Takhi-Post

ITG INTERNATIONAL TAKHI-GROUP

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Creating a future

On 11th June 2020, the 300th takhi was born in the Great Gobi B preserve. Its mother is called Dorothee – after Dorothee Stamm, honorary member and visionary ITG patron of the first hour. Mare Dorothee was one of the precious foals born in the first years following the start of the reintroduction in Great Gobi B.
In mid-October the rangers counted 320 takhi, including 70% mares of reproductive age – a good pre-condition for further recovery of this species which was extinct in the wild 50 years ago.

Photo: Dalaitseren Sukhbaatar

Let's Protect the Primordial Wild Horse and its Habitat.

Dear Friends of the Wild Horse

To those concerned about the survival of the Primordial Wild Horse I need not explain that this species of wild animal with its huge spatial needs constitutes a special challenge for conservation – just like other steppe ungulates. Although they are adapted to dry habitats, they depend on wide-ranging movements to find enough water and pasture. For these essential resources are both sparse and weather-dependent. A water hole may dry up fast, the surrounding vegetation may wilt. Or the competition may gobble up all the sparse green overnight. Then you'll have to move to some other place, in the hope of finding there what you need for survival. That's why it is so important to protect and connect really large areas.

Yet these days, in which man alone represents ten times as much biomass as all wild mammals combined, and our livestock another ten times as much biomass as all wild mammals and birds combined, putting very large areas under protection is practically mission impossible – even in areas as thinly populated as the Dzungarian Gobi. It, too, has been used since times eternal as grazing ground of the livestock of nomads. That's why Great Gobi B is a biosphere reserve according to UNESCO definition. Here people shall be able to live according to their traditions, without nature being damaged in the process.

For such a concept to have a future, herders must be able to make a living under park rules, e.g. benefit commercially from conserving nature, if possible. As the sanctuary has recently been enlarged to no less than 18'000 km² (almost half the area of Switzerland), a lot more people need to be won over – not least because grazing competition and the risk of infection from livestock herds can become a problem for wild ungulates. The takhi with its impoverished gene pool is at additional risk from hybridization, for the ceiling of a Mongolian horse stable is the firmament.

For the park management the steering of human interference thus remains the largest challenge, especially in those new sections of the preserve which were recently put under protection. That's why more than 200 nomad families were contacted by letter to get a precise picture of their activities which allows optimizing the co-existence of people and wild animals. The Mongolian government aims at establishing a clear responsibility of the herders with regard to their use of the preserve. This shall be ensured by contracts which define, in addition to rights of use, duties regarding herd size, care of pasture, and protection of wild animals and vegetation.

This Takhi Post details how your donation helps realize our vision of harmonious co-existence of endangered steppe fauna and the traditional nomad culture. However, in the name of our team working in an honorary capacity, let me express our heartfelt thanks to you for your generous support. Still, the Great Gobi B preserve, located 6100 km east of Switzerland, is an insider tip. All the more pleasing is the attitude of people like you who would like to conserve this sparse landscape and its original beauty for the future – including its precious icon, the takhi, resurrected thanks to a handful of perseverant aficionados. We need fellow campaigners like you for whom it is a matter of heart to create a future for nature and man. You will surely stick to it, won't you?

Dr. Reinhard Schnidrig, President, ITG

For a biosphere reserve to have a future, the locals must be able to make a living under its rules.

How can herders become rangers?

„The takhi eat our goats' pasture!" This was one nomadic herder's argument after he recently chased off grazing takhi – in the midst of the core zone of the Great Gobi B Strictly Protected Area. From the viewpoint of some nomads, the pasture is their livestock's. Wild ungulates are competition and are hence kept away.

That's reason for worry, especially since the livestock outnumbers wild animals multifold and keeps increasing enormously. Accordingly, the degradation of pastures in the park is concerning. They did not regrow well in the past year, despite good rainfall, and were so sparse in spring that, according to park management, any larger-scale snowfall would have sufficed to expose the takhi around the Khonin us oasis to a serious food problem.

In principle nomads have a genuine interest to use their range sustainably, allowing it enough time to regenerate. That's precisely why they move on when the grazing grounds of their couple hundred sheep and goats and a few dozen horses get too scraggy. And not when they are degraded. But this weighting is a narrow ledge. And modern economics with its inducement of consumption does not stop short of penetrating the once self-sufficient nomadic herding culture (see Takhi Post 13, December 2020).

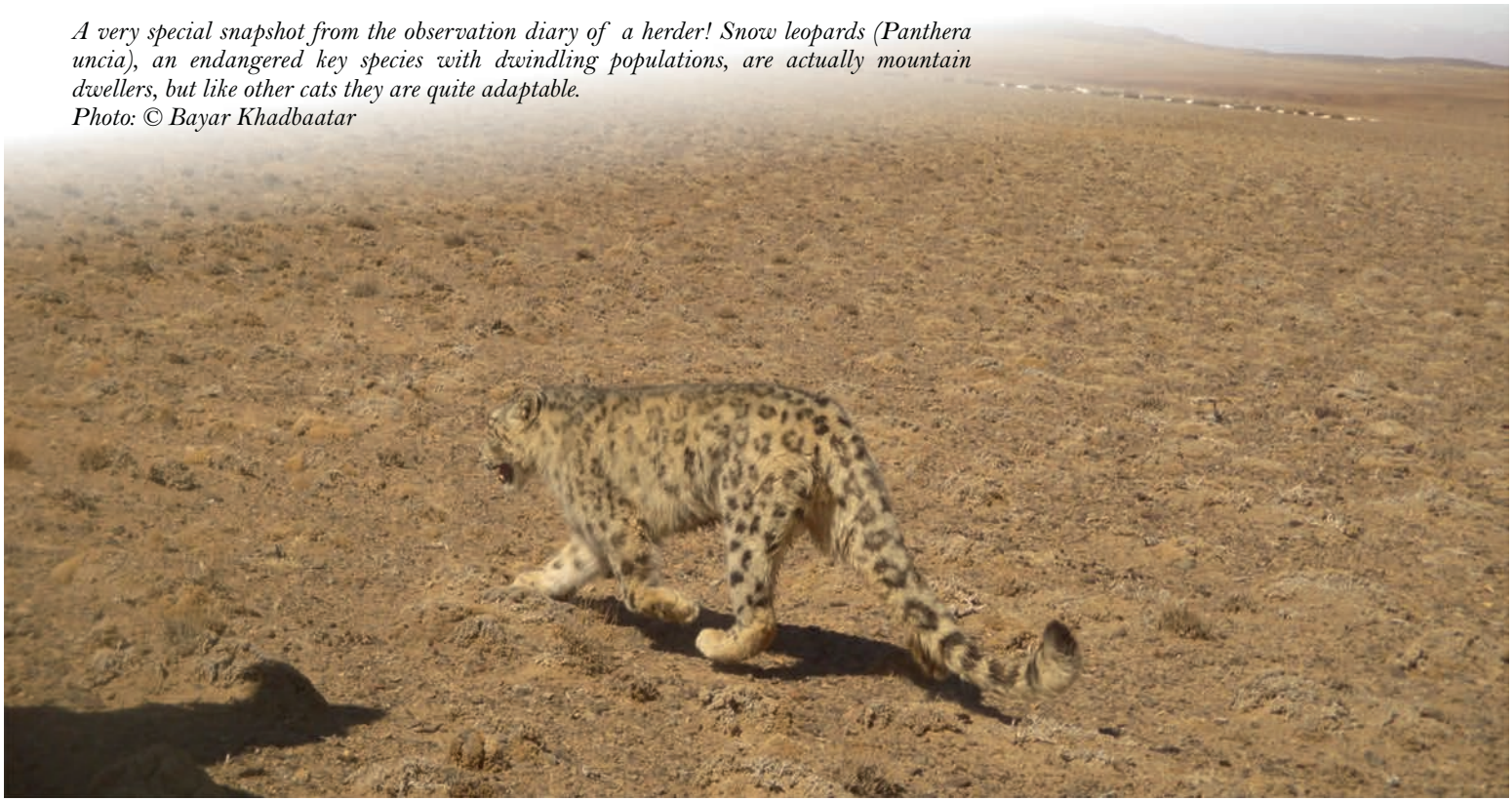
Should the co-existence of nomads and endangered wildlife in the biosphere reserve remain viable, a limitation of the number of goats and sheep entering and a clear regulation of herder activities may prove unavoidable. The Ministry of the Environment and Tourism has understood this, but ensuring the implementation of such rules in the 18'000 km² sanctuary is quite a different matter. It will ask a lot of surveillance effort from the thinly staffed ranger patrols.

The problem could be mitigated if cashmere wool (the most important economic factor for the nomads) would not be sold only to intermediate traders, but instead would be better marketed and processed in the region. This way added value would increase and the incentive for ever enlarging herds of cashmere goats would decrease. To solve this question is a core topic in the doctorate of the German Agricultural Ecologist Lena Michler. In her study financed by ITG[1] she is also exploring options for developing touristic offers for exigent, solvent guests in nature and culture tourism. To enable the local population to generate more added value is a central aspect of the management plan of Great Gobi B.

Herders can also play an important role in the management of the sanctuary if they can be convinced to enlist for cooperation and co-work as assistant rangers. In 2019 Lena Michler distributed thirty digital cameras among them and motivated them to keep an observation diary. These observations provide important insights on the distribution, mode of life and spatial use of wildlife to both park administration and researchers. In this way nomads can indeed become assistant rangers and contribute essential information for conserving the ecosystems of the biosphere reserve, on which they depend as much as the native fauna and flora.

[1] Michler L et al.: Managementstrategien für die Zusammenarbeit von lokalen Hirten und dem Schutzgebietsmanagement der Great Gobi B (ITG Forschungsprojekt Nr 4). In preparation.

A very special snapshot from the observation diary of a herder! Snow leopards (Panthera uncia), an endangered key species with dwindling populations, are actually mountain dwellers, but like other cats they are quite adaptable.
Photo: © Bayar Khadbaatar



Observations by herders contribute to optimize the management of the reserve and thus help conserve its ecosystems, on which they depend as much as the native fauna and flora.

Of planning and protecting

With 310'000 km² of strictly protected areas, national parks and nature reserves, Mongolia protects around 20% of its surface. This makes it a pioneer of implementing the so-called Aichi goals of 2010. Negotiations about a new framework for maintaining world-wide biodiversity, which are planned for October 2021 in Kunming, China, will include an increase in the area target for biodiversity precedence: until 2030 at least 30% of the global terrestrial area and 30% of the oceans shall be dedicated to protecting and preserving biodiversity; currently this applies to no more than 16.4% and 7.7%, respectively[2].

Yet this ambitious goal is not achieved with a mere proclamation. We need to walk the talk. Trying that, the devil is not only in the detail, but lurks right at the start.

How do you effectively and efficiently protect huge areas from poaching, illegal prospection, deforestation and overgrazing – and all this at a time when climate change is clearly picking up speed? This is a question that keeps bothering ITG, too, as less than 2 years have elapsed since doubling the area of Great Gobi B.

End-January we were virtually discussing it in our yearly workshop with our partners in Mongolia and Europe. Together, ITG, park management and the ministry of the environment and tourism were defining strategic focal points and activities. For us two goals remain essential: the networking of suitable habitats for takhi, khulan and other species with large spatial needs, and improved inclusion of the local population with the goal of their socio-economic advancement. The latter is indispensable for the acceptance

(Continued bottom left)

Photo: ©Bolor-Erdene

[2] 50 states, including Mongolia and Switzerland, have joined the High-Ambition-Coalition (HAC), particularly to achieve a breakthrough with the ambitious area protection goal. However, this won't be an easy walk, as 9 of the 10 largest nations by surface did not sign the HAC. These include Russia, the USA, China, Brazil, Australia, India, Argentina, Kazakhstan and Algeria. Together they cover no less than 46% of all ice-free land.

of the park and also directly serves the protection of wild ungulates from excessive food competition, as well as that of takhi from hybridization.
What also keeps us very busy is the building of staff capacity – a key requirement for professional management of the sanctuary. Triggered by its extension 14 additional rangers were hired at once in 2020. Like all other park employees they need adequate equipment and infrastructure as well as professional development and advanced training. For this purpose we are creating an organizational structure and educational programmes in close collaboration with the ministry.

The massive enlargement of the preserve is a giant opportunity, but makes it even more difficult to manage it out of the remote station in Takhin tal. Although this will remain an indispensable base and research station, we are planning to move the park administration into an administration and information building which shall be built in Altai (Khovd) just north of the Great Gobi B reserve. In this way we can improve the infrastructural connections, make the park more attractive as working place for qualified personnel and thus adapt it to increasing profile requirements. Equipped with office space, conference room, lab, guest room and an information center, this new information centre shall serve as a meeting point for both locals and tourists and improve the awareness of and understanding for the nature protection concept. This will support our long-term goal of transferring the operational and financial management of the biosphere reserve, and hence its effective conservation, into the sole responsibility of Mongolia in future.

The planned administration and information centre in Altai (Khovd) was designed by Dipl. Ing. Architect Franz Michler (Bad Säckingen, Germany) – FREE OF CHARGE! We extend our heart-felt thanks to him for this utterly generous donation to ITG.

CAD image: Dipl. Ing. Franz Michler

For us two goals remain essential: the networking of suitable habitats for takhi, khulan and other species, and improved inclusion of the local population.

100 concrete posts for a milestone

9000 additional square kilometers under strict protection are, first and foremost, a great gift to any conservationist. But then it means heaps of field work – even for just demarcating the border line. This alone required 29 paintbrushes, 65 liters of paint, 20 liters of diluent, 100 concrete posts and 3'500 kg of cement. And last but not least a committed ranger team that launched into this and painted, drilled, screwed, lifted and poured concrete… The result, generously financed by the Jean-Pierre and Sonja Siegfried Foundation (https://siegfried-takhi.ch), not only marks the new park border, but also a milestone in protecting the Dzungarian Gobi.

And of course it's not done with that. The area must be zoned anew, rangers must be equipped, educated, trained and sent on patrol, the car park urgently needs additional patrol vehicles and a partial renewal, and the local population, which over night inhabits a national park, must be familiarized with the rules through an information campaign in settlements and schools. Ideally some in this structurally weak region will get inspired for the conservation of species and nature, for serving as "vocational rangers" or for future tasks in tourism.

Advancing environmental awareness

For ensuring conservation of nature in the long term, new generations have to be won over. At times of continuously ballooning urbanization – including in Mongolia – this is urgent. Where the city rumble is hip, quiet nature quickly turns into a flop. That's what Anita Fahrni, ITG board member and proven Mongolia expert, stands up against. She wrote „Tuya's Trip", a truly exciting and gorgeously illustrated, locally produced English teaching material for teens. A print run of 10'000 copies of it was recently distributed at schools in Ulaanbaatar and in western Mongolia. City girl Tuya must spend her school holidays accompanying her mother to Takhin tal to assist with conservation projects. Totally uncool! However, on site she falls for the charm of the overwhelming nature and gets to know flora and fauna.

The 100 colourful concrete posts not only mark the new park border, but also a milestone in protecting the Dzungarian Gobi.

In Great Gobi B, a trail of dust visible from afar often betrays a khulan stampede. The endangered Asiatic wild asses, whose 10'000 individuals form one of their last and most important refuges here, are better protected since the park extension in 2019.

Photo: © Petra Kaczensky

Corona notwithstanding, in the current year and beyond we press ahead with key tasks of the management plan. At the core are the day-to-day patrolling and wildlife monitoring activities which due to the park extension require significantly more resources. Currently some 22'000 large ungulates live in Great Gobi B, of which 300 are takhi, 12'000 khulan and 10'000 goitered gazelles. The large **ungulate point count** planned for 2020 had to be postponed by one year. Whether it can take place in 2021 depends on the course of the pandemic.

But epidemic risks also loom in the midst of the Gobi – for takhi! Their population, still tiny despite the quick growth over the past few years, is not only exposed to weather risks and grazing competition from livestock. At waterholes it can also contract infections from pathogens of other, especially domestic species. The potentially deadly equine herpes viruses, for example, demonstrably remain infectious in water[3]. This danger we must be able to combat quickly and with determination. That's why we put much emphasis on a **pathology workshop** with veterinarians (notably Jean-Michel Hatt) and rangers to enable us to timely recognize illnesses and causes of wildlife fatalities.
Another serious threat to the takhi is hybridization with domestic horses which can water down their tiny, precious gene pool. Our respective **genetic research project** got held up by the corona pandemic. But now work on it continues, and we hope for speedy results.

Water use, water quality and the improvement of **water management** in Great Gobi B we investigate jointly with Khovd University and the park management in a study generously financed by SDC (Swiss Development Corporation) Mongolia. In addition to 3 longish field sessions, herders were asked about their water use and 3 springs were fenced to avoid them being trampled by thirsty animals. The study is scheduled to be concluded this year. Currently additional field work is being done, including the installation of two additional weather stations and the fencing of more springs. Ten percent of the costs have to be borne by ITG.

Parallel to this agricultural ecologist Lena Michler is investigating **socio-economic options** for sustainably advancing the subsistence of the local population and herders, or for generating added value from the biosphere reserve in other ways.

To better understand the **biodiversity** of Great Gobi B, we have initiated the compilation of a biodiversity catalogue. It will, among other aspects, name the roughly 100 bird species identified in the area, and map the saxaul bush, which is critical for the local ecology and must be protected from being cut down as firewood. In the mountains along the national border with China 100 camera traps were installed for three months to monitor the population of the local snow leopards and the mountain-dwelling ungulates. Moreover, ITG biologist Yondon Gansukh is conducting hydrobiological research on watercourses, in collaboration with a team led by Prof. Burmaa Tsambuu of Khovd University. The resulting species inventory of aquatic invertebrates so far lists 25 families from 6 orders. An inventory of small mammals of the steppe is planned to be generated from May onward. We are also establishing a student exchange programme with local universities to sensitize the young research generation for current and future conservation tasks.

The Dzungarian Gobi vegetation includes lichens and flowering plants specialized on the extremely continental climate. Photo: ©Petra Kaczensky

[3] Dayaram A et. al., Science of the Total Environment, 773, 2021, https://doi.org/10.1016/j.scitotenv.2021.145446.

In the current year we press ahead with key tasks defined in the management plan.

Species portrait: Bogeda snow lotus (IUCN: CR)

Primordial wild horses (Takhi) are not the only extraordinarily rare species benefitting from the strict protection of the Great Gobi B sanctuary. Even rarer is the Bogeda snow lotus (*Saussurea bogedaensis*), a botanical sensation first described as recently as in 2018. This impressive composite from the Saussurea genus had to be enlisted right-away in the Red List of species threatened with extinction. For it is globally known from only two locations: Bogeda mountain in the eastern Tien-Shan range in Xinjiang and the great Gobi B sanctuary.

Related to our knapweeds, the Bogeda snow lotus forms its own sub-family (*Carduoideae*) of the composites (*Asteraceae*). Its genus name Saussurea honors the Swiss naturalists Horace-Bénédict de Saussure (1740–1799, Co-founder of geology, glaciology and alpinism as well as topographic surveyor of Mont Blanc) and his son Nicolas Théodore de Saussure (1767–1845, founder of plant physiology).

In 2013 Shukerdorj Baasanmunkh, then a biology student, discovered the Bogeda snow lotus in Great Gobi B. He found another population there in 2017. However, the first scientific description of the species was published in 2018 by Yu J. Wang und J. Chen[4].
In 2020 Sh. Baasanmunkh and others published the Mongolian location and conducted a genetic analysis of the super-rare species[5]. They showed the species to be closely related to two other Saussureas from Tien-Shan (*Saussurea involucrata*) and the Altai (*Saussurea orgaadayi*). However, it is geographically isolated from these and distinguishable both morphologically and genetically. In its Mongolian site the Bogeda snow lotus grows on rocky slopes, screes and river banks at altitudes of 2400–3300 m a.s.l.

With 6 subgenera and around 500 species, the genus Saussurea is one of the largest of the Asteraceae. It is found across the entire northern hemisphere in diverse habitats, mostly in cold-dry locations at higher altitudes. Various species are known from Central Asia. In China alone the number of Saussurea species is estimated at 317, in India they number 61, in Siberia 54, in Bhutan 41 and in Pakistan 23. In Mongolia so far 53 species of Saussurea have been noted, 5 of which are endemic, hence occur exclusively in Mongolia (data as per [5]).

Saussurea species, or rather their essential oils, are used for various purposes, mainly medical and religious, but also for the perfume industry and as insecticides. With several Saussurea species this already resulted in endangering through overuse and habitat degradation. Since this group of plants is naturally rare and occurs in small populations only, any unsustainable use very quickly becomes an extinction risk. This also applies to the two sister species of the Bogeda snow lotus: both the snow lotus (*Saussurea involucrata*) and *Saussurea orgaadayi* are red-listed in Mongolia.

For the even much rarer Bogeda snow lotus any use is an inacceptable extinction risk. Until now in all of Mongolia only two populations were discovered in the Great Gobi B sanctuary, numbering altogether fewer than 600 individual plants. Therefore the species is at acute risk of being wiped out through human interference (intentional or not). Both the Mongolian and the Chinese authorities assess it as critically endangered (CR) according to the criteria of the IUCN Red List. To understand the threat better, on-site studies of the Bogeda snow lotus' reproductive biology are urgent. The species is particularly threatened by goat herds which could wipe out the entire population in no time. Its population sites must therefore be singled out as strictly protected zone and protected from grazing.


Photo: ©Shukerdorj Baasanmunkh

Extremely rare and critically endangered: The Bogeda snow lotus is known from only two sites world-wide, one of which is the Great Gobi B!

[4] Saussurea bogedaensis Yu J.Wang & J.Chen, PloS ONE 13(7): e0199416 (12) (2018)

[5] Baasanmunkh, Shukherdorj, Nyamgerel, Nudkhuu, Bayarmaa, Gun-Aajav, Oyuntsetseg, Batlai, Oyundelger, Khurelpurev & Choi, Hyeok Ja, 2020, A new record of critically endangered Saussurea bogedaensis (Asteraceae) from Dzungarian Gobi, Mongolia, PhytoKeys 160, pp. 109-121: 109; http://dx.doi.org/10.3897/phytokeys.160.55603

Until now only two populations of the Bogeda snow lotus were discovered in the Great Gobi B sanctuary, numbering altogether fewer than 600 individual plants.

Let's secure the future of the Primordial Wild Horse together

„The watercourses and oases of Great Gobi B are essential for survival of the takhi and many other species. Through our hydrobiological research we begin to understand these critical ecosystems better for the first time. That's the only way we can take the right decisions to keep them intact in the long run."
Yondon Gansukh, biologist, ITG Team Science (Mongolia)

ITG works in an honorary capacity.
Each donation is used directly for protecting the Primordial Wild Horse.

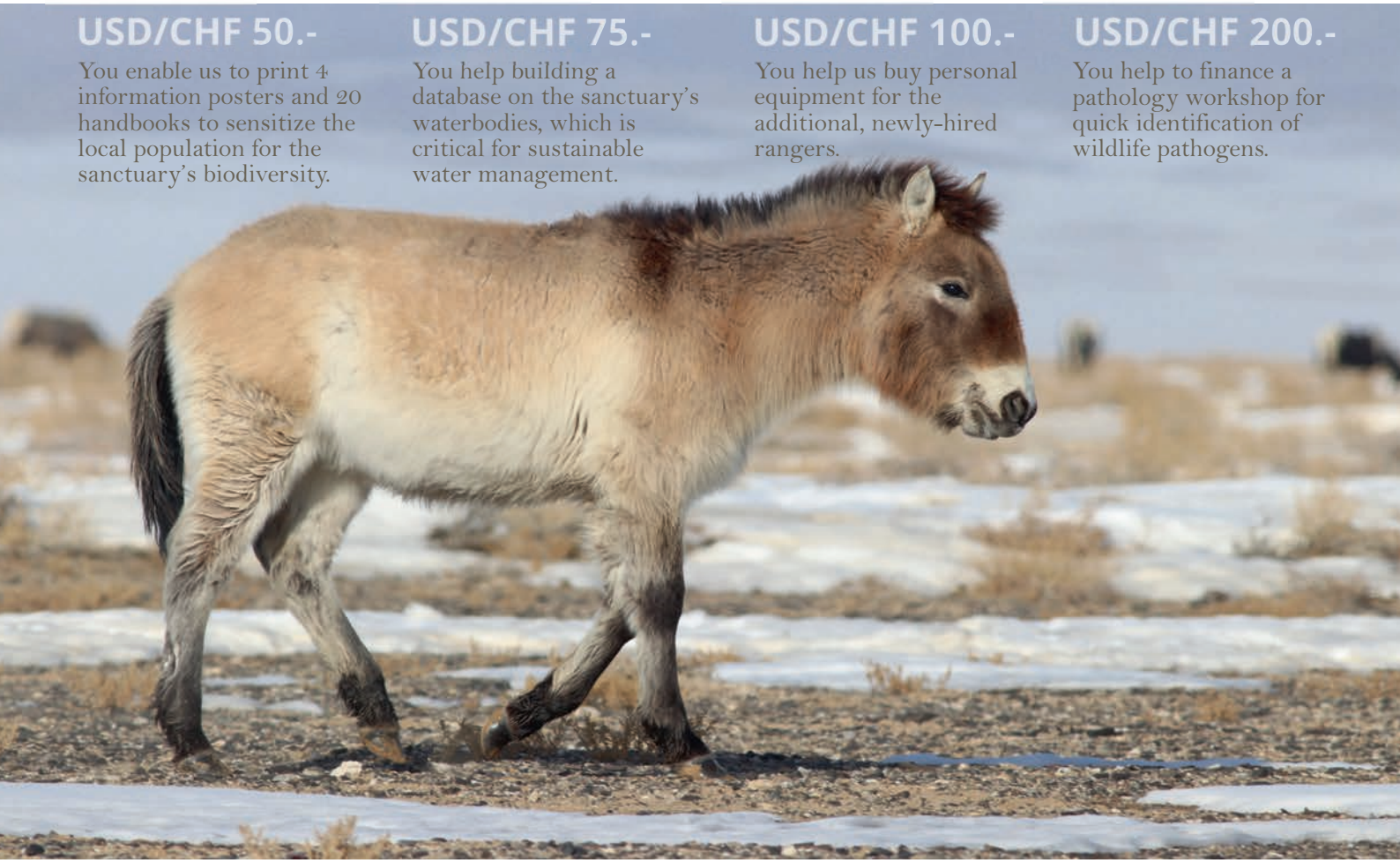
How your donation helps us – many thanks!

USD/CHF 50.-
You enable us to print 4 information posters and 20 handbooks to sensitize the local population for the sanctuary's biodiversity.

USD/CHF 75.-
You help building a database on the sanctuary's waterbodies, which is critical for sustainable water management.

USD/CHF 100.-
You help us buy personal equipment for the additional, newly-hired rangers.

USD/CHF 200.-
You help to finance a pathology workshop for quick identification of wildlife pathogens.



Any donation helps conserve this unique species of Wild Horse as well as other flora and fauna of the Central Asian steppe.

Photo: Dalaitseren Sukhbaatar

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