



**Wild horses return to the Mongolian steppe: more than 30 years after the true wild horses disappeared from the Mongolian steppe, Jo Eede reports on a conservation initiative that aims to reintroduce a viable population into its natural environment. (Przewalski's horse).** Jo Eede. *Geographical* 76.8 (August 2004): p81(4).

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On a cold morning in October 2003, I left Khovd, a small town in western Mongolia, and headed towards the Gobi Desert in an old Russian Jeep. It was a nail-biting ride. We steered erratically away from oncoming trucks--horns blaring, white dust rising. My fellow passenger, a German biologist, told me I'd get used to it. "Mongolia has been a horse-based culture for thousands of years," he said, "and they drive as if on horseback. Drivers here forget that cars don't naturally steer away from each other."

I'd travelled to Khovd to learn about the world's last wild horse, Przewalski's horse--known to Mongolians as the takhi. Two hundred years ago, huge herds of takhi roamed the grassy steppe. Short and stocky, with large heads, short manes and zebra-like stripes on their legs, they were fast, stubborn, skittish and had never been ridden. Until the late 19th century, they were unknown to the Western world; within 80 years, they were all but extinct.

Mongolia lies in the region where the Gobi Desert, the Siberian taiga forest, the Central Asian steppe and the Altai Mountains converge. It is a huge, land-locked country three times the size of France, and contains the Northern Hemisphere's last significant grassland ecosystem. Steppe once made up a quarter of all natural vegetation on Earth, but today it can only be found in a pristine condition in Mongolia.



In 1879, the Russian Tsar asked geographer Colonel Nikolai Przewalski to explore Mongolia. While crossing the border between Kazakhstan and China, he was given the skull and skin of a horse that had been shot in the Dzungarian Desert of northwestern China. Mystified, he sent them to the Zoological Museum of Academic Science in Petrograd, where it was confirmed that they came from a species previously unknown to science. And in 1881, the new species--named *Equus przewalskii* after the colonel--was formally described.

Przewalski's extraordinary discovery prompted a 'horse-rush' that marked the beginning of the takhi's decline. European enthusiasts made their way to Mongolia to claim the novelty horses for their zoos. The stallions evaded capture and were shot; the weaker foals were caught. Many died on the Trans-Siberian journey to Europe, although a number survived to establish breeding populations in European and US zoos.

By the start of the Second World War, encroachment by nomadic herdsmen into takhi pastureland had forced the remaining horses to the fringes of the Gobi Desert, where starving Kazakh soldiers retreating from Chinese forces slaughtered the herds. In the years that followed, a punitive mix of cold winters (-40[degrees]C), hot summers (40[degrees]C) and a wolf population with a healthy appetite ensured that the last takhi vanished from Mongolia in 1968.

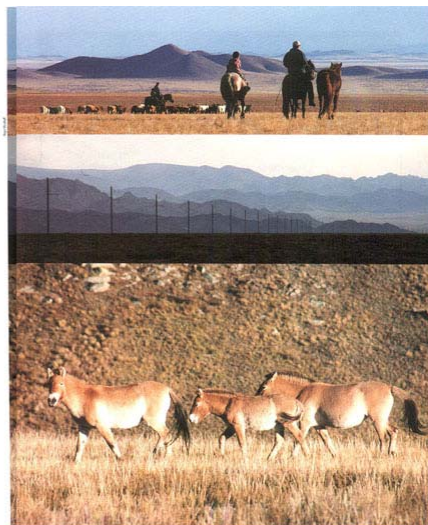
But now, that is all changing. In September, 12 takhi--three stallions, two yearlings and seven mares--will be flown from a reserve in the Lozere, southern France, to Khovd and then on to a 6,000-hectare reserve called Khomiin Tal on the border of Khares-Nuur National Park. They will form part of a revolutionary project--which began almost 15 years ago--to return Mongolia's wild horse to its homeland.

A nomadic race, Mongolians define themselves as "the people of five animals": horses, sheep, goats, camel and cattle. Horses are prized above all others--one horse is traditionally worth ten goats--and are still an integral part of daily nomadic life. Airag, the national drink and a daily staple for all nomads, is made from fermented mares' milk. Boys are taught to ride as soon as they can walk, learning on silver-engraved leather saddles that are passed down through the generations. In the 'land of the blue skies', there are as many horses as there are people, and they are believed to be the messengers of the gods.

In Khovd, I met Claudia Feh, one of the world's leading wild-horse experts. Feh is a founding member of the Association pour le Cheval Przewalski (TAKH), which is managing the reintroduction programme in Khomiin Tal.

Khovd was without water when I arrived--the Russians, who control the supplies across the border, had turned off the tap, annoyed by the latest unpaid bill. The after-shock of a large earthquake in the distant Siberian mountains was still moving the ground beneath my feet, a neighbouring province had been quarantined due to an outbreak of bubonic plague and unseasonable blizzards had forced the cancellation of all flights.

But Feh was unfazed and entirely focused on preparing 'optimum habitat' for the horses. She'd just returned from three weeks in the field erecting a fence that would keep the takhi in and other animals out. "The site is bordered to the east by a river," she explained, "and by the mountains to the west, but we will need an electric fence to keep out the domestic stallions."



Right: Keeping the takhi genetically pure will require the generation of contact with domestic horses. Right: A fence around Khomiin Tal National Park, where 12 takhi will be released in September. Right: When the season starts, the takhi can roam from range to another range.

During the 1980s, experts realised that protracted captivity was leading to signs of 'creeping domestication' in the takhi. In 1990, the Mongolian Association for the Conservation of Nature and the Environment and the Dutch Foundation for the Preservation and Protection of the Przewalski Horse decided to reintroduce a number of takhi to Mongolia. Two years later, the first horses arrived from reserves in the Netherlands and Germany at a site in Hustain Nuruu National Park, about 100 kilometres west of Ulaan Bataar, and at a second site on the edge of the remote Dzungarian Gobi, 1,000 kilometres further south.

The choice of such widely separated reintroduction sites was deliberate. "Analyses of the success or failure of reintroduction projects for many species worldwide have shown that it's necessary to have several geographically isolated subpopulations," says Munkhbat Tserendorj, a biologist with WWF Mongolia, which is collaborating with TAKH.

"Epidemics or extreme climatic events can wipe out a population in a very short time. The risk is greatly reduced when several populations exist in different locations."

Frederic Joly, a biologist with TAKH, agrees. "We would save a lot of money if the horses were in one reserve but the risks are separated this way," he says. "Our long-term goal is to exchange horses between the sub-populations to enhance the gene pool, but they still need to be kept in separate sites."

The first foals were born in Hustain Nuruu in 1994. They faced serious challenges, including competition for water with livestock, and were slow to acclimatise to the harsh conditions and poor vegetation. Many fell prey to wolves. Survival rates have increased, however, and there are now approximately 200 horses in Hustain Nuruu and SO in the Dzungarian Gobi, although it's the custom of Mongolians never to reveal the real number of horses in a herd.

Khomiin Tal reserve forms part of Mongolia's Great Lakes basin ecoregion in southeastern Mongolia. It's a vast, remote expanse of semi-desert covered with desert grass and artemesia bush and dotted with stone cairns that mark the graves of nomads.

As might be imagined, reintroducing animals that have lived 11,000 kilometres away from their native land for ten generations isn't without its challenges. "We face a vast array of problems, including diseases from domestic horses and wolf predation," says Feb. "But the most significant stem from the ecological effects of overgrazing."

This problem has economic roots. When subsidies from the Soviet Union dried up in 1991, inflation and unemployment rose and many urban Mongolians reverted to traditional herding practices. The number of livestock grew exponentially and the consequent demand for pastureland has caused erosion and a sinking water table.

Feh's concerns are echoed by Zunduijamts, a ranger in the park who lives with his family in a white-felt ger on the shores of Black Water Lake. "We are all worried about overgrazing," he says. "The number of livestock and herders is creating desertification and the picking of shavag [a plant used for firewood] is only making it worse. I am trying to educate other nomads to use more sustainable fuel sources such as camel dung." Zunduijamts believes that if alternative fuel supplies aren't used consistently, the area will become a desert within three years.

One of TAKH's main goals is to implement a pasture-management scheme that will help herders diversify their incomes through traditional industries such as rope making, salt extraction and the planting of special grasses to prevent desertification.

The soil erosion that has been one of the by-products of overgrazing has a by-product of its own--an increase in the abundance of the poisonous plant *Oxytropis muricata*, which has killed livestock in the surrounding areas. Feh hopes that the horses will avoid it in the same way that they instinctively avoided the poisonous vegetation in France when they first arrived in the Lozere. If not, several vets will be on site, and they will also monitor whether the horses are looking tired and stressed, which can be a pre-cursor to fights between the stallions and infanticide.

The horses' breeding must also be carefully monitored. The takhi's entire population is descended from the bloodlines of 13 stallions, and computerised genealogy records were

created in Europe to avoid inbreeding.

In the wild, it's the threat of curious domestic stallions that must be guarded against. "If domestic stallions breed with our mares we will lose the genetic purity of the takhi", Feh explains. However, most domestic stallions are castrated and, in any case, they are naturally scared of the takhi. "A combination of natural breeding barriers, natural boundaries and effective fencing should protect against interbreeding," she continues. To be quite sure that these factors are sufficient, samples will be taken from foals born in the reserve, and if they are revealed to be hybrids, they will be removed from the population.

Spotting hybrids is made easier by the fact that takhi cells contain 66 chromosomes, whereas all domestic horses have 64. This vital difference has led many experts to believe that the takhi is not, as originally thought, the progenitor of domestic horses.

The stakes are high, the conditions tough, but the takhi are resilient and adaptive, and much is being done to help their acclimatisation. Rangers are building wooden shelters against the prevailing northeasterly winds, and giant parasol-shaped devices that will protect against stinging insects. And they are digging wells to provide reliable water sources during the harsh winters, when ice on the rivers is impenetrable.

"Of course, this is primarily about protecting endangered species," says Feh. "But it is also about habitat protection and restoration, and maintaining the reserve's biodiversity. The takhi is Mongolia's largest herbivore and without it, the capacity for the ecosystem to adapt is greatly reduced. Returning the takhi to Mongolia is therefore an important way of preserving the whole ecosystem of the Mongolian steppe now, and in the future."

Before leaving Mongolia, I went to find the takhi in Hustain Numu National Park. I was told that the horses are most active at sunrise and sunset, when they gather at the Tuul Gol river to drink, but in the evening sun it would be hard to see their dun-coloured coats against the burnished copper of the autumn grasslands.

We drove deep into the reserve, through leafless birch forests and ancient juniper trees, and past nomads corralling their livestock with lasso poles, skinny dogs loping at their sides.

We found the horses crossing a river in the crook of a golden valley and sat down among the marmot holes and wolf tracks to watch them. It was quiet: the silence was broken only by the beating wings of a steppe eagle, and the clatter of the takhi's black hooves on the stony riverbed.



Top and above: one of the aims of the programme is to encourage sherpherds to participate in a pasture-management scheme

At first, they seemed unaware of us, five mares and one stallion walking in single file, the stallion bringing up the rear. Then, suddenly, they looked our way--alert, nostrils flared, ears pricked. They headed toward us, breaking into a collective trot. We returned to our vehicle; not only had I remembered the stories of their occasional aggression, of the stallions' fierce protection of their mares, but I had a strong sense that I was encroaching on the territory of truly wild animals.

#### Takhi facts

- \* Rock engravings in Italy, France and Spain dating from between 20,000 and 90,000 BC show figures that resemble takhi. They are believed to have been extensively hunted by early humans
- \* Genghis Khan was supposedly thrown from his horse when it reared as a herd of takhi crossed its path
- \* There are 1,600 takhi in captivity
- \* Takhi means 'spirited' in Mongolian
- \* Family groups typically consist of a stallion and from four to eight mares, along with foals and yearlings but they can sometimes contain up to 20 horses
- \* During winter, the horses' bellies are white and their backs light beige. When the snow melts, their coats darken
- \* Female foals may remain with the herd for some time, but the dominant stallion drives away young males before they reach sexual maturity. They then travel in small bachelor groups until around three or four years old, when they start harems of their own
- \* The gestation period is 11 months
- \* Foals are born in April or May and suckle for up to eight months before they are

weaned. They can gallop just 20 minutes after birth

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