



Sadly, there are less than 10 northern white rhinos left in the world, 3 of which are at the Wild Animal Park. This handsome fellow is Angilifou, the Wild Animal Park's male.

in reserves today, were not accustomed to being around people and trucks. They were wary of their new Wild Animal Park home, and the animal care staff was cautious around them as well. "I remember going out into the field enclosure to fix a drinker," said Dr.

Killmar. "I had to get out of the truck, and just a few feet away was a large, several-ton white rhino watching me. It was very unnerving, but after awhile, the rhinos got used to us."

This first group of southern white rhinos *Ceratotherium simum simum*, the founders of

the Wild Animal Park's breeding program, consisted of a male and eight females. On October 11, 1972 the first calf, a male named Zibulo (which means "first fruits of man" in Swahili), was born into this herd. The first calf was a big event for us, and animal care

We now know that it is not so much the size of the space they live in but the company they keep that inspires white rhinos to breed.

White rhinos are relatively social animals that live in herds of related females. Studies indicate that the pres-

ence of these females helps regulate breeding among the group. White rhinos kept as only one female paired with one male do not have the same breeding success as those kept in herds. The best grouping seems to be a herd of females with a few males that can move in and out of the presence of the herd. It appears that breeding behavior is strongly linked to the size of the female herd. By creating a herd of females

in a large enough space that allowed males to mingle or not, Dr. Schroeder overcame the barrier that was hindering the reproduction of this species in zoos. Since our first calf, the Wild Animal Park has successfully had more than 90 southern white rhino births. This represents more births of this species than any zoological institution in the world and has earned the Park recognition from the American Zoo and Aquarium Association (AZA). Of our founding herd, a number have passed away due to old age. We still have three founders, Nthombi, Komaas, and Mjuba. These three females, each over 30 years of age, are some of the oldest rhinos in the world and have given birth to 32 calves between them.

This is a success story for the Park, yet we still have a lot to learn about rhino reproduction. In 2006, researchers from the Zoological Society's department of Conservation and Research for Endangered Species (CRES) are launching a new study into white rhino reproduction. This study—which is supported in the United States by the Heller Foundation and in Africa by the International Rhino

Foundation—will look at reproduction in later generations of captive rhinos. Scientists hope to determine if there are social effects at work, if older animals like our three remaining founders influence the reproduction of their adult children. They also plan to investigate if nutrition plays a role in reproductive success.

Southern white rhinos are doing well in zoological settings. With protected reserves and laws against poaching, their numbers also appear stable in the wild. Unfortunately, not all rhino groups have been so lucky. The northern white rhino *Ceratotherium simum cottoni* is a subspecies that has reached a critical juncture and may go extinct in our lifetime.

Northern white rhinos are found only in a small area of Africa, around the Democratic Republic of Congo. They are very similar in appearance to southern white rhinos, although they tend to have larger horns and heads. The real difference, however, is in their DNA. In 1983, Dr. Oliver Ryder, a geneticist at CRES, characterized the differences. He published a paper making it clear that northern and southern white rhinos were two subspecies that would not normally interbreed. A survey

TACKLING WHITE RHINO BREEDING CHALLENGES

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A group of female southern white rhinos lounges by the waterhole at the Wild Animal Park.

The white rhinoceros captive breeding program faces one of the most mysterious and intractable problems in the zoo community. Many of the founding population reproduced well, but reproduction among first generation females has been extremely limited in zoos. Most of the wild-caught females that drove population growth are beginning to die off from old age. Now a looming crisis faces the worldwide captive population—if this problem is not solved soon, it will be necessary to bring in more wild rhinos to keep the captive population from going extinct.

I began to address this problem nearly 10 years ago, working with CRES endocrinologists on both captive and wild populations. While there have been many advances, we still cannot answer the elusive question, "Why don't captive-born females reproduce?" Apparently the problem starts during the early development of the females. We know that mating behavior is normal, so the problem is either poor conception or premature pregnancy termination. In a new development, I have just commenced a study funded

by the International Rhino Foundation trying to "mine the data" in the hands of managers of small private game reserves in South Africa. Two assistants will spend the next year traveling the country interviewing these managers about the history and breeding success of these rhinos.

On the home front, Lisa Nordstrom, funded by a generous donation from the Heller Foundation, will join us at CRES to tackle this problem from different angles. Lisa comes to us from Utah State University, where she is finishing her dissertation on rhino and tapir management and breeding. As the Heller Fellow, she will develop and circulate a questionnaire to zoos around the world. It will address the precise management circumstances that each captive-born female experienced during development, and determine how this influenced reproduction later in life. She will also analyze data from rhino "stud-books" and re-examine some of our behavioral data collected at the Wild Animal Park. With a little luck and a lot of hard work, Lisa may help us finally to get to the bottom of this perplexing conservation problem.

The Wild Animal Park has successfully had more than 90 southern white rhino births.



staff from all over the Park came out to see him. Pretty soon there were a number of other white rhino calves, and each one was a significant event and an important addition to the world population.

The Wild Animal Park's success appeared to indicate that large spaces were necessary for white rhinos to breed. A number of accredited zoos began following the Park's lead, building larger spaces for the rhinos in their care.

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More than a big statue: Since 1985, this life-sized bronze of a southern white rhino has been a big hit with children at the Wild Animal Park. It is also the symbol of the Park and a tribute to the late Anderson Borthwick, who as president of the Society's board of trustees arranged for the rare southern white rhinos to come to the Park from South Africa. Rancho Bernardo artist Wilfred Boettiger was commissioned to sculpt the one-ton bronze, which reminds us of a species that was once endangered and is now thriving.



The herd of southern white rhinos at the Wild Animal Park has done very well in the last 34 years, and more than 90 frisky little calves have been born there.