

BLACK RHINOCEROS SSP
(*Diceros bicornis*)

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Introduction

The AZA Black Rhino SSP continues its attempts to develop self-sustaining populations of two subspecies or geographical varieties of the species as a back-up to wild populations and as a resource to conduct management-oriented research and generate funds for *in situ* conservation. The seven-year/50-year/and 100-year target population objectives are: *michaeli* 90/90/90 and *minor* 50/80/80. The goal is to preserve 90 percent of the gene diversity in the population for 110 to 150 years (i.e. 8-10 rhino generations).

Data table *D. b. michaeli* (current through 1 July 1998)

	Two years ago	One year ago	Current year
Participating institutions	27	31	31
World captive population	Not available	87.98 (185)	Not available
North American captive population	39.30 (69)	42.31 (73)	42.31 (73)
SSP animals managed	39.30 (69)	41.31 (73)	42.31(73)
SSP recommended births	3	3.0	1.2 (3)
Nonrecommended births	0	0	0
Deaths of SSP animals	1	0.3 (3)	1.2 (3)
Imports	0	0.4 (4)	0
Exports	0	0	0
Founders with descendants	38	39	38

Data table *D. b. minor* (current through 1 July 1998)

	Two years ago	One year ago	Current year
Participating institutions	10	10	9
World captive population	Not available	29.32 (61)	Not available
North American captive population	13.18 (31)	18.20 (38)	18.17 (35)
SSP animals managed	13.18 (31)	18.20 (38)	18.17 (35)
SSP recommended births	5	5.2 (7)	0
Nonrecommended births	0	0	0
Deaths of SSP animals	2	0	0.3 (3)
Imports	0	0	0
Exports	0	0	0
Founders with descendants	22	27	23

Current population status

The SSP population of *minor* is now growing at a healthy pace although during the last year numbers and founders decreased slightly. However, this decline is considered a statistical vagary and the trend for this population is still good. The population should attain its desired size of 80 in less than a rhino generation. The *michaeli* population is larger and nearer to its target population size but has been more or less stagnant for a number of years. According to the International Studbook for African Rhinoceros, the global captive population of *michaeli* is approximately 185, and of *minor* 60, for a total of 245. Wild populations of black rhinos are gradually recovering in most range states although the threat of significant poaching remains throughout Africa. Current numbers are estimated at 2,600, or 300 above the low point of 2,300 earlier in this decade.

Demographic trends

Reproduction is adequate but not optimal in *D. b. michaeli*; despite the lack of births this year, reproduction is vigorous in *D. b. minor*. A major demographic problem continues to be high mortality due to a complex of health problems (including hemolytic anemia, liver toxicities, encephalomalacia, various infectious, and a recently described peripheral vasculitis syndrome). However, with various preventative and therapeutic measures suggested

by the continuing research on these problems, mortality has declined appreciably over the last several years. The greatest demographic problem in *michaeli* now is the serious skew toward males in sex ratio of calves born in the SSP: 21 of the last 28 surviving births have been male. The pattern is now statistically significant. A similar trend, although not yet statistically, may be developing in *minor*. In an effort to redress this demographic imbalance, three females were imported over the last year from the *michaeli* population in Addo Elephant National Park in South Africa. A further importation of a captive-born female from Japan is being arranged as part of an exchange between the SSP and Species Survival Committee of Japan (SSCJ), which will receive two males from the North American population.

Population genetics

The genetic foundation of the *michaeli* population seems adequate at this time: there are 38 founders; gene diversity is about .97. The addition of new founder lines with animals imported for demographic reasons will further secure this situation. The genetic status of *minor* in the North American population is also sound. There are 23 founders with another one a potential. Gene diversity is about 0.96. There was a loss of representation of four founders this last year with the death of sole descendants; there is the possibility of recovering representation of one of these founders from the Australasian population. There is an ongoing effort to increase founder representation through recruitment of reproduction from nonbreeder founders already in the population.

Special concerns

The possible causes of the skew toward males in the sex ratio of calves needs to be intensively investigated to determine if there are possible management factors causing this pattern. Health and husbandry need to be improved to increase survival and reproduction in this species. Additional space for both subspecies needs to be increased and coordinated with each other and with the two other major rhino taxa in SSP programs, the white and Indian rhino. The Black Rhino SSP has been working in particular with the White Rhino SSP in hopes of moving white rhinos from selected institutions to open up more space for black rhinos. Better coordination is the reason for combining the black and white rhinos first in the African Rhino SSP Master Plan of 1994 and now in the totally consolidated AZA Rhino Master Plan of 1996. The question of whether or not to keep *michaeli* and *minor* as two subspecies is still pending and the possibility of a workshop on the issue remains under consideration.

Research

There are several major research projects in progress involving health, husbandry, nutrition, and reproduction of black rhino, under auspices of the AZA Rhinoceros Advisory Group and with funding from the International Rhino Foundation.

Progress toward goals

1. The SSP master plan was updated in January 1998 as a result of a workshop for all Rhino SSPs conducted at White Oak Conservation Center in November 1997.
2. An appreciable number of rhinos continue to be relocated in an endeavor to induce more reproduction. There are already positive results from these moves and more relocations are planned.
3. To continue redress of the demographic imbalance caused by the skew toward males in sex ratio of *michaeli* calves born in the SSP, three females have been acquired from the free-ranging population in Addo Elephant National Park, South Africa to which this subspecies had been translocated in the 1960s from Kenya.
4. Major research projects on health, nutrition, and reproduction are in progress with support from the International Rhino Foundation.
5. Captive habitat for black rhinos in North America has been and continues to be expanded through coordination with the White Rhino SSP.

Field conservation

The SSP is working with the International Rhino Foundation (IRF) to provide support for selected *in situ* projects throughout Africa.

Financial report

The Black Rhino SSP does not maintain a separate bank account but works through the AZA Rhinoceros Advisory Group account and the International Rhino Foundation.

Short-term goals for upcoming year

1. Implementation will continue of the 1998 SSP Rhinoceros Master Plan recommendations for black rhino comprising:
Matings: *D. b. michaeli*--29 *D. b. minor*--18
Transfers: *D. b. michaeli*-16 *D. b. minor*--9
2. Attempts will continue to reproduce all breeding age females, and recommendations will continue to wean calves as soon as possible to be able to expose postlactational cows to bulls.
3. Research effort will continue to determine if there are management factors causing the skew toward males in the sex ratio of black rhino calves born in the SSP.
4. The SSP will continue to interact with other regional *ex situ* breeding programs as well as *in situ* protection and management efforts. In particular, an additional female *michaeli* will be imported from Japan (under auspices of the SSCJ) to redress the current imbalance in sex ration in this SSP population. In return, a male *michaeli* will be provided to the SSCJ population.
5. The SSP space will seek more space for both *michaeli* and *minor* in order to achieve the carrying capacity of 170 animals.