

## Concerns With Breeding F1 White Rhinoceros In Zoological Institutions

Randy Rieches, Curator of Mammals  
San Diego Wild Animal Park  
15500 San Pasqual Valley Road, Escondido, California 92027  
e-mail: rrieches@sandiegozoo.org

From its first exhibition in the Pretoria Zoo in 1946 until 1994, there has been the following statistical information recorded for the white rhinoceros:

Southern White Rhinoceros (*Ceratotherium simum simum*)

Imports = 256.347.2 = 605 (The first import was an animal at the Pretoria Zoo, July 29<sup>th</sup> 1946)  
Births = 253.217.5 = 475

Northern White Rhinoceros (*Ceratotherium simum cottoni*)

Imports = 9.12 = 21 (The first import was a pair at the Antwerp Zoo in April of 1950)  
Births = 1.3 = 4

The first recorded captive birth of a Southern White Rhinoceros was on June 8th, 1967 at the Pretoria Zoo. Of the 253.217.5 = 475 specimens born in captivity, 19.13.3 = 35 were stillbirths.

Captive longevity for a Southern White Rhinoceros male was set at the SDWAP with 35 years, 6 months.

Female longevity was set by an animal in Pretoria at 40 years, 8 months.

Recorded average gestation for the white rhinoceros is 514 days. (480 - 548)

The age of captive born female whites at first parturition has been recorded at 4 years 4 months and 4 years 11 months.

Female Ujima born 26 Feb. 1995 at the SDWAP - ISIS 695051 - SB #1051 will be the exception to this average as she is pregnant and is due April 1999.

Regarding the male at the birth of their first offspring (not at the time of mating), the time frame is 3 years 2 months and 4 years 4 months.

The shortest interval in days between captive births is 409, 451, 469, and 506.

| <u>Continent</u> | <u>Number of births</u> | <u>Year of first birth</u> | <u>Country</u> |
|------------------|-------------------------|----------------------------|----------------|
| Africa           | 32                      | 1967                       | South Africa   |
| Asia             | 68                      | 1978                       | Japan          |
| Australia        | 6                       | 1981                       | Australia      |
| Europe           | 128                     | 1971                       | Germany        |
| No. America      | 228                     | 1972                       | USA            |
| So./Ce. America  | 19                      | 1976                       | Mexico         |

The North American SSP population consists of 55.67 = 122 animals in 38 institutions, with 1.1 births and 2.2 deaths in 1998. (September)

In the SSP population the top 15 ranking males and top 30 ranking females have no living offspring in the United States. We have been able to reproduce founder Southern White Rhinoceros with some degree of regularity in both Europe and the US. Although some of the male and female founder population has not reproduced offspring, we believe that the major reason for this can be attributed to the historical management practice of keeping animals in pairs.

Of major concern now is the F1 population of animals in zoos worldwide. With an aged population of founders and the impending imports of new founders, the need to deal with F1's has never been more critical. We can not afford to make the same mistakes that we have inadvertently made with the white population in the past. It is believed that only 8% of the F1 population worldwide has reproduced.

The Southern White Rhinoceros collection at the San Diego Wild Animal Park has produced 43.42 = 85 offspring.

Historically there have only been three female F1's that have had the opportunity to reproduce at the SDWAP, one of which is currently pregnant.

Note: Statistical information from the Zoological Society of San Diego; the International Studbook and The Rhinoceros in Captivity by L. C. Rookmaaker 1998

#### Assumed Problems In The Reproduction Of F1 White Rhinoceros:

- \* Animals that are not cycling or appear not to be cycling
- \* Animals that do cycle and breed but fail to conceive
- \* Females that do not have the opportunity to breed
- \* Suppression of F1's by their dams
- \* Suppression of F1's by higher ranking females in the group
- \* Mate preference
- \* Medical cause
- \* Environmental factors