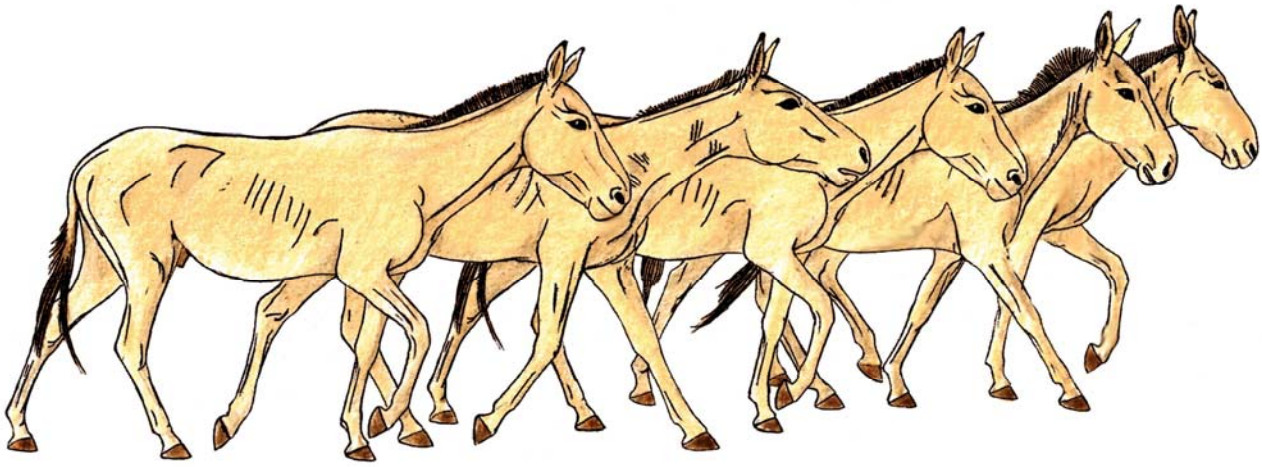
# Landscape level research for the conservation of Asiatic wild ass in Mongolia

Report September 2008



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# RESEARCH ACTIVITIES IN GREAT GOBI B SPA

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"Landscape level research for the conservation of Asiatic wild ass in Mongolia" funded by the Austrian Science Foundation (project P18624)

# 1. INTRODUCTION

Mongolia is an important stronghold of the Asiatic wild ass (*Equus hemionus*, khulan in Mongolian) and has a global responsibility to ensure their conservation. At the present time, Mongolia is anticipating the development of a commercialized agricultural sector that could cause a far greater intrusion of human activities into the Gobi environment than current pastoral livestock production. Development of other sectors of the Mongolian economy, especially mining and road construction, could also impact environmental security in general and habitat needs of the khulan and associated wildlife in particular. Thus the impact of habitat fragmentation and the presence of people and their livestock on wild ungulates has become a key research focus in Mongolia (Ito et al. 2005, Kaczensky et al. 2006).

For our research project "Landscape level research for the conservation of Asiatic wild ass in Mongolia" funded by the Austrian Science Foundation (project P18624) we selected three focal areas: Great Gobi B Strictly Protected Area (SPA), Great Gobi A SPA and the SE Gobi. The three areas vary in respect to habitat productivity and the intensity of human land use. This years focus was on retrieving collars from the animals marked in 2007. In Great Gobi B SPA we also continue our research activities around the re-introduced Przewalski's horse population (*Equus ferus przewalskii*) in part funded by a previous FWF project (project P14992). The majority of all field work in the Great Gobi B SPA was conducted from 9-22 July 2008.

This summer's research focus was on:

- retrieving GPS / store-on-board (SOB) units from 10 khulans collared in 2007 via VHF telemetry (see Kaczensky and Walzer 2007)
- testing two GPS / satellite telephone (Iridium) collars on domestic animals
- retrieval of one GPS / SOB unit from a Przewalski's horse stallion transferred to Takhin Tal from Hustai Nuruu in 2007
- calibrating behavioural information from GPS / SOB units through simultaneous direct observations of a collared Przewalski's horse (diploma work by Klaus Huber)
- comparative parasitological examination of equids in the Great Gobi B SPA, Mongolia (diploma work by Johanna Painer)
- retrieving GPS / ARGOS collars from khulans and wild camels in Great Gobi A SPA

## 2. RETRIEVAL OF GPS / STORE-ON-BOARD KHULAN COLLARS

To deepen our understanding of small-scale movements and time budget relative to various habitat variables we deployed new GPS / store-on-board collars, designed and produced by our colleague Gerhard Fluch (FIWI). The collars were designed to collect and store GPS position every 15minutes over a 12 months period. To allow collar retrieval, we equipped all collars with pre-programmed drop-offs (CR-2a, Telonics, USA) which were programmed to open on the 10th July 2008. Previous data has shown that most khulans move to the eastern part of the Great Gobi B SPA in June/July.

Previous experience with VHF telemetry has taught us that the range is very restricted in flat terrain. Thus we had worked out a detailed search map, taking advantage of all elevated points in the park as possible VHF telemetry "control points" (Fig.1). All points were numbered and transferred to a handheld GPS to facilitate orientation.

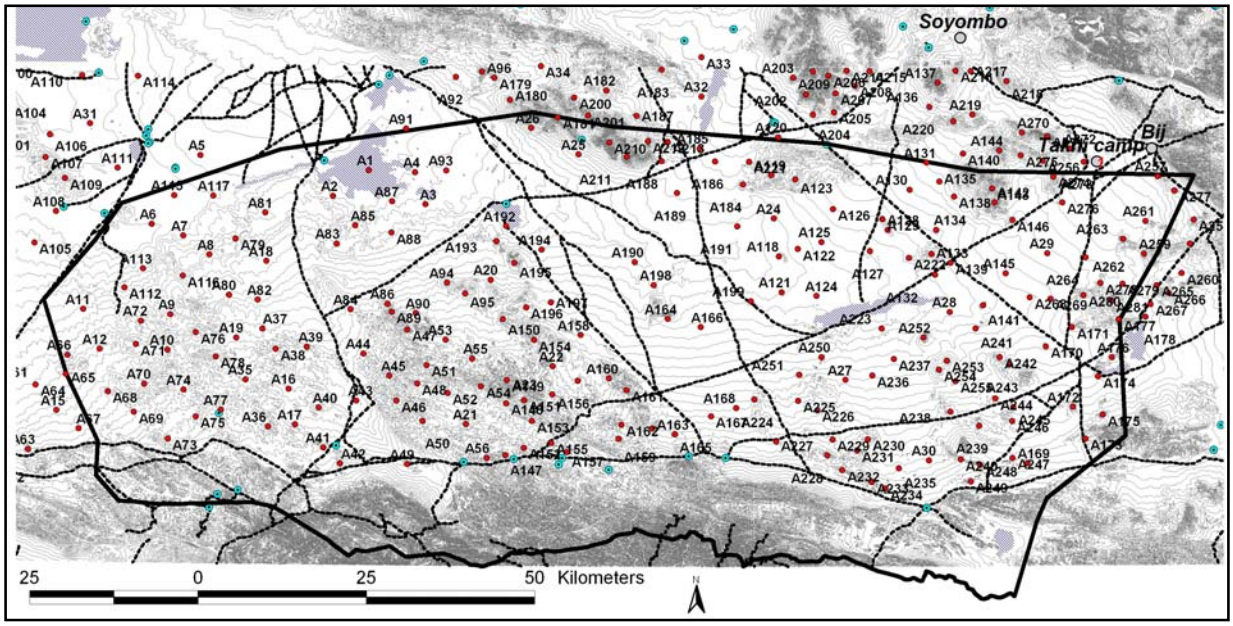


*Fig. 1: Map with strategic search points for VHF telemetry in the Great Gobi B SPA.*

We were pleasantly surprised when we picked up the first VHF signal already on the first day of search and on the second VHF "control point". Our luck held and within 3 days we were able to retrieve all 10 collars. As originally anticipated all collars were dropped in the eastern part of the park. Eight collars were dropped just north of the park boundary close to a little stream near the village Soyombo, and one each near the water points Chonin us and Gashurn us (Fig. 2). None of the collars was dropped at the original capture side.

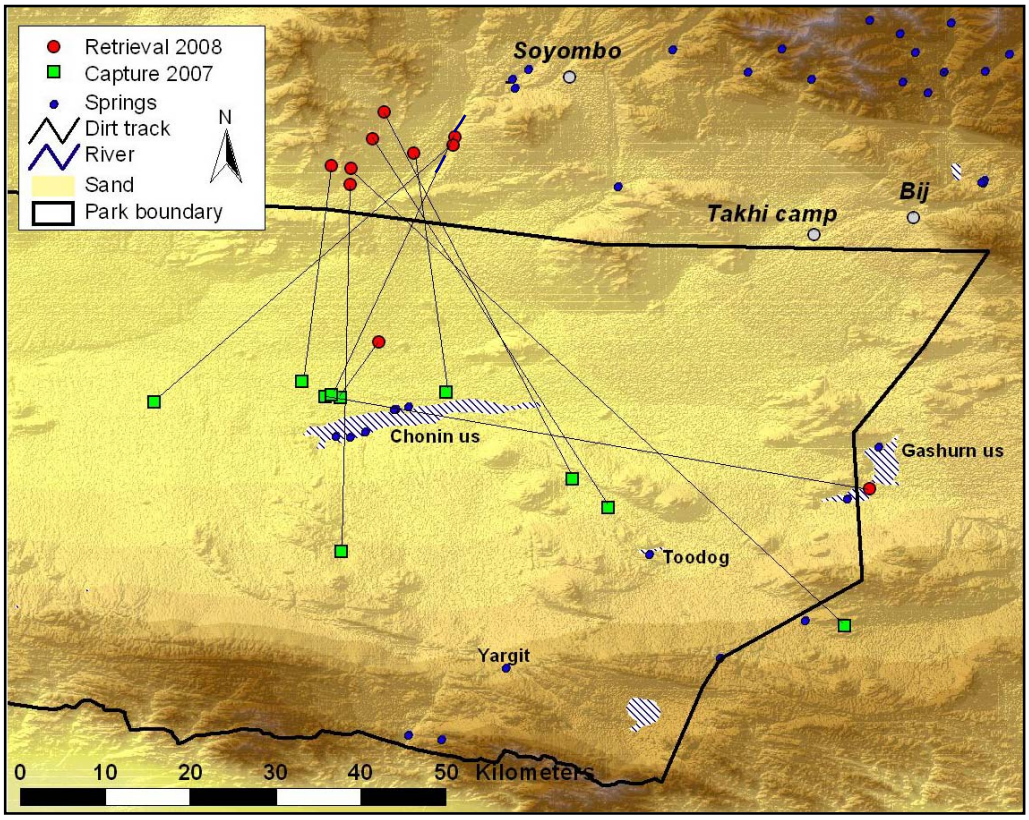


*Fig. 2: Deployment and retrieval locations of 10 GPS / SOB collars.*

All collars had opened correctly and none was attached or in the vicinity of a Khulan carcass. Thus we can conclude that all collared khulans survived until the drop date on 10 July 2008. Although all collars showed some signs of wear, eight were in good condition (Fig. 3). From the remaining two collars, the GPS unit was missing. Both collars had been on stallions and the damage was most likely a result of a recent fight. The VHF unit and the battery pack were intact on all 10 collars. Signal strength of the VHF signal was excellent and we were able to pick up the signal from high peaks (1,800-2,000m) for up to 60 km. On flat terrain signal range was 500-1,000m.

*Fig. 3: GPS SOB collars retrieved from 10 khulans collared in July 2007 in the Great Gobi B SPA.*

## 3. RETRIEVAL OF ONE GPS / SOB UNIT FROM A PRZEWALSKI'S HORSE STALLION

Two of the stallions (Arslan and Erk Hul) transferred to Takhin Tal in 2007 had been equipped with a GPS store-on-board collar. In spring 2008 Arslan headed towards Angirt mountains NW of the Takhi camp. He was regularly observed by local herdsmen because he had joint a group of domestic horses. The last observation of the collared takhi had been on 15. July. On 19 July we headed towards Angirt mountain to retrieve the collar and discuss the future fate of this takhi. On 20 July we located him in a group of domestic horses, but unfortunately he had lost the collar.

An agreement was reached with the local herders to drive him back to Takhin Tal in September, together with a group of domestic horses. Meanwhile the enclosure in Takhin Tal will be repaired and 2-3 bachelors herded into the enclosure to keep the Arslan company upon arrival. Hopefully the stallions will form a new bachelor group that can be released after 2-3 months and stays in the park. If this approach will not work and Arslan will again head for the mountains and join domestic horses, we will castrate him to avoid the production of hybrids.

*Fig. 4: Takhi stallion Arslan with a group of domestic horses in Angirt mountains.*

## 4. TESTING TWO GPS / SATELLITE TELEPHONE COLLARS ON DOMESTIC ANIMALS

Given the poor performance of GPS / ARGOS collars in central Asia and the difficulty to retrieve GPS / SOB collars in remote or flat areas we tested two collars that use the Iridium satellite telephone connection for data transfer (Vectronic Aerospace, Berlin, Germany). As the units are quite bulky (1.3 kg) and stiff, we deployed them on a domestic camel and a domestic horse for testing (Fig. 4). Both animals are easier to follow and observe on close range which allowed us to assess whether the units disturb the animals or cause any injuries.

Initial observations do not suggest any serious problems in both animals. However, the round shape of the collar did not very nicely fit the neck of the horse. Excess space is available on the side, while the collar is rather tight on the oesophagus. Data transmission, on the other hand, works very well even in mountainous terrain. During the 10 day test period on the horse, only 1 out of 214 attempted GPS positions was missed. During the 38 day test period on the camel 0 out of 901 attempted GPS positions were missed (Fig. 5). With some adaptation in size and collar shape the Iridium collars seem a great alternative to GPS / ARGOS collars.

*Fig. 4: Domestic camel and horse with GPS / satellite phone collars (Vectronic Aerospace HmbH, Berlin, Germany) for testing.*

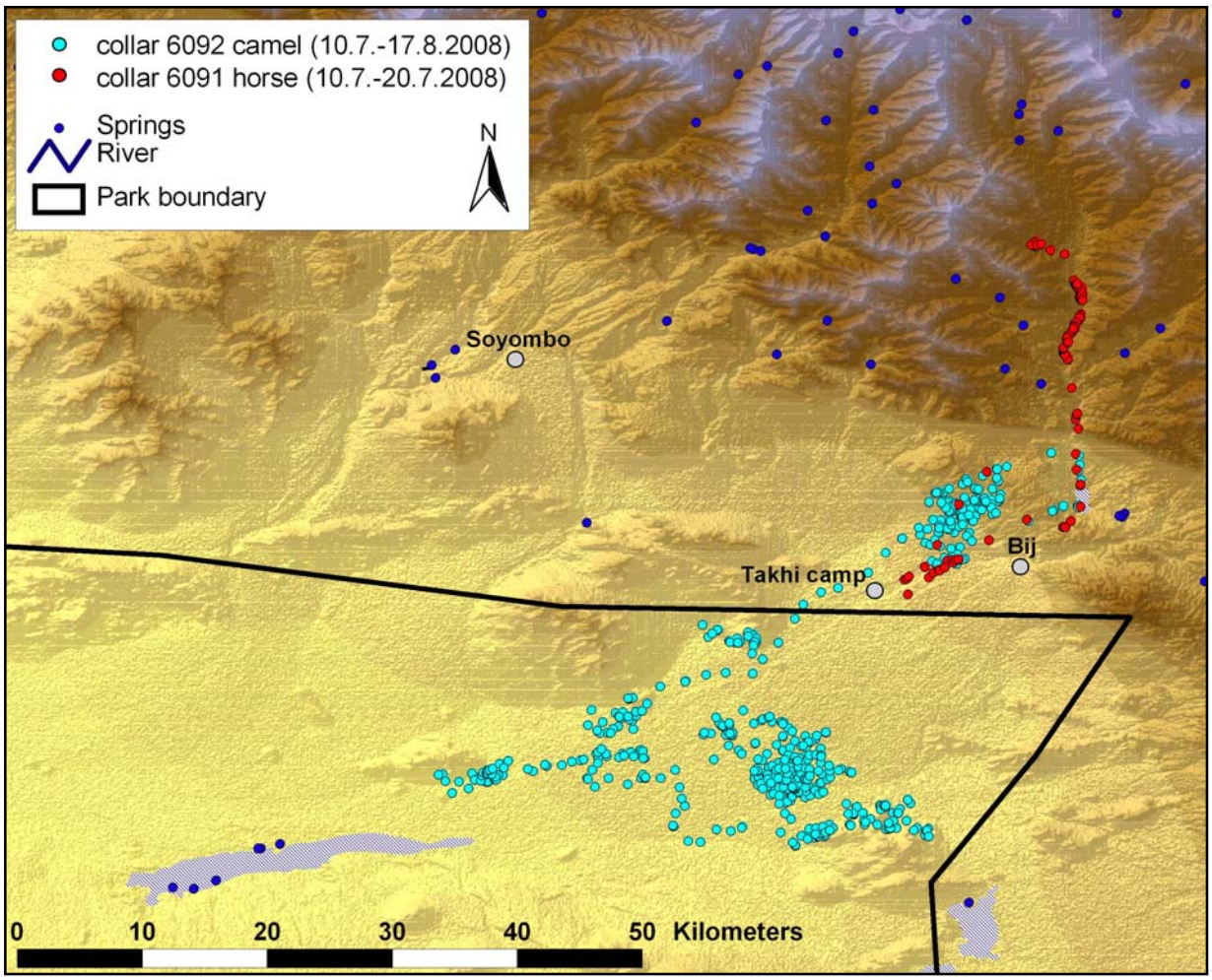


*Fig. 5: GPS positions from GPS/of obtained from with GPS / satellite phone collars during a test run in July/August 2008.*

# 5. DIPLOMA THESIS

## 5.1. Calibrating behavioural information from GPS / SOB units through simultaneous direct observations of a collared Przewalski's horse.

The GPS / SOB was fixed on the takhi yearling Erhes (Fig. 6). The collar has a store-on-board system which records a GPS position every 15 minutes and summarizes the head movements at 5 minute intervals. Parallel to the automatic recordings of the collar, Klaus recorded the daily behaviour of the yearling. The aim of his work was to test how well the behavioural categories "resting", "grazing", "walking", "travelling" and "running" may be distinguished. Based on the parallel analysis of the logged data and the behavioural observations Klaus will define thresholds in distance travelled and head movements to distinguish between the five main behavioural categories.

*Fig. 6: Klaus Huber and his study horse "Erhes", a yearling stallion.*

## 5.2. Comparative parasitological examination in the equids of the Great Gobi B SPA

Johanna analysed fresh scat samples from Przewalski's horses, Asiatic wild asses and domestic horses. To obtain fresh samples Johanna observed the equids with a Leica Vector GIS binocular which allows to measure the distance and angle to the place of defecation. When the animals left, the samples were collected without causing any disturbance.

Three different parasitological methods were carried out at the Takhin Tal research camp where a part of the laboratory has been equipped for these diagnostic examinations (Fig. 7). In addition, a subsample of the faecal material was dried by sunlight and will be tested for hormone status at the University of Vienna.

For her diploma work Johanna will test the following hypotheses:

- Animals with higher testosterone level such as bachelors have a higher parasite load. [Based on the theory of male biased parasitism, testosterone is immunosuppressive for the host and work anabolic for parasites]
- Wild asses have the highest parasite load because they have large home ranges and regularly aggregate in large groups
- Younger animals have a higher parasite load than older ones
- Parasites with a thicker hull are better adapted to the harsh Gobi climate and occur more frequently

*Fig. 7: Johanna Painer analysing fecal samples for parasites in the Takhin Tal lab.*

## 6. WEATHER CONDITION

The winter of 2007/2008 again was rather mild in Takhin Tal (Fig. 8). Average annual temperature was 2.85°C (July 2007-July 2008). Some rain fell in June, but upon our arrival the pastures were still rather brown. However, from 16 July on, several thunderstorms reached the area and brought extensive rains (Fig. 9).

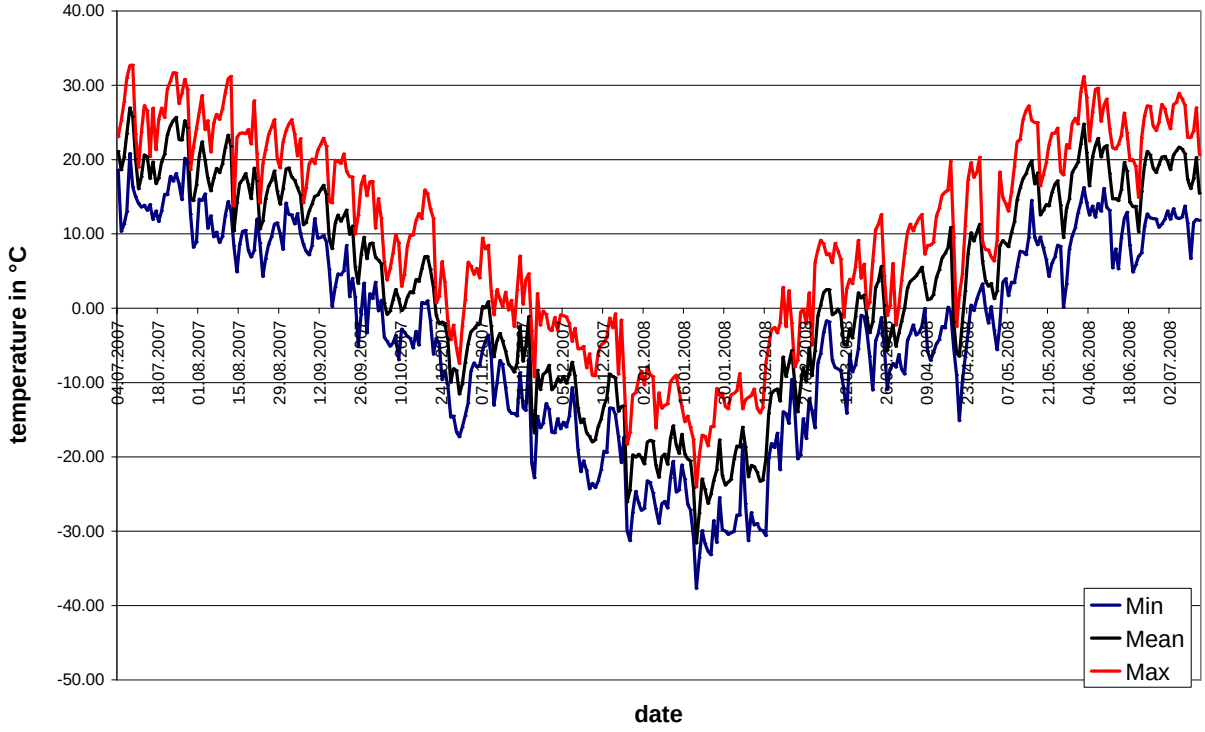


*Fig. 8: Average daily temperatures in Takhin Tal from 8 July 2006 until 4 July 2007 (Hobo datalogger, Hoskin, Canada).*

*Fig. 9: One of several thunderstorms approaching the Takhin Tal research station in July 2008.*

## 7. PRZEWALSKI'S HORSE POPULATION STRUCTURE

The Przewalski's horse population in and around Takhin Tal continues to grow (Fig. 10&11). As of 20 July 2008 a total of 136 P-horses, organized in 11 harem groups and several bachelor groups, roam the park (Table 2). To date 32 foals were born of which 24 are still alive. The missing 8 foals all disappeared within the first two weeks following their birth. No carcasses could be found and thus the reason for the losses remains unknown. Another 5 mares were still pregnant in July.

*Fig. 10: The Przewalski's horse population in Takhin Tal keeps growing.*

*Fig. 11: Observations like the above make us hope for even more foals in 2009.*

*Table 2: Overview of Przewalski's horses in Great Gobi B SPA as of 20 July 2008.*

| Name | Sex | ZB-Nr. | Birtdate | Age | Origin | Dam | Sire |
|---|---|---|---|---|---|---|---|
| ***Zagal group (10 adults, 4 foals,1 gelding domestic horse)*** | | | | | | | |
| Zagal | stallion | 3720 | 10.05.02 | 6 | Gobi B | 3035 | 2866 |
| Tsgaadai | mare | 2940 | 06.06.96 | 12 | Tachin Tal | 1297 | 1772 |
| Khokhoo | mare | 2984 | 19.11.96 | 11 | Langenberg | 1359 | 1374 |
| Soir | mare | 3045 | 31.03.97 | 11 | Langenberg | 2018 | 1374 |
| Dorothee | mare | 3230 | 06.06.99 | 9 | Tachin Tal | 3035 | 2503 |
| Telmen | mare | 3735 | 15.05.02 | 6 | Gobi B | 3072 | 1818 |
| Sormuus | mare | 4393 | 13.06.04 | 4 | Gobi B | 3383 | 3066 |
| Khatan | mare | 4751 | 21.05.06 | 2 | Gobi B | 3230 | 3069 |
| Bambi | mare | 5020 | 03.06.07 | 1 | Gobi B | 3045 | 3069 |
| Simba | stallion | 5048 | 20.06.07 | 1 | Gobi B | 2984 | 3069 |
| Dorotte's foal | stallion | - | 10.05.08 | 0 | Gobi B | 3230 | 3069 |
| Sormuus's foal | mare | - | 10.05.08 | 0 | Gobi B | 4393 | 3069 |
| Soir's foal | ? | - | 27.05.08 | 0 | Gobi B | 3045 | 3069 |
| Telmen's foal | stallion | - | 21.06.08 | 0 | Gobi B | 3735 | 3069 |
| Tsagaadai's foal | stallion | - | 01.07.08 | 0 | Gobi B | 2940 | 3069 |
| Khokhoo's foal | mare | - | 13.07.08 | 0 | Gobi B | 2984 | 3069 |
| ***Tayan group (12 adults, 2 foals)*** | | | | | | | |
| Tayan | stallion | 3066 | 24.04.97 | 11 | Tierpark Berlin | 1431 | 2041 |
| Imj | mare | 2748 | 02.08.94 | 14 | Schwerin | 1436 | 1236 |
| Zandan | stallion | 3166 | 28.05.98 | 10 | Tachin Tal | 2398 | 1818 |
| Mongon | mare | 3273 | 06.05.99 | 9 | Winterthur | 2483 | 1742 |
| Zogii | mare | 3375 | 15.05.00 | 8 | Winterthur | 1897 | 1742 |
| Orkhon | mare | 3430 | 15.07.00 | 8 | Tachin Tal | 2645 | 2363 |
| Oroo | mare | 3755 | 24.05.02 | 6 | Gobi B | 2787 | 1818 |
| Kheren | mare | 3803 | 28.07.02 | 6 | Gobi B | 2712 | 2866 |
| Harz | mare | 4313 | 02.05.04 | 4 | Gobi B | 3045 | 3069 |
| Doroo | stallion | 4356 | 27.05.04 | 4 | Gobi B | 3375 | 3066 |
| Buman | mare | 4503 | 29.04.05 | 3 | Gobi B | 2748 | 3069 |
| Tumen | mare | 4822 | 30.06.06 | 2 | Gobi B | 2748 | 3069 |
| Harz's foal | stallion | - | 05.05.08 | 0 | Gobi B | 4313 | 3066 |
| Oroo's foal | ? | - | 10.05.08 | 0 | Gobi B | 3755 | 3166 |
| Mongon's foal | ? | - | 01.06.08 | 0 | Gobi B | 3273 | 3066 |
| Zogii's foal | ? | - | 12.06.08 | 0 | Gobi B | 3375 | 3066 |
| Kheren's foal | ? | - | 14.06.08 | 0 | Gobi B | 3803 | 3066 |
| ***Taihar group (8 adults, 3 foals)*** | | | | | | | |
| Taikhar | stallion | 4328 | 12.05.04 | 4 | Tachin Tal | 2586 | 2363 |
| Od | mare | 2645 | 23.04.94 | 14 | Prag | 1847 | 1135 |
| Gurguul | mare | 2786 | 07.05.95 | 13 | Winterthur | 1879 | 1742 |
| Itgel | mare | 2948 | 12.06.96 | 12 | Köln (D)/WPL | 1557 | 1118 |
| Arslan | stallion | 4405 | 07.07.04 | 4 | Tachin Tal | 1669 | 2363 |
| Naran | mare | 4566 | 01.09.05 | 3 | Tachin Tal | 2645 | 2363 |
| Maizii | mare | 4701 | 24.04.06 | 2 | Tachin Tal | 2786 | 2363 |
| Hurmast | mare | 4915 | 28.04.07 | 1 | Tachin Tal | 2645 | 2363 |
| Od's foal | stallion | - | 21.04.08 | 0 | Gobi B | 2645 | 2363 |
| Itgel's foal | mare | - | 20.05.08 | 0 | Gobi B | 2948 | 2363 |
| Gurguul's foal | stallion | - | 23.05.08 | 0 | Gobi B | 2786 | 2363 |
| ***Selenge group (5 adults)*** | | | | | | | |
| Selenge | stallion | 3441 | 28.08.00 | 8 | Marvel Zoo | 1497 | 2507 |
| Sogoo | mare | 2586 | 01.12.92 | 15 | Australien, Dubb | 974 | 787 |
| Yyl | mare | 2712 | 17.04.94 | 14 | Oberwil | 486 | 1772 |
| Sonja | mare | 3415 | 13.06.00 | 8 | Salzburg | 2017 | 1433 |
| Mogoi | stallion | 4961 | 11.05.07 | 1 | Tachin Tal | 2586 | 2363 |
| ***Nomkhon group (8 adults, 3 foals)*** | | | | | | | |
| Nomkhon | stallion | 3717 | 07.05.02 | 6 | Gobi B | 2141 | 1818 |
| Shagai | mare | 2141 | 15.06.91 | 17 | Askania Nova | 966 | 1008 |
| Uugan | mare | 2398 | 02.09.92 | 16 | Tachin Tal | 1831 | ? |
| Bulga | mare | 2787 | 07.05.95 | 13 | Langenberg | 2018 | 1374 |
| Michid | mare | 2921 | 13.05.96 | 12 | Tierpark Berlin | 744 | 2041 |
| Mandal | mare | 3758 | 26.05.02 | 6 | Gobi B | 2940 | 2866 |
| Holog | mare | 4561 | 30.06.05 | 3 | Gobi B | 2398 | 1818 |
| Otgonbor | mare | 5038 | 15.06.07 | 1 | Gobi B | 2398 | 1818 |
| Mandal's foal | stallion | - | 05.05.08 | 0 | Gobi B | 3758 | 3750 |
| Shagai's foal | ? | - | 09.06.08 | 0 | Gobi B | 2141 | 3750 |
| Bulga's foal | ? | - | 15.07.08 | 0 | Gobi B | 2787 | 3717 |
| ***Myangan group (8 adults, 5 foals)*** | | | | | | | |
| Myangan | stallion | 3361 | 01.05.00 | 8 | Tachin Tal | 1669 | 2866 |
| Udam | mare | 3734 | 15.05.02 | 6 | Wien (A) | 1386 | 2444 |
| Zuram | mare | 4234 | 02.06.02 | 6 | Karlsruhe (D) | 2638 | 2397 |
| Ners | mare | 3784 | 10.06.02 | 6 | Karlsruhe (D) | 1648 | 2397 |
| Borkhul | mare | 4306 | 28.04.04 | 4 | Tachin Tal | 2786 | 2363 |
| Huvhar | mare | 4383 | 06.06.04 | 4 | Gobi B | 2141 | 1818 |
| Tsovoo | mare | 4398 | 16.06.04 | 4 | Gobi B | 2398 | 1818 |
| Taniya | mare | 5018 | 30.07.07 | 1 | Gobi B | 4234 | 3361 |
| Zuram's foal | ? | - | 18.05.08 | 0 | Gobi B | 4234 | 3361 |
| Borhul's foal | stallion | - | 06.06.08 | 0 | Gobi B | 4306 | 3361 |
| Huvhar's foal | mare | - | 09.06.08 | 0 | Gobi B | 4383 | 3361 |
| Ners's foal | stallion | - | 12.06.08 | 0 | Gobi B | 3784 | 3361 |
| Udam's foal | ? | - | 15.07.08 | 0 | Gobi B | 3734 | 3361 |

| Name | Sex | ZB-Nr. | Birtdate | Age | Origin | Dam | Sire |
|---|---|---|---|---|---|---|---|
| ***Moogii group (6 adults, 2 foals)*** | | | | | | | |
| Moogii | stallion | 3342 | 08.10.99 | 9 | Neusiedl/Wien | 1386 | 2444 |
| Toot | mare | 3072 | 11.05.97 | 11 | Zoo Berlin | 1813 | 1618 |
| Mondor | mare | 3194 | 17.06.98 | 10 | Springe | 2187 | 1118 |
| Shankhat | mare | 4339 | 17.05.04 | 4 | Gobi B | 3084 | 3069? |
| Tenges | mare | 4399 | 25.06.04 | 4 | Gobi B | 2787 | 1818 |
| Bokhoo | mare | 4787 | 03.06.06 | 2 | Gobi B | 2984 | 3069 |
| Shanhat's foal | stallion | - | 27.05.08 | 0 | Gobi B | 4339 | 3342 |
| Mondor's foal | ? | - | 25.06.08 | 0 | Gobi B | 3194 | 3342 |
| Tenges's foal | ? | - | 15.07.08 | 0 | Gobi B | 4399 | 3342 |
| ***Khuchit group (9 adults, 1 foal)*** | | | | | | | |
| Khuchit | stallion | 3320 | 16.06.99 | 9 | Langenberg | 2254 | 1374 |
| Misheel | mare | 3084 | 28.05.97 | 11 | Tachin Tal | 1977 | 1159 |
| Erdene | mare | 3040 | 19.02.98 | 10 | Rotterdam | 1633 | 1429 |
| Maral | mare | 3387 | 23.05.00 | 8 | Tachin Tal | 3038 | 2363 |
| Kherlen | mare | 3391 | 26.05.00 | 8 | Tachin Tal | 3035 | 2363 |
| Saran | mare | 3823 | 09.04.03 | 5 | Tachin Tal | 2645 | 2363 |
| Erhsaran | mare | 5017 | 03.06.07 | 1 | Gobi B | 3084 | 3166 |
| Janjin | stallion | 5065 | 04.07.07 | 1 | Gobi B | 3387 | 2911 |
| Ariuka | mare | 5087 | 08.07.07 | 1 | Gobi B | 3803 | 3166 |
| Saran's foal | ? | - | 01.06.08 | 0 | Gobi B | 3823 | 3166 |
| Misheel's foal | mare | - | 03.07.08 | 0 | Gobi B | 3084 | 3166 |
| ***Hubsgul group (15 adults, 3 foals)*** | | | | | | | |
| Hubsugul | stallion | 3233 | 21.05.97 | 11 | Langenberg | 1320 | 1374 |
| Beltes | mare | 3047 | 15.04.97 | 11 | Ahaus (D)/WPL | 1987 | 1118 |
| Zur | mare | 3301 | 06.06.99 | 9 | Köln (D)/WPL | 1022 | 1852 |
| Shandas | mare | 3312 | 11.06.99 | 9 | Ahaus (D)/WPL | 2948 | 1852 |
| Nergui | mare | 3708 | 26.04.02 | 6 | WPL | 2018 | 2805 |
| Mandhai | mare | 3730 | 13.05.02 | 6 | Winterthur (CH) | 1897 | 1742 |
| Tolbo | mare | 3807 | 30.06.02 | 6 | Wien (A) | 2173 | 2444 |
| Zolboo | mare | 3811 | 19.10.02 | 6 | Stuttgart (D) | 1767 | 2480 |
| Audi | mare | 4688 | 09.04.06 | 2 | Gobi B | 3047 | 3233 |
| Altai | mare | 4690 | 16.04.06 | 2 | Gobi B | 3312 | 3233 |
| Suvd | mare | 4778 | 30.05.06 | 2 | Gobi B | 3807 | 3233 |
| Ynzagahan | mare | 4855 | 25.08.06 | 2 | Gobi B | 3811 | 3233 |
| Shandast | stallion | 4856 | 01.09.06 | 2 | Gobi B | 3301 | 3233 |
| Khaan | stallion | 5054 | 25.06.07 | 1 | Gobi B | 3312 | 3233 |
| Shuudan | mare | 5055 | 25.06.07 | 1 | Gobi B | 3807 | 3233 |
| Mandhai's foal | ? | - | 15.05.08 | 0 | Gobi B | 3730 | 3233 |
| Beltes' foal | stallion | - | 01.06.08 | 0 | Gobi B | 3047 | 3233 |
| Nergui's foal | mare | - | 01.07.08 | 0 | Gobi B | 3708 | 3233 |
| Tolbo's foal | mare | - | 15.07.08 | 0 | Gobi B | 3807 | 3233 |
| ***Bundan group (3 adults, 1 foal)*** | | | | | | | |
| Bundan | stallion | 4404 | 02.07.04 | 4 | Gobi B | 3391 | 2911 |
| Zorgol | mare | 3383 | 20.05.00 | 8 | Winterthur | 1892 | 1742 |
| Taij | stallion | 4731 | 09.05.06 | 2 | Gobi B | 3383 | 2911 |
| Zorgol's foal | mare | - | 25.06.08 | 0 | Gobi B | 3383 | 3166 |
| ***Bosoo group (3 adults)*** | | | | | | | |
| Bosoo | stallion | 3750 | 21.05.02 | 6 | Gobi B | 2398 | 1818 |
| Tschandaga | mare | 2130 | 11.05.91 | 17 | Askania Nova | 600 | 1159 |
| Henzee | mare | 5089 | 30.08.07 | 1 | Gobi B | 2130 | 1818 |
| **Bachelors** | | | | | | | |
| Jiguur | stallion | 2363 | 12.06.92 | 16 | Langenberg | 486 | 1772 |
| Mondol | stallion | 3069 | 10.05.97 | 11 | Tachin Tal | 2130 | 1818 |
| Magnai | stallion | 3426 | 02.07.00 | 8 | Rotterdam | 2671 | 2040 |
| Rotary | stallion | 3724 | 12.05.02 | 6 | Hustai | 2682 | 1891 |
| Osama | stallion | 3808 | 11.09.02 | 6 | Tachin Tal | 2586 | 2363 or 1818 |
| Shijee | stallion | 3821 | 03.04.03 | 5 | Tachin Tal | 2786 | 2363 |
| Kharaatsai | stallion | 3881 | 06.06.03 | 5 | Gobi B | 3230 | 3069 |
| Tsast | stallion | 3888 | 12.06.03 | 5 | Gobi B | 2398 | 1818 |
| Tsombon | stallion | 4308 | 29.04.04 | 4 | Gobi B | 3194 | 3066? |
| Sansar | stallion | 4314 | 02.05.04 | 4 | Tachin Tal | 2645 | 2363 |
| Zegst | stallion | 4352 | 25.05.04 | 4 | Gobi B | 3332 | 1818 |
| Jonon | stallion | 4392 | 13.06.04 | 4 | Gobi B | 3387 | 2911 |
| Ganzaga | stallion | 4417 | 24.07.04 | 4 | Gobi B | 2921 | 1818 |
| Huleg | stallion | 4500 | 27.04.05 | 3 | Tachin Tal | 2786 | 2363 |
| Bars | stallion | 4511 | 09.05.05 | 3 | Gobi B | 3430 | 3069 |
| Azaa | stallion | 4529 | 21.05.05 | 3 | Gobi B | 3230 | 3069 |
| Burd | stallion | 4533 | 25.05.05 | 3 | Gobi B | 3040 | 2911 |
| Bohon | stallion | 4535 | 27.05.05 | 3 | Gobi B | 2141 | 1818 |
| Agsam | stallion | 4559 | 24.06.05 | 3 | Tachin Tal | 2586 | 2363 |
| Sooton | stallion | 4593 | 08.10.05 | 3 | Tachin Tal | 2948 | 3233 |
| Sumber | stallion | 4815 | 24.06.06 | 2 | Gobi B | 3045 | 3069 |
| Matar | stallion | 4824 | 02.07.06 | 2 | Gobi B | 2940 | 3069 |
| Erhes | stallion | 4932 | 03.05.07 | 1 | Tachin Tal | 2786 | 2363 |
| Yalalt | stallion | 4956 | 09.05.07 | 1 | Tachin Tal | 2948 | 2363 |
| Erk Hul | stallion | 3710 | 19.04.02 | 6 | Hustai | 1970 | 2619 |
| Arslan2 | stallion | 4321 | 06.05.04 | 4 | Hustai | 2703 | 1857 |

*animals that died (all disappeared for unknown reasons)*

# 8. CAMEL COLLAR RETRIEVAL FROM THE GREAT GOBI A SPA

From 24-29 July, Petra Kaczensky, N. Altansukh, B. Galbadrakh and our guest Ilka Reinhardt (*LUPUS wildlife consulting*, Germany) drove to Great Gobi A SPA to search for dropped wild camel and khulan collars. In Bayantooroi we teamed up with rangers Ankhbayar and Sukhe, as well as the young cooker Enkhbayar.

We were searching for four collars:

(1) Khulan collar 58849 (VHF 151.550) which dropped on 20.10.2007 (no ARGOS connection)
(2) Khulan collar 58848 (VHF 151.500) which dropped on 01.06.2008 (no ARGOS connection)
(3) Wild camel collar 70350 (VHF 151.250) which dropped on 01.06.2008 and sent a last location on 30.06.2008 (last GPS position ~10 hours before drop-off)
(4) Wild camel collar 25805 (VHF 151.350) which sporadically sent identical GPS positions (assumed to have died)

Based on their last locations, the two wild camel collars were located somewhere between Bogts tsaagan ders and Marzaalain shand (Fig. 12) and our search was concentrated in this area. For the two khulan collars, from which we had not received GPS or ARGOS positions in several months, we searched opportunistically by scanning the VHF frequency from elevated points along the route.

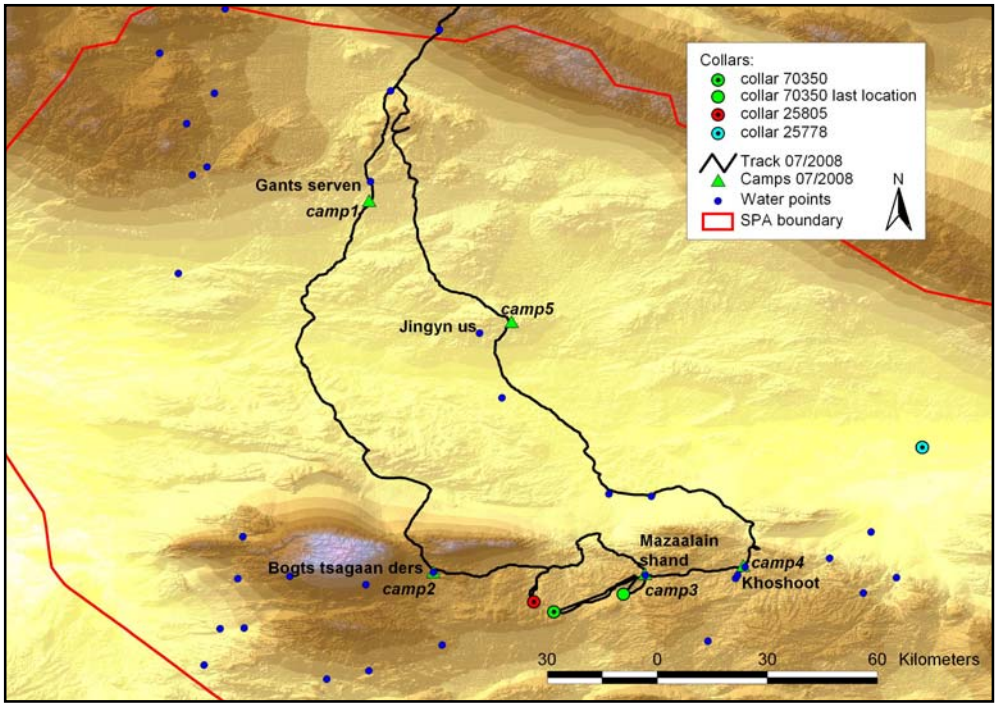


*Fig. 12: Search route for dropped collars in Great Gobi A in July 2008.*

We drove ~600 km within the Great Gobi A SPA and were able to retrieve the two wild camel collars, but not the khulan collars. We found collar 25805 at the GPS position last transmitted via the ARGOS satellite system. For unknown reasons the drop-off had released the collar prematurely. The collar and drop-off showed virtually no wear.

Collar 70350 proved more difficult to find as we did not pick up a VHF signal in the vicinity of the last location. However, from the top of a nearby mountain (1715m) we finally heard a weak VHF signal. Following the signal we were able to locate the collar ~15 km away. The collar had fallen on the external ARGOS antenna, which apparently had blocked any further ARGOS connections.

Collars 25778, which sent identical GPS locations since April 2008, had already been picked up by the Harry Reynolds Gobi bear team in June 2008. The collar was still attached to the more or less intact body of a dead camel. The team was unable to determine the likely cause of death of the deceased animal.

# 9. MISCELLANEOUS

## 9.1 English class

This year the resident students where asked to hold English lessons for the children in Takhin Tal (Fig. 13). The two Austrian vet students Johanna Painer and Nikolaus Huber assisted by some of the Mongolian students provided basic English instruction. Interested children from 3 to 12 years of age joined. Simple phrases, local animals and counting were part of the fun afternoon classes.

*Fig. 13: Klaus Huber and N. Altansukh holding English class in the ITG office.*

## 9.2 Support to other projects in Mongolia

At the request of Tom McCarthy from the *International Snow Leopard Trust* and *Panthera*, Chris Walzer went to visit the newly established ISLT Snow Leopard research camp in the South Gobi. The team was able to capture and collar a male snow leopard during his stay (Fig. 14). Chris provided some anaesthesia and monitoring training for the team.

*Fig. 14: Chris Walzer, Tom McCarthy and Orjan Johannson (from left to right) placing a GPS-Globalstar Satellite collar on a snow leopard.*

## 9.3 Visitors to Takhin Tal

As in the past years several guests visited the project and the park. Prof. Dr. S. Shar from the department of Zoology at the National University of Mongolia in Ulaanbaatar and his team of students spent several weeks in camp researching various aspects of the small mammal fauna (Fig. 15). Notable was also the visit of two Przewalski's horse researcher: Norbert Pantel who had worked at the Kalameili reserve in Xinjiang, China and Franziska Roth who had worked in Hustai Nuruu NP, Mongolia and in Pentezug semi-reserve, Hungary.

*Fig. 15: Prof. Dr. S. Shar (2nd left) and his team from the department of Zoology at the National University of Mongolia.*

A total eclipse of the sun could be observed on 01.08.2008 in the Khovd province (Fig. 16). The central line of the moon's shade went through Great Gobi B SPA near the small town Altai Khovd, 80 km away from the Takhin Tal camp. About 100 people visited (and paid park dues) in order to watch this impressive spectacle. Around 15 people spent one to several nights in one of the Takhin Tal gers. Some of these tourists were Astronomers, mainly from Germany, France and Mongolia. Most of the tourists stayed one or two days longer to see the park and its wildlife, namely the takhis and khulans.

*Fig. 16: two park visitors observing the total eclipse of the sun on 1st of august 2008 in the Gobi B SPA near Takhin Tal.*

# 10. RECENT PUBLICATIONS

## 2008

Kaczensky, P., N. Enkhsaikhan, O. Ganbaatar and C. Walzer. ***In press***. The Great Gobi B Strictly Protected Area in Mongolia – refuge or sink for wolves Canis lupus in the Gobi? Wildlife Biology, 14(4):00-00. http://www.wildlifebiology.com/Manuscripts.aspx

Kaczensky, P., O. Ganbaatar, H. von Wehrden and C. Walzer. ***In press***. Resource selection by sympatric wild equids in the Mongolian Gobi. Journal of Applied Ecology. doi: 10.1111/j.1365-2664.2008.01565.x

Kaczensky, P. and C. Walzer. ***In press***. Der Asiatische Wildesel – bedrohter Überlebenskünstler in der Wüste Gobi. Zeitschrift des Kölner Zoo.

Kaczensky, P., O. Ganbaatar, H. von Wehrden, N. Enksaikhan, D. Lkhagvasuren, and C. Walzer. **2008**. Przewalski horse re-introduction in the Great Gobi B SPA - from species to ecosystem conservation. Pages 125-130 in B. Boldgiv (Eds). Proceedings of the International Conference "Fundamental and Applied Issues of Ecology and Evolutionary Biology", April 25, 2008 in Ulaanbaatar. Ecology Department, Faculty of Biology, University of Mongolia, Ulaanbaatar, Mongolia. ISBN 99929-59-82-7

Kuehn, R., P. Kaczensky, D. Lkhagvasuren, S. Pietsch and C. Walzer. 2006(**2008**). Differentiation of meat samples from domestic horses (*Equus caballus*) and Asiatic wild asses

(*Equus hemionus*) using a species-specific restriction site in the mitochondrial cytochrome b region. Mongolian Journal of Biological Sciences, 4(2):57-62.

Rüegg, S. **2008**. Biology and Epidemiology of equine piroplasmosis in Takhin Tal (Mongolia). Ph.D. Thesis at the Institute of Parasitology, Vetsuisse Faculty of Zurich, University of Zurich, Switzerland.

von Wehrden H. and K. Wesche. **2008**. Mapping the vegetation of southern Mongolian protected areas: application of GIS and remote sensing techniques. Arid Ecosystems, 13(33-34):136-145.

Walzer, C. and P. Kaczensky. ***In press***. Choisir un émetteur ou une balise - revue des possibilités et limites. Ve Congés International Vétérinaire Francophone sur les Animaux Sauvages et Exotiques, Paris, France.

Walzer, C., P. Kaczensky, and F. Schwarzenberger. **2008**. Re-thinking the role of wildlife veterinarians (conservation professionals) in a globalized conservation world. In: Proceedings 7th. Congress of the European Association of Zoo and Wildlife Veterinarians, ed. Erken A, pp. 87-89. Leipzig, Germany.

Walzer, C. and P. Kaczensky. **2008**. Radio waves, explosions and satellites - choosing the appropriate telemetry device for wildlife studies. In: Egzotikus és Állatkerti Emlösállatok Betegségei, ed. Sos E, Liptovszky MMolnar V, pp. 6-11. Budapest.

Walzer, C., P. Kaczensky, D. Enkhbileg, G. Dovchindorj, Y. Adiya. **2008**. Through the eye of the desert to capture and collar wild Bactrian camels (*C. ferus*). Annual Conference of the American Association of Zoo Veterinarians & Association of Reptile and Amphibian Veterinarians, October 11-17, 2008, Los Angeles, California, USA.

Walzer, C., P. Kaczensky, O. Ganbaatar, J. Lengger, N. Enkhsaikhan, D. Lkhagvasuren. 2006 (**2008**). Capture and anaesthesia of wild Mongolian equids – the Przewalski's horse (*Equus ferus przewalskii*) and khulan (*E. hemionus*). Mongolian Journal of Biological Sciences, 4(1):19-30.

## 2007

Kaczensky, P. **2007**. Wildlife value orientations of rural Mongolians. Human Dimensions in Wildlife, 12:317-329.

Kaczensky, P., N. Enkhsaihan, O. Ganbaatar, R. Samjaa, and C. Walzer. **2007**. Identification of herder - wildlife conflicts in the Gobi B Strictly Protected Area in SW Mongolia. Exploration into the Biological Resources of Mongolia (Halle/Saale, Germany) 10, 99-116.

Lengger, J., F. Tataruch, and C. Walzer. **2007**. Feeding ecology of Asiatic wild ass *Equus hemionus*. Exploration into the Biological Resources of Mongolia, 10:93-97.

Souris, A.C., P. Kaczensky, R. Julliard, C. Walzer. **2007**. Time budget-, behavioral synchrony- and body score development of a newly released Przewalski's horse group *Equus ferus przewalskii*, in the Great Gobi B Strictly Protected Area in SW Mongolia. Applied Animal Behavioural Science, 107:307-321.

Stubbe, A., M. Stubbe, H. von Wehrden, N. Batsajchan, and R. Samjaa. **2007**. Biodiversity in space and time - towards a grid mapping for Mongolia. Exploration into the biological resources of Mongolia 10:391-406.

von Wehrden H. and K. Wesche. **2007**. Mapping Khulan habitats - a GIS-based approach. Exploration into the biological resources of Mongolia 10: 31-44.

von Wehrden, H. and K. Wesche. **2007**. Relationships between climate, productivity and vegetation in southern Mongolian drylands. Basic and Applied Dryland Research 2:100-120.

Walzer, C., P. Kaczensky, O. Ganbaatar, N. Enkhsaihan, and D. Lkhagvasuren. **2007**. Capture and anaesthesia of the Mongolia wild ass (*E. hemionus*). Exploration into the Biological Resources of Mongolia (Halle/Saale, Germany) 10, 69-76.

For various research reports see www.takhi.org

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As in the past years many people have worked very hard and helped so much to make this summers trip a success. We are grateful for our new office manager N. Enksaikhan for his organisational skills and the good communication – things have become so much easier! We want to thank O. Ganbaatar for his great work in Takhin Tal. We are fully aware of his qualities and the huge workload and responsibility he has to burden. In B. Chinbaat not only O. Ganbaatar has a reliable bookkeeper and organizer, but so have we. The parks specialist N. Altansukh has become a very experienced Takhi man within the last year and his motivation and organizational skills are much appreciated.

We are very much indebted to B. Batsuuri and his wife S. Tungalagtuya for making sure that the camp remains in excellent condition. Without S. Tungalagtuya’s wonderful cooking, research activities would be severely hampered. Due to the excellent work and the watchful eyes of the rangers and takhimen G. Nisekhkhuu, T. Khuderchuluun, B. Batsuuri, Z. Baast, L. Oinbayar, B. Chinbat, and O. Nyambayer we know the fate of each and every Przewalski’s horse and get regular information about wildlife and human activities in the park. B. Galbadrakh is doing his best to keep the heavily used jeep and motorbike fleet running.

And last but not least we thank Ilka Reinhardt, Johanna Painer and Klaus Huber for their support and great company. We hope they will become deeply infected with the famous “Gobi fever”, which makes people wanting to come back again and again.