



*A charismatic species is wiped out in the wild.
Against all odds, a handful of conservationists bring it back.
But can captive-bred Wild Horses survive in the Gobi desert?
The answer is an exemplary conservation story.*



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years of
reintroduction
1992 – 2017

The Takhi returns

Protect the Wild Horse and its Habitat

Dear Friends of the Wild Horse



The unprecedented economic progress made globally over the past few decades is mindboggling. But you need not be technophobic to realize that the improvement of so many livelihoods comes at a huge price to other forms of life: they disappear. That should not be taken lightly, for once a species is gone, it will never come back. And some of the extinctions which we don't even notice – under water, under soil – may cause irreparable ecological damage.

Thus, one of my key duties in Switzerland and abroad is to find ways in which nature and people can co-exist, allowing both to thrive. Flourishing economy and flourishing ecosystems are not mutually exclusive. All it takes is respect for the needs of both and the determination to support both. This does mean self-limitation. The maximum is not enough. Only the optimum is. Fifty years ago, the takhi, venerated by our forebears, was on the brink of extinction. A handful of people cared enough to avert its disappearance. They considered it shameful for mankind that such an emblematic species should die out. This year we celebrate 25 years of the takhi's return to its final refuge in Southwestern Mongolia. This brochure provides some insights into what – and who – made the return possible and how they did it. Bringing back a species that had been completely wiped out in the wild has not often been tried. The reintroduction of the Mongolian Wild Horse – a large mammal – to the Gobi semi-desert, one of the most challenging habitats on earth, was and remains a big effort.

The early days were fraught with difficulties. Everything, from breeding to transportation to monitoring, had to be invented and adjusted to the situation. It took thousands of volunteer work hours and lots of donated funds to bring the free-roaming Wild Horse back to us all. And it has never been certain – right up until now – that these efforts would be successful. In the wild, takhi are still super-rare. Even though they are no longer hunted, they remain vulnerable to diseases, drought, climatic extremes and competition from domestic animals.

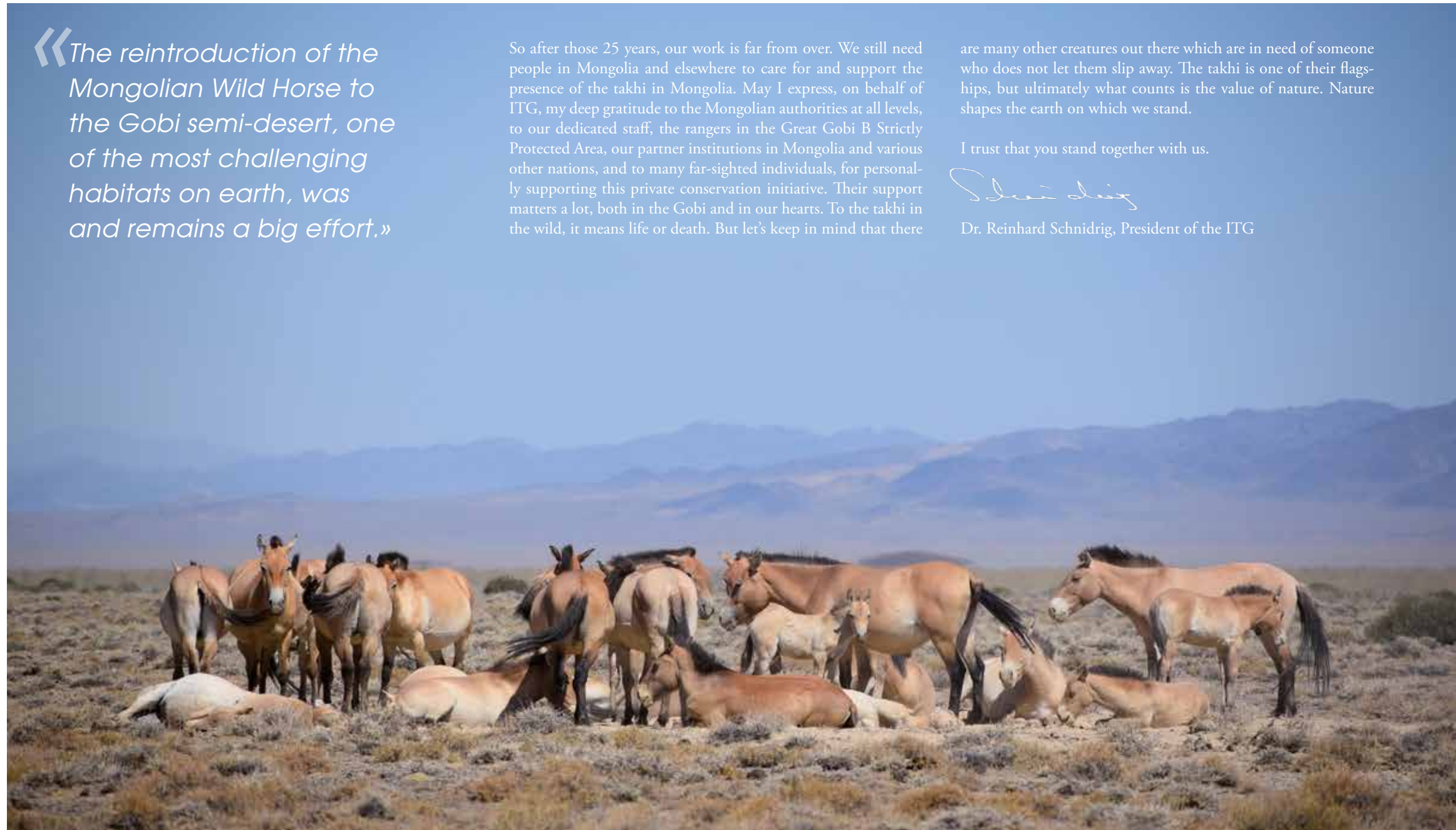
«The reintroduction of the Mongolian Wild Horse to the Gobi semi-desert, one of the most challenging habitats on earth, was and remains a big effort.»

So after those 25 years, our work is far from over. We still need people in Mongolia and elsewhere to care for and support the presence of the takhi in Mongolia. May I express, on behalf of ITG, my deep gratitude to the Mongolian authorities at all levels, to our dedicated staff, the rangers in the Great Gobi B Strictly Protected Area, our partner institutions in Mongolia and various other nations, and to many far-sighted individuals, for personally supporting this private conservation initiative. Their support matters a lot, both in the Gobi and in our hearts. To the takhi in the wild, it means life or death. But let's keep in mind that there

are many other creatures out there which are in need of someone who does not let them slip away. The takhi is one of their flagships, but ultimately what counts is the value of nature. Nature shapes the earth on which we stand.

I trust that you stand together with us.

Dr. Reinhard Schnidrig, President of the ITG



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The Takhi Returns. International Takhi Group (ITG), September 2017.

Dr. Reinhard Schnidrig is Deputy Division Head of the Biodiversity and Landscapes Division in Switzerland's Federal Department of the Environment, Transport, Energy and Communication, and Head of the Swiss Wildlife and Forest Biodiversity Section. He is also responsible for international aspects of the Wildlife and Forest Biodiversity Section, and represents Switzerland in various international conservation agreements, including CAMI (Central Asian Mammals Initiative).

Dr. Schnidrig is President and Board Member of the International Takhi Group (ITG), the organization that coordinates

the efforts to re-establish a viable takhi population in Mongolia. ITG was initiated by Ochir Dorjraa and the late Mr. Christian Oswald. ITG members include the zoos of Prague (Czech Republic), the Animal Park of Nuremberg (Germany), the Deer Park Bruderhaus (Winterthur, Switzerland) and the Foundation of the Wilderness Park in Langenberg, Zurich (Switzerland). Honorary Private ITG Members include the late Dr. Jean-Pierre Siegfried (Arlesheim, Switzerland), Dorothee Stamm (Meilen, Switzerland), and former ITG President and Swiss Senator Prof. Thomas Pfisterer (Aarau, Switzerland).



Ruth Werren

President Bruderhaus Deer Park Society, Winterthur, Switzerland

«I take pride in the active participation of the Bruderhaus Deer Park in the takhi reintroduction project. Whenever I guide visitors through the park or organize information events, it makes me happy to tell them about this conservation success story. Back in 1990, celebrating the 100th anniversary of the Bruderhaus Deer Park, the city council of Winterthur decided to keep a new species in the park. Ernst Huggenberger opted for the takhi, which we have been keeping since 1991. In 1996 the Deer Park management decided to participate in the reintroduction programme. So far, no less than 15 takhi from Winterthur were released in Mongolia!»



Welcome address



Ms. Dulamsuren OYUNKHOROL
Former Minister of Nature Environment and
Tourism of Mongolia

Compared to many densely populated countries, Mongolia has vast expanses of pristine land. With the expansion of globalization, conservation of nature is a top concern of both my country and me personally, since many of our ecosystems are both unique and fragile. This is particularly true for the Great Gobi landscapes, large portions of which are strictly protected by Mongolian law. The Dzungarian Gobi ecosystem in the Southwest of Mongolia is spectacular in several ways – not only through scenic beauty but also in that it hosts a great diversity of wildlife, including large herds of Goitered Gazelle, Khulan, and Takhi. The presence of free-roaming takhi in this habitat is especially noteworthy, considering the extreme rarity of this species, which went extinct in the wild some 50 years ago.

Twenty-five years ago, it returned to the Gobi, thanks to the vision of far-sighted Mongolian authorities and the support of a determined group of professionals in Europe, who together brought the species back home. Reintroduction of a large mammal to such a climatically extreme area is a masterpiece of conservation. I am proud that Mongolia has initiated this success and is determined to make it last. The takhi reintroduction is an exemplary conservation project, both in my country and beyond. It shows what international cooperation can achieve, and I am grateful to the International Takhi Group (ITG) for the long-term, productive partnership in this challenging endeavor.

Importantly, the miraculous steppes of the Gobi and other pristine landscapes of Mongolia, and of course the takhi roaming the immense plains of Great Gobi B SPA, represent a precious natural asset. Saving unique ecosystems creates great opportunities for tourism development with benefits to the people in remote regions of Mongolia. I am confident that the gift of nature blessed by our ancestors will last through the generations.

«The Takhi reintroduction
is an exemplary conservation
project, both in my country
and beyond.»

When the Gobi calls

Conditions in the Gobi can be merciless. Extreme temperatures aside, sandstorms can wreak havoc on the plain. In winter 1997/98, a severe sandstorm turned one of the yurts in the ranger camp upside down, smashed it, scattered household items and carried a seven-year-old boy into the river. The boy was washed out by a wave and, miraculously, driven past a lone tree to which he managed to hold on, until he was found by his terrified father. Stallion Perun, born in Askania Nova, was less lucky. Released with his harem in 1998, one of his mares moved away to give birth to a foal. Perun circulated between the group and her when a severe sandstorm hit the area. He disappeared in the storm and was not seen again. The mare returned to the group after a few days, but had lost her foal to wolves. Perun was not the only casualty due to a sandstorm; at least 2 other takhi died the same day, and two more had died in a sandstorm half a year earlier.



The pioneers



Great developments often start with extraordinary individuals. Sometimes, the very development they initiate is what makes them extraordinary. They idealistically embrace an airy idea which others would have rationalized away. They plunge head-on into an adventure of unknown scale - just because they feel what they do is necessary and right. And they make it succeed, against all odds - with courage, skills and determination.

Christian Oswald (1930 – 2011) was a merchant and founder of a company in Munich (Germany), trading globally with venison and dropped antlers of almost all deer species. In this business since 1954, he built an import trade from Austria, Eastern European countries, New Zealand and Argentina. He was especially interested in deer. 1967 he visited an international hunting exhibition in which Mongolia was represented with a yurt. The mighty trophies of Argali, Capricorn and Maral from this country, whose exact location he did not know at the time, kept him under their spell.

Christian Oswald extended his trade to China and Mongolia and built an excellent network there, including the necessary staff. In 1981 he met – a stroke of luck in his life – wildlife biologist Dr. Guo Fang Zheng on a business trip. He spoke German perfectly and could tell him all about Chinese wildlife.

In 1990, Mr. Oswald was asked by the then Mongolian Prime Minister Mairdar to implement the idea of reintroducing the takhi, gone extinct in the wild in the late 1960s. He accepted and, with his immense drive, got started at once. For this purpose he founded the Christian Oswald Foundation for the Protection and Conservation of Wildlife (COS) and financed, with support from the Conseil International de la Chasse, the first transports of takhi from zoos to Mongolia (1992). For this he had to overcome great challenges regarding infrastructure, logistics and means of transportation. Jointly with the Wild Horse Committee of the Mongolian Ministry of the Environment he decided to reintroduce the species in the Takhin Tal area. From the start he understood that the animals, grown up in a protected zoo environment, had to be acclimatized carefully to their new habitat. Although the project had weaknesses at the start, today we know that without Christian Oswald no takhi would have been brought to the Gobi.

Tsedensodnom Sukhbaatar

was the second Takhi Reintroduction Project Head in Mongolia. A veterinarian by profession, he was the coordinator of all Mongolian activities relating to the reintroduction, driving the project forward energetically.

Mr. Sukhbaatar was then appointed the first Director of Great Gobi B Strictly Protected Area. He has great merits for making the takhi reintroduction succeed in the early, difficult days.

Unfortunately, Mr. Sukhbaatar fell ill and died at an early age. However, his legacy lives on, and his merits will not be forgotten.



Dr. med. vet.

Jean-Pierre Siegfried (1930 – 2013) was the Werner Stamm Foundation's veterinarian since its inception and later its president. His special interest was donkeys. In 1999 he founded, together with Mr. Oswald, Mr. Dorjraa and the Werner Stamm Foundation, the International Takhi Group (ITG) and was elected its first president.



The first five years of the reintroduction project were difficult; methodologies and science-based protocols still had to be developed. To achieve this, ITG was founded. Under Dr. Siegfried's lead the new organization and the takhi reintroduction project developed successfully. Numerous practical and scientific questions were solved. Dr. Siegfried also initiated the cooperation with other takhi projects in Mongolia. As both professional and comrade, he never made any fuss about himself. The Mongolian partners liked him very much because of his competence and humour. This earned him the honorable nickname «Teme» (Mongolian for camel).

Jean-Pierre Siegfried was a gifted fundraiser and thereby created the basis for the long-term success of the project. He was on good terms with all people and organizations involved in the reintroduction project. At a time of great rivalry around the takhi reintroduction he set clear signals of objectivity and cooperation. In 2007, he stepped down as ITG president and was named Honorary President. In this function he continued to support ITG and to offer his large knowledge, ideas, network and help in the search for funds.

A key support in this was his wife, Sonja Siegfried. Fascinated by the takhi and its reintroduction, she always managed to accompany the project with enthusiasm, engagement and discretion and to give it the necessary backing.

The Jean-Pierre and Sonja Siegfried Foundation, established by the couple, continues the engagement and support for Equids, and particularly the takhi. Its purpose is dual: support the reintroduction through contributions for maintenance and monitoring, and research on the reasons for failing domestication of the takhi. Without Jean-Pierre Siegfried's ability to unite the many interests and personalities in one goal, there would be neither ITG nor the project in its current form.



The takhi shall not die



Ochir Dorjraa is a pioneer of nature conservation in Mongolia. In 1990 he was Director of the National Committee for Rare Species Conservation. When the then Deputy Prime Minister Maidar brought up the idea to reintroduce the takhi in Mongolia, Mr. Dorjraa was the first coordinator of this project on the Mongolian side.

Mr. Dorjraa, what motivated Mr. Maidar and you to seek to reverse the extinction of the takhi in your country? In 1990, it had been extinct for over 20 years, so what was your vision?

In 1977, I was working in the Great Gobi B. There I first met Mr. D. Maidar, then a member of the Mongolian Politbureau and First Secretary of the Council of Ministers. It was his first visit to the region. His aim was to conserve the Mongolian Gobi ecosystem through establishing a park with a suitably located administration center and appropriate management of this unique area. He decided to establish the park center in the Zahui bag of Tsogt sum, changing the village's name to Bayon-tooroi. He was a true conservationist who cared for nature and rare wildlife.

I took the chance to discuss the reintroduction of takhi to Mongolia: where, when and how we could bring them back. He really supported the idea. In April 1978, the 318th government

order declared the future status of Great Gobi B SPA and clearly defined reintroduction of takhi to Mongolia. To me, Mr. Maidar's support of this idea was the utmost motivation. After a failed attempt by some Russian scientific academy to bring takhi to Bogdkhan mountain, Mr. Maidar initiated the reintroduction by contacting international donors such as Christian Oswald from Germany and Jan Bouman from Holland. This was the start of a long-term cooperation involving many international conservation experts.

What did you feel when in 1992 the first takhi returned to the Gobi?

In 1985, an international takhi conference held in Moscow decided to return the species to its home country and to start preparations. In March 1990, Mongolian government established the National Committee of Takhi Reintroduction, electing me as Secretary. There were most skilled scientists and experts in the team preparing the translocation of the horses. I did not worry much about taking care of the takhi, as Mongolians are skilled horsemen. We informed the locals, and all of us were excited to see the takhi return after so many years. The plane took about 4 hours to bring them from Ulaan Baatar to Great Gobi B. We had prepared everything we could, airstrip, fences etc., but much could still have gone wrong. What a relief when all turned out well! It was a grand day to remember, back then and still now.



L. Oinbayar Ranger, Great Gobi B SPA

«The first takhi arrived here in 1992. Since 2005 I have been working as an active conservationist. I have many respective memories. I collaborated with experienced conservationists, learned a lot and lived through a lot with them. The most difficult time for me was when during the Dzud winter 2009-2010 I was living in Khonin us in a small borrowed yurt, monitoring takhi. It got colder by the day, and one morning everything was full of snow. We didn't care how deep the snow and how strong the wind were, just kept on working. We conservationists held together and supported the nomads in the winter camps. I adore my work. It motivates me and makes me happy to see the endangered animals graze and to marvel at the beautiful, untouched nature. I fully support the protection of the Great Gobi B and the work of ITG. Studies show the morbidity and mortality of the takhi to decrease. We are witnessing this and do all we can to further increase their numbers. Luckily, our Zagan forest and other vegetation also keep growing, which is of high importance for the colonization through further animals.»

The takhi living in Mongolia today are living in 3 reserves isolated from each other. Do you believe that in the longer term, further areas need to be set aside for this species?

Indeed, this is an important management aspect. The reintroduction sites – Great Gobi B, Hustai and Khomiin Tal – are ecologically quite different, including Gobi semi-desert and steppe. They are sponsored by different organizations and managed separately, but all pursue the same goal. Having three projects has the advantage of comparing approaches and sharing knowledge and experiences. Moreover, it offers some protection against localized nature disasters. The Gobi population has quickly adapted, and wild behavior is returning, whereas the Hustai population, in a smaller reserve, has a high reproduction rate and benefits from good conditions and easier control.



As our takhi population keeps increasing, definitely we need more areas in the near future, also to reduce the risk of catastrophic chance events. However, this calls for thinking about the increase in livestock and overgrazing, as well as about how to develop attractiveness to tourists through adequate infrastructure.

Since the return of the takhi, the headcount of livestock herds has increased a lot. How can conflicts between livestock and rare species of wildlife be managed?

Since ancient times, livestock and agriculture are the main subsistence for Mongolians. Despite our vast land and abundance of pastures, in recent years global warming and the harsh climate affected lots of livelihoods. We had reductions in spring water and pasture in most of areas of Mongolia. Droughts may increase competition between livestock and wildlife. A wise solution might be to regulate livestock numbers in protected wildlife areas.

The Mongolian government is pursuing a project to increase the networking of protected areas step by step. Especially in regions with rare or vulnerable species, new protected areas should be established, and we must regulate well the pasture management of wildlife and livestock there.

At the same time we also consider using underground water with self-managing technology for wildlife in protected areas. Nowadays, 20 percent of the Mongolian territory has some protection. We should increase that proportion without competition with herders.

The takhi is a Mongolian icon. Will this be enough to protect it? And what about species without that mystique?

Mongolians love horses. Historically we occupied half the world on horseback. We iconize the takhi as ancestor of the Mongolian horse and as “divine horse”. Yet modern wildlife conservation is not only about single species, nor is it a single nation's duty; it requires a broad view and global cooperation, as evidenced through our takhi reintroduction program. The takhi was extinct in the wild, but survived in zoos abroad. Thanks to international collaboration, we could implement the reintroduction project and restore a wild population in the Gobi. We are really grateful to all those on the team who were and are contributing.

It took 91 years...

...from discovering the takhi for science until exterminating it in the wild. Some were hunted for trophies, others for display in zoos. In order to capture foals like those miserable orphans of Hagenbeck zoo, their mothers were simply shot dead.



In my father's footsteps

«We love the job
and this holy animal.»

Since the beginning of the takhi reintroduction, Borkhuu Batsuuri has been a senior ranger in the Great Gobi B Strictly Protected Area. When the last takhi were still roaming the area, his father was an eye-witness. As a young man Mr. Batsuuri moved to Darkhan. But then he returned to his father's home land.

Mr. Batsuuri, what motivated you to, rather than living an urban life, move back to the foothills of the Altai and protect the very species whose disappearance your father had witnessed?
Our country's transition from the Soviet system to a free economy made survival very hard for many industries. The factory in Darkhan city where I was working shut down. As a young couple with two babies, we headed back home. After return we were herding with my father for one year. At that time the takhi returned to Takhin Tal, and I remember well many scientists meeting with my dad and asking him about their history. Looking for a job at that time, I was dreaming of joining this wonderful project to save the wild horse. Finally both my wife and I got a job in it, and we love the job and this holy animal.

What does the takhi mean to you?

To love, to worship it. To Mongolians it is a spiritual animal, so we must protect them.

Which aspect of your work do you appreciate most?

I have been working as a conservation ranger and takhi ranger for over 20 years. In the early days, the newly reintroduced population was struggling because of various difficulties, including predation by wolves and natural disasters. We learned a lot from each of those. In recent years, the numbers in the Great Gobi B have increased to nearly 200. I am aspiring to both further increase their number and to conserve the entire Gobi, with its other wildlife, to keep it for the next generation.

What stories did your father tell you about the last takhi living in the wild?

Although my dad was well advanced in years, he was able to tell us stories of takhi. For example, he said that our home region was the real home range of the takhi. In his words, he had seen many of those horses around Gun tamga, Takhin shar mountain, and Toodog spring. They were very shy and wild, could spot people from a long distance and would run away into the Gobi. Yet the numbers were falling year after year, until around 1970 no takhi were seen anymore in the Gobi.

Did your father also have any traditional knowledge about which areas in Mongolia were supporting takhi prior to their extinction – for example, parts of today's Great Gobi A SPA or the frontier area along the Chinese border?

The Dzungarian Gobi was the real home range of the takhi, as evidenced by the many local place names referring to them, such as Takhi shar mountain, Takhi us, Takhi tsavchaal etc. My dad thought that additional herds occurred to the west. But he never mentioned takhi in the south or in the Gobi A. We don't have much information about the Gobi A reservation; this area has been real wilderness, and still is today. Maybe takhi horses also occurred in the Chinese Gobi, too.

Are there any hints in your father's recounts that suggest differences in behaviour between takhi living in the wild before extinction and reintroduced individuals?

Certainly the wild population was really shy and difficult to approach. The translocated horses are of course very calm, because they were born in captivity and fed by humans. But their wild-born offspring readily return to wild behavior.



The park's ranger team poses together with Honorary ITG President Thomas Pfisterer at the entrance of the National Park centre, a building initiated through an Austrian-Swiss partnership.



▲ Christian Stauffer and 'Temee' Siegfried sharing a swig of Vodka in Takhin Tal, the ranger camp of Great Gobi B SPA.

◀ Ochir Dorjraa, who together with Christian Oswald kicked off the takhi reintroduction project, next to the monument commemorating Christian Oswald.



Stephan Siegfried, M.Sc.

President of the Jean-Pierre and Sonja Siegfried Stiftung, Arlesheim, Switzerland

«Being a biologist, it was clear in my mind at a youthful age already what I wanted to work for voluntarily. Very early on, my special attention went to ornithology. Thus, I regionally campaigned for the increase of the red-backed shrike. This includes the fostering of food supply, of small structures and thereby of the habitat of an animal species which has become rare in our surroundings. Many other animal and plant species also benefit from these measures.

Continuing my father's reintroduction project enables me to extend my engagement to an international level, to collect exciting experiences and to network with stakeholders of the takhi project.

This way I can both realize one of my aims in life and continue the meaningful lifework of my father. A great, rewarding and very satisfying task!»

«DIVINE HORSE»

A new song by HURD, famous Mongolian rock band

«Do you know our brand new Takhi Song? You should! One day after launch it had already reached 80'000 people and many likes. We sing about the takhi, the vast Mongolian landscapes and our freedom-loving way of life... because we value it and care for it. Thanks to Fredy Naef of Chinggis Brewery for suggesting to write such a song to support ITG, and for sponsoring production, together with the Swiss Development Corporation SDC. And thanks to all our fans in Mongolia and abroad. Just join us!»

B. Khurelbaatar, Chairman des «Bronz Hero»-Studios, D. Ganbayr, Frontmann von HURD, flankiert von Alfred Naef, CEO der Chinggis-Brauerei, und Namtar Enkhsaikan von der ITG.



Where there's a will, there's a way

In 1975, Werner and Dorothee Stamm of Basel, Switzerland, founded the Werner Stamm Foundation for the Conservation of Rare Equids, a member of the European Association of Zoos and Aquaria. It helped launch the takhi breeding programme and took part in the species' reintroduction. Among other contributions, the foundation sponsored the first acclimatization enclosures in Great Gobi B SPA, Mongolia.

Dr. Baumgartner, a Swiss Veterinarian, was involved in the very first takhi transports to Mongolia, and has been involved in the reintroduction programme ever since. She is a long-term Board Member of the International Takhi Group (ITG), which closely cooperates with the Mongolian government on the reintroduction of the takhi.



Mrs Stamm, your husband, a keen international rider and judge of horse dressage, was a pioneer of breeding rare equids (i.e. wild horse, wild ass and zebra species). What brought him to conservation, and what vision did he have? Werner Stamm, an architect by profession, had a profound interest in animals. He was a colonel of cavalry and fascinated by horses. On his family's estate on „Muellerhaegli“ he created a facility for keeping endangered wild forms of equids. His overarching goal was to conserve these

rare species, almost all of which are threatened and in steep decline. In the early 1970s, his foundation started to keep Przewalski Horses, which had just gone extinct in the wild at the time. Later, he added the Asian Wild Ass species Khulan, Onager, Kiang, as well as the African species Somali Wild Ass and Grevy's Zebra. His vision for the Przewalski Horse was to reintroduce the extinct species in its original habitat.

Is it possible to define any 'principles and pitfalls of takhi breeding'?

Wild equids need spacious facilities with adequate room for movement. Moreover, they have to be able to organize in natural social groups (i.e. in harems). Other than that, the principle is to stay 'hands-off', i.e. to interact as little as possible with the animals.

Were there any major species-specific breeding aspects – e.g. regarding behavior, social organization or practical management?

All members of the horse family are savannah and steppe dwellers

having similar requirements for care. Hence the species differences barely had any practical consequences. However, for the Przewalski Horses, the genetic bottleneck was critical. Therefore, the two lines of Prague and Munich, bred separately after the War, were to be mingled to get a healthier genetic basis. For this purpose, there were intense contacts with the studbook keeper Jiří Volf from Prague Zoo.

You have been the first to breed takhi in Switzerland.

Where were they coming from?

The Takhi came from the two breeding stations in Prague and Munich, respectively. At this time there were only few breeding stations, and the number of horses was very small.

The Werner Stamm Foundation was the first institution joining the reintroduction programme that Christian Oswald and Ochir Dorjraa had initiated. What made you believe it would work?

I was ensouled and driven by the thought to realize the vision of my husband, who had died early. So I didn't hesitate long when Christian Oswald contacted me, and agreed to deliver in 1995, as first institution world-wide, Takhi to the Oswald project in the Great Gobi B Strictly Protected Area. This was a courageous move at the time, as the European Endangered Species Programme assessed the project extremely negatively and prohibited its members to participate.



Dr. Baumgartner, the first takhi were released in what is now the Great Gobi B SPA, a large national park in the Southwest of Mongolia located along the Chinese border. How was this release site decided on? It's harsh, dry and hot in summer, very cold in winter.

This semi-desert in the Dzundarian Gobi is located in an arid zone whose continental climate reaches extreme values during the day and at night. Particularly in spring, severe snow and sand storms can move across the plain. A group of scientists of the UNDP (United Nations Development Program) was commissioned with the reintroduction project, which was financed by the Mongolian Takhi Strategy and Planning Group.



By means of a habitat analysis, it investigated various regions in Mongolia regarding their suitability for takhi reintroduction. It concluded that the Great Gobi B Strictly Protected Area was the most suitable. Food supply is qualitatively good, and water holes dispersed over the area ensure the availability of drinking water with varying permanence, despite only intermittent rainfall.

Although the programme was initiated in Mongolia, it was necessary to build awareness of its goals and actions at many levels of political and administrative decision-making. How did ITG achieve this?

From 1990 onward a close collaboration had been established between the Christian Oswald Foundation for the Protection and Conservation of Wildlife (COS), the Werner Stamm Foundation for the Conservation of Rare Equids (Stamm Foundation), and other foundations. A key initiator of the project and its first Mongolian coordinator was Ochir Dorjraa, the Director of the National Committee for Rare Species Conservation. Moreover, Ochino, the CEO of the trading firm OCCO in Mongolia, had a key position in project coordination and communication. Key actors in this phase were COS, the Stamm Foundation, the Prague Zoo with the studbook manager Jiří Volf, the Wilderness Park Langenberg with its CEO, Christian Stauffer, whose tireless engagement and visions were fundamental for project success, and Chris Walzer, then veterinarian in Salzburg zoo. Through this institution, Chris ensured the veterinarian care for Takhi, including in Mongolia, and finally conducted scientific research together with Petra Kaczensky.

Which were the key players in creating the financial and administrative planning to turn a great vision into hands-on work in both Europe and Mongolia?

The one to name first and foremost is ITG (International Takhi Group). Founded in 1999, its goal is the comprehensive, science-based protection of the habitat of the 9000 km² Great Gobi B

Strictly Protected Area. In ITG's charter and in contracts with the Mongolian government, the goals were further defined. In collaboration with all partners, ITG assumes the lead and coordination to ensure the implementation of the long-term goals and to guarantee an efficient and appropriate use of donated funds. The members of ITG are engaged private persons working on an honorary basis, as well as institutions, especially zoological gardens.

Horses are fast-moving steppe animals, averse to narrow enclosures, let alone transportation crates. So there must have been many challenges in organizing and practically implementing wild horse transports from various European breeding centres to remote areas of Mongolia. Which were the biggest obstacles in realizing such transports?

It's probably the interplay of many aspects which has to be right for a successful translocation. The following criteria have proven important to facilitate the horses' translocation and acclimatization in Mongolia: the selected takhi must be healthy and just about 2 years old. They should have gotten used to each other during a period of several weeks and should have formed a social group. Mares should not be pregnant, and during transportation, neighbouring crates must hold takhi who know each other well. Before transportation, all takhi must be clinically checked, treated against parasites and vaccinated against piroplasmiasis (an infectious disease transmitted by ticks). Mares and stallions need to be categorically kept separate in the first year to avoid pregnancies and births in this first phase.

«ITG (International Takhi Group) assumes the lead and coordination to ensure the implementation of the long-term goals.»



Chaliuuna: Horse in the brook

Mare Chaliuuna, born in Australia on 16.3.1988, arrives in Takhin Tal in 1995. She is the lead mare in her harem, which shall be released in 1998. To be able to observe the group after that, she shall be fitted with a radio collar.

Yet in the daze of her anaesthetic, she ends up in a brook and gets wedged in the tall grass of a river bend. What now? Luckily she can easily, by hand, be laid down on her side, with her head secured on a sandbank. She recovers well, if covered with mud, from being caught.



Zagaadaj needs a rope

Ranger alarm: Mare Zagaadaj, born in Takhin Tal on 6.6.1996, has a wound from parasitic fly larvae which quickly enlarges. But the rangers manage to rope her with a lasso and then medically treat her. Once released, she won't let them come near anymore. They can only control her through binoculars. But the one-off treatment is successful.



From vision to action

At the outset, the takhi reintroduction project was carried by an airy vision not well supported by hard facts. It took several years to figure out a methodical framework that allowed using science-based methodologies and defining a sound, effective action plan. Pivotal in this development was Christian Stauffer, a wildlife biologist and former CEO of the Wilderness Park Langenberg, Zurich, Switzerland, the first zoo to engage in the takhi reintroduction project. Mr. Stauffer is currently CEO of the Network of Swiss Parks, Vice President of ITG and President of the 'Friends of the Wild Horse'.

Prof. Dr. Dr. h.c. Thomas Pfisterer is a retired professor of law, former Swiss Federal Judge, former Swiss Senator for the Canton of Aargau and former member of the Cantonal Government of Aargau, Switzerland, international expert in federalism and (among other vocational commitments) former President and current honorary president of ITG.



Christian Stauffer, you have been a key driving force of the takhi reintroduction. How did Langenberg Wilderness Park get involved in the project and what was your role in it, both in Switzerland and on site in Mongolia?

We had been successfully breeding takhi for some years in Langenberg, and to us it was clear that we wanted and needed to dare the move into the wild. Finally it was Dorothee Stamm and Jean-Pierre Siegfried who convinced us to participate in Christian Oswald's programme. Since as a zoologist I was primarily interested in

the wild, this project also presented an opportunity for me to engage personally. At the request of Christian Oswald, I visited the project area in 1997. Having seen the situation I could join Chris Walzer in planning the right approach.

Langenberg Wilderness Park was the first translocation center, collecting horses from other breeding centres and then shipping them to Mongolia. That sounds like both a logistical and zoological challenge. How did you overcome the difficulties of connecting key players and of safely transporting wild horses?

Zoos keeping takhi were always interested to provide animals for the project. Initially the main point was to overcome the fundamental objections against the project voiced by the European Endangered Species Programme. Regarding translocations, we learned little by little and improved with every transport. In 2002 we could load 14 Takhi as one accustomed group, having to anaesthetize only particular individuals.



After the first horse translocations to Mongolia, how did you develop the project further?

The first two transports from Askania Nova were a good start and, from a pragmatic standpoint, the best option. Thereafter the goal was to reduce the high disease risks for new arrivals and to foster releases, which until 1997 had only been done very hesitantly. The greatest challenge was the collaboration with the Mongolian colleagues, especially the handling of cultural differences. Luckily we always had a common understanding of wildlife living in the wild.

As Board Member of ITG, what do you consider the key development needs for making the takhi reintroduction programme a long-term success?

The mutual understanding of the animals, but also of the biotope as biosphere reserve in which humans successfully coexist with wildlife in their traditional way of life, was a decisive step. The symbiosis between people and wildlife is decisive in future, for only if the local population desires to maintain its way of life and can do so, will the Takhi have a future. I do hope that the Mongolian colleagues will continue to make the project their own, step by step. If they do, I consider the future secured.

Prof. Pfisterer, you are a high-profile expert in law. What made you preside over a conservation organization?

I learned back home how to combine development and nature conservation. This gave me some experience for projects abroad too.

As former President of ITG, one of your goals was to share best practices of democracy in general, and federalism specifically, with Mongolian authorities. What links democracy with conservation?

Effective conservation depends on adequate support by the local population. In the case of the takhi – and other species living in its Gobi habitat – Mongolians need to socially and politically support its reintroduction. They must accept takhi living in their habitat, even in case of conflict with other interests, particularly those of agriculture and mining. This programme will only get sustainable if and when it persists independently of the influence of ITG, doing without the 'foreign' (Swiss) contribution in the long term.

Such a development in turn depends on political decision-making processes. Since the 1989/1990 revolution, Mongolia characterizes itself as a democracy and as a small state among Great Powers – in analogy to Switzerland. To secure the responsibility of Mongolians for the reintroduction of the Takhi, the bottom-up democratic and federalistic ties need to be strengthened in communities, provinces and nationwide.

What response did your respective activities create in Mongolia?

They solicited and increased Mongolian interest in Swiss political institutions, especially in direct democracy and in federalism. Among other actions, this led to visits of various Mongolian office-holders in Switzerland, including a state visit of former Mongolian President Tsakhiagiin Elbegdorj. On an invitation by ITG, he came to see the Aarau Centre of Democracy. Also following a suggestion by ITG, the Swiss Development Cooperation together with the Aarau Centre of Democracy conducted a decentralization project in Mongolia.

What political efforts do you consider essential to secure the Takhi reintroduction, and the protection of the unique Gobi habitats and species, in the long term?

We know the Swiss bottom up approach. The same is crucial here: to convince first the herders, then the sums, the aimags and finally the State.



N. Altansukh

Bachelor, Economic University of Mongolia, Ulaanbaatar;

MSc, National University of Mongolia in Khovd Province; Senior Specialist, Great Gobi B SPA

«Humans are part of nature. If mankind wants well-being, we must conserve the environment and nature, keep it clean and use it sustainably. A clean environment is extremely important for world health and comfortable living. Therefore, to my mind, working in the field of nature conservation, especially protecting the wild horse, is a top job. Ten years ago I started to work in the Great Gobi B SPA as a specialist. At that time I had just graduated from the university in economy. Although I am an economist, I have great interest to work in nature conservation and in the takhi project. Being a country boy of Bij river, our family was very close to Takhin Tal and involved in the takhi reintroduction programme. I had great interest to work with takhi, too.

Later I again attended university while working in the park, and graduated with a Master's degree in nature conservation. Now we are working together with researchers to collect data on takhi behavior and monitor wildlife of the Great Gobi B park. We much appreciate that ITG is implementing this valuable programme to bring back our wild horse to our home country. This is one of the best conservation projects in Mongolia, even in the world. ITG not only cares for takhi, they are helping to conserve the entire Gobi ecosystem; and its international set-up allows both locals and nomads to benefit from nature conservation.»



The science of revitalization

While the overall number of takhi surviving the species' functional extinction was about 50, only a dozen founder animals are represented in today's population in the wild. This bottleneck is a significant issue for further breeding. It took a lot of deliberation to create a viable captive population from which to select the best animals for reintroduction into their former habitat.

Prof. Dr. med. vet. Chris Walzer lectures at the University of Veterinary Medicine in Vienna, Austria. He heads the Department of Conservation Medicine and is Executive Director Wildlife Health at the Wildlife Conservation Society, New York. Prof. Walzer has internationally recognized expertise working with wildlife, especially wild equids and carnivores, gained from combined years of work and study in Europe, Asia and Africa. He is sought as a consultant in wildlife matters by many international government and non-government organizations and universities.



Prof. Walzer, you have been scientifically accompanying the reintroduction of the Takhi, a species with zero wild survivors, into one of the harshest climates on earth. Nobody had done any such thing on this scale before. What knowledge did you and others have to acquire to stand a reasonable chance of success?

At the onset of the project we really had a very limited understanding of most aspects related to the takhi. We lacked an understanding of the ecology, the dynamic environment, the other species and the involved stakeholders in the Gobi. Additionally, there was surprisingly

little information on takhi prior to extinction in the wild we could refer to. From day one we were very meticulous in adapting our management and decision processes as we acquired more and more science-based knowledge. Generation of knowledge was a truly multi-disciplinary effort involving, amongst others, ecologists, veterinarians and social scientists.

What was the role of ITG in this pioneering program?

During the initial phases of the reintroduction project, the ITG and its board were instrumental in addressing international concerns and guaranteeing adherence to international reintroduction standards and protocols. As the project progressed, the ITG board provided the guiding vision and delineated the mission of the project. Furthermore, the ITG provided the framework under which numerous research and conservation grants were acquired. These



For researching critically endangered Bactrian Camels, renowned wildlife veterinarian Chris Walzer has to dart them in remote regions of the Gobi desert.

funding sources were pivotal in moving the project forward during the first 2 decades of the project and provided vital infrastructure.

What criteria were used to choose the most suitable individuals from the breeding centres?

From the onset this project, in contrast to other projects, has always worked closely with the European Endangered Species Program (EEP) and the species coordinator and committee. The EEP is the most intensive method for captive population management of a species in the European Zoo and Aquarium community (EAZA). This cooperation guaranteed that the project always had access to the best genetic representation available from the global species pool. Additionally, this trust-based relationship allowed us to individually screen every horse before it was transported to Mongolia.

Continued on p. 16



Uugan: under-cover import

Mare Uugan is born on 2.9.1992, the first foal in Takhin Tal. Her birth is actually an «accident», for no-one had noticed the pregnancy of her mother. Despite the advanced season, the foal survives. As an adult, Uugan gives birth to a conspicuously dark stallion foal on 28.5.1998. She nurses it unusually long, for almost three years. In 2017, Uugan is still alive. At age 25, she is the oldest mare in Takhin Tal.



«From day one we were very meticulous in adapting our management and decision processes as we acquired more and more science-based knowledge.»



In the pioneering days of the reintroduction programme, the takhi - up to 14 in a single load - were transported aboard a Swissair passenger plane. In Beijing, the crates with the takhi were loaded onto a small plane from which all seats had been removed. This machine was able to land on a gravel plain in the national park, right next to the acclimatization enclosures.



Dalaitseren Sukhbaatar

Son of Tsedensodnom Sukhbaatar, the second director of Takhi reintroduction center of Great Gobi B, he was introduced to takhi conservation at an early age. He was fond feeding newly arrived takhi at Ulaan Baatar airport. Today, he is a Bachelor in zoology from the National University of Mongolia who has just joined the Great Gobi B team as a research assistant!





What genetic side effects are to be expected due to the reproduction bottleneck, and how can they be mitigated?

First of all, one must acknowledge that the bottleneck due to human persecution of the takhi and the resulting small number of individuals is a fact that can no longer be reversed. While such a massive population reduction invariably results in the loss of genetic variation, it does not necessarily mean that the remaining population is less robust if one assumes the survivors had the greatest genetic fitness. However, in view of global change the reduced gene pool could constitute a limiting factor in the resilience and survival of the species in the wild, and more specifically in the Gobi.

You are an expert wildlife veterinarian. What specific challenges did you have to overcome to make the horses cope with the long and stressful journey to their destination?

We very quickly determined that the available methods and protocols were not a viable option for our situation. Over the years we developed and refined all aspects of the transport: anaesthesia, loading, dimensions and structure of the crates, provision of water and food amongst many other factors. One technical aspect that, in my view, greatly enhanced the welfare of the takhi was the use of so-called long acting neuroleptics, a class of drugs used in human medicine in antipsychotic therapy which significantly calmed the animals during the flight.

Continued on p. 18



Takhi escort in the plane: From left to right, Christian Stauffer, Jean-Pierre Siegfried, Ravchig Samiya, Dorothee Stamm, Mr. Oswald jun., and Ruth Baumgartner.

Upon touch-down on the Takhin Tal airstrip, the tailboard would open to a crowd of excited spectators eagerly awaiting the unloading of the takhi. In the acclimatization enclosure, they were finally released from their crates - an emotional moment of fulfilment of a mission prepared perseverantly, against countless obstacles, by both conservationists and supportive functions.



Research activities in the park include taking field samples for veterinary (top left) or genetic testing (bottom left, Petra Kaczensky), zoological and botanical investigations (top right). Moreover, regular ungulate censuses conducted by Petra Kaczensky's large ad-hoc team of rangers, scientists and support staff will establish the long-term population development of takhi, khulan and gazelle in the protected area. Even some takhi contributed data through their collar cameras.



The science of revitalization

What health issues did you see in new arrivals and post release, and how were they addressed?

Initially we were baffled by takhi deaths during the spring months. With rigorous sampling and training rangers in carcass recovery, we quickly determined the cause: a malaria-like parasite, *Babesia*, transmitted by ticks. The parasite is endemic to Mongolia and native horses had over generations evolved mechanisms to deal with the infection but naïve European takhi were defenseless. We developed a method that involved infecting takhi with the parasite and simultaneously treating with an anti-babesia drug. This leads to life-long protection from the disease which is also conveyed to the offspring. Today we continue to monitor the health of the takhi.

Horse and other livestock trading is intense in Mongolia, and infectious diseases can easily spread from livestock to an endangered species such as the takhi. How should the current population in the wild be monitored for such an event?

Today, practically all wildlife that survives in multi-use landscapes is threatened by the spill-over of infectious diseases from domestic livestock. Mitigating and limiting the impact of these threats necessitates a many-pronged approach: continuous monitoring of takhi health including necropsies of recovered carcasses to determine cause of death, supporting local communities in securing resources and access to health care for their livestock and finally enforcing protected area restrictions on livestock incursions. Key is to have staff on the ground who are able to recognize the early signs of potential health issues and the support system to implement rapid mitigation measures.

Another risk is interbreeding with domestic horses. How can it be prevented in an area with nomadic herding?

Interbreeding, hybridization with domestic horses is a real threat to the takhi population and can never be completely prevented in these multi-use landscapes. It is important to realize that this issue has to date been of limited impact. For the future, as with infectious diseases and health, careful monitoring, enforcing protected area restrictions on livestock incursions and if necessary, genetic testing of individuals with their subsequent removal from the population will markedly limit the impact of hybridization. ■

Prof. Ravchig Samiya is a retired professor of wildlife biology of the National University of Mongolia, Ulaan Baatar. He has been conducting zoological and ecological research in the Great Gobi B Strictly Protected Area.

Prof. Samiya, you and your team of zoologists have been investigating the Great Gobi B ecosystem during the reintroduction programme. Is the biodiversity of the area different from other Central Asian steppe habitats or even unique?

The Dzungarian Gobi, where the horses were brought to, is a vast valley surrounded by high mountains: the Mongolian Altai in the East, the Dzungarian and the Russian Altai in the North, and Tenger Mountain in the South. It is also called the Western Dry Depression. It includes the Takhin Yellow mountain range, Bij River, Khonin Us Gobi, and the Yolkhon and Bulgan river basins. Its geographical location, structure and climate make its flora and fauna unique, including vertebrates such as the Beaver (*Castor fiber*), the Mongolian three-toed Gerboa (*Stylodipus sungorus*), the Forest Dormouse (*Dryomys nitedula*), the Tamarisk Jird (*Meriones tamariscinus*), the Steppe Runner lizard (*Eremias arguta*), the toadhead agama (*Phrynocephalus helioscopus*), a Central Asian montane toad (*Bufo pewzovi*) and other amphibians endemic to this area. These examples indicate that this region is unique among Gobi and other desert areas of our country, and has attracted a lot of interest. Our young researchers have been investigating small mammals of this area for years. Teachers and students also participate in the ungulate census.

Has this habitat been stable over time, or did you see any developments, such as a loss of or change in vegetation density?

Over the last few years, we saw a lot of change in the Mongolian steppe and Gobi pasture compared to historical sources. A main cause of reduction in wildlife habitats and ungulates is the overwhelming encroachment by people and domestic herds occupying water points. This threatens wild ungulate and takhi populations. However, the Gobi ecosystem is generally very unstable. Its determinant factor is precipitation in fall. After the massive snowfall in 2009 and 2010, the fauna of the Dzungarian Gobi recovered



quickly, and the area looked like a savannah, showing clearly how the ecosystem's flexibility was maintained. This remarkable recovery happened after we suffered huge losses of domestic and wild animals, including the takhi herds.

The Great Gobi B ecosystem hosts two equid species. Do they occupy different ecological niches, or is there significant competition for the same resources?

It's interesting to investigate whether ungulate species compete or differ in habitat use – especially those of the same genus living to-



The Beijing shirt stunt by Ravchig Samiya

Several times I accompanied the translocation of takhi from Beijing via Ulaanbaatar to Bij River. In Beijing, it took several hours to unload the takhi from a large freight plane and load them onto the small AH-26. We had to even lower the roofs of their crates to fit the small plane, and then hand-carry each horse over. One of the takhi almost turned loose during such an operation. Dr. Chris Walzer, an expert wildlife veterinarian, caught it when it almost fell out from the crate. He ran over, ripping his shirt off at the same time. Waving it, he was able to catch and calm down the takhi. Without his stunt, we might have lost the takhi at Beijing International Airport!

Daniel Wismer

Yak breeder, Embd, Switzerland

«Reintroducing an animal species always has a component of compensation to nature. That alone is enough for me to support the takhi project. Since some of my yaks are of Mongolian origin, I made a trip to their natural homeland. In addition to the yak festival, I visited Hustai National Park where I saw my first takhi in the wild. With every Mongol I talked to about this project I sensed a deep national pride about the “home-coming” of their spiritual horse. The visit of a group of Mongolian tourists whom I met there confirmed it. Moreover, the creation of jobs and the sensitization for nature and the environment in Mongolia are important “side effects” of this reintroduction project. I think even Genghis Khan would have been very pleased and would have approved of the return of the holy horse.»





Herd of Khulan (Asiatic Wild Ass). Outside protected areas, its numbers are declining throughout its range due to intense poaching.



gether. We don't know much about the previous history of takhi, as this species was discovered late by science and extinct in the wild soon after, before its ecological and behavioral characteristics were studied. Clearly, the scarcest resource for it is water. There is evidence that wild camels share water points with domestic camels in Altai Gobi, and that khulan share them with domestic animals. The most suitable place for takhi is the gramineae steppe. But data from P.S. Pallas, who scientifically described the khulan, showed that both equid species were living in the same places, and before the 18th century were roaming a much larger area. For managing the two species, as well as Black-tailed Gazelle, we need to research their respective spatial use of the relatively limited Dzungarian Gobi basin, including water resources. Ecologically, species with almost identical use of resources can't live together in one place. Many research questions are about to be investigated in this area, but they need a long-term continuous approach.

How would you rate the Gobi B biotope in comparison with an optimal takhi habitat?

In the 19th century, the last takhi population held on to the Dzungarian Gobi and the Takhi Yellow Mountain range, under huge pressure from humans and domestic animals. At this time, takhi foals were captured by shooting their mothers – the final blow in the species' extinction in the wild.

When preparing the reintroduction, the optimal habitat was discussed intensively. One consideration was the place where they last lived. So we chose the Bij River area. That wasn't wrong, as it supplies pasture during drought and heavy snowfall.

Most experts believe that habitats with a variety of grass species are the most suitable for takhi. Gramineae grow in the small hills and depressions in the mountain ranges surrounding the Western Dry Depression. The best spots for takhi are hills with Stipa grasses. The takhi use only small ranges of pasture due to their captivity background. Their spatial "imagination" is not formed yet.



Their grazing area will extend when the number of takhi and takhi herds increases further. The process of discovering new areas is continuously ongoing as the herds separate. True competition between wild ungulates may occur once the takhi number hundreds or thousands.

You have been studying small mammal ecology in the Great Gobi B. Why these rather than large mammals?

Jokingly, they are easy to study because they are underground. But seriously, small mammal populations are excellent for studying many ecological baseline issues. They have short lives and propagate easily. It takes relatively little time to find valid statements about small mammals compared to larger ones. An example for our research: In the Dzungarian Gobi there is a vole called Shar Ov. In some years it is abundant, then it disappears for several years. This begs a lot of questions regarding this species' role in this ecosystem and the reasons for the fluctuation.

The Siberian Marmot is a species whose population is in rapid decline throughout Mongolia, due to intense hunting pressure. What is its conservation status in the mountain ranges surrounding the Great Gobi B SPA?

Until recently, Siberian marmots were abundant in Mongolia. But about one million were hunted each year. Mongolians use their meat and oils for food and export the skin for fashion garments, the main product sold. The population was overhunted. However, scientists hypothesize that in 2000-2003, many marmots also died from disease. Currently, marmot hunting is prohibited in Mongolia, but people still kill them because the demand is still increasing. Illegal hunting shows that conservation measures are not always implemented or successful. Only local people can make a change in the conservation of marmots. They need to protect them; only this will preserve the species long-term, including as a resource.



Dipl. Ing. ETH Andreas Siegfried

Vice President of the Jean-Pierre and Sonja Siegfried Foundation, Arlesheim, Switzerland

«Mankind's dealing with our planet truly leaves a lot to be desired. Hardly a day goes by without finding oneself confronted with sad news about ecological devastation or animals threatened with extinction. I have been wishing for a long time to counteract this somehow and to work for the conservation of our fauna and flora. In 2002 I could visit Mongolia and more particularly the Takhin Tal sanctuary, together with my parents, Sonja and Jean-Pierre Siegfried. Once confronted with this landscape, the passion for the reintroduction project doesn't dwindle. Consequently, after the demise of my parents, I took the opportunity to become involved together with my brother Stephan in the continued thriving of their foundation, aiming to foster and support projects that enhance the success of the reintroduction. I look forward to the continuation of the established cooperation with ITG.»



Wild life school

Reintroducing a captive-bred species into its former habitat seems like a straightforward way of undoing extinction in the wild. However, success is far from guaranteed, especially not over time. Captive-bred individuals resemble playschool children released into the real world. They face habitat conditions, competitors, predators and pathogens with a total lack of all relevant knowledge and experience.

Mr. O. Ganbaatar, Director of the Great Gobi B Strictly Protected Area and a wildlife biologist graduated from the National University of Mongolia, has been the heart and soul of the takhi reintroduction in the park. Based on his extensive field experience, he has a huge knowledge on this and other species of the Gobi habitat.



Mr. Ganbaatar, as Director of the Great Gobi B Strictly Protected Area you lead the largest Mongolian nature reserve hosting wild takhi. What habitat conditions pose the key challenges to the species' survival in the great Gobi B?

As the Gobi desert is an arid region with little water, water points and oases are the most important and preferred places for both the flora and fauna. In the ecosystem of the Great Gobi B, these are the water points, oases and rivers Bijiin, Guntanga, Toodog us, Khonin us, Takhi us and Yolkhon.

The Zagan forest is the most popular whereabouts of herbivores, which form the founda-

tion and basis of the trophic pyramid. In our sanctuary water, besides the places mentioned above, also occurs in the many small gulches between the hill ranges.

Although the Great Gobi B is a vast area, suitable grazing is limited. How do the Takhi share it with competing grazers?

That's a very interesting question. Excuse me if some researchers and natural scientists may not agree with me: Takhi were bred in captivity for some time and have lost their natural evolution. When we released them into the wild, it was interesting to see how they chose their grazing grounds and dealt with other grazers. Initially they were frequenting regions in proximity to humans. But now they choose their range seasonally, taking into account both the vegetation and the presence of other takhi and khulans. They seem to stay away from the large Khulan herds, and they prefer associating with camel herds rather than Goitered Gazelles.

Did you see any development in the horses' behaviour compared to the takhi coming from captivity? Have you ever registered any deficits that might reflect their captivity background?

Even takhi from captivity can find the most nutrient-rich forage plants and communicate acoustically. They can escape predators fast enough and deal with dangers. Yet they are less resilient against cold and wind and have no immunity against blood parasites such as ticks. Moreover, they have lost a proper sense of seasons.

However, since they are again roaming freely, their wild characteristics are fully returning. Most takhi mares give birth in May or June. They are now grazing much larger areas, but can drink much less frequently. They choose their pasture according to the weather and sometimes wander to places so remote that they are inaccessible to us.

One obvious difference compared to captivity is the presence of predators. What strategies do the takhi use to cope with them, and how well do these work?

Although this was not properly studied yet, currently the wolf

is the only carnivore known to attack takhi in the Great Gobi B sanctuary. It's not in a hurry to do so, as it does not yet know this species. After the 1997 release of the Shiree group, protected by a stallion, it took a year until a foal was killed by a wolf for the first time. Since then, the probability of wolf kills continues to rise. We know that in 2006 a wolf pack killed a whole takhi group – about 10 foals and adults – within 14 days. Although takhi and wolves roam the same areas, since 2006 we have no more proof that any takhi beyond the foal age fell prey to wolves.

Steppe ungulates tend to migrate in search of good grazing grounds. Will the Great Gobi B SPA offer sufficient suitable habitat in a long-term perspective?

Ungulates such as Khulan and Goitered Gazelles roam the Great Gobi B in seasonal patterns. Comparing the results of the counts in 2010 and 2015, the number of khulans increased by 164% to 9'337. The number of Goitered Gazelles reached 13'531, an increase by 228.9 %. This allows concluding that the sanctuary is very well suited for this type of animals.

Unfortunately the fierce Dzud winter 2009 / 2010 drove a whole herd of khulans out of the sanctuary and killed almost 70% of the takhi. That's a good reason for extending the Great Gobi B strictly protected area. We would thus like to add the Dzungarian Gobi, a Mongolian territory, to our sanctuary.

What do you consider the most unexpected finding during this pioneering reintroduction programme?

Firstly, the successful takhi reintroduction within such a short time-span. Secondly, we may err in believing that takhi are very conservative. Initially I could barely believe it, but in spring and fall the snake stallion herd commutes 70 km between the oases Takhi Us and Khonin Us. The Ugalz stallion group walks about 30 km between Toodog Us and and Khonin Us to go drinking. And the stallion groups Bundan and Bars were grazing jointly all year long.

We humans bear the blame for the extinction of the takhi here. But if we manage them well, I am fairly certain that they will recolonize the Dzungarian Gobi by the thousands.



Patrol drives in the Gobi can get nasty - especially when you need to dig out your jeep at -45° C, not counting wind chill.



Lighting the spark of conservation: Field school of O. Ganbaatar's



Heinz Zweifel

Long-term former Treasurer on the ITG Board

«What fascinates me about the Thaki project? In the year 2000 I was elected Treasurer on the ITG Board. I didn't know much about the project, but I was convinced that this position would enable me to offer direct support for the reintroduction of the Przewalski Horse. For the first time in 2002, I flew to Mongolia with a transport of 12 animals and witnessed their release. What an experience! What a great and meaningful idea! All of it keeps fascinating me today. I recommend to everyone to have a closer look at this project and to support it financially.»

Z. Baast

Ranger

«I will never forget how in 2008 we were following 4 takhi with two cars and one motorbike as they were wandering from Takhin Tal (Gobi-Altai Province, Bugat district) to Takhi us (Khovd province). We were escorting them for more than 100 km.

It was then that I became aware how strong and sturdy takhi really are. I am very proud to be part of the takhi reintroduction project in Mongolia and in my homeland. I consider the project work of ITG in the Great Gobi B sanctuary a necessity, and to contribute to it just feels great.»



Nomadic herders are allowed to seasonally move through the Great Gobi B SPA with their sheep, goats, domestic horses and camels.



The Pas harem makes itself comfortable in the hay storage



Treating foals with wolf bites



Macho goes too far

Pas, born in Askania Nova (Ukraine) on 24.4.1989, is a powerful stallion. He also has brains: while still acclimatizing, he discovers one day that the gate to the hay storage is ajar. In he leads his entire harem, whereupon everybody is living in clover. Later his group is released towards the Shirin-Us waterhole, but it regularly returns from there, walking slowly back to camp. Not far away, the group of the stallion Uinch is grazing. Before long, heavy fighting erupts between the two. Pas soon snatches a mare from Uinch, and over time, all other horses. But now his harem is so stretched that it gets restless. What's worse, the foals start showing dark spots. Willy-nilly, the already released large group is driven back into their former enclosure to investigate the cause. It's wolf bites that need treatment. Even a macho stallion cannot effectively protect a group which has become too large.

From captivity to conservation

In the second half of the 20th century, innovative zoos were implementing a paradigm change, changing from animal exhibitions to survival centres for endangered species. Modern zoos play a pivotal role in conservation. Without the captive stock in the ITG member zoos of Langenberg (Switzerland), Prague (Czech Republic), Nuremberg (Germany) and Bruderhaus (Switzerland), the takhi would not have survived. The Prague zoo acts as keeper of the takhi studbook and is an important breeding centre. In addition, it has become a key force in transporting takhi to Mongolia and raising funds benefitting the reintroduction programme. Miroslav Bobek is the Director of Prague Zoo and the driving force behind these activities.

Mr. Bobek, Prague Zoo implements the World Association of Zoos and Aquariums' (WAZA) global conservation strategy. In addition to using a portion of visitor revenues for conservation, it has a broad approach to conservation, way beyond zoological aspects. Can you explain your rationale for this broad approach, and which role in conservation do you pursue with your institution?

The conservation of endangered species is one of the main, if not the most important, task of modern zoos. The motto of WAZA is 'United for Conservation'. However, nowadays the main focus of this conservation is not for zoos to save exterminated species and return them to the wild. Of course, they also do this, and the takhi is, in this respect, an example of a huge success, but there are too many endangered species and too few zoos... Moreover, the cause of many species' disappearance is the destruction of their habitat. Therefore, great emphasis is placed on in-situ conservation, i.e. in the areas where endangered species occur. This is often associated with a relatively broad range of activities. For example, our Wandering Bus project addresses children living in the vicinity of the Dja Faunal Reserve in Cameroon in order to limit the hunting of endangered species - including Western Lowland Gorillas - and to support nature conservationists. In this sense, our activities in Mongolia are broader and not limited to transporting takhi. Thus, our visitors can not only see the animals in the zoo, they can directly support their conservation through their visit. Part of the entrance fee to Prague Zoo goes directly to our various conservation projects and other resources are obtained from donations or merchandising sales.



«Part of our entrance fees goes directly to our conservation projects.»

Prague Zoo has been continuously keeping and breeding takhi since the early 1930s. As a member of ITG, the Prague Zoo is also the keeper of the takhi studbook. What was its role in the early days of takhi breeding?

Our present activities are built on the virtues of our predecessors. In the 1920's Professor Bílek brought the first takhi from the Halle Zoo in Germany. It was on October 4, 1932 that two of these horses - named Ali and Minka - moved to Prague Zoo, which had only opened a year before. So we are also celebrating 85 years since the takhi came to Prague Zoo! A great deal of attention has been given to breeding them here. It was in particular thanks to the then director, Col. Dr. Jan Vlasák, that the breeding programme weathered World War II without any great harm. After that, especially with the Munich breeding programme, which was also not interrupted during the war, it formed one of the basic building blocks for the recovery of the takhi population in captivity and much later on even for their return to the wild.

Prague Zoo also played an important role in coordinating the international efforts to save the takhi. An important foundation was the world symposium, initiated by the then Prague Zoo director Dr. Cyril Purkyně and held in Prague in 1959. It was then that we were also entrusted with keeping the world studbook for the takhi, a register of all individuals and an important aid in managing their breeding. For many years this studbook has been kept by Dr. Jiří Volf, who was one of the first - if not the very first - of his time to mention out loud the idea of reintroducing the takhi to Mongolia. At the beginning of the 1990's he was a great help for Christian Oswald, who initiated the reintroduction of the takhi to Takhin Tal. Already then several horses were transported from Prague to Mongolia. So we have a lot to tie in to. The takhi is an iconic animal for Prague Zoo.



Lic. jur. Sven Hoffmann

«In 2003 I was elected Foundation Council of the Werner Stamm Foundation, through which the Stamm family kept making significant donations to ITG. This arose from the enthusiasm with which Stephan Stamm and especially his mother Dorothea had shown me their facility for endangered equids in Oberwil (Switzerland), and told me about the reintroduction of takhi in Mongolia. I was immediately captivated by the work that had been done in the years past, and was soon also appointed to the ITG Board. From the start, I was again inspired by the commitment with which ITG members and especially the Board, working in an honorary capacity, were engaging for the reintroduction of the takhi, the preservation of their habitat and the project's scientific framework. As a lawyer, I can challenge the aims and paths of this organization shaped by zoologists, veterinarians and conservationists – an approach I deem quite beneficial to its cause.»





The new well in Takhin Tal provides fresh water for the ranger camp.

Transporting takhi to Mongolia is costly. In 2011 you established a successful cooperation with the Czech Airforce, which has since been flying takhi to the town of Bulgan at mere operation cost. How did you achieve it?

I first mentioned the idea that we should try to start transporting the takhi to western Mongolia at our breeding and acclimatization station in Dolni Dobrejov in December 2010. However prices for commercial transport were completely beyond our means. But I did not want to give up and it occurred to me that I could try and contact the Czech Air Force. At first the Commander of the Air Force Transportation Base in Prague-Kbely probably couldn't believe his own ears, but to my and probably his own surprise, he was keen.

The intention to transport takhi to Mongolia using the new CASA transport aircraft was then approved by the Government of the Czech Republic (probably also thanks to the Prague Zoo's great pu-

blic reputation). The road to the first transport was thus open - and there were only about one thousand administrative, organizational and technical problems left to solve. Since then, we've used the Army's CASA planes seven times, and we value this cooperation immensely.

For the Czech Army, long flights and landings in unusual conditions help to increase the readiness of pilots and crews. As we only pay for fuel, airport charges, and air tickets for the shift crew, transport comes at a fraction of the cost of commercial transportation. Although we're mainly talking about our transports, we have also won the Czech Developmental Agency to support us with significant investments into infrastructure and equipment of Great Gobi B SPA and the adjoining village of Bij, including the reconstruction of the Bij hospital, several cars for Great Gobi B SPA, haylofts, guard posts, and the drilling of a well in Takhin Tal.

The transport of horses must be a very demanding and exhausting activity, both for people and horses involved. What are, in your opinion, the critical success factors?

Between 2011 and 2017, we transported 27 takhi from the Czech Republic to Western Mongolia by Czech Air Force CASA planes. The next four went on a national flight in Mongolia. We haven't lost one of these horses during our transports! It is the result of long-lasting and extremely careful, almost pedantically so, preparations that take into account every detail and every imaginable option. It is demanding work carried out by many people over many months, including my representative Dr. Jaroslav Šimek, the Veterinarian Dr. Roman Vodička, the commander of the Prague-Kbely base Col. David Klement and the wonderful main pilot Lieutenant Colonel Milan Laniak.

The selection of horses for transport, taking into account their origin, age, health and nature, is carried out by the staff of many institutions from a number of European countries. The takhi that we return to Mongolia are not just from Prague or the Czech Republic, but also from Germany, Belgium, France, Switzerland, Denmark, Slovakia and Hungary, all in coordination with the EEP (European Endangered Species Programme) in the framework of the EAZA (European Association of Zoos and Aquariums). A substantial part of the preparations, of course, takes place in Mongolia and would not be possible without ITG Mongolia, represented by N. Enkhsaikan, nor without the director of Great Gobi B SPA, O. Ganbaatar. I would like to thank all those who I have named, but also the unnamed ones. Without them the return of wild horses would not be possible.

Society on the move: A network for change

Over the past 18 years, Anita Fahrni-Minear's Swiss Program for Language Instruction and Teacher Training has offered 101 Mongolian students a year of study and 40 language teachers 3 months of additional training in Switzerland, while also placing 160 people to teach English or German in schools and universities throughout Mongolia. She has established a vast network among universities, schools, politicians, non-governmental organizations and individuals while distributing thousands of books and tons of school equipment. Anita Fahrni-Minear is a long-term Board Member of ITG; her friends in local communities support our work. She is an Honorary Professor of Orontenger University, Ulaan Baatar, holds a PhD h.c. of the National University of Mongolia and a PhD h.c. of the University of Khovd, and is a former Member of the Cantonal Parliament of Thurgau, Switzerland



Mrs. Fahrni, globalization and digitalization are making our world spin at ever increasing speed. For the nomadic tradition of Mongolia, this offers both opportunities and challenges.

Indeed, the dramatic changes in the Mongolian society over the past 20 years are felt both in cities and in remote regions. Mongolia is no longer isolated; opportunity is at its doorstep. However, the rapidity of the change has created difficulties. Having opened

themselves so rapidly to the world, to consumerism, Mongolians are losing traditional values. Respect for the earth, for the careful use of nature, for ethical conduct can no longer be taken for granted. Unfulfilled expectations have led to disillusionment, frequent changes in government to dangerous, often nationalistic reactions. In my opinion, the rights and the responsibilities of democracy are not yet fully understood.

What brought you to develop educational programs with Mongolian institutions?

Young Mongolians have no idea how difficult the situation was in the early 1990s. My work there began with books because books were not readily available. I was able to provide schools with educational material but realized that teacher training and especially oral language training was also needed. Swiss volunteers accepted the challenge of teaching in Mongolia and Swiss schools accepted selected students of German. A foundation covered the costs of the students; our work was entirely without pay.

Looking back over these efforts, what has been achieved?

As I follow their careers, I am proud of these former exchange students. In Switzerland they not only learned German but also expanded their horizons, saw other ways of life, met people with other customs, learned modern teaching methods and to think critically. They now use this knowledge daily in their work, as teachers and mothers, and are passing it on to others.

As a Board Member of ITG, do you try to link these two commitments in some way?

While ITG provides funding and scientific support for the takhi, we also support the protection of the habitat and of biological diversity in the entire region, without which the reintroduction is not sustainable. ITG and similar organizations need well educated young people with broad experience, ability in language and communication, willing to work hard. Good education is the key to success, for individuals and for the country. Those trained in Switzerland know the importance of environmental protection, of waste management and recycling, reliable public transportation systems, community efforts in environmental protection and participation in politics, of ethical behavior and of volunteerism. Now they try to implement these ideas in Mongolia.

Do community development and conservation collide at times, or can they be synergistic?

Tourism and conservation together can create jobs and income for communities if planned and managed carefully, with consideration of what a region can offer and what visitors want. Many visitors seek wide steppes, clean lakes, undisturbed nature, the "authentic Mongolia". Let's be honest: the scattered ger camps, the ugly cement structures and "attractions" now springing up around the country are not what travelers are looking for and often spoil the scenic spots.

What would you advise local communities to do to ensure a sustainable development from which all of the people profit?

Communities could work together regionally to study their opportunities and to plan with professional help how to realize their potential. Local and national governments should consult with the public. Vocational training is needed as jobs are created locally for carpenters, plumbers, builders and electricians. However, no community can develop sustainably without protecting the nature, the wonderful diversity which surrounds it.



Namtar Enkhsaikan

MSc, National University of Mongolia, Ulaanbaatar Director, ITG Office Mongolia, Ulaanbaatar

«Mongolian history is inseparable from the horse culture, which still matters to Mongolians and nomadic life. Being close to my horses, I feel deep pride in helping to save the takhi, the ancestor of the Mongolian horse. Loving nature, I studied conservation. After assignments on wolf, wild ass and takhi, I got the opportunity for an internship in Hustai National Park. Later I studied sustainable resource management at TUM in Munich, Germany. During my diploma thesis on wolf feeding ecology and its influence on the population of takhi and other prey, I heard about the reintroduction project in my home region, Gobi-Altai. Prof. Samiya, one of my supervisors at the National University of Mongolia, opened the door to ITG, newly established at the time. Two students – my classmate O. Ganbaatar and I – could join the project. Both of us are still working for it today.

As ITG coordinator in the office in Ulaanbaatar, I liaise with Takhin Tal, ITG headquarters, the administrations of Aimags (provinces) and their sums (counties), ministries, nature conservation organizations and other international partners. A key task of mine is to run the office and to obtain and manage all documents for takhi translocations, logistics and contracting. Our main project goal is a stable, self-reproducing takhi population in Mongolia which roams the entire reserve, so it stands good survival chances in case of a natural disaster.

It's thrilling to watch its population grow and adapt to its former Gobi habitat. Many people have contributed to this. The Gobi ecosystem is unique in the world. We Mongolians have to protect it well for the next generation. The return of the takhi, one of its key species, helps us conserve and study it. For both we need to cooperate well with national and international organizations as well as the local population.»



Coping with life in the Gobi

Dr. Petra Kaczensky is a Senior Scientist at the Norwegian Institute for Nature Research (NINA) in Trondheim, Norway and the Research Institute of Wildlife Ecology (FIWI) in Vienna, Austria. Her expertise is on large herbivore and large carnivore conservation and management in Europe and Central Asia. She has been working in the Mongolian Gobi with a special focus on khulan and takhi since 2001. Mr. Oyunsaikhan Ganbaatar is Director of the Great Gobi B Strictly Protected Area and a wildlife biologist graduated from the National University of Mongolia.



Dr. Kaczensky, the successful reintroduction of a large mammal species which has been extinct in the wild is a masterpiece of conservation. But is it really successful? In other words, were the programme's goals achieved, or are there gaps compared with expectations towards such a programme?

First, is reproduction in captivity sufficient to allow both the survival of the breeding network and the continuity of releases?

Defining success in this context depends a bit on the perspective. Yes, we have been successful in bringing back takhi from captivity into the wild and the animals have proven that they are still fully capable of coping with the harsh conditions of their native homeland – both behaviorally and physiologically. In addition, public perception has changed and Mongolians embrace the takhi back

and now protect them, rather than hunt them. So that is a big success. But we have brought back this species to only a tiny portion of its former range, and numbers are still small, making them vulnerable to chance events like climatic extremes or disease outbreaks. In a large population which can be found over a vast range, such events only have a localized effect, and localized population declines can be easily counteracted by immigration. In a small and isolated population, such events can well result in its extinction. Therefore, it is important to have multiple takhi populations in a variety of different habitats and ideally allow a connection between as many of those regions as possible, allowing the exchange of individuals. I am optimistic about the takhi, but there is still a way to go before I would consider the species to be firmly re-established back in the wild.

Have the released takhi become fully independent of human support?

Yes and no. The takhi are able to survive and they obviously don't need humans to show them. But because their numbers are still so small and their distribution is so localized it currently makes sense to try to minimize losses. This is the reason why emergency hay is stored or injured animals are taken care of. But much more importantly, this is why we need disease monitoring and ecological research. We want to understand the species' ecological needs and try to anticipate the risk to the free-ranging population to develop conservation and management strategies which will give the species the best chance for a long-term survival.

Mr. Ganbaatar, in the 20th century, the takhi were hunted to extinction, although takhi are said to be a spiritual animal in Mongolia. What groups of people were involved, and is there still a threat of takhi hunting?

Obviously the takhi extinction was man-made. But I think that human encroachment was contributing more than the kills. People domesticated horses and cattle, bred them in large numbers and thus drove the wild horses away from their water points and pastures. The final blows in the extinction were then the poaching and theft of foals. The Dzungarian Gobi, the last refuge of wild takhi, was an empty frontier zone bordering 3-4 nations. So not only Mongols, but hunters from all of these came to hunt takhi. The national frontiers are clearer now than in the 20th century, and the takhi luckily are no longer considered game. I guarantee that there is no more takhi poaching here, hence this is no longer an extinction factor.

Are the released takhi behaving normally, or are there any signs of captive-type behaviour?

It depends on how long the herd has been roaming free and where the lead animal comes from. Until now we have a single takhi approaching humans and sniffing their hands. This mare called Zur came from Cologne (Germany) in 2004 and still seeks the company of humans.

Do the released takhi autonomously move to suitable seasonal habitats, and have they spread over the entire area of the Great Gobi B SPA?

Although takhi wander in search of good grazing grounds, they do move in a relatively limited area since a stallion takes care of 2-8 mares plus their foals, which is quite a lot. The stallion groups Azaa and Nomkhon mostly range between the rivers Guntanga and Bijiin Gol, whereas the stallion groups Bundan and Bars jointly use the large area between the water points Bijiin Gol, Khonin Us, Shiriin Us and Ovchuu Barlag. The stallion group Erhes frequents Khonin us in winter and Shiriin Us in summer and grazes behind the Khöndön. It would be safer for the takhi if, like the khulans, they would seasonally use quite distinct regions.

Dr. Kaczensky, have the released takhi formed core populations in the release area (rather than moving away), established natural social structures and begun to reproduce?

Takhi, contrary to khulan, seem very conservative in their range use. We do not know how takhi used the area of Great Gobi B in the past and whether or not they showed long-distance or season-

al migrations. Newly released takhi tend to stay in the vicinity of the release site, and that is the main reason why the majority of takhi is still primarily found in the eastern part of Great Gobi B SPA where the Takhin Tal research station is located. This made the takhi population very vulnerable to localized events like the dzud winter of 2009/2010, which dumped the highest amounts of snow in this area, resulting in a 60% drop in the population. A second release site in Takhi Us has helped to increase the range. Takhi born and raised in the wild also seem less conservative. Today groups have started to expand into new areas, and there are now multiple horses which "know" the Takhin Tal, the Takhi Us, and areas beyond. We hope that this wider "landscape" knowledge will help the growing population to react more flexibly to localized droughts or snowy winters in the future.

Looking at these answers, do you consider the programme successful, and how do you expect it to continue?

The takhi population in Great Gobi B is large enough again to have the intrinsic capacity for population growth and range expansion. In my opinion, the future focus should be on networking – both on a political and an ecological scale. Extending the protected area and seeking to establish an ecological corridor between Great Gobi A, Great Gobi B and protected areas in northwestern China should be one priority, close cooperation between the existing projects another. However, political agendas and activism should not be the drivers of conservation actions. And for management decisions to be evidence-based we need to make sure to implement high quality research and monitoring programs.



Jiguur, the herding stallion

Jiguur originates from Langenberg Wilderness Park (Switzerland). On the first day of his release, wild gazelles irritate him. He strolls over and suddenly attacks them in a fierce gallop. The gazelles bounce around like fleas as Jiguur's group calmly keeps on grazing. Soon Jiguur loses his group to Pas, who doesn't need to be asked twice. Now Jiguur is without a harem. But in the ranger camp, there are cows innocently grazing on the river bank. A replacement harem! Jiguur gallops over, rounds up the cows and drives them up to the airstrip. Then he finds a huge scattered flock of sheep and cashmere goats, all of which he tries to round up in one compact herd. Failure. Then he calmly grazes among his charges. It takes the united forces of 6 Mongolian horsemen to finally catch Jiguur with a rope. In-between domestic horses, he trudges back to the stallions' enclosure, where he is welcomed like an old friend.



The takhi reintroduction is an exemplary conservation programme. What lessons does it teach us?

Firstly, mankind tends to overestimate the resilience of nature. Repeatedly in our history, we have wiped out species within a century or two – including extremely numerous ones such as the Passenger Pigeon. Nature as a whole can cope with much, but for most species, life in the wild is precarious. It doesn't take much to overstrain them. The fragmentation and destruction of habitats puts many species under continuous stress, reducing their fitness for survival. Their numbers dwindle – often at an alarming speed. To survive, they need niches – large ones for some species – of undisturbed habitats, and these need to be connected to allow population exchange.

Secondly, it is possible to save a species at the brink of extinction. But success is far from being guaranteed, and it takes a lot of dedicated people investing a lot of effort, a lot of consideration, a lot of time and a lot of money to save a single species. So prevention is much, much better than cure.

Thirdly, the most important aspect in conservation is our will to coexist with nature, rather than living at its expense. It's an obvious choice once we realize how precious it is. For it's the fabric of life that keeps us warm – both our bodies and souls. Let's not allow it to get too thin.

Dr. Reinhard Schnidrig, President of ITG

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an intact biosphere sanctuary
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«I am optimistic about the takhi, but there is still a way to go before I would consider the species to be firmly re-established back in the wild.»

Dr. Petra Kaczensky



Dr. Peter Kistler
Richenthal, Switzerland
«Does it matter to engage for a rare species? It does! Each life form is a unique result of evolution, irrevocable when lost – hence a precious heritage. Together, they form the network of life: terrestrial and maritime ecosystems on which our very existence depends. Yet the majority of these species is extremely rare compared to ours. And under the incessant onslaught of us, 7 billion top predators, they are losing their footing at an alarming rate. Do we care? Not enough. In Switzerland (and probably elsewhere), around 90% of donations benefit people, only 10% go to conservation. That's too little. I consider it a moral duty to fight back. I have been sponsoring conservation projects for years. My goal is to keep ecosystems intact, but it is charismatic species such as the takhi that touch my heart. Yours, too? Then think of nature next time you have some money left for charity. It needs you. Urgently.»



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