Chris Walzer
University of Veterinary Medicine Vienna | International Takhi Group

Petra Kaczensky
University of Veterinary Medicine Vienna | International Takhi Group

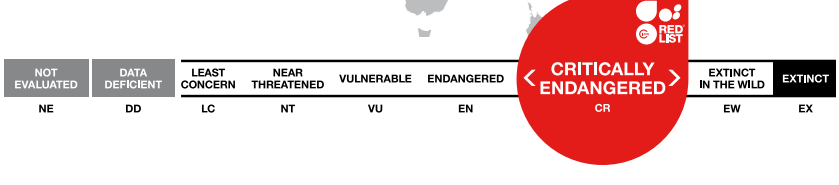
Oyunsaikhan Ganbataar
Great Gobi B Strictly Protected Area Administration

Namtar Enkhsaikhan
International Takhi Group

Christian Stauffer
Zurich Wilderness Park Foundation | International Takhi Group

Coming home: the return of the Przewalski's horse to the Mongolian Gobi

Species	Przewalski's horse (*Equus ferus przewalskii*)
Range	Mongolia
Population	300
Threats	Habitat destruction, hybridisation, competition, disease



A Przewalski's horse mare and her newborn foal crossing the plains (© Chris Walzer/ITG).

The Przewalski's horse (*Equus ferus przewalskii*), "takhi" in Mongolian, became extinct in the wild during the 1960s. The very last recorded sightings of the Przewalski's horse in the wild occurred in the Dzungarian Gobi of south-western Mongolia. The takhi only survived thanks to captive breeding based on 13 founder animals. The reasons for the extinction of Przewalski's horse are seen in the combined effects of pasture competition with livestock and overhunting. Subsequent to the establishment of the Przewalski's horse studbook at Prague Zoo and the initiation of a European Endangered Species Programme under the auspices of Cologne Zoo, the captive population grew to over 1,000 individuals by the mid-1980s. This fact was an important prerequisite to initiating a reintroduction programme.

With Mongolian independence in 1990, the "Takhiin Tal" project was initiated with the support of various international sponsors. By the late 1990s project leadership and management was overhauled with research and scientific data firmly integrated into the decision-making process. In 1999, the International Takhi Group (ITG) was established as a non-governmental organisation to continue and extend this project in accordance with the IUCN reintroduction guidelines. The vision of ITG is the integral protection of the Gobi habitat and to conserve the Great Gobi B Strictly Protected Area (SPA) as a biosphere reserve in the sense of the IUCN.

Release of Przewalski's horses in Takhi Us after translocation from the Takhiin Tal area (© Chris Walzer/ITG).

Unloading a crate with a newly arrived Przewalski's horse at Takhiin Tal (© Chris Walzer/ITG).

The 9,000 km² Great Gobi B SPA was chosen as the reintroduction site. This SPA was established in 1975 and encompasses some 9,000 km² of desert steppes and semi-deserts. Plains in the east and rolling hills to the west dominate the landscape, with the mighty Altai Mountains flanking the park in the north. The Takhin Shar Naruu mountain range in the south forms the international border with China. Elevations range from 1,000 to 2,840 m. The climate is continental with long cold winters and short hot summers. Average annual temperature is a frigid 1 °C and average annual rainfall a mere 96 mm. Snow cover lasts an average of 97 days. Defining factor for this landscape is that rain and snowfall are highly variable in space and time. Open water (rivers and springs) is unevenly distributed with almost no water in the central and western part of the SPA.

In 1992 the first group of captive-born takhi were selected from various zoos and then airlifted to Takhiin Tal at the edge of the Great Gobi B SPA. The logistics were a nightmare at the time and the journey for the horses was long and exhausting. Five years later a harem group was released into the wild from the adaptation enclosures, and in 1999 the first foals were successfully raised in the wild. In the following years several further airlifts occurred and a total of 88 horses from various European zoos were brought to the Gobi. Today some 150 takhi roam over 3,000 km² in the SPA. Although it would be short-sighted to judge the project a success, the positive trend in the free-ranging Przewalski's horse population is encouraging. Initially largely confined to the north-eastern corner of the SPA, range use of the reintroduced horse population increased gradually. In 2005 one harem group was successfully translocated to the Takhiin Us water point about 120 km west of the original release site to speed up the expansion of the distribution range within the area.

Two young Przewalski's horse bachelors testing each other's strength (© Petra Kaczensky/ITG).

Public and media interest focused heavily on the international transports from Europe to Mongolia. However, the establishment of a permanent field station with the necessary infrastructure (solar power, laboratory, office, vehicles and petrol) and communication abilities (VHF communication, satellite-based e-mail and telephone) proved equally important. In 2004 the Takhiin Tal camp hosted the second international workshop on the reintroduction of the Przewalski's horse. In 2005 facilities at the Takhiin Tal camp were further upgraded with the construction of the SPA headquarters funded by the Austrian Ministry of the Environment and ITG. Facilities now allow year-round living and research. The camp provides training possibilities for young Mongolian and international scientists, has created local employment options and is run by well-trained and motivated local staff.

For this reintroduction programme to be successful in the long run it is necessarily embedded in a broader context of ecosystem conservation. Over the years the project greatly expanded on various fronts. Early scientific input was focused on the Przewalski's horse and concentrated on determining causes of death and low reproductive rates. The elucidation of the effects of an endemic parasite disease (piroplasmosis) on the population and subsequent management changes led to remediation of this deadly problem. Horses were fitted with satellite-tracking collars in order to determine their position, home range and habitat preferences. Ten individual Przewalski's horses were monitored with such positioning devices. Home range sizes based on telemetry showed that individual horse groups cover non-exclusive areas of 152 to 826 km². Simultaneously, the Asiatic (Mongolian) wild ass (*Equus hemionus*) and the grey wolf (*Canis lupus*) have been studied with these methods in the shared habitat. Satellite-based technologies provide the backbone for all habitat-related project issues. At the onset data collection was restricted to the eastern part of the SPA but today the spatial scale encompasses the entire Gobi region in Mongolia and northern Xingjian in China.

Two young Przewalski's horse mares keeping an eye on the researcher (© Chris Walzer/ITG).

Mongolia, often called the "land without fences", provides the last remaining refuge for a number of migratory species that require large areas of habitat. This region also supports a growing human population, including a large number of livestock herders, who maintain a fragile grip on survival after enduring the political and economic upheaval wrought by the collapse of the socialist command economy. With Mongolia's transition to a privatised market economy, more people and exploitative economic activities – notably mining and road construction – could further impact environmental security and habitat needs of the wildlife in the Gobi region.

Starting out initially as a single-species reintroduction project, the magnitude of the conservation activities has greatly expanded in recent years. Seen from a species perspective, integrated research projects dealing with the Asiatic wild ass, grey wolf, wild Bactrian camel (*Camelus ferus bactrianus*), various rodent species and the vegetation have been implemented. Whereas the initial reintroduction efforts were driven mostly by health concerns for the horses, the disciplinary scope has significantly broadened with zoologists, biologists, botanists and remote sensing experts performing habitat mapping and assessment, and with community development experts establishing a socio-economic framework for future project development. Away from the field an important aspect for project advancement has proven to be lobbying activities both in Ulaanbaatar and among the international community. Lobbying activities not only enhance information flow and political support for the project, but also create collaborative opportunities and necessary alliances.

Comprehensive interdisciplinary monitoring and research are the foundation for management decisions at the present, but a sustainable financial base, training, capacity building and empowerment of local scientists and residents constitute the future of this programme.

Research has also focused on socio-economic aspects of local herders, their impact on the SPA and its surroundings, and their attitude towards wildlife and management issues. In 2005 training workshops on the construction and application of fuel-efficient stoves was conducted in order to reduce the pressure for illegal saxaul and juniper collection. In 2006 a concept for environmental education for children in Takhiin Tal was developed, yet still needs to be implemented. In 2007, with support from the Italian region of Lombardia and under the lead of the Instituto Oikos, a trans-boundary project in collaboration with the Xinjiang Institute of Ecology and Geography of the Chinese Academy of Sciences was initiated. This project aims to support rural communities of nomadic pastoralists living in the trans-boundary area of the Dzungarian Gobi in China and Mongolia and investigates the possibilities of expanding the ranges of the Przewalski's horses and the Asiatic wild ass across the international border. Local livelihoods will be improved through the strengthening of international collaboration on sustainable development issues and the integration of an environmental component in the respective development processes. The project currently seeks additional funds to further strengthen local involvement and community development in the project area.

A Przewalski's horse stallion waiting out a snowstorm (© Chris Walzer/ITG).

Dr **Chris Walzer** was educated at the University of Economics and the University of Veterinary Medicine, Vienna. He received his veterinary degree in 1989, became DVM in 1993 and obtained his habilitation in 2003. He has been university professor (chair of conservation medicine) and co-director of the Research Institute of Wildlife Ecology, University of Veterinary Medicine Vienna since 2005. He has been a board member and director of science in the International Takhi Group since 1999. He has internationally recognised expertise working with wildlife, especially wild equids and carnivores, gained from combined years of work and study in Europe, Asia and Africa.

Dr **Petra Kaczensky** studied biology at the universities of Regensburg, Colorado and Munich. She graduated in 1991 and received her Ph. D. degree in 2000. She is a senior researcher at the Research Institute of Wildlife Ecology, University of Veterinary Medicine Vienna. She has internationally recognised expertise working with wildlife, especially wild equids and carnivores, gained from combined years of work and study in Mongolia, Europe and North America.

Oyunsaikhan Ganbataar studied biology at the National University of Mongolia and graduated in 2003. He is director of the Great Gobi B Strictly Protected Area and a Ph. D. candidate at the National University of Mongolia. He has internationally recognised expertise working with Przewalski's horses and in protected area management in Mongolia.

Namtar Enkhsaikhan received his B. Sc. degree in biology from the National University of Mongolia in 1999 and his M. Sc. degree in sustainable resource management from the Technical University of Munich in 2006. He has worked as office manager for the International Takhi Group since 2006.

Christian Stauffer studied zoology at the University of Zurich and received an MBA degree for non-profit organisations from the University of Fribourg. He is director of the Zurich Wilderness Park Foundation, which runs Langenberg Animal Park and a small nature reserve. He acts as secretary of the International Takhi Group.