

Nr. 19 | April 2023

One steppe, one health

Survival in the deep freeze.
-20°C during the day, -40°C at night.
Wind biting, pasture scant.
In one word: dzud.



Photo: Dalaitseren Sukhbaatar

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

Dear friends of the Wild Horse



This winter, the wild horses in the Gobi were trembling - and we were trembling for them. We anxiously followed the weather forecasts for the Khovd and Altai regions. For many weeks the thermometer did not rise above -20° C during the day, no matter if the sun was shining or not. Every night it dropped to -40° and lower. In addition, a stiff steppe wind swept the last ounce of warmth from the bodies of the takhi.

The "dzud" had arrived! Not all takhi were up to the merciless cold. At least 40 froze to death, around 100 are still missing. What proportion of the small, precious population of primeval wild horses survived the extreme winter will not be known until the early summer population survey, because most victims die between February and April from increasing emaciation and exhaustion.

Thanks to your generous donations, we were able to stockpile hay in time and provide emergency hay to various takhi harems. Every bite alleviated the hunger! On behalf of our team and the primeval wild horses, I thank you very much for your help in this difficult situation. Great thanks are also due to the team of rangers in the reserve who made their way to the takhi with the emergency hay under the most difficult weather conditions.

A dzud is one of the major risks facing small populations of this rare species. It has the potential to wipe out the entire population. Drought, overgrazing and infectious diseases can also threaten the hard-won success of the reintroduction. And not just the takhi! The herds of Mongolian nomads graze on the same pastures as the takhi, khulan and gazelles. Wild and domestic animals also meet at some water points - and exchange viruses. Some of these - such as tick-borne encephalitis viruses or rabies - are dangerous not only for grazing animals, but also for humans.

For the past 15 years, the transmission of infectious germs has been increasing significantly. Animal diseases, epidemics and pandemics are on the rise—think of swine flu, SARS, avian flu and Covid-19. One consequence of this is the One Health concept. It is based on the insight that the well-being of humans, animals, plants, fungi and ecosystems - the entire biological diversity - is closely linked. It must be understood as one - and treated as such.

This winter's dzud shows: when the steppe freezes over, it affects wildlife, livestock and humans alike! That is why your personal commitment to the primeval wild horses and the Great Gobi Biosphere Reserve benefits animals and people alike. Can I count on you again this year?

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

Dr. Reinhard Schnidrig, President, ITG

¹Destoumieux-Garzon D et al., Front. Vet. Sci., 12 February 2018, Sec. Veterinary Epidemiology and Economics, Volume 5 - 2018 | <https://doi.org/10.3389/fvets.2018.00014>



Photo: Lhagva Tumur

"The well-being of humans, animals, plants, fungi and ecosystems — the entire biodiversity — is closely interlinked."

Faces of conservation: N. «Aagi» Altansukh

N. "Aagii" Altansukh originates from the hamlet of Bij on the northeastern reserve boundary of Great Gobi B and is therefore very familiar with local conditions and stakeholders. He holds a bachelor's degree in economics and accounting from the International Institute of Economics and Business and a bachelor's degree in environmental ecology from the Institute of Environmental Management, as well as a biology degree from Khovd University. He had already been working for the reserve since 2007 as a specialist, later senior specialist. In 2022 he took over the operational management as Director of the Great Gobi B Reserve from his predecessor O. Ganbaatar.



ITG: Vast areas of Mongolia are used very extensively by a nomadic culture that has shaped Mongolian identity. But they are also rich in mineral resources, the exploitation of which can cause significant environmental damage and social transformation. How do you personally experience the impact of rapid economic development on your homeland? What changes do you notice most, and how can their impact on the fragile ecosystems of the Mongolian Gobi be optimized?

N. Altansukh: Like other developing countries, Mongolia has many environmental problems. The Great Gobi B is rich in mineral resources. Gold prospecting and illegal gold mining have caused significant environmental damage. The rapid development of the Mongolian economy in the last 20 years is clearly felt in our region. The gross domestic product per capita has tripled since 2000. Along the way, the country's economy has gone through contraction–expansion cycles that point to fundamental fragility rather than consistent growth. The commodity sector is an important growth driver with an upward trend. In an environment of high commodity prices, the economy is unstable and uncertain despite abundant positive effects. This is increasingly felt in rural areas.

It is not trivial to keep the number of small livestock or the capacity of pastures stable in Great Gobi B and surrounding areas. The number of goats is growing more rapidly than that of horses, camels, sheep, and cattle, all of which have negative impacts on grazing areas. However, goat cashmere is the raw material for Mongolia's booming cashmere industry and brings the most income to herders.

Due to overgrazing, the topsoil loses quality, soil erosion

is accelerated, and as a result, desertification caused by climate change intensifies. To solve this problem, we are working to reduce the herders' livestock in the area by establishing a herders' cooperative and supporting them in their activities.

ITG: You have been the acting director of the Great Gobi B administration since last year. What are your main priorities to ensure effective protection of the ecosystems and species of this vast protected area?

N. Altansukh: The declaration of the Great Gobi B as an International Biosphere Reserve opened many opportunities for research and protection of the Central Asian desert ecosystem, as well as for international exchange. Due to the rarity and threatened nature of the species in the biosphere reserve, we are working to improve their protection in order to pass it on to future generations without disturbing the balance of the ecosystem. Priority is given to regular research activities as well as rehabilitation of endangered species and degraded areas, in order to create healthy and stable conditions for the ecosystem and its permanent protection.

In order to improve the information and ecological understanding of the local population, we cooperate with the herders of the Great Gobi B buffer zones and with the students of the eco-clubs. We plan appropriate public relations activities and work on their effective implementation.

ITG: What goals did you set for yourself in terms of staff management and the administrative aspects of reserve management?

N. Altansukh: Staff management is one of the most important issues in reserve administration. In this context, it is necessary to establish the number of pro-

In order to improve the ecological understanding of the local population, we cooperate with the herders of the Great Gobi B buffer zones and with the eco-clubs.

Faces of conservation:

N. «Aagi» Altansukh

professionals required for the reserve management as well as their working conditions. Another important issue in sustainable management of the administration is financing. Sustainable financing of operations, working conditions, wages and supplies for employees are important issues that need to be addressed.

For the work of the organization, well-qualified staff is most important. Thus, within half a year, 2 specialists and 13 rangers will prepare for the civil service examination. Our reserve is far from urban centers, and few want to work as rangers in rural areas. In order to give residents the opportunity to work in national conservation, we want to work together with the Ministry of Environment and Tourism to adapt the civil service examination professionally and methodologically.

Our main problems are the restriction of patrol activities due to the doubling of fuel prices, a shortage of vehicles and insufficient robustness of Chinese motorcycles for the roads of the Gobi. Improvements can also be made to rangers' expense allowances and equipment. And, of course, we strive to detect and punish violations of the regulation of saxaul use, wildlife protection and driving on the reserve.

ITG: So far, takhi - the flagship species of the Great Gobi B - are so closely monitored that most are known by name and individually identifiable. That's impressive - but the population is growing rapidly, becoming more mobile and fragmented, making monitoring ever more complex. How do you plan to address this development in reserve management?

N. Altansukh: Takhi are a key focus species in the management plan of the Great Gobi B. The current 31st year of successful reintroduction of takhi to their homeland will be focused on further increasing their numbers, creating an independent and stable population in the wild, protecting their habitat, and conducting research.

The takhi herds will be monitored scientifically on a regular basis. This great program is the result of years of efforts of many foreign and local scientists, researchers, professionals and conservationists. The fact that individual takhi can be detected is the result of hard teamwork of the experts and game wardens. The number of takhi is increasing, and it is becoming increasingly difficult to name and identify individuals. It is also becoming increasingly difficult to fully monitor takhi herds. We will therefore have to review the long-term direction of monitoring and research work.

ITG: What do you consider to be the main risks for the

further development of equine species in the reserve, and what countermeasures are you planning?

N. Altansukh: For a short time in spring and autumn, there is a grazing overlap between takhi and domestic horses. At that time, domestic horses are sometimes kidnapped by takhi stallions. The domestic horses then have to be separated again by our gamekeepers and handed over to the respective herders.

In addition, the habitats of takhi, khulan and domestic horses overlap seasonally in pastures or at water sources. The main risk is the high probability of takhi and khulan contracting strangles. To control grazing by domestic horses, herders in the buffer zones are regularly made aware of the dangers of cross-breeding with domestic horses.

We are keen to ensure that herders keep domestic horses away from the takhi's pastures and other wildlife, and do not allow their domestic animals to graze unattended. In doing so, we will make sure that those herders who winter under contract in the protected area and buffer zones understand and support this.

ITG: Why did the number of domestic horses on the reservation increase to about 1,200 individuals, even though they seem to have no economic importance?

N. Altansukh: Mongolians have a long tradition of valuing horses. Herders often herd their livestock on horseback. Mongolian horses always live outdoors - often unattended - and are tough; in winter they eat only dried grass, which they scrape out of the snow with their hooves. Except in a dzud, they do not need any additional feed. They are well adapted to the local climate, with darker horses dominating in the mountain regions and lighter ones in the steppe. The herds migrate seasonally, as it snows more often in the mountain regions in winter, while the steppes of the Gobi are hot and dry in summer and autumn.

We are looking for opportunities to work with local officials to educate herders on best grazing management practices and ensure domestic horses are kept to appropriate numbers. We plan to organize meetings and discussions with buffer zone herders to discuss the economic impacts of increasing horse numbers.

ITG: Do you see any risks regarding the acceptance of the reserve (which was, after all, doubled in area in 2019) by the local population, and what options are there to let them benefit from the protection of the area?

It is important to us that herders do not leave their domestic animals to graze unattended.

A wild horse foal has strayed into a herd of domestic horses. Alerted by the herder, the game warden prepares to capture the foal and return it to its harem.

Hybridization and infection with equine diseases are among the main risks of the takhi in the reserve.
Photo: ©Uli Rutz



N. Altansukh: Doubling the size of the protected area has reduced negative impacts on the ecosystem and reduced violations of illegal poaching and illegal gold mining.

Local residents are satisfied with the implementation of many laws, such as the Environmental Protection Law, the Specially Protected Areas Law, and the Border Protection Law, which prevent these violations.

The establishment of protected areas enables the improvement of living standards in buffer zones - for example, through the creation of jobs or the development of ecotourism. This promotes trust in protected areas and the implementation of laws and regulations.

ITG: Do you think it is possible to generate tourism or other income from the ecologically and culturally significant Great Gobi B reserve in the medium term to finance its protection - and how could this be achieved?

N. Altansukh: The Great Gobi B is not suitable for mass tourism due to the fragile soil and vegetation conditions. However, as part of the medium-term tourism goal, we are working to create sustainable funding by starting quality ecotourism with a small number of particularly interested tourists. More visits, information exchange, cultural offerings, and sales of products and services could benefit the reserve and the economic growth of the buffer zone.

The region has great potential for tourism development, and it is necessary to support this at the local level. However, certain problems stand in the way of this:

remoteness, poor infrastructure, high travel time and cost, low profile, lack of services and entertainment, difficult climate conditions.

We plan to first develop a tourism program for the Alag Khairkhan Mountain Nature Reserve and the Great Gobi B buffer zones.

ITG: What would be your top 3 wishes for ITG and MET (Mongolian Ministry of Environment and Tourism)?

N. Altansukh: To the MET: Allowances for rangers in rural and local areas should be increased by 30 percent. The new law grants a local allowance to rangers in provinces and soums, but not to those in rural areas. Yet these work in the harsh conditions of the Gobi, including weekends, but food and transportation costs are not compensated. Sufficient funds should also be allocated to pay performance bonuses for officers on a quarterly basis.

This would allow rangers to work stably in the rural areas for which they are responsible and to perform their duties fully.

To ITG: First, staff capacity building in various areas of competence. Secondly, it would be useful to mend the two ranger cabins in the Khoni us and Takhi us oases, where the game rangers overnight during their patrols.

ITG: Thank you very much for the interview.

The region has great potential for tourism development.

When the dzud strikes

Extreme winters occur in Mongolia every few years. Such a "dzud" claims countless victims among the herd animals of the nomads - in the winter 2009/2010 about 10 million! At that time, 2/3 of the takhi in the Great Gobi B reserve also died. Mongolia maintains an early warning system specially designed for this particular weather phenomenon. Dzud is not predictable in the long term.

A Mongolian extreme winter can turn deadly in several ways: by heavy snowfall (white dzud), by previous drought (black), by icing after a brief thaw (iron), and by extreme cold (cold dzud). This year's dzud is a combination of these². In January 2022, the temperature in the north-western provinces dropped to -50°C and remained in the deep-freeze range even during the day. Elsewhere, it was 3-4 degrees colder than the multi-year average. At the same time, in many places there were 30-40 cm of snow - far too much for grazing.

This was preceded by a severe drought. In the summer of 2022, 50% of the country received too little precipitation, especially in the west and south. Pasture productivity was correspondingly low, exacerbating the dzud.

bated by overgrazing. Less than 40% of the country had sufficient winter pasture. Small cattle could not build up reserves. Pregnant females died or suffered abortions. Young animals also died. Weakened by the drought, livestock has to draw on their fat reserves from December to February and eventually dies en masse - usually in March and April - from cold, hunger and exhaustion. At the beginning of March 2023, according to the Ministry of Food, Agriculture and Light Industry, the total already stood at 483,593 animals³.

This way the herders lose their livelihoods. In March 2023, about 116,000 herders were severely affected by the dzud. Many ran out of hay and fodder as early as the beginning of February. They fell into a vicious cycle: in the oversupply, they cannot sell livestock and thus cannot get the cash they need to buy hay supplements. As the 2022 hay crop collapsed because of the drought, and inflation shot up to 13.2%, hay prices doubled in many places. Fuel - a major cost factor for supplies due to long transport distances - also became unaffordable for many herders.



A dzud is a winter with extreme cold lasting for weeks, heavy snowfall and icy winds. If it is preceded by a summer drought, the long-suffering animals are already weakened and die en masse and gruesomely - not infrequently by the millions - from cold, emaciation and exhaustion. The death of their animals also deprives many a nomadic family of its livelihood. Photo: © UNDP Mongolia 2010

This year's dzud is a combination of low pasture productivity, low winter temperatures and abundant snowfall.

² <https://reliefweb.int/report/mongolia/mongolia-severe-winter-dzud-2022-2023-18-january-2023>
³ IFRC OPERATIONAL UPDATE Mongolia Cold Wave 2022

In addition, the sensitive digestion of ruminants fails after a hunger shock. Therefore, the Mongolian Red Cross Society (MRCS) distributed livestock care kits containing feed supplements such as vitamins, fish oil and mineral salt, as well as ointment to care for hooves sore from the snow. MRCS also paid Mongolian tugrik worth 100 francs each to 100 pastoralist households in need in January 2023. Other relief organizations also contributed and assisted such households.

A dzud can destroy the livelihoods of many pastoral households and increase land flight. Through cold and hunger it also makes livestock vulnerable to the livestock measles/morbillivirus, which circulated in 15 provinces and killed 3,312 of the animals by March. Since vaccines against zoonotic diseases are scarce in Mongolia, this also increases the risk to the population. One steppe, one health!

And the wild animals? Large steppe animals such as khulan, gazelles or takhi are highly mobile. In principle they can avoid adverse environmental conditions through long-distance moves. However, this is true only if they can use huge habitats connected by safe corridors. And they need experienced individuals which know when to leave for which area to avoid perishing in a dzud or drought. This nomadic knowledge, essential for survival, is still present in khulan and gazelles. The takhi lost it with the extinction of their free-living population.

Rebuilding it will take generations. Until then, the reintroduced takhi remain in danger. Supplemental feeding of hay can ensure that they survive the winter in reasonable condition. However, in the meantime many harems can no longer be fed. They are wild again and take to their heels.

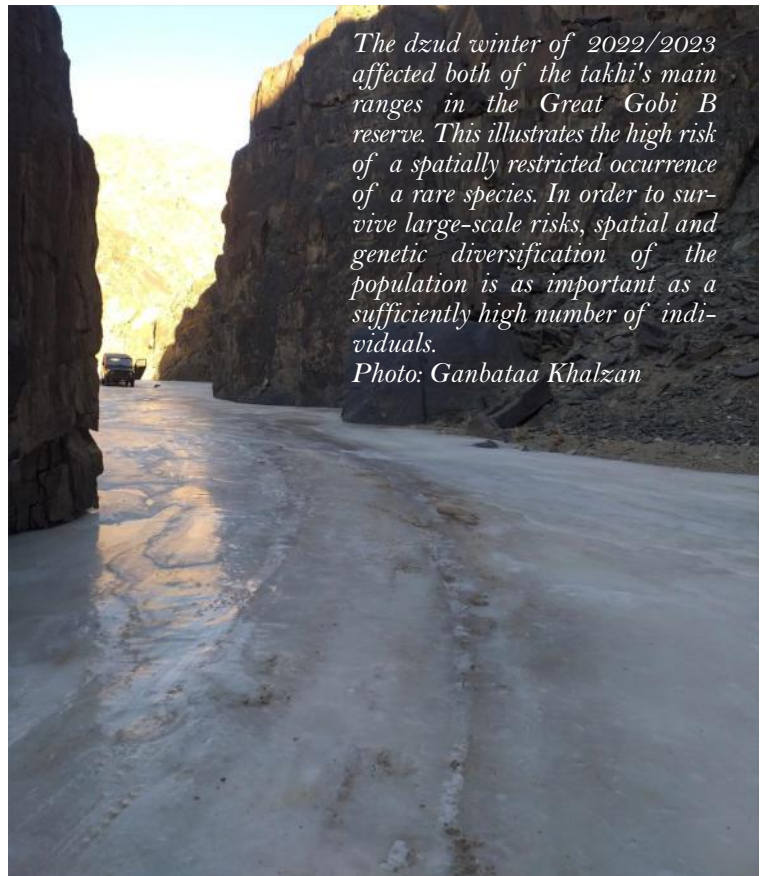
To date, we know of 40 takhi that fell victim to the dzud 2023: 12 at the western oasis of Takhi us, 13 at the eastern oasis of Khoni us, around 10 in the backcountry, and 2 in an (open) acclimatization enclosure. The number of unreported cases is likely to be considerable, and no all-clear can be given before April: around 100 takhi are still missing. And even as the snow melts, a dzud can still wreak havoc with flash floods.

However, not all dzud is created equal. The extreme winter of 2000/2001 in Great Gobi B resulted in much lower temperatures and the death of 40% of the then still small takhi population (63 animals). In the following spring only one foal was born, 4 young horses died. In the white dzud of 2009/2010 there was much more snow than this winter. At that time, 10 million sheep and goats died, while this year a comparatively small proportion perished. Of the 151 takhi living in the reserve at that time, over 102 died, and some disappeared and did not reappear until 2 years later. Whether the predominantly black dzud of 2022/2023 led to similar evasion (and thus increased takhi experience) remains to be seen.

*Starving and freezing goats in the Great Gobi B.
Photo: Dalaitseren Sukhbaatar*



*The dzud winter of 2022/2023 affected both of the takhi's main ranges in the Great Gobi B reserve. This illustrates the high risk of a spatially restricted occurrence of a rare species. In order to survive large-scale risks, spatial and genetic diversification of the population is as important as a sufficiently high number of individuals.
Photo: Ganbataa Khalzan*



The supplementary feeding of hay can help the takhi to survive the dzud in reasonable condition.



Supplementary feeding of hay helps to survive extreme winters. Such interventions must be carefully weighed. They are intended to mitigate high risks to the overall population of a species reduced to very low numbers.

However, during a dzud, even patrolling the reserve becomes a huge challenge. A big thank you to the rangers who did not get discouraged even by such difficult conditions!

Feeding wild animals?

Should wildlife in a reserve be fed to keep them from freezing or starving?

That depends. Basically they are – statistically, not individually – genetically optimized to their natural environment and hence capable of coping with very difficult conditions. Artificial interventions such as setting up feeding stations, waterholes, or eliminating predators are therefore usually nonsensical, potentially harmful interventions in natural regulation.

However, many habitats today are anything but "natural". Many species simply lack sufficient intact, undisturbed habitat. It is disturbed by humans day and night, ecologically severely damaged, and chopped up into fragments that are insufficient for the long-term survival of many species.

If the continued existence of a species depends on a few populations and individuals, it may make sense to mitigate particularly high risks as needed. This is especially true for species such as the takhi, which have been reduced to a few individuals and later reintroduced into the wild at enormous expense. Once their populations have recovered to the point where extinction by a large-scale event becomes unlikely, they should be left again to the competence of their genome. Natural environmental factors such as a dzud can then again act as an "evolutionary driver" that optimizes genomes and behaviours. This might help to revive, for example, seasonal migration in the takhi.

The nature and extent of interventions therefore requires careful consideration. Finally, the survival of many endangered species is now entirely in the hands of humans. In order not to lose them, we must ensure the right conditions for their survival – one way or another.

Outdoor laboratory for zoonoses

A dzud weakens all large animals. And it makes them more susceptible to infections. Thus, several thousand of the animals that have died so far in the 2022/2023 dzud died from morbilliviruses. These include measles, canine distemper (CDV), rinderpest (RPV), and small ruminant pest (PPRV). Where animals of different species are in close contact with each other and with humans, the risk of infection across species boundaries increases: one steppe, one health hazard!

This may have affected domestic horses. Their dzud mortality this year appears to be significantly higher than that of ruminants (goats, sheep, cattle, camels). Were they affected by a pathogen that further deteriorated their condition? And if so – were takhi, which did not survive the dzud, also already ill? Did they perhaps even carry the same pathogen as the domestic horses? This question is currently being investigated by the experienced equine veterinarian Angela Becsek. She traveled to Mongolia specifically for the ITG to pathologically examine samples of dead horses and to instruct the wildlife team in dissecting horses, taking samples, and diagnosing important diseases.

For instance, highly contagious strangles can cause a deadly epidemic in horses. Symptoms of this bacterial infection include apathy, nasal catarrh, high fever, and potentially pneumonia. Strangles bacteria are transmitted through contact with other horses, people, and contaminated objects such as bridles or feed troughs. Most of the takhi that died in the 2000/2001 cold dzud were confirmed to have had strangles, which they had contracted through contact with domestic horses.

Initial results suggest that heavy infestations of botfly weakened the takhi. Piroplasmiasis, a malaria-like disease with fevers and anemia, and other tick-borne diseases are also suspected to have contributed to the deaths.

Where animals of different species are in close contact with each other and with humans, the risk of cross-species infection increases.

The Flying Vets: against zoonoses in Mongolia

An innovative project aims to detect wildlife diseases and zoonoses in Mongolia in time to take protective measures for animals and humans. Local herders, veterinarians and institutions will be trained to recognize, report and respond to wildlife diseases.

ITG, with its President Reinhard Schnidrig and ITG Veterinary Advisor Jean-Michel Hatt (EBVS, a European Veterinary Specialist in Zoological Medicine), partakes in the steering committee of this joint project of the International Council for Game and Wildlife Conservation (CIC) and the World Organization for Animal Health (WOAH).

It was founded and launched in April 2021 by Flurina Hammer. She is a Swiss member of the CIC and an intrepid extreme rider. In 2022, she participated in the 10-day, 1000 km Mongol Derby - and finished the toughest horse race in the world in 12th place!

Domestic horses moving with the nomads through the reserve are therefore not only a hybridization risk for the precious small gene pool of the primeval wild horses - they can infect their wild cousins with diseases directly and even indirectly through water points. Unhealthy livestock are one of the greatest risks to primeval wild horses. Identifying a potential pathogen and analyzing its spread in domestic livestock on the reserve is therefore a high priority. We also hope to gain insight into the most common causes of takhi death; in addition to pathogens, heavy metals and salts dissolved in drinking water could also play a role.

Herders are also exposed to disease risks, such as tick-associated encephalitis viruses like TBE⁴. Their goats provide a reservoir for these (and thus serve as an indicator species for risk areas⁵). A single tick can transmit several types of viruses at once⁶! Such viruses can also infect humans via milk and cheese products. Resistant antibiotics could also spread via the same products in case that Mongolian herders treat their animals with antibiotics. Furthermore, hepaciviruses and parvoviruses, as well as intramuscular parasites, can be transmitted to humans.

Finally, rabid foxes and herding dogs are a particularly dangerous source of disease. That this is not fictitious is proven by the case of a takhi mare that was infected with rabies in the acclimatization enclosure in March 2018 and died from it.

What's clear is that if the herds of cattle migrating through the biosphere reserve are not healthy, neither their herders nor the endangered species are protected from dangerous pathogens. However, effective vaccines are available against several of them. Where available and if used consistently, effective vaccinations against pathogens can preserve the health of both nomads and their herds - and that of wildlife in the reserve as well.



Photo: ©Uli Rutz

Unhealthy livestock are one of the biggest risks to primeval horses, but also a health risk to herders.

Species portrait: Baitag Bogd, a plant hotspot⁷



Photo: ©Don Croner, <http://www.doncronerblog.com/2013/01/mongolia-khovd-aimag-baitag-bogd.html>

The Great Gobi B primeval horse reserve is located in the Dzungarian Gobi, a biologically unique, very barren semi-desert and steppe region in the southwest of Mongolia and the northeast of Xinjiang in China. One would not expect botanical diversity here. But with more than 900 species it is one third as big as in Switzerland. S. Baasanmunkh et al. show in a remarkable 11-year study that this region has 28% of its vascular plants on only 2% of Mongolia's territory.

The amazingly high species diversity is concentrated in mountain ranges and river valleys. In the Mongolian part, two areas stand out in particular: the Baitag Bogd mountain range and the Bulgan River depression. Both are located directly on the border to Xinjiang.

Because of their distinct structuring, mountain ranges generally have a high diversity of habitats and therefore of plants. The Baitag Bogd mountain range is a vegetation hotspot in three respects: it is home to a particularly high

Fact Sheet

Plant Biodiversity in the Dzungarian Gobi

913 species of vascular plants (including 34 subspecies and 1 variety).

329 genera (e.g. Rosa) from 70 families (e.g. Rosaceae).

21 species newly located in the Dzungarian Gobi.

19 endemic (only found here) plant species.

96 species threatened, of which 6 critically endangered, 26 endangered, 57 vulnerable.

Species-richest plant groups: Asters (Asteraceae, 153 species), legumes (Fabaceae, 77 species), foxtails (Amaranthaceae, 69 species), and sweet grasses (Poaceae, 68 species).

In terms of the number of species, endemic species and threatened species, Baitag Bogd Mountain is a plant hotspot of the Dzungarian Gobi. It is home to 48% of the vascular plants living in the Dzungarian Gobi.

number of plant species, of endemic species (only found here) and of threatened species. Such biodiversity hotspots warrant special protection.

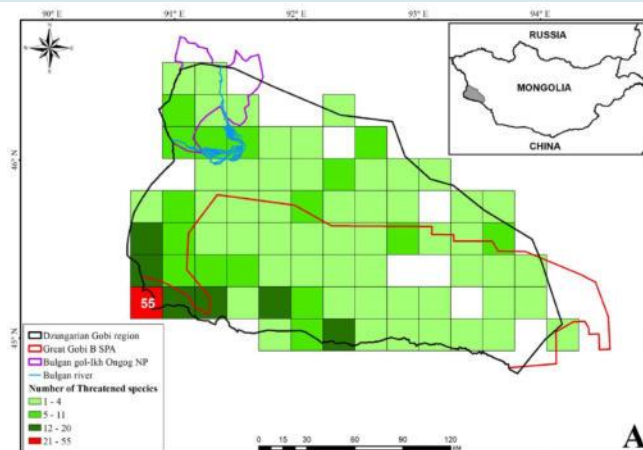
Baitag Bogd is not only quite well protected due to its extreme remoteness and location right on the Chinese border, but since 2019 it has also been part of the Great Gobi B. One of the largest reserves in Central Asia (and the only one with two wild equid species), the 18,000 km² Great Gobi B places 60% of the Dzungarian region under strict protection.

The Bulgan gol-Ikh Ongog National Park, located north of it, gives protected status to some species-rich areas of the Bulgan Depression.

Beavers in the Gobi?!

High plant diversity usually allows for high faunal diversity as well. The Dzungarian Gobi of Mongolia is home not only to three species of large steppe herbivores (khulan, goitered gazelle and reintroduced wild horses), carnivores such as the snow leopard, steppe fox, lynx and Pallas's cat, but also a wide range of small mammals such as the Gobi jumping mouse. But it is hard to believe that there are even Eurasian beavers living in the middle of the Gobi! They occur on the Bulgan River, where they have once been hunted almost to extinction. Beavers were the original reason to establish the 2,460 km² Bulgan gol-Ikh Ongog National Park.

Humans, apart from small permanent settlements along watercourses and wet depressions, stay only seasonally in the Dzungarian Gobi. However, they introduced the dominant herbivore species (which has been increasing for 30 years) into the region: goats.

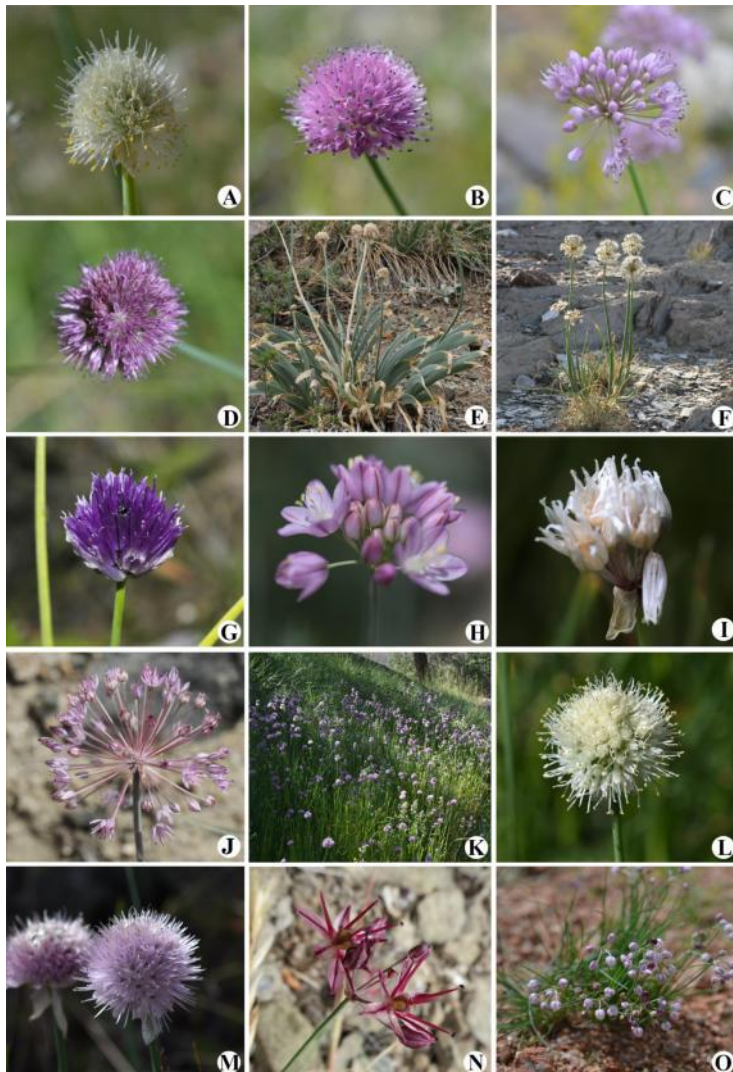
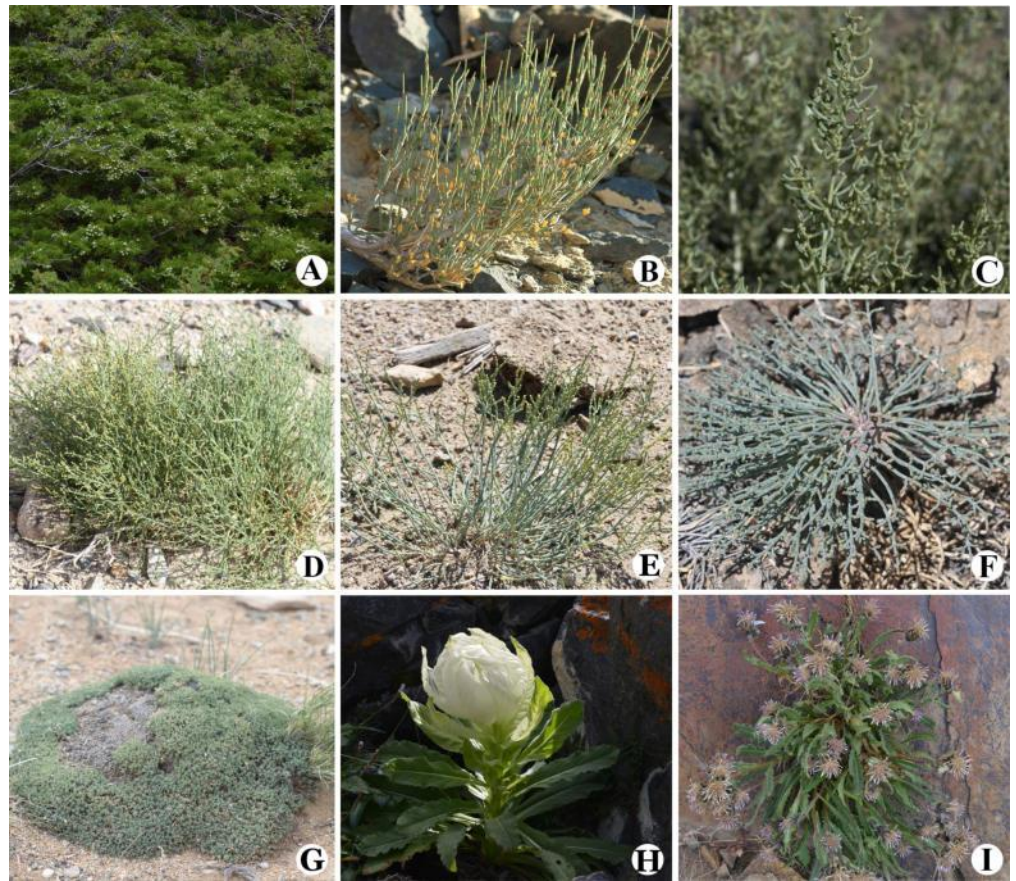


Baitag Bogd is home to 55 endangered vascular plant species, making it a hotspot of Mongolian plant diversity. Red line: Great Gobi B. Purple line: Bulgan gol-Ikh Ongog National Park. Blue line: Bulgan River.

The Dzungarian Gobi of Mongolia is home to more than 900 species of vascular plants (including 19 endemic and 96 endangered).

Plant hotspot

Vascular plant diversity in the Dzungarian Gobi. A) *Juniperus sabina* (Cupressaceae), B) *Ephedra intermedia* (Ephedraceae), C–F) *Amaranthaceae*: C) *Iljinia regelii*, D) *Anabasis aphylla*, E) *Anabasis elatior*, F) *Anabasis truncata*, G) *Nanophyton erinaceum*, H, I) *Asteraceae*: H) *Saussurea bogedaensis*, I) *Saussurea saichanensis*. From Baasanmunkh S. et al. 2021⁷. Reproduced with kind permission of the first author.



Garlic Eldorado!

15 *Allium* species from the Dzungarian Gobi. A–O) *Amaryllidaceae*: A) *Allium altaicum*, B) *Allium amphibolum*, C) *Allium austro-sibiricum*, D) *Allium bogdoicola*, E) *Allium carolinianum*, F) *Allium galanthum*, G) *Allium karelinii*, H) *Allium mongolicum*, I) *Allium oliganthum*, J) *Allium pallasii*, K, L) *Allium platyspathum* subsp. *platyspathum*, M) *Allium pumilum*, N) *Allium subtilissimum*, O) *Allium vodopjanovae*.

From Baasanmunkh S. et al. 2021⁷. Reproduced with kind permission of the first author.

⁷Baasanmunkh S, Oyuntsetseg B, Oyundari C, Oyundelger K, Urgamal M, Darikhand D, Nyambayar D, Khaliunaa K, Tsegmed Z, Kechyakin AA, Shmakov AI, Erst AS, Friesen N, Ritz CM, Wesche K & Choi HJ: The vascular plant diversity of Dzungarian Gobi in western Mongolia, with an annotated checklist. Phytotaxa 501 (1): 001–055. <https://doi.org/10.11646/phytotaxa.501.1.1>

The Dzungarian Gobi of Mongolia is home to more than 900 species of vascular plants (including 19 endemic and 96 threatened).

Let's secure the future of the wild horse together



"For us Mongolians, it has always been clear that human well-being depends on an intact nature. But here, too, the circular economy is a thing of the past. We have to reinvent coexistence with nature."

Suvd Purevjav, biologist, Project Manager ITG (Mongolia)

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!

USD/CHF 50.-

You cover the cost of one day's deployment of the veterinary team in the field.

USD/CHF 75.-

You fund a day of takhi monitoring using a professional drone.

USD/CHF 100.-

You enable the participation of a school class in the Young Researcher Programme.

USD/CHF 200.-

You provide for the purchase of 4 new tires for a patrol vehicle.

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

Photo: Dalaitseren Sukhbaatar

Follow us on Facebook und Instagram!



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.-

Foal member for young people, students and apprentices USD/CHF 20.-

Donation account

Aargauische Kantonalbank

CH-5001 Aarau

Account number (IBAN): CH07 0076 1016 0117 6052 3

Beneficiary "Freunde des Wildpferdes"

Printed on environmentally friendly FSC
(Forest Stewardship Council) / EU Ecolabel paper



Freunde des Wildpferdes
c/o Stiftung Wildnispark Zürich
Alte Sihltalstrasse 38
CH-8135 Sihlwald / ZH
www.savethewildhorse.org
info@savethewildhorse.org