

Nr. 20 | November 2023

New Challenge



The 2022/2023 cold snap hit the takhi hard after a long drought. But extreme weather is only one of several threats. What strategy can help against it?

Photo: © Markus Salathé

Let's protect the Primordial Wild Horse and its environment.

Dear friends of the Wild Horse



We were too optimistic. Unfortunately, the drought of 2022 was followed not only by a dzud (extreme winter). It also hit much harder than the known losses of Wild Horses in the Great Gobi B reserve in April of this year would have suggested. Instead of only 40 takhi, according to the latest estimate we lost four and a half times as many, namely about 180. About 100 takhi were still considered missing in April.

Today we know that they perished. Dzud victims often die at the end of winter from increasing exhaustion due to cold and lack of food. The last extreme winter was thus similarly devastating to the one in 2009/2010. This time we lost about 26% of the spring population in the sanctuary. The foals were particularly hard hit. As a result of the drought, only 23 were born, of which just four survived until today.

Does this jeopardize our reintroduction program? Not according to previous experience. The population recovered within 6 years after the dzud in 2009/2010. But today we have twice as many takhi **after** the dzud as we did **before** back then. Nevertheless, complacency would be inappropriate. There is still drought in the Gobi. Another harsh winter could hit the takhi hard again. Extreme climate, grazing overuse by competing livestock, infectious diseases and hybridization with domestic horses are constant threats to the fragile population. We need to find answers to them. In these times of climate change, who knows when the next dzud will strike?

Another challenge was that the gamekeepers were no longer able to monitor the takhi individually as before. The harems could no longer always be distinguished without doubt, which makes a reliable precise population count in the huge protected area impossible. Effectively, we no longer know exactly how many takhi there are in the Great Gobi B today. Because of the steadily growing population, we planned to switch from monitoring individuals known by name to population monitoring in the near future. The time for this change now coincides with the Dzud 2022/2023.

Conclusion: A single extreme winter reduced the takhi population in the reserve from 349 in spring 2022 to around 257 in the spring afterwards, which means a population decline of around 26%. A bitter setback after many successful years. The takhi of the Great Gobi B are not yet out of the woods. They still need the support of loyal conservationists who care about the last surviving wild horses on the Eurasian steppe. Do you count yourself among them?

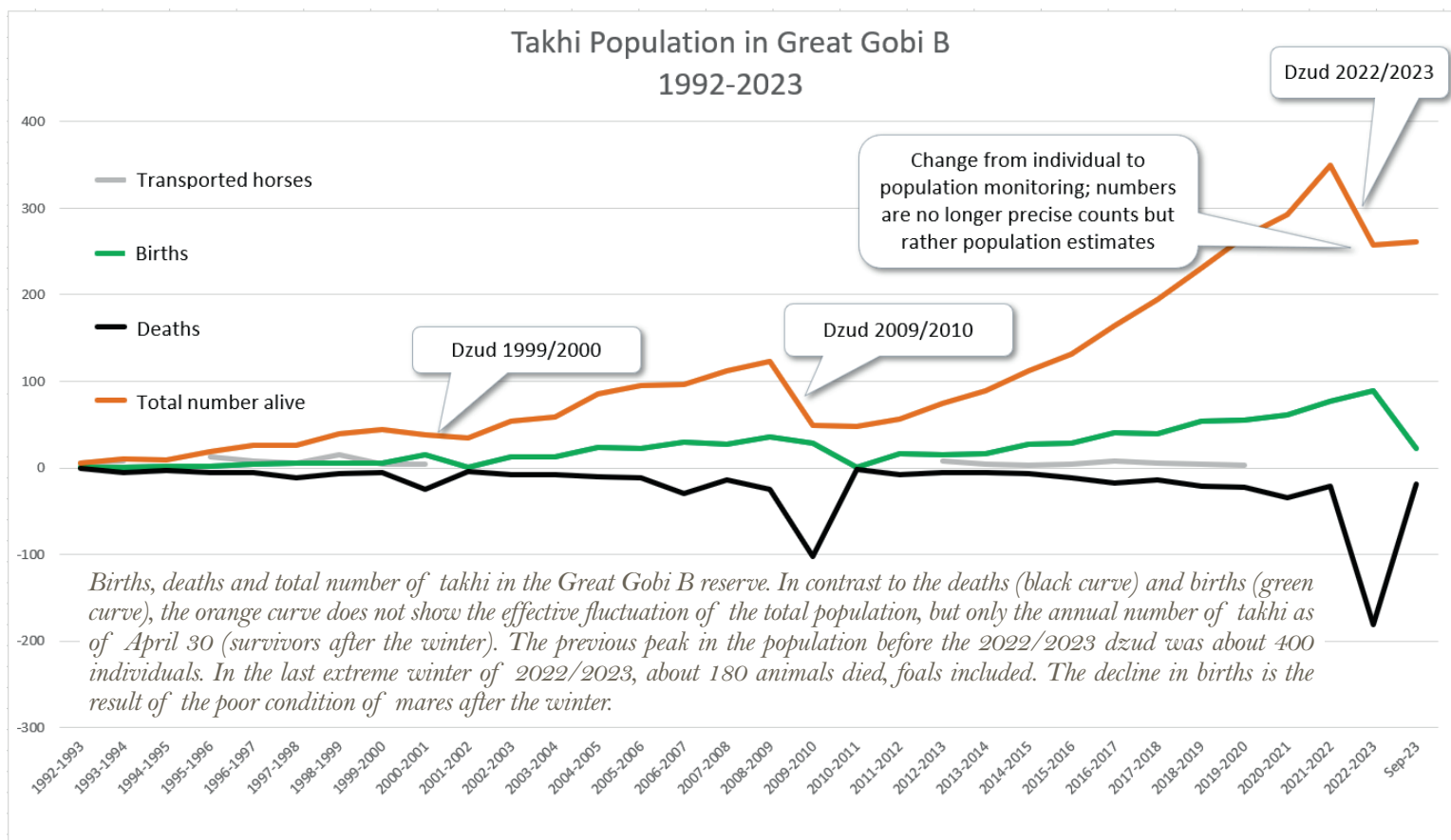
A handwritten signature in black ink, appearing to read 'Schnidrig'.

Dr. Reinhard Schnidrig, President, ITG



The harem of the stallion Bohon on 21 December 2022
Photo: Dalaitseren Sukhbaatar

"The last extreme winter was similarly devastating to the one in 2009/2010."



Staying on guard

Without a doubt, the reintroduction of the Primordial Wild Horses in their last refuge is a complete success of species conservation. A big wildlife species, which had been extinct in the wild for 30 years, was successfully reproduced in captivity, reintroduced to the wild and able to establish a growing population in the wild. And this was achieved despite the complete inexperience of the zoo-bred takhi and despite a habitat that is not easily surpassed in terms of challenges. Some 30 years ago, only the few visionaries, patrons and professionals whose extraordinary commitment we have to thank for this impressive success would probably have bet on it.

But eradication is definitely easier than reintroduction. The bold undertaking was not only fraught with unforeseen difficulties of which onlookers have no idea. It also required long, very long breath. And that is still needed, as the past brutal winter proves. In mid-October 2020, game wardens counted 320 takhi on the reserve, and in May 2021, the three-hundredth foal was born there. Last fall, the number of Wild Horses in the Great Gobi B even rose to over 400. A few months later, many of them were killed by a single weather event that hit western and southern Mongolia especially hard.

Potentially, such an extreme weather event could wipe out the entire population of free-ranging takhi in Mongolia. And it is not the only major risk. Droughts, grazing competition from small livestock and domestic horses, and infectious diseases transmitted by livestock are also causes for concern. Not only are these risks partially linked; they are also exacerbated by global climate change, which is causing more frequent drought in the Gobi semi-desert and, along with rapidly growing livestock populations, threatens the recovery of already very sparse vegetation.

As long as the reintroduced population is only a few hundred animals, each of these risks is existentially threatening. If we want to preserve the Primordial Wild Horse for posterity, we must always be on guard and arm ourselves with counterstrategies. Until several self-sustaining populations of takhi are established in different steppe regions, this legacy of the Ice Age cannot be considered saved. The reintroduction was an impressive success of species conservation (rather species rescue). But to secure the tiny takhi gene pool in zoos and a few reserves in the long term, we must always think a few moves ahead.

If we want to preserve the Primordial Wild Horse for posterity, we must always be on our guard and arm ourselves with counter-strategies.

Pointing the compass: Interview with Christian Stauffer

With an introduction by Christian Stauffer, Vice-President ITG, President "Friends of the Wild Horse".

Christian Stauffer is a wildlife biologist with a degree from the University of Zurich and an MBA in management of non-profit organizations. He is one of the first and pivotal contributors to the reintroduction of the Wild Horse in Mongolia. As the then director of the Langenberg Wildlife Park, which was involved in the European Breeding Program, he designed the airlifts of takhi to Mongolia, which were used to establish the first free-ranging stock in the Great Gobi B reserve. In 2013 Stauffer became director of the Swiss Parks Network and in 2020 director of the KORA Foundation for Predator Ecology and Wildlife Management. Christian Stauffer has been Vice President of the ITG since 2015 and President of the "Friends of the Wild Horse" since 2000.



The reintroduction of the takhi in the Gobi is characterized by the following factors, which also apply in one form or another to other reintroductions / animal species.

The animals come from captivity and were bred for 100 years according to human criteria and for life in zoos. On the one hand we are amazed about the adaptability of the takhi, on the other hand we do not know if e.g. the observed conservative behaviour is due to their history.

All takhi are descended from 12 founder animals and therefore represent only a very small sample of the original population and genetic diversity. It is very likely that various traits have been lost. If the animals are now re-exposed to natural selection, it will occur within a very limited choice.

The Great Gobi B reserve is located at the edge of the range for horses, i.e. far from the optimum in terms of climate and vegetation. It is therefore to be expected that the population reacts very sensitively and violently to changes. At the same time, this area is the only one within Mongolia that meets the requirements for reintroduction in terms of area and connectivity.

Reintroduction is a balancing act between allowing natural selection and maintaining the population. Natural factors such as predators, climate and food should be allowed, but influences of habituation or transport should be avoided as far as possible. In the case of the takhi, dealing with their very conservative behaviour is a particular challenge. In the Gobi precipitation is often locally very variable. Wildlife can find better vegetation by migrating. The takhi do this only to a very limited extent, even after 30 years.

ITG: The population of wild horses in the Great Gobi B reserve plummeted by a staggering 180 individuals during the last, extremely cold winter. What killed these takhi, and why did the rest survive?

C. Stauffer: We had to deal with a so-called black dzud in the winter of 2022/23. The summer was very dry with correspondingly sparse vegetation, followed by a cold winter with little snow. Many takhi went into the winter in poor condition, especially young and old animals. Especially these animals did not survive the winter - many of them were additionally weakened by parasites (see p. 7).

ITG: The same reserve is also one of the most important refuges of the Khulan (Asian wild ass) and the goitered gazelle. Did these species suffer similarly high losses, or do they cope better with extreme weather?

C. Stauffer: These two animal species are basically better adapted to the dry conditions than wild horses. In addition, especially the khulan have a pronounced migratory behavior, thanks to which they can seek out areas with better conditions.

ITG: Would any takhi have survived at all if they had not been provided with emergency hay?

C. Stauffer: I presume so. In the winter of 2022/23, feeding with hay may have had a relatively small effect because it started too late for this situation. We have never had such poor vegetation over a large area. To counter this, we should have started feeding earlier. This is also the most important thing we learned from the winter.

"The summer of 2022 was very dry with correspondingly sparse vegetation, followed by a cold winter with little snow."

ITG: This was the third dzud since the reintroduction began 30 years ago. Apparently, an extreme winter is to be expected about every 10 years. The takhi population, which has been reintroduced in this area at great expense, can easily be wiped out by such an event. Why is it not possible to keep the losses lower despite the dzud early warning system?

C. Stauffer: No two dzuds were the same. While the first one was mainly characterized by extreme temperatures and the second one by extreme snowfall (the summers before had shown normal precipitation), dzud 22/23 was mainly characterized by the dry preceding summer, which allowed hardly any vegetation to grow over a large area. This was not predicted by the early warning system. In addition, things have only ever improved since 2010. We had created large haystacks for several years and then did not use them. After 12 years, the sensitivity had decreased somewhat, respectively directed to other issues.

ITG: During a dzud, strategically placed open-air hay stacks and protective groves could possibly ensure a higher survival rate. In the Chinese Gobi, saxaul shrubs (an endangered native species) are reforested to protect against wind, erosion and desertification. And

weatherproof hay stacks have been in use in Europe for thousands of years. Have such measures never been considered?

C. Stauffer: Our goal is a free-ranging population of takhi that is independent of humans. Although the conservation and promotion of saxaul is also a topic in the Gobi, more extensive management measures, especially directly for the takhi, represent restrictions for the development of the free-living population and we have therefore not considered them.

ITG: In the biosphere reserve, livestock populations, namely of cashmere goats, but also of unattended domestic horses, are constantly increasing. They represent a triple major risk for the Wild Horses through competition for food or overgrazing, transmission of infectious diseases and (in the case of horses) hybridization. Is the increasingly intensive use of such a sensitive ecosystem at all compatible with the protection of endangered large mammals, and what is ITG doing to keep these risks under control?

C. Stauffer: Increasing livestock numbers are a problem. In the case of cashmere, we are working directly to improve value while limiting goat numbers. The rising domestic horse population still poses a conundrum, as the animals actually have no economic



*The steppe stretches almost endlessly. But the sparse vegetation must be used with great restraint to avoid permanent damage.
Photo: Dalaitseren Sukhbaatar*

“Our goal is a free-ranging population of takhi that is independent of humans.”

The Salathé family (back row, 2nd-4th from left) with guide (back row, 1st from left), driver (3rd from right) and cook (4th from right) visiting Mongolian nomadic herders.

Photo: © Markus Salathé



value and are hardly needed for work. This is where we need to step up our efforts in the coming years.

ITG: Nomads and their herds are denied access to critical watering holes and pastures. But unsupervised domestic horses don't read bans. A problem?

C. Stauffer: Yes, this is a problem whose causes we still understand too little. Thus, we do not yet have a basis for countermeasures.

ITG: With the dzud, at the latest, the previously practiced individual monitoring of the takhi reached its limits. Will the data still be reliable after the changeover to population monitoring?

C. Stauffer: The individual monitoring was the ability and also the hobbyhorse of Ganbaatar, the former director of the reserve. The fact that we cannot continue this is due to his departure and the larger numbers and dynamics in the takhi population. However, I see no problem in collecting reliable data at the population level. These are quite sufficient.

ITG: Will ITG or the reserve management possibly need to change their priorities to ensure the long-term survival of takhi populations in the Great Gobi B reserve?

C. Stauffer: The biggest concern is climate change, which we don't have much leverage to combat here. The whole of Mongolia is struggling with increasing drought. In dealing with change in the Gobi, one focus will certainly be on hydrology. Here, plants like saxaul can contribute significantly to stabilization, so I see its active promotion as a possible new focus.

"In dealing with climate change in the Gobi, there will certainly be a focus on hydrology."

What killed the takhi

The Swiss veterinarian and horse specialist Dr. Angela Becsek investigated this spring in the reserve Great Gobi B, among other things, the causes of death of takhi found after the dzud. It turned out that many of them had suffered from heavy infestations of botfly. In domestic horses, the botfly larvae living in the stomach can lead to chronic gastritis with ulceration, colic, lack of appetite, diarrhea, emaciation and anemia. Foals in particular also show developmental disorders, reduced performance and lowered resistance. Infestation with gastrointestinal parasites is normal in wild takhi, according to several studies. But in a dzud that leads to freezing temperatures for weeks, it can weaken the animals.

With the help of the Institute of Veterinary Medicine at the University of Ulaanbaatar, samples were taken from nearly 30 dead takhi. These are currently still being examined at the Mongolian university. So far it could be determined that all dead animals were emaciated. Even the animals' coronary fat - the last fat reserve of a body suffering from energy deficiency - was atrophied. According to Dr. Becsek, the picture found is, as far as can be judged at the moment, very similar to the so-called "winter starvation", which has been described in cows. Starved animals are more likely to die in winter, in combination with extreme temperatures, than in summer at moderate temperatures. In addition, exhaustion and parasite infestation can further weaken the animals and thus contribute to premature death.

The age distribution of the dead takhi showed that mainly young animals (between 1-4 years old) and older animals died. Most carcasses were found where most takhi spent the winter, i.e., at Takhi us and Khonin us oases, where fresh water is available all year



Dr. Angela Becsek with Bataa, an orphaned takhi colt bottle-raised in Takhin tal. Photo Dalaitseren Sukhbaatar, © A. Becsek

round. Thus, the overall picture suggests that the takhi simply starved to death. The feeding with emergency hay was accepted by all takhi, but proved to be insufficient.

In the course of her work, Dr. Becsek also noticed the appallingly poor state of health of the livestock. These were "partly only skin and bones". Becsek firmly states that the preservation of an ecosystem also includes the health of the wild and (in the case of a biosphere reserve) domesticated ungulates that share it. In the Gobi, domestic livestock with chronic diseases - tuberculosis, paratuberculosis, parasites, babesiosis - combined with high levels of malnutrition constitute a "ticking time bomb," according to Dr. Becsek. She sees a high urgency to sustainably improve the health of livestock and domestic horses, which would indirectly benefit the endangered wild equids. For this purpose, the health status of the livestock herds in the Great Gobi B would have to be determined (with government support), maintained (vaccination, deworming) and subjected to regular mandatory inspections. Only in this way will wild ungulates receive a minimum level of protection against infectious diseases. Moreover, if domestic horses in the reserve continue to reproduce uncontrollably, regular genetic testing of the takhi is needed to detect hybridization. Finally, a uniform reporting system is needed to collect and properly analyze deaths of wild and domestic animals.



"Part of maintaining an ecosystem is the health of the wild and domesticated ungulates that share it."

Looking ahead: our planning for 2024

The dzud of 2022/2023 was a bitter setback. But in the steppe, one's gaze automatically wanders to the horizon. In the long term, we want to continue to preserve one of the world's largest and most important steppe habitats for and with the people who live there. We achieve this by:

- Monitoring, protecting and connecting the ecosystem and ensuring its sustainable use by the nomadic population
- Establishing a self-sustaining takhi population
- Anchoring the idea of conservation in the population (among other things with the operation of the centers in Altai and Takhin tal as well as with an exhibition and operation concept for the "House for the Gobi")
- Professional management of the overall program

The above points require numerous individual activities, which the ITG promotes and supports and for which it seeks funding. These include, for example, the establishment of a sustainable cashmere value chain, the necessary training programs and infrastructure for soft tourism; but also a biodiversity inventory, monitoring of steppe ungulates and critical habitats, regeneration of water-storing saxaul bushes and the development of baselines for future wildlife corridors.

A key task is monitoring takhi populations as well as health and hybridization monitoring for this endangered wildlife species.

Information work, namely in the "House for the Gobi", and cooperation with local authorities, nomads and other protected areas (sister parks) shall convey the importance of the conservation measures to the local population, too.

For these activities we urgently need project donations from conservationists. We give an account of the use of donations from the previous year at our annual meeting.

House for the Gobi will be built in Altai (Khovd)

Good news from the "House for the Gobi". This administrative and information center will improve the working conditions in the reserve operation, which will significantly increase its attractiveness for qualified workers and their families. Thanks to donations from our loyal supporters and a project loan from KfW (Kreditanstalt für Wiederaufbau), construction work can begin next year. Completion is scheduled for 2025.

Friends of the Wild Horse on the road

This year, some loyal Swiss takhi supporters (families Salathé, Siegfried and Witzig) made adventure vacations in Mongolia. They came back enthusiastic and recommend their eco-safari for imitation. They kindly gave us some great pictures to illustrate this Takhi Post. Many thanks for that - and of course for the donations!

ITG President Dr. Reinhard Schnidrig and Karin Hindenlang of the ITG Board also made an extended project visit to Mongolia this summer. On this occasion Schnidrig acted as the patron of a traditional Naadam, the festival celebrating Mongolian National Day (July 11-12), which attracted numerous visitors from the region to Bij Bag (Bugat Soum, Govi-Altai). During the festival, participants compete in wrestling, archery and horseback riding.

*A classy lunch in the Gobi.
Photo: © Markus Salathé*



We want to preserve one of the world's largest and most important steppe habitats for and with the people who live there.

Tzuut died

For 8 years, we have repeatedly told our readers about the stallion Tzuut ("the famous one"), who was found as an orphaned foal in October 2015, amazingly adopted by a takhi mare and released with her as an adolescent at the Takhi us oasis. There he matured rapidly, was thrown out of the harem by the local stallion, but undauntedly challenged him and chased off his adversary in no time. Thereafter, he quickly rose to become one of the more powerful harem stallions. This spring, however, he met the fate of many cold steppe animals. Tzuut is one of the approximately 180 victims of the extreme winter of 2022/2023.



Population monitoring: How do the data change?

Until last summer, wildlife biologists Ganbaatar and Dalaitseren recognized not only every harem of the primordial wild horses, but also almost every one of the more than 300 takhi distinguished by name. This almost uniquely accurate knowledge of the population was aided by the high site fidelity of the harems. However, the rapid population growth up to the dzud of last winter, as well as the increasing dynamics due to many foal births and an increasingly balanced sex ratio, brought this method to its limits. After the departure of Ganbaatar and later also Dalaitseren, the change of the takhi population survey from individual to population monitoring became mandatory. It also allowed the focus to shift more from the individual group dynamics of the first harems released to population ecology.

But what methodology leads to the highest possible data quality when it is no longer possible to detect all harems, let alone individual takhi? How do monitoring objectives need to be adjusted, and how can we still keep track of harem trends? These are the kinds of questions which the biology student Ankhzaya will be investigating in her ITG-funded master's study programme at the National University of Mongolia, Ulaanbaatar, starting in September 2023.



*A takhi harem on 15 Aug. 2023.
Photo: © Markus Salathé*

With the conversion of the takhi population survey from individual to population monitoring, the focus is shifting to population ecology.

Species portrait: Marbled polecat ^{1,2}



Photo: ©zoofanatic, <https://www.flickr.com/photos/zoofanatic/18277723408>

Very cute is the look of the marbled polecat (*Vormela peregusna*). It really seems to be a pocket-sized tiger - and a skunk at that. A polecat, however, it isn't.

From insects to snails, amphibians or reptiles to birds and all sorts of mammals up to rabbit size, nothing is safe from this masked, agile creature with a weasel body, short legs and unusually large ears. But as much as it resembles our polecat (*Mustela putorius*) and the steppe polecat (*Mustela eversmanii*) it belongs to a different subfamily of mustelid species. This one includes only 6 species worldwide. The striking stripe pattern of the 4 Old World species warns predators of the very malodorous secretion of their enlarged anal glands.

The marbled polecat is the only Eurasian representative of this particular group. It inhabits the steppe and desert belt from the Balkans and Levant (excluding the Arabian Peninsula) to eastern China. Avoiding mountain ranges above 2000 m.a.s.l., it prefers dry valleys, scrubland, dunes and salt marshes with saxaul scrub, clay steppes and oases.

Marbled polecats are mostly crepuscular and nocturnal. During the day, they rest in the home burrows of their prey - often those of the large gerbil - on a nest of grass and leaves. However, they can also dig burrows themselves with their strongly clawed forepaws. At night they hunt on the ground surface and underground and, as good climbers, even in trees. Their main prey is locally occurring rodents.

The home range of the marbled polecat covers about 0.5 km² according to Israeli data. It may overlap with territories of other individuals, but is used solitarily.

The rut season lasts from March until the beginning of June. 4-8 young are born after 45 days or, after delayed implantation of the eggs in response to temperature, only in the following February or March (after 240 to 330 days). They are raised exclusively by the female, which weans them after about 50 days. The family breaks up after about 2 months. Females become sexually mature at 3 months, males at 1 year. The relatively high reproductive rate compensates for losses to a variety of predators, namely birds of prey and other carnivores.

However, the fact that marbled polecat populations partially collapsed in the 20th century and the species is classified as endangered on the IUCN Red List is due to the rapid loss of steppe and desert habitats. These are being converted to agricultural land, especially in Europe, thus destroying the habitat of many small rodents. In addition, these are being persecuted with poisons and traps, to which marbled polecats are also falling victim. In China, the species is also threatened by desertification.

The marbled polecat is a flagship species of the steppe. It is under strict protection under Appendix II of the Bern Convention, a reminder of the urgent need to protect the last steppe habitats. In Mongolia it is considered endangered³.

Our knowledge about this species is quite limited. We know nothing precise about the taxonomy, distribution, size and trends of the populations, nor do we know specific threats or targeted conservation measures. A national or international management plan, international trade controls, and information or education programs for local populations are lacking. At least European zoos launched a conservation program.

¹Wilson DE, Mittermeier RA (2009): Handbook of the Mammals of the World, Vol. 1, Carnivores. Lynx Edicions, Barcelona

²Abramov, A.V., Kranz, A. & Maran, T. 2016. *Vormela peregusna*. The IUCN Red List of Threatened Species 2016: e.T29680A45203971. <https://dx.doi.org/10.2305/IUCN.UK.2016-1.RLTS.T29680A45203971.en>. Accessed on 04 October 2023.

³Shagdarsuren, O., Jigi, S., Tsendjav, D., Dulamtseren, S., Bold, A., Munkhbayar, Kh., Dulmaa, A., Erdenejav, G., Olzihutag, N., Ligaa, U. and Sanchir, Ch. 1987. Mongolian Red Book. Publishing House of the Mongolian Academy of Sciences, Ulaanbaatar, Mongolia.

The marbled polecat is a reminder of the urgent need to protect the last steppe habitats.

Tiny flagship

The marbled polecat is a species typical of the Eurasian steppe. And like the steppe itself, it is endangered. Since even biologists know little about this species - let alone the local rural population - it is difficult to determine target-oriented conservation measures. At least European zoos have launched a conservation program. Let's hope that the marbled polecat will not have to be reintroduced into the wild again one day...



*Happy climbing in the red rocks.
Photo © Markus Salathé*



Let's secure the future of the Wild Horse together



"Already at the end of September the first snow fell in the Great Gobi B reserve. As a precaution, we buy 156 tonnes of hay. If another hard winter follows, we want to be able to feed the takhi for 4 months, from mid-December to mid-April. A big thank you to all the donors who are helping us with this!"
Rebekka Blumer, Treasurer, ITG

ITG works in an honorary capacity.

Every donation goes directly to the protection of the Wild Horses and their habitat.

This is how your donation helps us - thank you very much!

CHF/USD 50.-

You feed 25 takhi with emergency hay for one day.

CHF/USD 75.-

You contribute to the urgent purchase of a second-hand truck for the transport of the emergency hay.

CHF/USD 100.-

With your contribution, 1000 m² of water-storing saxaul bushes will be replanted in the reserve.

CHF/USD 200.-

You fund one month of training for 20 local herders in pasture management and in the management of their cashmere cooperative.

Also with any other amount you help to preserve this unique wildlife species and the flora and fauna of the Central Asian steppe.

Mandal harem with bachelor stallions, 21 Dec 2022

Photo: Dalaitseren Sukhbaatar

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Adopt a takhi foal! USD/CHF 100.-

Become a member of the 'Friends of the Wild Horse'!

- Annual membership fee for private individuals USD/CHF 50.-
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