

## WHITE RHINOCEROS (*Ceratotherium simum*)

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### Introduction

In spite of five births this year within the White Rhino SSP, the population continues to face a demographic crisis. Immediate concerns for the White Rhino SSP continue to be the demographic status of the population, the need for additional founders, and the need for adequate captive space and herd management.

### Data table (current through July 1997)

	Two years ago	One year ago	Current year
Participating institutions	42	42	39
Total captive population	53.71	55.67	55.65
# of SSP animals managed	124	120	120
# of SSP recommended births	1.2	2.1	3.2
# of SSP nonrecommended births	0	0	0
# of deaths of SSP animals	0.3	0.1	3.5
# of imports	0	0	0
# of exports	4	4	4
# of founders with descendants	38	38	38

### Demographic trends

The southern white rhino population is not self-sustaining and is in a demographic crisis. As indicated last year, only three percent of the captive population is captive-born and -bred, numerous genetically valuable individuals have not reproduced, and the age structure is senescing (46 percent of the population is older than 25 years of age).

As noted in the above data table, the managed population declined by four animals due to exports this year and there were five births within the population. Four of these births, however, were to previously proven breeders and only one was to a previously unproven breeder. A particular concern of the SSP is the recruitment of unproven individuals into the breeding population.

As reported last year, the northern white population consists of only 2.2 (4) animals, none of which have reproduced. Furthermore, all are more than 20 years of age and thus may be postreproductive.

### Population genetics

The genetic objective of the White Rhino SSP is to maintain 90 percent gene diversity for 110-150 years. This goal may be achievable if the current attempts at improved reproduction succeed.

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 requires immediate 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 to the SSP for animals exceeds the number of individuals available.
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). If transfer recommendations are completed and institutions are successful in managing the additional animals, these numbers would bring the target breeding population closer.
3. Transit deaths: Four white rhinos died within transit this year.

## **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 (additional institutions propose to join this effort). 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; and
  - e) to set the stage for the development of a rhino genome resource bank.Data collection is ongoing and includes 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 Zoological Park). Data collection will continue for 18 months from the onset of the project, which began in March 1996. Preliminary results of the first 12 months of data will be presented to the IRF and Rhino TAG this year.
2. Research populations: Twenty southern white rhinos, including 12 females, have been designated for research programs at both The Wilds and White Oak Conservation Center. Research priorities at these institutions are being evaluated. Additionally, reproductive research using ultrasonography continues at the Fossil Rim Wildlife Center (R. Radcliffe).

## **Progress toward goals**

1. Compliance with SSP master plan recommendations is good. Thirteen animals have been transferred to date based on the SSP and master plan recommendations.
2. Significant research projects have been funded that will set the stage for hopefully increasing the population growth rate and recruiting additional founders into the population. Additional research projects are being pursued by several individuals.
3. The AZA Rhino Husbandry Resource Manual (which includes sections on white rhino) continues to be requested. It has been distributed to more than 300 institutions throughout the world.

## **Financial report**

There are no funds at this time.

## **Short-term goals for upcoming year**

1. Continue to facilitate and encourage the compliance with all master plan recommendations.
2. Continue to support and conduct research leading to increasing the population growth rate and recruiting additional founders.
3. Hold another master plan workshop to analyze the current status of the population.