



# Expeditions Fund: Hustai National Park Mongolia

• June 2023

## **My expedition to Mongolia: On the pursuit of the world's last truly wild horses - Takhi (Przewalski's horse)**

As a Medical Genetics student, I was very intrigued by the unique genetic differences between the wild horses and domesticated breeds. These horses have a different number of chromosomes than normal horses (66 chromosomes in Przewalski's horses compared to 64 in domesticated horses).

I applied for the Expeditions Fund to aid my exploration and have the remarkable opportunity to observe the Takhi (in Mongolian) in their natural habitat and gather valuable first-hand insights.

By connecting my academic background in Medical Genetics to my expedition. I gained a broader perspective on the importance of genetic diversity in preserving endangered species, and it inspired me in my studies to carry out my own research in the future.

I arranged my travels, finally made it to the capital city: Ulaanbaatar. On the first day, I went to my hotel, then gathered information from the locals about the national park. I went sightseeing around the city and saw the central Buddhist Temple: Gandantegchinlen Monastery - shown on top of the slide. Then I saw the parliament building (shown on the bottom). The sky was very blue indeed, as they call: Land of the Blue Sky.



## On the pursuit of the world's last truly wild horses - The travels and the changes:

At first, we had to organize drivers and locals to figure out how to get to the National Park. The capital city is very bustling and bursting with life, however once you step out of the capital city, everything changes. It becomes quiet, windier and literally people free! It was such a breathtaking view because it was a very open land and I felt so free. The two pictures were taken outside the city, where the main asphalt road turns into dirt roads. I somehow felt very excited because you could see kilometres away, all the grasslands and the hills. There had to be a few changes made to the expedition due to advice from the locals on which roads to take and how to get there. The Hustai National Park is a very well known tourist spot - about 1-2hrs away from the city. The cars and drivers in Mongolia have a lucky special ornament in their cars for good luck and protection from bad events. I was very impressed how they can drive without any GPS, without any clear road or road signs and know exactly where to go. We got a call and have been very lucky in the trip. There was an unplanned encounter with the Shamans on the way. Mongolian shamans, also known as "böö," "bööchin," or "udgan," are people who practice traditional Mongolian shamanism, a spiritual and religious tradition deeply rooted in the culture of the Mongolian people. The shamans serve as intermediaries between the human and spirit worlds, helping communication with array of spirits, including those of nature, ancestors, and celestial beings. We were very lucky and had the chance to see their rituals and ceremonies.



## On the pursuit of the world's last truly wild horses – The encounter of the Shamans.

For the Mongolian people and the shamans, the Takhi horses, also known as Przewalski's horses, hold a special place in the cultural and spiritual life. Revered as symbols of untamed beauty, wildness, resilience, and strength. The Takhi horses are seen as living embodiments of the natural world's enduring spirit. This is because they are known as the free horses, the only horses in the world which are wild. Mongolian shamans, deeply connected to the cycles of nature and guardians of ancient traditions, view these horses as spiritual entities, often associating them with celestial and ancestral forces. The Takhi, being the last truly wild horses, are regarded as emissaries from a bygone era, embodying the untamed essence of the Mongolian steppes. The connection between the shamans and the Takhi horses extends beyond the physical realm, as rituals and ceremonies are conducted to seek blessings for the community, protection for the herds, and a harmonious balance between the tangible and the spiritual dimensions. For the Mongolian people at large, the Takhi horses symbolize a living testament to the nation's nomadic heritage and a shared cultural identity deeply intertwined with the vast and unspoiled landscapes they call home. We met the head of the Shamans in Mongolia – they were holding an annual ritual for the blue sky known as the Tengri for protection, safety, and the wellbeing of every living being. I partook the shaman rituals and prayed in the special ceremony – with the white jacket.







# Arrival to the National Park

## Conservational Efforts

The conservation of the takhi horses in Mongolia is a collaborative effort that involves scientific research, governmental support, and community participation. The takhi were once extinct in the wild and they were reintroduced from captivity to their natural habitat in the Great Gobi B Biosphere Reserve, where they are monitored and protected by the International Takhi Group (ITG) and the Mongolian government. The ITG also works with the local nomadic people who live in the reserve, providing them with water, hay, and other income sources, such as cashmere production and tourism. The Takhi population in Hustai increased over the years, where more than 400 wild horses are present today. The park has effectively served as a breeding and reintroduction site, contributing substantially to the genetic diversity of the global Takhi population. Moreover, collaborative projects involving the Mongolian government, the Takhi Conservation Center, and international organizations is a great example of successful conservation efforts. Local villages and towns have actively participated in these initiatives, benefiting from sustainable practices that align with the preservation of the Takhi's habitat, tourism also helps with the conservation and the locals with income.





Przewalski's horse – Takhi – Close up

At the Hustai Park, there are different times of the day when you can spot the Takhi horses. Usually they get closer to the water around the afternoon, where the horses are spotted in groups drinking. Physically, they are characterized by a smaller and sturdier build, larger head, height around 140 cm tall with a compact body around 300kgs. They have a distinct dun-colored coat, often reddish or yellowish-brown, however in the Hustai park most of the horses were yellowish brown. They have a distinct mane which is short, that stands straight and a tail with a dark tuft. The short legs and hard hooves of Takhi horses are adapted to the challenging terrain of the Mongolian steppes. Behaviourally, they exhibit a different social structure, forming small family groups in their native habitat. They live in small family groups consisting of a dominant stallion, several mares, and their offspring. The stallion plays a crucial role in protecting the group and maintaining order. Domesticated horses, on the other hand, may live in larger herds or be kept individually, depending on their management.





They are classified as *Equus ferus przewalskii*, while domesticated horses belong to *Equus ferus caballus*. Domesticated horses, on the other hand, have been selectively bred for specific traits over thousands of years. Takhi show survival traits that aren't present in domesticated horses. Early studies of their genetics indicate that takhi have a different number of chromosomes ( $2N = 66$ ) in comparison to domestic horses ( $2N = 64$ ), the difference being due to a simple Robertsonian translocation. Scientists have confirmed a Robertsonian translocation event through the wild horse's chromosomes 23 and 24. A Robertsonian translocation is a type of genetic change where two specific chromosomes break and their long arms fuse together, creating a single, larger chromosome. The population of Przewalski's horses are relatively small, and they have low genetic diversity. This lack of genetic variation can make it difficult to sustain a healthy and robust population without careful breeding management to avoid inbreeding. Therefore, having conservation programmes are vital for the healthy maintenance of the wild horses.



When we were at the Hustai National Park, there were biologists, conservationists, tourists, and families on a day out from the city. I met the chief manager of the conservation Hustai Park, the park is a protected area from poachers and other predatory animals. The tourism side of the operation helps fund the conservational goals and the national university of Mongolia also has trips to the area. Furthermore, maintaining genetic diversity among the takhi horses was a challenge. The horses represent unique descendants within the Botai/Borly clade and possess genetic diversity that is no longer found among domestic horses.





**Thank You!**