

WHITE RHINOCEROS SPECIES SURVIVAL PLAN
(*Ceratotherium simum*)

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Introduction

With the importation of 4.15 (19) animals and 5.3 (8) births, the AZA White Rhino SSP is making great strides to address the demographic crisis that has been facing the species. Immediate concerns for the White Rhino SSP continue to be the demographic status of the population and the need for adequate captive space and herd management.

Data table Southern white rhino (*Ceratotherium simum simum*) (current through 15 July 1999)

	Two Years Ago	One Year Ago	Current Year
# participating institutions	39	39	41
Total captive population	55.65 (120)	54.64 (118)	60.81 (141)
# SSP animals managed	120	118	141
# SSP recommended births/hatches	3.2	1.0	5.3
# SSP non-recommended births/hatches	0	0	0
# deaths of SSP animals	3.5	2.1	2.0
# imports	0	0	4.15
# exports	4	0	0
# founders with descendants	39	39	39

Demographic trends

As has been reported in the past several years, the southern white rhino population has faced a demographic crisis. Less than 10% of the captive population is captive born and bred, numerous genetically valuable individuals have not reproduced, and the age structure is senescing (at least 55% of the population is older than 25 years of age). However, this past year, 8 births occurred and 19 animals were imported. These births and importations will significantly increase the genetic viability of the population. A particular concern of the SSP will be the recruitment of these new founder animals into the breeding population. As part of this importation program, organized by the International Rhino Foundation (IRF) and supported by several SSP-participant institutions, an additional 12 rhinos will be translocated from North America to Australasia. These animals will be the new founders in the Australasian captive white rhino population.

The SSP has acquired a new nonmember SSP-participating institution: Lion Country Safari, Florida. The recruitment of institutions such as Lion Country Safari, which can hold large herds of rhino, will be particularly important to the integrity of the population. Another AZA institution, Busch Gardens (FL), joined the SSP.

One of the male northern white rhinos previously held at the San Diego Wild Animal Park was returned to Dvur Kralove to facilitate breeding at that institution. To date, there has been copulation with the two younger females at that facility as a result of the transfer; however, no confirmed pregnancies. Currently, the northern white population in the U.S. consists of only 1.2 (3) animals (SD-WAP), none of which have reproduced. Furthermore, all are more than 20 years of age and thus may be post-reproductive.

Population Genetics

The genetic objective of the White Rhino SSP is to maintain 90% gene diversity for 110-150 years. This goal may be achievable if the current attempts at improved reproduction succeed. Additionally, the SSP will pursue the importation of another 2.4 animals this year.

The situation for the northern white rhino continues to look bleak. Without reproduction and with such a low number of founders, this population is not likely to be genetically viable without the global management of both captive and remnant wild animals.

Special Concerns

1. Demographic crisis: The major problem facing the White Rhino SSP that continues to require attention is the demographic status of the population. Reproduction to date has been sporadic across institutions, and only a few institutions have produced calves consistently. As noted previously, unproven breeders must be recruited into the breeding population in order to meet the population's genetic goals. The number of requests from institutions for animals exceeds the number of individuals available within the SSP population. The addition of the new founders and the births in the population this year are very promising and will assist the SSP in addressing this concern.
2. Continued need for large enclosures and social groups: Large captive spaces must be identified that can hold white rhinos in herd situations to encourage reproduction. There are a total of 86 adult spaces and 35 calf spaces in 13 facilities (current and proposed).

Research

1. Understanding basic reproductive biology to conserve the African rhinoceros (T. Roth (Principal Investigator), Center for the Reproduction of Endangered Wildlife (CREW)) To date, nine White Rhino SSP institutions are participating in an International Rhino Foundation (IRF)-funded project examining the basic reproductive biology of the African rhino. This project was initiated in 1997, and recently received additional funds to cover expenses and expand research directions. The project encompasses four studies with the following specific objectives:
 - A. To establish the reproductive status of the extant population by measuring reproductive cycle patterns via hormonal profiles and relating these data to reproductive behavior, seasonality and stress;
 - B. To determine the feasibility of noninvasively estimating time of ovulation;
 - C. To examine the impact of seasonality on male reproductive hormones;
 - D. To begin developing and testing the feasibility of transcervical artificial insemination;
 - E. To set the stage for the development of a rhino genome resource bank. Data collection included the collection of feces (to monitor hormonal patterns) and behavioral data (to identify behaviors that may correlate to estrus; coordinated by T. Wagener, Fort Worth). Results of this study are in press.
2. The International Rhino Foundation and Zoological Society of San Diego hosted a workshop on problems associated with the low rate of reproduction among captive-born female southern white rhinos. Few captive-born females of reproductive age have ever reproduced. The majority of these rhinos monitored by hormones have been found to be either acyclic or to demonstrate irregular cycles. Topics included extended luteal phases, ovulation induction and behavior. The White Rhino SSP supported and participated in this important project. The proceedings of the workshop are available from the San Diego Wild Animal Park.

Field Conservation

1. South Africa White Rhino Conservation: As part of the IRF and White Rhino SSP importation program, the captive community has contributed almost \$600,000 to *in situ* rhino conservation in South Africa.
2. Garamba National Park: With the support of many AZA White Rhino institutions and the newly formed International Elephant Foundation, the International Rhino Foundation has now assumed the lead NGO role for northern white rhino in Garamba. These efforts provide salaries and operating supplies for the anti-poaching patrol officers working in Garamba. This rhino population is under increased threats due to the continued political unrest in the country.

Progress Toward Goals

1. Compliance with SSP master plan recommendations is good. Over twenty rhinos have been transferred in the past two years.
2. A bachelor group of young males has been established to help address the "sibling relationship" syndrome that seems to occur when young white rhino, especially pairs, are placed together from an early age.
3. The SSP supported and participated in the workshop on reproductive problems in southern white rhino generously funded by the International Rhino Foundation and the San Diego Wild Animal Park.
4. Significant research projects have been funded which will set the stage for hopefully increasing the population growth rate and recruiting additional founders into the population.

Short-Term Goals for the Coming Year

1. Import 2.4 southern white rhino from South Africa.
2. Pursue and support additional reproductive research and individual animal evaluations.
3. Complete the biannual master plan analyses and recommendations.
4. Improve conditions to stimulate reproduction in those institutions holding the individuals that are not breeding.
5. Do not move females older than 21 years of age in an attempt to induce breeding. Rather, there should be attempts at inducing reproduction by hormonal treatment.
6. Designate most females older than 25 years of age (with a very few exceptions) as a surplus/research population. It is recognized that many of these animals may be lost as potential breeders, but remain important to social herd structure.
7. Continue the intensive reproductive assessment and management, including the hormonal manipulation of the three northern white rhinos.
8. Increase cooperation with Dvur Kralove to maximize the possibility of successful reproduction with the northern white subspecies.
9. Continue to facilitate and encourage the compliance with all master plan recommendations.
10. Support and conduct research leading to increasing the population growth rate and recruiting additional founders.

Financial Report

There is not a dedicated fund for the White Rhino SSP. White Rhino SSP research and conservation projects are supported both logistically and financially by the Rhino TAG and IRF.