

## WHITE RHINOCEROS (*Ceratotherium simum simum*)

Species Coordinator and Studbook Keeper:  
Robert W. Reece, Wild Animal Habitat, Kings Island

### Introduction

The overall objective of the southern white rhino SSP is to develop a captive self-sustaining population to reinforce the wild populations in Africa as part of a global strategy. To that end, we will attempt to preserve 90% of the average heterozygosity obtained from the wild populations for a period of 170-200 years or 10-12 white rhino generations. Since there is a need to coordinate the use of resources by all of the rhino SSP programs, the southern white population will be reduced gradually over the next several years to approximately 100 individuals. Accomplishing this reduction will require that we also attain a minimum of 35 effective founders in order to achieve the demographic and genetic goals mentioned earlier.

The white rhino program was blessed initially with an unusually large number of potential founders as a result of the large influx of importations which occurred in the late 1960s and early 1970s. Unfortunately, most of these very young animals were placed as pairs where they remained into adulthood. A recently completed analysis of these animals indicates that none of the animals so placed has reproduced in its original location. With one exception, the same holds true for animals placed as trios. Institutions with multiple male/multiple female groups have invariably experienced breeding success. Since there is a limited number of facilities large enough to accommodate these groups, the SSP has endeavored to induce breeding by translocating specific animals. This usually has involved switching males between "pair" institutions and moving previously non-breeding animals to institutions which have enjoyed successful programs in exchange for animals that are sufficiently represented, at least for the near term. In terms of increasing founder representation, the white rhino SSP is still developing even though we have, through attrition, reduced the total number of animals currently managed by the SSP.

Data Table (current through 1 December 1990)

	Two years ago	One year ago	Current year
Participating institutions	48	41	40
Captive Population	61.75	58.74	58.70
# SSP animals managed	136	132	124
# SSP animals not required to meet goals	0	0	4
# animals in non-participant collections but desirable to SSP	0	0	0
Total births in SSP program	7	2	3
# surviving to one year	7	1	3
# of desired births	7	2	3
# of undesired births	0	0	0
# of deaths of SSP animals	3	3	3
# of imports	0	0	0
# of exports	1	1	8
# of founders with represented descendants	36	36	37

### Current Population Status

The captive white rhino population is currently being reduced through attrition and by exporting selected animals to the new Australasian program. Several non-productive animals have been placed in breeding situations and in some cases given reproduction examinations to determine their value to the SSP. There are indications that animals which have not bred by the time they are in excess of 25 years of age, probably will not breed. In 1988 and 1989, 34 potential founders were transferred to new locations in an attempt to stimulate breeding. The success of that project has not been determined as yet.

### Demographic Trends

Reproduction has fallen off during the past two years primarily due to the translocation program which has taken some of the more prolific breeders out of circulation. Additionally, we are attempting to insure that we don't produce surplus animals. Australia is still in need of more white rhinos but the animals which

are producing are well represented in the Australasian program. The population has remained stable, growing at a rate of slightly less than two percent if exports and planned surpluses are discounted. However, the population is aging and emphasis will soon need to be shifted to producing second generation offspring.

#### **Population Genetics**

While the current founder base is probably adequate, the fact that the remaining potential founders are approaching 25-30 years of age means that unless the transfers mentioned above provide sufficient stimuli to induce breeding in the very near future there is little likelihood that the founder base will increase perceptibly.

#### **Special Concerns**

As was mentioned earlier, in the late 1960s and early 1970s many of the imported white rhinos were placed as young pairs in zoos which could not accommodate larger groups. None of these animals ever bred in their original locations. The situation was nearly as bad for animals placed as trios. Institutions where animals were received in larger multiple male/multiple female groups invariably experienced breeding success. Much of the emphasis in the Master Plan has been placed on attempting to move animals previously kept in pairs or unproductive trios into breeding groups. Cooperation in this respect has been good and the effort is ongoing. However, some institutions are reluctant to transfer animals because of the costs involved.

#### **Research**

Research efforts have been sporadic and have emphasized primarily the need to gather reproductive data (on all species of rhino). It is anticipated that within the coming months the Rhino TAG will produce a set of priorities for research and provide the leadership necessary to develop a comprehensive program in which many institutions will be able to participate.

#### **Short-term Goals for Upcoming Year**

- (1) There are still eight animals which have been recommended for transfer and it is anticipated that at least four of these transfers will occur during the coming year.
- (2) A space allocation study already underway will be completed. This analysis will result in recommendations for each individual institution regarding what the propagation group feels is that institution's role in rhino captive breeding. It is expected that many of those facilities which only have accommodations for a pair of animals will be asked to consider switching to another species of rhino or to expand their facilities to accommodate a larger group of whites.