

ENDANGERED SPECIES

Technical Bulletin Reprint

Wildland Management Center
School of Natural Resources
The University of Michigan

Return to the Wild

Zoos, Wildlife Parks Reintroducing the Mongolian Horse to the Wilderness

by Dave Smollar

SAN DIEGO — For 2,000 years, Chinese literature referred to wild horses roaming the steppes and deserts of western Asia.

But by the late 19th Century, when scientists finally confirmed the existence of the Mongolian wild horse — the only wild horse species in the world — its survival in the wild was already precarious. And in the past quarter-century, the animal, also known as the Przewalski horse after the Russian who discovered proof of it, has become extinct in its natural habitat.

The species is being kept alive, however, through the efforts of about 70 zoos and wildlife parks in North America and Europe. And plans are under way to reintroduce the horses to the wild in the next decade.

Herds are to be formed from the hundreds of Przewalskis successfully bred in captivity, some from the largest North American collection at the San Diego Zoo and Wild Animal Park and others from the world's most extensive preserve in the Soviet Union's Ukraine.

Scientists have had to develop a new breeding program to increase the horses' chances of survival in the wild.

If the program meets its goal, either by its tentative 1991 date or later, it will represent another notch in the efforts of zoologists to place endangered or extinct-in-the-wild animals into as natural a state as possible.

In the case of the Mongolian wild horses, "the effort started as a labor of love and scientific interest among many zoologists in the 1960's," said

geneticist Oliver A. Ryder of the research department at the San Diego Zoological Society. Ryder spoke at a United Nations-sponsored conference in Moscow on the Przewalski last year, where the 1991 target date was set.

"The 1991 date is optimistic," Ryder said, explaining that it assumes "remaining conflicts will be resolved and that government-to-government problems can be minimized."

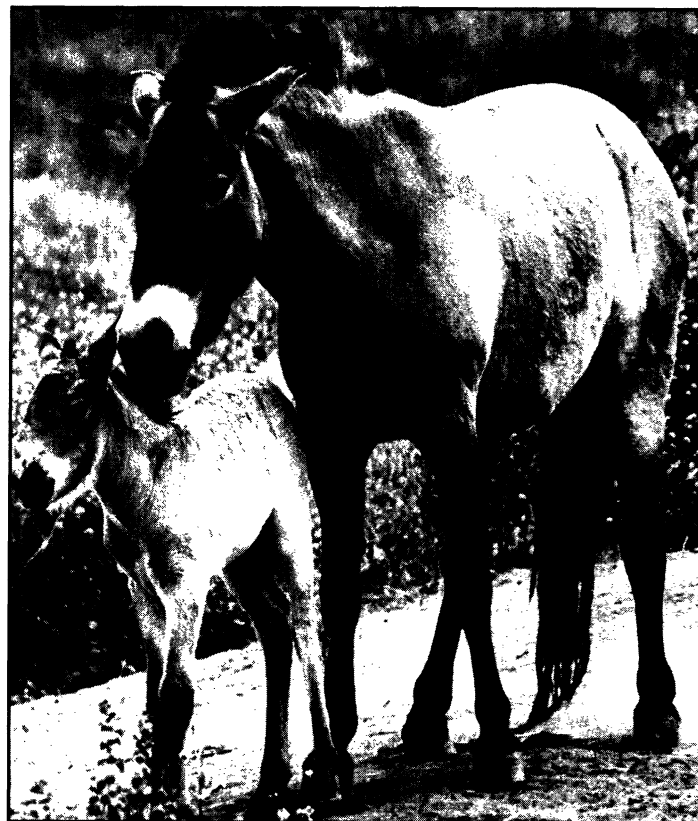
The Chinese, who want to reintroduce the horse in wilderness areas of their country, did not participate in the Moscow meeting. Their program,

which will receive a stallion from San Diego in September for breeding purposes, might proceed apart from U.N. plans, according to Jim Dolan, general curator for mammals at the zoological society.

Problems include the lack of expertise in Mongolia, which has no zoos and no experience in handling endangered animals, Dolan said.

In 1881, Russian nobleman and explorer N.M. Przewalski sponsored the first expedition to obtain a carcass of

Please turn to the next page



Przewalski's horse:
The only wild horse species in the world is now extinct in the wild.

Zoological Society of San Diego

Mongolian Horse continued

the only species of never-domesticated horses. Even after the skeleton was displayed in St. Petersburg (now Leningrad), most scientists remained unconvinced that the animal was truly a horse, pointing out its stocky, mule-like appearance.

Proof of its wild status was not solid until the Duke of Bedford captured Przewalskis and bred them at his Woburn Abbey game preserve in England around the turn of the century. Even in captivity, they would not be tamed.

The population of the tan, white-snouted horses shrank in their natural habitats — Mongolia, the eastern Soviet Union and western China — under competition from large numbers of domestic animals for limited water sources. The horses also were hunted by nomads who considered them pests good only for their skin and meat.

A Przewalski was last taken from the wild in 1947 and no sightings — even unconfirmed — have been made since the early 1960s.

But there are at least 700 of the horses in captivity, with the numbers growing by perhaps as many as 100 a year. The official studbook for births worldwide is kept by zookeepers in Prague, Czechoslovakia. The lineage of all the horses can be traced back to 12 animals, 11 captured at the turn of the century and the 1947 catch, a mare named Orlitza.

Ryder coordinates a 7-year-old cooperative breeding program among nine North American zoos. In one exchange, a stallion brought to the Bronx Zoo from the Moscow Zoo was transferred in 1983 to the San Diego Wild Animal Park, where he impregnated seven mares before suffering a fatal back injury last year.

"Breeding programs have had astounding successes everywhere," Ryder said. "And our own herd in San Diego is magnificent." It now includes 11 males and 18 females.

sionally kill their young, something that happened once last year at the San Diego Wild Animal Park.

"You have to remember that we don't understand their biology all that well, and that real studies of their behavior . . . only have begun in the last 10 years at spacious zoo environments," Ryder said.

Dolan said the Askania Nova wildlife preserve in the Ukraine most closely approximates the Mongolian habitat and will be the test staging area.

He said the horses will not be completely free of human intervention even after the releases begin, citing the management necessary throughout Africa to preserve elephants and other large mammals in national game parks.

"If the animals can be put into a secure area, with sufficient water and feed, I see no problems scientifically."

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"San Diego has made a major commitment," Ryder said. "We've got two major breeding groups, one on-exhibit and one off-exhibit, and a group of bachelor males off-exhibit. Those males can be sent around the world as they near breeding age. We're also working with research on semen collection, on artificial insemination, so that perhaps we could freeze away representative semen in case a catastrophic epidemic ever occurred."

One of the prerequisites for the release program will be placement of an initial herd in an area closely resembling the wild, but where the horses can still be controlled and watched for behavioral or genetic problems. One unanswered question is whether stallions more than occa-

Avian Reproduction Center at the San Antonio Zoo

by Mary Healy

The bird department at the San Antonio Zoo is counting its chickens before they hatch by anticipating a productive breeding year, thanks in part to a new off-display bird facility completed last October. The "Avian Reproduction Center" (ARC) was made possible by a Conservation Grant received from the Institute of Museum Services, an independent agency within the National Foundation for the Arts and Humanities. The agency was established in 1976 to assist museums and zoos in their efforts to preserve the nation's cultural, historical and scientific heritage. The Conservation Grant was made available to zoos in 1984 and enabled them to receive assistance in the areas of improved nurturing, research or training. The \$20,000 received from the IMS was matched by a donation from Mr. and Mrs. Rugeley Ferguson of San Antonio.

The bird collection at the zoo is among America's largest and most significant in terms of rarity and captive reproduction. Seventy of the 225 species hatched young in 1985. Prior to the completion of the ARC, all reproduction was subject to the pressures of visitors (over a million a year) and the necessary maintenance that a public display requires. The ARC provides privacy that was never before possible.

The choice of species for the facility is based on several considerations. Naturally, rare and endangered species take priority, but the gene pool available in captivity is also an important consideration. Most species are represented at the San Antonio Zoo by two or three pairs, in the hope of producing unrelated offspring to surplus to other zoos. The ARC provides the means to do this without being repetitive in exhibits.

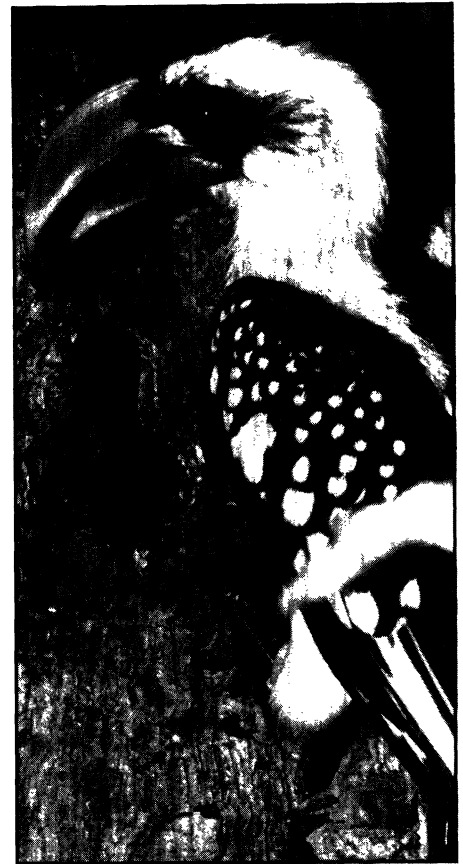
The facility was designed "strictly for the birds". The units vary in widths from 8' to 11'. All are 7½' high and 26' long. Half the floor area is soil and is planted with grass, shrubs and trees to provide natural cover. Species housed there are able to tolerate the

mild San Antonio winters with only a radiant heater and a roof over half the cage area. Built-in feed doors minimize disturbance of the birds.

The support received from the federal government, the community and the zoo administration is indicative of the changing trends in zoo animal management. Zoo aviculturalists recognized the need for improved captive avian reproduction early in the 1970's when import restrictions increased. Since that time, the number of birds raised in zoos has increased dramatically. Changing attitudes among zoo professionals have also been a significant factor. The days of competing to have exclusive honors on a captive breeding have passed. Efforts are now made to share information and work cooperatively, concentrating on key species.

The public's attitude has also undergone significant changes. Wildlife films and television programs have made the zoo visitor more aware of the importance of zoos and their conservation efforts. There is a growing interest in seeing the animals in exhibits replicating the natural habitat. The result has been that zoos are constructing larger, more complex exhibits, such as rain forest habitats and other walk-through and mixed-species exhibits. While these are very educational, they do present a challenge to the aviculturalists who are attempting to propagate birds. The difficulties encountered in managing animals in an exhibit of this type are much greater than those in less attractive, but more accessible single-species cages. The birds are subjected to inter-specific as well as intra-specific pressures such as they encounter in the wild. These changes in exhibit practices have made it necessary to have controlled areas, such as the ARC, where the concentration can be solely on reproduction.

Since its completion in October of 1985, the ARC has given every indication of becoming a success. The first eggs were laid within three weeks of its opening by a green junglefowl. A



Jackson's hornbill
(*Tockus deckeni jacksoni*)

photo by Rob Gramzay, San Antonio Zoo

pair of blue-crowned pigeons produced their first fertile egg in December after being in the collection for several years without such success. A pair of Jackson's hornbills have already gone to nest, with the female sealed up in the plywood nestbox provided, just as she would be in a tree cavity in the wild. Other species showing breeding potential are spot-billed toucanets, red-fronted macaws and hawkhead parrots.

The San Antonio Zoo is optimistic that the new Avian Reproduction Center will be a significant addition to its already notable captive breeding program.

Mary Healy is the Curator of birds at the San Antonio Zoo.

Resources. . .

News from the Society for Conservation Biology

The interim governing board of the new Society for Conservation Biology met in Washington, D.C. on March 20, 1986. David Ehrenfeldt has been selected as the editor of the society's journal, which will be published by Blackwells.

The first annual meeting of the society will be in Bozeman, Montana, in June 1987, together with the meetings of the American Society of Naturalists and the Society for the Study of Evolution.

A membership drive for the society is planned for this fall. Financial support to date has been provided by the New York Zoological Society and the Chicago Zoological Society.

New Publications

TRAFFIC (U.S.A.) staff has prepared fact sheets written for the layperson on five trade subjects: psittacines, elephant ivory, primates, rhino horn, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Up to 50 copies are available free by writing TRAFFIC (U.S.A.), 1255 23rd Street, N.W., Washington, D.C. 20037.

Meetings

September 21-24. "Natural Forum on BioDiversity" will be held at the Smithsonian Institution, Washington, D.C. with advance registration required to obtain free tickets for sessions. For registration form write: National Forum on BioDiversity, Directorate of International Activities, Smithsonian Institution, Washington, D.C. 20560; (202) 357-4281.

September 21-26. The Institute of Tropical Forestry, USDA-Forest Service, is presenting a conference, "Management of the Forests of Tropical America: Prospects and Technologies", in San Juan, Puerto Rico. Registration fee of \$35.00 includes box lunch for fieldtrip and copy of conference proceedings. Contact Julio C. Figueroa, Institute of Tropical Forestry, P.O. Box AQ, Rio Piedras, Puerto Rico 00928; (809) 763-3939 for further information.

September 28-30. The Environmental Policy Institute is sponsoring a "Citizens Conference on Tropical Forests, International Environment and The World Bank" to be held in Washington, D.C. Registration fee is \$25. Contact: Environmental Policy Institute, 218 D. Street, S.E., Washington, D.C. 20003; (202) 544-2600.

Resource information provided by Jane Villa-Lobos, Smithsonian Institution.

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