recommended

Survey Studies; limiting factor research; epidemiology; - OTHER RESEARCH: Need to understand the impacts of other browsers in some areas as well as habitat changes in some donor populations.

15. Management Recommendations

habitat management; wild population management; monitoring; sustainable utilisation; limiting factor; work in local communities; Metapopulation management is required for the subspecies. (See management plan for black rhino within SANParks - Knight et al 1998)

16. Captive Breeding / Cultivation Recommendations

17. Facilities:

	Males:	Females:	Unsexed:	Total:
In captivity				

18. Level of Ex Situ Management Recommended

No ex situ programme is recommended.

Diceros bicornis bicornis

Critically Endangered

Black Rhinoceros - arid ecotype

3. Techniques to Propagate the Taxon

Techniques known for this taxon or similar taxon.

0. General Comments

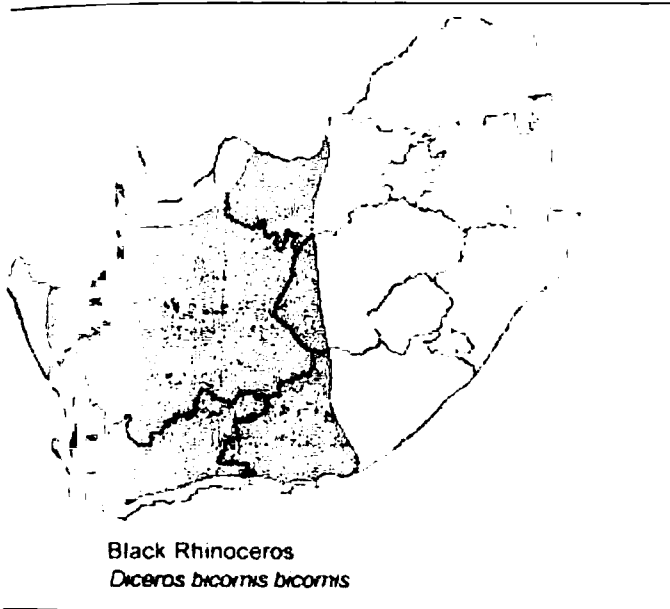
Black rhino in captivity suffer from build up of iron possibly related to captive diets.

1. Sources

- Emslie, R.H. & Brooks, P.M. 1999.
- Hall-Martin, A.J. & Castley, J.G. 2003.
- African Rhino Specialist Group, IUCN / SSC

2. Compilers

G. Castley and R. Emslie



Black Rhinoceros
Diceros bicornis bicornis

- Museum Records and Personal Observations
- Extent of Occurrence