Field activities in the Great Gobi B Strictly Protected Area in SW Mongolia in June 2013

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1. Przewalski's horse collaring

Monitoring of the Przewalski's groups has become more challenging as groups seem to move over greater ranges and are slowly starting to expand into new areas. Consequently we decided to again collar some Przewalski's horses, focusing on horses that had newly arrived in 2012 and the established harem which presently is the most difficult to monitor.

1.1. Anesthesia

Between 7 and 13 June we darted five horses out of a pursuing jeep as previously described. We used the standard combination of 10 mg butorphanol, 10 mg detomidine and 2.6 mg etorphine. Induction to lateral recumbency ranged between 5 to 14 minutes and was calm in all 5 horses. Anesthesia monitoring demonstrated excellent SpO2 values between 85-96%. Venous blood gases were all in the physiological ranges. Procedures lasted 20-40 minutes duration. Anesthesia was reversed with 50 mg naltrexone iv.

1.2. GPS-Iridium collars

Four animals were equipped with GPS-Iridium collars (VECTRONIC Aerospace, Berlin, Germany) programmed to obtain 1 GPS fix every hour. These locations are transmitted via the Iridium satellite phone connection every 10-20 hours. The estimated lifespan of these collars is 2 years. One animal was equipped with a newly released GPS-Iridium collar with an integrated digital camera. The digital camera is programmed to take one image every hour between 8:00 to 20:00 (daylight). The images are stored on board of the collar, but can be down-loaded once the collar is retrieved. Given the additional drain on the battery by the camera, the estimated lifespan of the collar is 1 year (Table 1).

Table 1: Przewalski's horse captured and collared in June 2013 in the Great Gobi B SPA.

Date	Local time	ZB number	Name	Sex	Born	Origin	Group	Capture location	XCO	YCO	Collar ID	Collar life	VHF frequency	Breakaway date
07.06.2013	11:00	5341	Tsagaanaa	f	07.06.08	Doebritzer Heide, Germany	Erkhes group	in large enclosure	93.63730	45.53254	7215	2 years	150.150	01.05.2015
08.06.2013	13:00	4751	Khatan	f	21.05.06	Gobi, Mongolia	Bundan group	near Shirin us	93.34882	45.53807	7209	2 years	150.100	01.05.2015
10.06.2013	11:00	5094	Oidov (Z 274)	m	06.09.07	Jimsar, China	Bachelors	near Takhi us	92.54910	45.49253	6092	2 years	151.150	01.05.2015
10.06.2013	12:00	4963	Khovd (Z 262)	m	11.05.07	Jimsar, China	Bachelors	near Takhi us	92.54910	45.49253	7213	2 years	150.050	01.05.2015
13.06.2013	19:00	5372	Boroo (K3)	f	03.05.09	Doebritzer Heide, Germany	Erkhes group	near Serun	93.60388	45.58913	13155	1 year	150.200	01.05.2014

Testing the camera collar on a Lipizzan horse in Austria revealed that an orientation of the camera towards the front does not work very well. The need to fix the collar right behind the head (to stop the collar from sliding up and down the neck) in combination with the long lower jaw of a horse largely obscures the camera during the majority of the pictures (Fig. 1). We thus asked VECTRONIC Aerospace to change the camera orientation towards the side (see title and Fig. 4).

Fig. 1: Camera collar images from the test horse in Austria.

1.3. Przewalski's horses marked

The first horse, mare Tsagaanaa, was darted on 7 June in the large acclimatization enclosure. She had a 25 cm long cut on the inner side of the elbow joint of the left leg which was likely fence entrapment related. The wound was cleaned and sutured during anesthesia. She did not seem much affected by the wound as she fed and moved like the other horses and hardly limped at all.

Fig. 1: Mare Tsagaanaa is being collared and treated for a wound on the upper, inner side of her left leg.

The second horse, mare Khatan, was darted and collared on 8 June near Shirin us (Fig. 2). Unfortunately we could not tell the identity of the mare and did not realize she had a young foal with her. The chase separated her from the foal and the group did not remain in the vicinity of the capture side, but moved on. Attempts to re-unite the mare with the group did not succeed and may have separated them even further. The group finally re-united with Khatan after ~ 24 hours. However, by that time her foal looked rather exhausted and was not seen any more the next day. Consequently, captures during the period when the foals are still very young will be avoided in the future.

Fig. 2: Mare Khatan after reversal with naltrexone getting up from anesthesia.

The third and fourth horse, stallions Oidov and Khovd, were darted and collared on 10 June near Takhin us (Fig. 3).

Fig. 3: Stallions Oidov (left) and Khovd (right).

The fifth and last horse, mare Boroo, was darted and collared on 13 June near Serun mountain north on the Takhin Tal camp in the late afternoon. A capture attempt in the morning failed due to difficult terrain and technical problems. The group had been released from the enclosure just two days previous on 11 June. The mare was in rather poor body condition, but did not have any injuries. The mare was additionally treated with 5 ml carbesia® im. She was equipped with the GPS-Iridium camera collar and hopefully will document her adaptation to life in the Gobi during the next year (Fig. 4).

Fig. 4: Mare Boroo with GPS-Iridium camera collar.

1.4. First GPS locations

Four collars are collecting GPS locations every hour as expected and are sending them at regular intervals. However, collar 7213 of stallion Khovd seems to have problems (Table 2).

Table 2: Locations received as of 18 June 2013, 11:00 UTC (19:00 Ulaanbaatar local time).

Date	7215_Tsagaanaa	7209_Khatan	6092_Oidov	7213_Khovd	13155_Boroo
07.06.2013	21*				
08.06.2013	**24**	19*			
09.06.2013	**24**	**24**			
10.06.2013	**24**	**24**	21*	8*	
11.06.2013	**24**	**24**	**24**	0	
12.06.2013	**24**	**24**	**24**	0	
13.06.2013	**24**	**24**	**24**	0	13*
14.06.2013	**24**	**24**	**24**	8	**24**
15.06.2013	**24**	**24**	**24**	4	**24**
16.06.2013	**24**	**24**	**24**	6	**24**
17.06.2013	**24**	**24**	**24**	8	17
18.06.2013	4	11	11	10	**not sent yet**
Sum	**265**	**246**	**200**	**44**	**102**

*capture day

The collared horses appear to be doing fine and are moving quite a bit (Fig. 5 & 6). We hope to make the positions available online on the new ITG website and the Vetmeduni Vienna website as soon as possible.

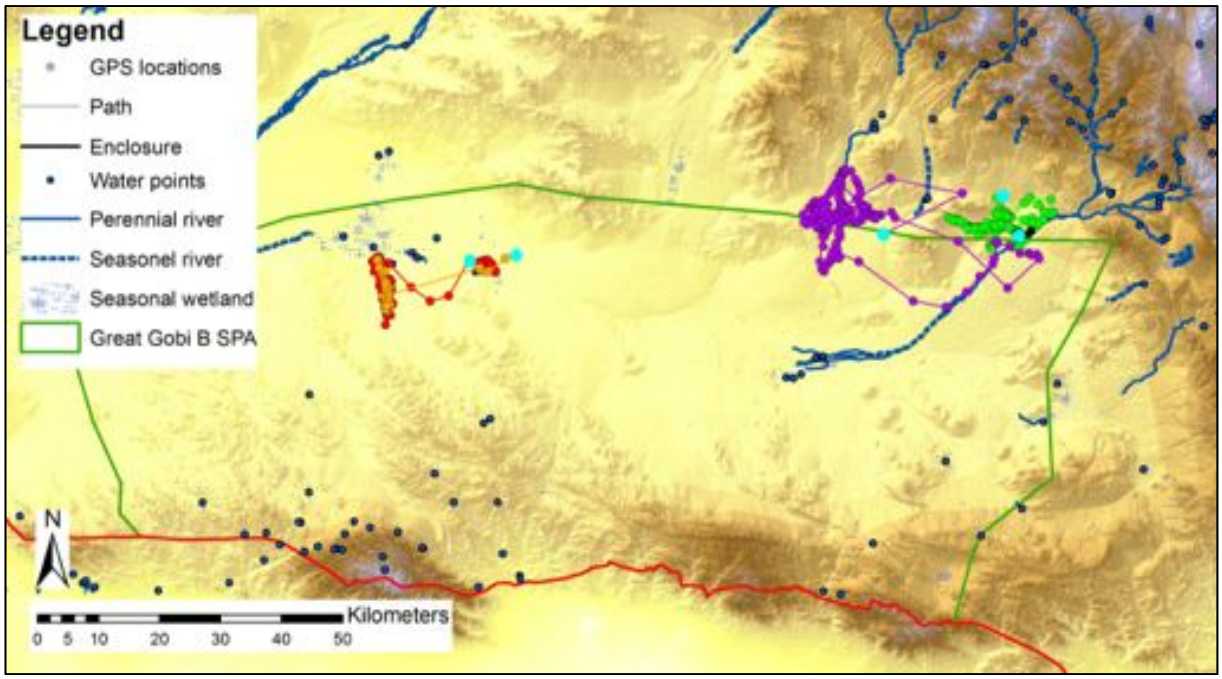

Fig. 5: Overview of the GPS locations obtained between 6 and 18 June 2013 (capture locations marked light blue). Because the two stallions largely move together and Tsagaanaa and Boroo are in the same harem, their positions mostly overlap.

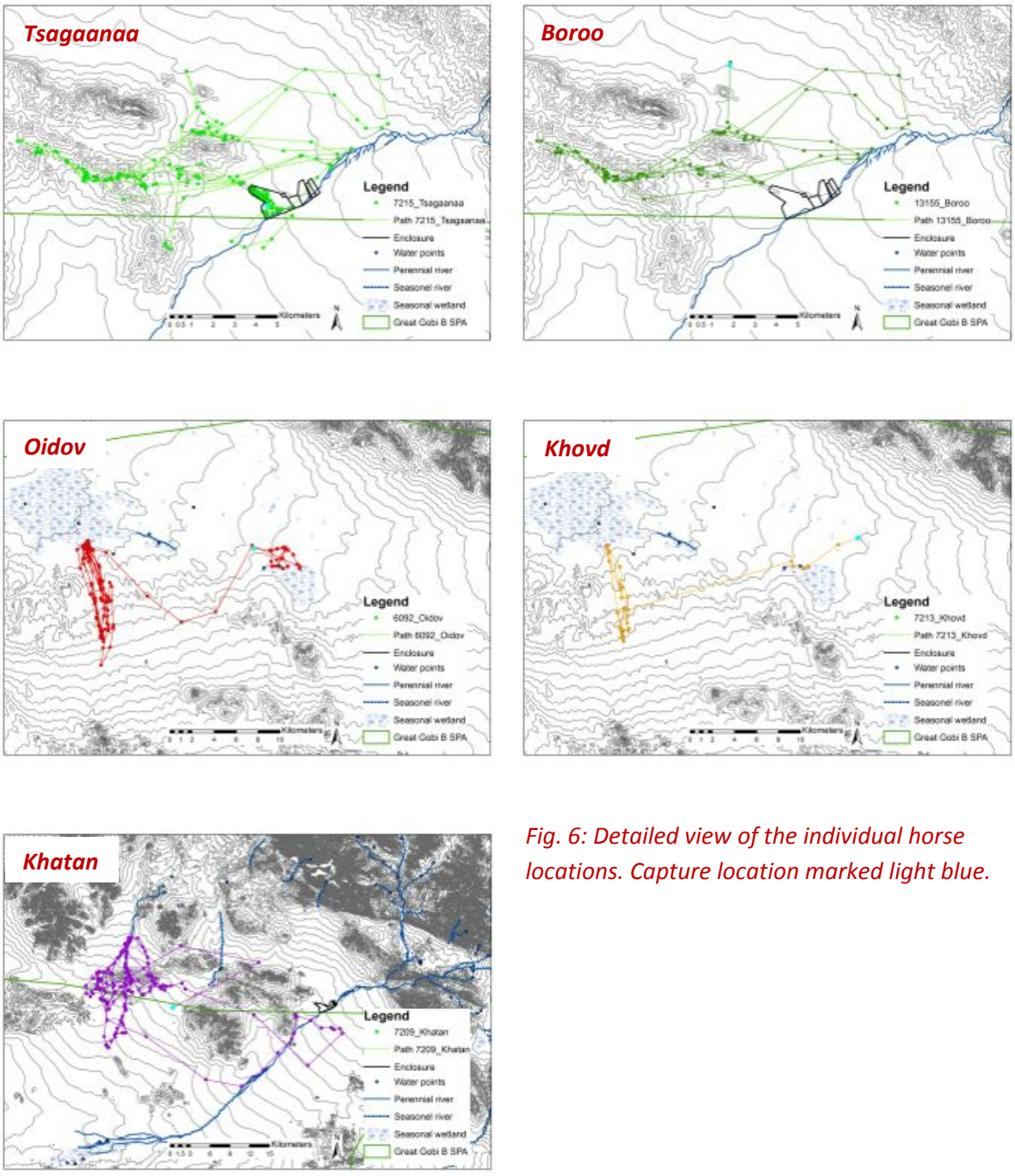

Fig. 6: Detailed view of the individual horse locations. Capture location marked light blue.

2. New weather station

We installed the new Hobo (Onset, Cape Cod, Massachusetts, USA) weather station on the old ITG container (Fig. 7). It is an upgrade of the simple Hobo temperature and rain gauge logger established in April 2003. The new station will measure: temperature, relative humidity, barometric pressure, wind direction, and wind speed. The first test data confirmed our subjective impressions that night-time temperatures were still quite cool (Table 3). The weather station was launched on 16 June at 9:00 local time and will collect data every hour over the next few years powered by a solar panel.

Fig. 7: New weather station at the Takhin Tal research camp / Great Gobi B SPA administration.

Table 3: First data from the new weather station.

Date	Local time	Barometric pressure (mbar)	Wind direction (ø)	Temperature (°C)	Relative humidity (%)	Wind speed (m/s)	Single gust wind speed (m/s)	Battery (V)
13.06.2013	10:00	822.8	240.1	13.7	28.7	1.5	5.0	4.33
13.06.2013	11:00	822.2	280.8	16.8	26.1	4.0	9.6	4.54
13.06.2013	12:00	821.8	287.8	18.0	25.6	6.3	12.1	4.32
13.06.2013	13:00	821.4	286.4	18.8	22.8	6.0	12.6	4.33
13.06.2013	14:00	821.0	287.8	19.0	20.0	7.3	14.4	4.34
13.06.2013	15:00	820.4	273.8	19.0	19.1	7.3	13.1	4.33
13.06.2013	16:00	819.8	287.8	20.3	18.8	7.1	12.6	4.33
13.06.2013	17:00	819.6	285.0	21.3	16.9	7.3	13.6	4.36
13.06.2013	18:00	819.9	280.8	20.5	19.0	7.8	14.6	4.34
13.06.2013	19:00	819.7	286.4	19.9	19.7	7.3	12.1	4.34
13.06.2013	20:00	820.1	279.4	18.4	21.1	7.3	13.1	4.36
13.06.2013	21:00	820.3	279.4	17.2	24.5	7.3	11.8	4.34
13.06.2013	22:00	820.8	287.8	15.8	28.7	6.3	10.6	4.33
13.06.2013	23:00	821.7	303.2	14.5	30.5	3.8	7.8	4.32
14.06.2013	00:00	821.8	310.3	13.4	31.9	3.3	6.8	4.32
14.06.2013	01:00	822.2	279.4	11.3	36.8	2.5	4.5	4.32
14.06.2013	02:00	822.7	296.2	10.4	46.3	2.0	4.3	4.32
14.06.2013	03:00	822.8	296.2	11.0	46.8	1.8	4.3	4.32
14.06.2013	04:00	822.3	348.2	9.0	50.7	0.5	3.3	4.32
14.06.2013	05:00	822.4	168.5	9.6	52.6	0.0	1.8	4.32
14.06.2013	06:00	822.6	234.5	8.5	55.7	0.0	1.5	4.34
14.06.2013	07:00	822.9	144.6	8.4	57.0	0.3	1.8	4.36

3. Khulan social organization

Data from collared khulans and subsequent observations in 2012 suggested that the area around the mountain Tankhin Khar may be an important mating area for khulans in Great Gobi B SPA. Males seem to establish, what looks like “mating territories”, in this region from mid June until early July. The presence of khulans, groups as well as single, regularly spaced stallions could be again confirmed this year on 11 June. Numerous khulans could also be observed drinking at the nearby water point Toodog (Fig. 8).

Fig. 8: Stallion and mare khulan at Toodog water point.

4. Solar power station in Takhin Tal

The solar station has recently caused numerous problems that have impeded communications amongst other tasks. A careful investigation of the system revealed that the solar charge controller, which is some 8 years old, is defective allowing a far too high charging tension which has basically “cooked” the accumulators. At the present the system works during the mornings, evenings and overcast days which limits the charge. A new controller has been ordered and will be installed in August 2013 during our next trip. It appears prudent to buy 9 x 100 Ah batteries before the winter.

5. Protected Area Network Program assessment

Petra Kaczensky and Chris Walzer participated in the national protected area network program assessment exercise and provided Gobi B director O. Ganbaatar with the impressions and perspectives of an international NGO in this matter.

Fig. 9: Petra Kaczensky, and O. Ganbaatar working through the numerous questions in the national PA assessment.

6. Minister meeting

On 17 June we had a meeting with S. Oyun, Minister of Environment and Green Development (MEGD; Fig. 9). Minister Oyun was very interested in the Przewalski's horse re-introduction project and was optimistic to solve the tax issues concerning the next Przewalski's horse transport on the cabinet meeting on Saturday 22 June. However, a general tax exemption will not be possible in the future and we let the minister know that this was also not a top priority for the ITG. She also was very supportive about the issue of the number of staff for Great Gobi B SPA, but is bound by a parliament standard (number of staff / km²) adopted in 2006 and reactivated by the Ministry of Finances. With decreasing copper and coal market prices, the overall state budget is lower than expected. We hope to hear from her office in the next few weeks concerning movement on this vital issue.

Unfortunately all PAs are facing the same problem and are generally understaffed. Minister Oyun was also very interested and supportive in the potential expansion of the Great Gobi B SPA and the idea of creating a Central Asian transboundary peace park.

Fig. 10: Meeting with S. Oyun, Minister of Environment and Green Development (MEGD). From left to right: N. Enksaikhan, S. Oyun, P. Kaczensky, and C. Walzer.

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