

## WHITE RHINO: A CRITICAL SPECIES

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My story of the white rhino begins on page 479, volume II of Lyddker's Royal Natural History. The author begins his description of the white rhino with a prophetic statement, "Alas, [the white rhino] is practically exterminated." This was in the year 1894.

By his accounts from hunters, in 1874 considerable numbers of these animals were to be found but by 1890 they had been completely exterminated in much of their former range. There seemed little concern toward keeping the white rhino species alive. One account says, "Mr. Selous was, however, only able to find a single specimen in Mashonaland and it was then thought that this animal, which fell to his rifle, was actually the last of its race." Still indicating little concern for the live animal, Lydekker writes, "The extirpation of this rhinoceros is the more to be regretted since our museums are badly off for specimens."

Our story on the white rhino could have ended here around 1896 to 1900. The white rhino was thought to have followed the quagga and bluebok into extinction. Not so, however, as two discoveries turned the fortunes of this beleaguered species around. In 1900 the northern white rhino was described for the first time from a skull sent by Major A. St. H. Gibbon from the west bank of the Nile in southern Anglo-Egyptian Sudan<sup>2</sup>, separated by some two thousand miles from the southern race. Further, a few individual southern white rhino were found to have survived in a small area of Natal in South Africa. This location was developed into a reserve especially for the protection of the white rhino and is now one of Africa's best known reserves - the Umfolozi.

Due to the extraordinary efforts of South Africans like F. Vaughn-Kirby, conservationist in charge of Umfolozi, the southern white rhino made a remarkable recovery, eventually spreading to the nearby Hluhluwe reserve. Today the southern white rhino has again reached a population of approximately 3,000 animals with over 2,000 of these to be found in the Umfolozi/Corridor/Hluhluwe Complex.

Even though the southern race of white rhino was thought to have numbered only about twenty animals, certainly no more than one hundred, at the turn of the century, it is now probably the most secure species of all rhinoceros.

The northern race, however, has not been so fortunate. Today they are said to be the most threatened of all African rhinos with approximately 700 individuals left and their numbers decreasing. Almost all are to be found in southern Sudan and northern Zaire's Garamba National Park.<sup>4</sup>

White rhinos in captivity have a short history. The first of this specie to be exhibited was a young female calf of the southern race delivered to the Pretoria Zoo on July 29, 1946. On January 16, 1949, a male was received and on August 23, 1952, another female was acquired. These animals came from the Umfolozi Game Preserve in Natal [Crandall].<sup>5</sup>

Outside of Africa, the first white rhino represented in a captive collection was of the northern race captured in the Sudan. This young pair arrived at the Zoological Gardens of Antwerp on April 7, 1950. Then in 1955 the London Zoo acquired a pair followed by pairs to the National Zoo in 1956 and St. Louis in 1957.<sup>5</sup>

The first southern white rhinos arrived in the U.S. in August and September, 1962. The South Africans as a part of the relocation plan shipped a group of eleven animals from the Umfolozi Reserve to Chicago, Milwaukee, New York, San Diego, and the Catskill Game Farm. Several other pairs were delivered to European zoos.<sup>5</sup>

According to a chart compiled by Tom Foose this Spring on numbers of all rhinos in captivity in North America, there are 172 southern white rhinos in 49 institutions in the U.S. with a total of 35 of these animals born in North America between 1977 and the Spring of 1982.<sup>6</sup> This may seem to be a fairly successful breeding record, however, a more in-depth study is needed to determine the relatedness of these captive born animals. For example, Dr. Ryder reports that even though the..."San Diego Wild Animal Park has been successful in producing offspring, the effective population size has been low due to the fact that all the young have been sired by a single male."<sup>7</sup>

I'm sure that many of you in this room can remember when only black rhinos were displayed in zoos. Then, when white rhinos became available, mainly through the South African relocation policy, the "in" thing to do was go for the white rhino. Today there are only 56 black rhino as compared to 172+ white rhino in North America.

Looking strictly at numbers, it might be concluded that there is no need for a breeding program for southern white rhino, however, we all know of other popular species that seem to prosper under captive conditions, then with the death of a few key individuals, the whole situation took a downturn.

There are a number of reasons for this: 1) second generations failing to reproduce, 2) close inbreeding over an extended period may result in loss of fertility, greater infant mortality and congenital diseases and, 3) loss of interest in maintaining a species considered common or that "everyone is raising."

Any one or all of these factors could result in serious problems for captive white rhino if a well planned, cooperative, master-breeding plan is not developed. Then too, it is difficult to ignore the possibilities of social upheavals and wars in the area containing two-thirds of these animals. Some twelve years ago conservationists were recommending moving the northern white rhino into areas of Uganda, thinking they would be better off there than in the northeastern Congo and southern

Sudan. Today the African Rhino Specialist group is calling for just the opposite. Just recently, the June 1982 issue of Oryx magazine reports that the northern white rhino is now thought to be completely exterminated in Uganda.<sup>8</sup>

As a good friend, Pat Quinn, once remarked "there seems to be more plans for saving rhinos than there are rhinos to save." However, it seems the best approach is to consider all the species of rhino together when developing conservation programs for captive populations as it must be taken into account that our collective facilities can only accommodate just so many rhinos of all kinds and that time and money must be allocated among many projects.

There is no definite master-breeding program at this time, however, several aspects of such a program are being discussed. Basic to white rhino breeding program is their gregarious habits and good nature (compared to their black cousins). Experience with the captive breeding of this species indicates that simple pairs do not reproduce well, therefore, an attempt should be made to form small herds from animals now existing as pairs or singles. It is hoped that several zoos can modify their exhibits to house more individuals and for those that cannot, or do not wish to, will be willing to translocate their white rhino and substitute a rhino specie that reproduces well in pairs.

Also, being investigated is the possibility of developing herds of white rhinos on two or more ranches. A project of this kind can be quite complex, however, I am optimistic that the details could be worked out rather rapidly if such an action is decided upon. Much of a program for rhinos on ranches could follow the framework of our other two zoo/ranch programs. Much experience has been gained towards obtaining joint cooperation between landowners and AAZPA representatives, developing loan agreements, transportation, choosing founder stock and the like.

Such details as fencing, shelter, nutrition and veterinary care have been discussed at great length with many good ideas being voiced. The problem of containing white rhinos under ranch conditions might not be as difficult as was first anticipated. There are a number of institutions that have experience with maintaining rhinos under similar conditions. Some of the more notable examples are: the Natal parks with their programs of containing rhino within fenced reserves; Hunt's International Animal Exchange with rhinos behind chain link fencing at their drive-through parks; San Diego with rhinos at the Wild Animal Park and the Texas Safari Park with a small breeding herd being maintained behind ordinary woven wire fence.

Suitable shelters should not be too difficult to provide in the moderate climate of South Texas. Housing with plenty of skylights, radiant gas heaters and the use of solar energy can be designed to give maximum low cost comfort to the animals during the two to three months of cold weather.

Given pastures with a good supply of grasses, the white rhino, being a grazer, could obtain much of its nutritional requirements from the land, thus reducing the cost of feeding these megaherbivores.

The more tractable white rhino may also be used to serve other rhino programs through observation and study of life cycles, physical requirements and for more exacting research into such things as super-ovulation, artificial insemination, and embryo transfer.

Concerning sub-species, much discussion has taken place as to whether or not the AAZPA's Species Survival Plan should try to deal with sub-species as separate breeding groups. At least for the white rhino, it seems that sufficient differences have been demonstrated to warrant conservation programs insuring the continued existence of both the southern and northern races. Recent investigations by George, Puentes and Ryder of the San Diego Zoo's Research Department indicate that substantial species differentiation between the two sub-species with a split from common ancestry some two million years ago.<sup>9</sup> Additionally, Dr. Kes Hillman, chairman of the IUCN/SSC AFRICAN RHINO GROUP writes that "Taxonomically the northern sub-species has a smaller head and tooth row (236-280) than the southern (C.s. simum) 270-305, considerably less dorsal concavity in the skull and the adults lose all body hair, in contrast to the southern. They look different being shorter legged and longer bodied, with lighter heads and occupy somewhat different habitats."<sup>10</sup>

The IUCN African Elephant and Rhino Specialists Group has targeted the northern white rhino for number one priority ranking in their rhino conservation programs. Under their recommended field action the following items are listed in priority:

- 1) "Strengthen the "captive herd" of northern white rhinos by centralising the animals presently held in captivity into a single viable and productive breeding unit.
- 2) The captive breeding herd should be strengthened by capture and translocation of a few animals from the wild...
- 3) The white rhino population of Garamba is considered...to have the greatest biological and conservation value and to be the most viable. ...the meeting urges that the greatest effort should be devoted to securing the safety of white rhino in Garamba.
- 4) Apart from Garamba National Park the southern Sudan is the only other country in which wild northern white rhino still survive... [recommends] securing the preservation of at least one viable population unit in the southern Sudan."<sup>11</sup>

The two main objectives of the White Rhino Propagation Group for the coming year will be to pursue the possibilities of translocating the southern white to form herds, thus making room for other rhino species while fostering a better condition for the reproduction of whites and to look into the possibilities of assisting the IUCN's northern white rhino conservation program.

## REFERENCES

1. Lydekker, Richard B.A., FRS., etc. The Royal Natural History, Frederick Warne & Co. 1894.
2. Mochi and Carter, Hoofed Mammals of the World, Charles Scribner's Sons, New York, 1953.
3. Owen-Smith, Norman, The White Rhino Overpopulation Problem and Proposed Solution - as presented in - Problems in Management of Locally Abundant Wild Mammals, edited by Peter A. Jewell & Sidney Holt, associate editor, Donna Hart, Academic Press, 1981.
4. Anon., Oryx magazine, February 1982, p. 274.
5. Crandall, Lee S., Management of Wild Mammals in Captivity, The University of Chicago Press, Chicago, 1964.
6. Foose, Thomas Ph.D., AAZPA Conservation Coordinator, chart of "Rhinos in Captivity."
7. Ryder, Oliver A. Ph.D., San Diego Zoo Research Department, letter to Ed Schmitt, Chairman WCMC, May 11, 1982.
8. Edroma, Eric L., White Rhino Extinct in Uganda, Oryx, Volume XVI No. 4, June 1982, p. 352.
9. George, Matthew, Jr., Puentes, L.A., and Ryder, Oliver A., Genetic Differences Between Sub-species of White Rhinoceros, manuscript, San Diego Research Department.
10. Hillman, Kes, Ph.D., Chairman, IUCN/SSC AFRICAN RHINO GROUP, letter to Tom Foose.
11. Cumming, D., summary, "Final Priorities for the Action Plan," IUCN African Elephant and Rhino Specialist Group Meeting, Wankie National Park, Zimbabwe, July-August 1981.