

## ITG Research priorities: Jan 26, 2019

The research priorities defined by ITG board and scientific council aim at supporting the conservation and management targets of the Great Gobi B Strictly Protected Area (GGB SPA) as defined in the management plan. A first identification and ranking of research priorities was done within the framework of a workshop organized by ITG 25-27 February 2017, at Kartause Ittingen, Switzerland.

Workshop participants included representatives of ITG (including Zoo Prague), GGB SPA, the Mongolian Academy of Science (MAS), the Research Institute of Wildlife Ecology of the University of Veterinary Sciences, Austria (FIWI at VetMed Vienna) and the Norwegian Institute of Nature Research, Norway (NINA).

The research priorities will be reviewed annually based on ongoing research activities (made available as field reports, publications, or presentations). The priorities will then be revised based on research results, revisions of the management plan, or new opportunities and challenges. For ITG, Dr. Petra Kaczensky (NINA, Norway & FIWI/Vetmed Vienna, Austria) has been given the mandate by the ITG board to advise on and coordinate ITG research priorities for three years (2018-2021). GGB SPA has agreed to prioritize and support the ITG research priorities.

The 9 research priorities identified in February 2017 were revised in January 2019, based on ongoing research and the conservation and management targets outlined in the new management plan (available and discussed in a draft version on 25 January 2018). The following notes summarize past progress, ongoing activities, and future plans. No research priorities were dropped, but some modifications were made, and two additional research priorities were added as a result of focal habitats defined in the management plan: saxaul forest and two oasis complexes which are considered biodiversity hotspots and provide key habitat and resources for a range of species.

### # 1: Rephrased: **Disease monitoring of ungulates with a special focus on understanding all forms of Takhi mortalities**

The priority was rephrased to allow a wider focus including all ungulates in the GGB ecosystem and the livestock-wildlife interface. The latter is particularly relevant given the recent outbreak of Peste des Petits Ruminants (PPR) in saiga and the outbreak of African Swine Fever (ASF) in northern China.

The focus will be on investigating all occurrences of more than the occasional mortality of any individual Takhi (which is normal and has to be expected and does not need specific attention beyond opportunistic sampling) or other wild and domestic ungulate species.

In respect to takhi, one issue which keeps on surfacing year after year, is the loss / disappearance of Takhi foals in the western population part around Takhi us.

The need for capacity building and training to do post-mortem analysis was highlighted as well as correct storage and timely analysis of samples. However, these activities are not research per se, but rather fall under routine monitoring, capacity building and training. Hence, they were removed and included as activities under the management plan.

- ITG will seek possibilities with FIWI to provide post-mortem training in 2019
- O. Ganbaatar suggested the best time for training would be April/May

- O. Ganbaatar will provide a full inventory of sampling material (where, what, and in what condition) in Takin Tal (TT)
- O. Ganbaatar will provide a list of samples stored in TT

## # 2: Rephrased: Inventory of mountain ungulates

The priority was rephrased to match the inclusion of argali wild sheep (*Ovis ammon*) as a focal species of GGB SPA and to separate it from the new research priority focussing on the focal oasis complexes Khonin us and Takhi us – Yolkhom. The priority was widened to not only include camera traps, but also methods like double observer mountain ungulate surveys as done for snow leopard prey in other areas of Mongolia.

- ITG agreed to “keep eyes” open for funding or cooperation opportunities. It was felt that with the park extension, this research priority should be included in a KfW proposal.
- No concrete actions planned for 2019.

## # 3: Rephrased: Analysis of Takhi monitoring data from the past 20 years

The priority was rephrased to more clearly define what is at the core, the analysis of the last 20 years of Takhi data and other data relevant for the respective analysis.

- O. Ganbaatar wants to address this priority within a PhD thesis, which includes the need for at least one first author peer reviewed publication in an international scientific journal. O. Ganbaatar will do the necessary steps in coordination with his supervisor at NUM (Prof Samija) in 2019 (the last year he can finalize his PhD).
- The individual takhi database is updated regularly and the status, birth, and death are reported to Dr. Jaroslav Šimek, Prague Zoo for the Przewalski Horse International Studbook and to ITG for information.
- Range monitoring and Takhi observation data is collected at a regular basis and reporting should be done by Dalaitseren Sukhbaatar in a timely fashion (within 1 week following the wildlife survey) and at 4-month intervals for the ranger takhi observation data with tables summarizing the observations and maps showing the locations.

## # 4: Transition of tradition: local people’s land use and co-management options in and around GGB SPA

This research priority focusses and understanding local herders’ livelihood, pasture use, herd management, and expectations and constrains for the future.

- Since 2018, ITG supports a PhD project by Lena Michler which is supervised by Dr. Petra Kaczensky (NINA/FIWI) and PD Dr. Anna Treydte (University of Hohenheim, Germany/ Nelson-Mandela African Institution of Science and Technology, Tanzania). More field work will be conducted from end of March until October 2019. The focus of the work is on: i) understanding local herders’ livelihoods, herd management, livestock camp locations and herd movements, ii) understanding the impact of grazing on biomass, plant cover, plant composition, soil quality and seed bank composition. The results will be combined in a model exploring scenarios under different herding regimes and expected climate predictions.

- ITG will explore possibilities of follow up projects with existing and up-coming cooperation partners, including the University of Life Sciences in Mongolia, the Senckenberg Institute in Germany, WCS Mongolia.
- Lena Michler and her partner Humair Hayat seek financial support for a documentary about the research involving local people as one of several means to share the results back with those local communities (<https://www.facebook.com/Sharingback/>)
- Prague Zoo explores cooperation with Dr. Francisco Ceacero Herrador, Czech University of Life Sciences Prague, which will be complementary to and coordinated with ongoing research activities.

#### # 5: Khulan and gazelle population size monitoring using regular simultaneous point counts

- GGB SPA and ITG have agreed on a 5-year monitoring cycle for the two plains focal ungulates khulan *Equus hemionus* and goitered gazelles *Gazelle subgutturosa* using a revised point count approach based on experiences from the 2010 and 2015 count.
- The next point count is scheduled for 2020 and funds for this have already been approved by the ITG board.
- The point count will be coordinated by Petra Kaczensky (NINA/FIWI) and O. Ganbaatar (GGB SPA) and implemented by Great Gobi B SPA in cooperation with neighbouring reserve staff, local, and international volunteers.
- In addition, GGB SPA conducts regular ground transect surveys. For these, reporting and quality control needs to be improved to allow efficient park management.
- ITG and O. Ganbaatar agreed to train Dalaitseren Sukhbaatar (“Dalai”) to write timely and standardized reports on these monitoring activities.

#### # 6: Goitered Gazelle study

- Petra Kaczensky and Rebekka Blumer will explore possibilities for funding to initiate research on gazelles.
- Petra Kaczensky will explore the possibility of cooperation with FIWI / Vetmed Vienna, the National University (NUM) with Davaa Lkhagvasuren, and the Senckenberg Institute in Germany
- O. Ganbaatar discussed possible cooperation with PhD student Battogtokh who is interested in goitered gazelle research in GGB SPA and buffer zone involving GPS collaring.

#### # 7: Genetic screening of the reintroduced takhi population using non-invasive sampling (dung)

The genetic screening is intended to provide insight into the overall variability of the reintroduced Takhi population, genetic data to verify the observation-based pedigree, and a means to assess domestic horse introgression (recent and past geneflow with domestic horses).

- GGB SPA staff under the lead of Dalaitseren Sukhbaatar has collected and stored ca. 150 samples (130 individual scats in sampling tubes filled with silica beads and 17 dried in paper envelopes) of individual takhi; unfortunately, without any communication with ITG board or Petra Kaczensky.

- After Tsaagan Tsar (5 February 2019), O. Ganbaatar will send a list of samples (which Takhi was sampled when and by whom), specify the sampling procedure, and send details and photos of the sample storage at TT.
- Based on the quality of the samples, further steps (export to Vienna, analysis at the genetics laboratory by Dr. Steve Smith, FIWI / Vetmed Vienna) will be discussed.

#### **# 8: Observational research on harem switching**

- Francisco Ceacero Herrador, Czech University of Life Sciences Prague, initiated a pilot study on harem switching and together with a student stayed in TT for a few weeks in summer 2018.
- Jaroslav Šimek will contact Francisco Ceacero Herrador to provide a field report on last year's activities.
- Further research is planned for 2019 – details will be provided by Jaroslav Šimek or Francisco Ceacero Herrador directly.

#### **# 9: Great Gobi B SPA takhi carrying capacity**

- Some aspects of this research priority will be addressed within the PhD of Lena Michler.
- No specific activities beyond the workplan of Lena Michler planned for 2019.

#### **# 10: NEW: Saxaul Inventory**

This is a new research priority in accordance with the tasks of the management plan which defines two focal habitats: saxaul forest and two oasis complexes.

- No specific activities planned for 2019. However, Petra Kaczensky and O. Ganbaatar will explore suitable approaches to do an inventory and a quality assessment of the saxaul forest in GGB SPA
- Explore possibilities in respect to including this research priority in a KfW application

#### **# 11: NEW: Inventory of the two key oasis complexes Khonin us and Takhi us – Yolkom**

- First ideas were collected: i) functional group inventories (breeding birds, insects), ii) spring inventory (water flow, quality), iii) camera trapping for use by larger mammals, iv) use by humans & livestock
- Possibilities for water analysis at the university in Khovd will be explored.
- Explore possibilities in respect to including this research priority in a KfW application