Przewalski's horses, wolves and khulans in Mongolia

Report March 2005, by Petra Kaczensky and Chris Walzer

ITG INTERNATIONALE TAKHI-GROUP

NATIONALPARK GOBI B

website: www.takhi.org or alternate site: www.wildvet.at

1 The Przewalski's horse population

Status of the population

2004 was a good year for the takhis in Takhin Tal: in total 24 foals were born of which 18 are still alive (Table 1). No adult takhis were lost, but two young stallions were found dead in late winter. One apparently slipped on the ice and subsequently died, whereas the other was found dead for no obvious reasons (autopsy pending). The total population in March 2005 was 87 takhis in 7 groups.

In December the stallion Hubsgul jumped the fence of the adaptation enclosure containing the newly arrived 12 mares and thus created a new harem (Fig. 1). In June this group will be transported to the water point Takhi Us, about 90 km to the west of the Takhin Tal station (Fig. 2). Moritz Schönpflug as part of his doctoral thesis will supervise this new approach. In 1999 Moritz already spent almost a year in Takhin Tal for his diploma thesis on the behaviour of a bachelor group. Prior to the big move, Moritz and Ganbaa will train the takhis to enter the transportation boxes and to accept an electric fence.

Fig. 1: The newly arrived mares from 2004 made it though the winter in good condition..

Fig. 2: The release point of the new mares will be Takhi us, 90 km to the west of Takhin Tal.

Table 1: Most recent group composition and fate of the horses in the Gobi B strictly protected area (20 March 2005).

Name	Sex	Birthdate	Age	Origin	Arrival	ZB-Nr.	Mutter	Vater
Pas group - 14 adults / subadults + 5 foals								
Khowch	stallion	24.04.89	16	Askania Nova		1818	548	896
Tschandaga	mare	11.05.91	14	Askania Nova		2130	600	1159
Shagai	mare	15.06.91	14	Askania Nova		2141	966	1008
Uugan	mare	02.09.92	13	Tachin Tal		2398	1831	?
Bulga	mare	07.05.95	10	Langenberg		2787	2018	1374
Michid	mare	13.05.96	9	Tierpark Berlin		2921	744	2041
Toot	mare	11.05.97	8	Zoo Berlin		3072	1813	1618
Oodon	mare	30.07.99	6	Whipsnade/London	14.06.02	3332	1718	2521
Nomkhon	mare	07.05.02	3	Gobi B		T602	2141	1818
Telmen	mare	15.05.02	3	Gobi B		T604	3072	1818
Javkhan	mare	20.05.02	3	Gobi B		T605	2130	1818
Bosoo	stallion	21.05.02	3	Gobi B		T600	2398	1818
Dolgoon*	stallion	02.06.03	2	Gobi B		?	2141	1818
Tsast	stallion	12.06.03	2	Gobi B		?	2398	1818
Yruu	mare	23.06.03	2	Gobi B		?	2130	1818
Oodon foal	stallion	25.05.04	1	Gobi B		?	3332	1818
Shagais foal	mare	06.06.04	1	Gobi B		?	2141	1818
Uugan foal	mare	16.06.04	1	Gobi B		?	2398	1818
Bulgas foal	mare	25.06.04	1	Gobi B		?	2787	1818
Tschandaga foal**	stallion	14.07.04	1	Gobi B		?	2130	1818
Michid foal	stallion	24.07.04	1	Gobi B		?	2921	1818
** slipped on ice on 20.01.2005*								
*** disappeared on 31.08.2004*								
Mundol group - 11 adults / subadults + 2 foals								
Imj	mare	02.08.94	11	Schwerin		2748	1436	1236
Tsgaadai	mare	06.06.96	9	Tachin Tal		2940	1297	1772
Khokhoo	mare	19.11.96	8	Langenberg		2984	1359	1374
Soir	mare	31.03.97	8	Langenberg		3045	2018	1374
Mondol	stallion	10.05.97	8	Tachin Tal		3069	2130	1818
Misheel	mare	28.05.97	8	Tachin Tal		3084	1977	1159
Dorothee	mare	06.06.99	6	Tachin Tal		3230	3035	2503
Orkhon	mare	15.07.00	5	Tachin Tal		3430	2645	2363
Zagal	stallion	10.05.02	3	Gobi B		T603	3035	2866
Mandal	mare	26.05.02	3	Gobi B		T608	2940	2866
Kharaatsai	stallion	06.06.03	2	Gobi B		?	3230	3069
Soir foal	mare	02.05.04	1	Gobi B		?	3045	3069
Misheels foal	mare	17.05.04	1	Gobi B		?	3084	?3069?
Tsgaadai foal*	stallion	28.05.04	1	Gobi B		?	2940	3069
Dorothees foal**	mare	08.06.04	1	Gobi B		?	3230	3069
** disappeared on 6.03.2005*								
*** found dead with broken jaw on 9.06.2004*								

Tuulai group - 8 adults / subadults and 3 foals

Yyl	mare	17.04.94	11	Oberwil		2712	486	1772
Tuulai	stallion	07.05.96	9	Tachin Tal		2911	1825	1159
Erdene	mare	19.02.98	7	Rotterdam	14.06.02	3040	1633	1429
Tagtaa	mare	05.05.98	7	Winterthur		3143	2483	1742
Maral	mare	23.05.00	5	Tachin Tal		3387	3038	2363
Kherlen	mare	26.05.00	5	Tachin Tal		3391	3035	2363
Oroo	mare	24.05.02	3	Gobi B		T607	2787	1818
Kheren	mare	28.07.02	3	Gobi B		T611	2712	2866
Yyl foal	stallion	15.05.04	1	Gobi B		?	2712	2911
Erdene foal*	mare	31.05.04	1	Gobi B		?	3040	2911 or 3066
Tagtaa foal	mare	02.06.04	1	Gobi B		?	3143	2911
Maral foal	stallion	13.06.04	1	Gobi B		?	3387	2911
Kherlen foal	stallion	02.07.04	1	Gobi B		?	3391	2911

** killed by Tuulai on 31.05.2004*

*** disappeared on 20.01.2005*

Tayan group - 6 adults and 4 foals

Tayan	stallion	24.04.97	8	Tierpark Berlin		3066	1431	2041
Mondor	mare	17.06.98	7	Springe	14.06.02	3194	2187	1118
Mongon	mare	06.05.99	6	Winterthur	14.06.02	3273	2483	1742
Tsakir	mare	02.06.99	6	Chemnitz	14.06.02	3298	2502	806
Zogii	mare	15.05.00	5	Winterthur	14.06.02	3375	1897	1742
Zorgol	mare	20.05.00	5	Winterthur	14.06.02	3383	1892	1742
Mondors foal	stallion	29.04.04	1	Gobi B		?	3194	3066?
Mongon foal	mare	20.05.04	1	Gobi B		?	3273	3066
Zogii foal	stallion	27.05.04	1	Gobi B		?	3375	3066
Tsakir foal*	stallion	08.06.04	1	Gobi B		?	3298	3066
Zorgol foal	mare	13.06.04	1	Gobi B		?	3383	3066

**found in desolate condition and euthanized on 8.06.2004*

Bachlor group - 7 adults / subadults

Zandan	stallion	28.05.98	7	Tachin Tal		3166	2398	1818
Khuchit	stallion	16.06.99	6	Langenberg	14.06.02	3320	2254	1374
Moogii	stallion	08.10.99	5	Neusiedl/Wien	14.06.02	3342	1386	2444
Myangan	stallion	01.05.00	5	Tachin Tal		3361	1669	2866
Magnai	stallion	02.07.00	5	Rotterdam	14.06.02	3426	2671	2040
Selenge	stallion	28.08.00	5	Marvel Zoo	14.06.02	3441	1497	2507
Zuun	stallion	01.05.01	4	Tachin Tal		3362	2786	2363
Avarga*	stallion	21.05.03	2	Tachin Tal		?	1669	2363

** found dead on 6.03.2005*

Photo: P. Kaczensky

Jiguur group - 10 adults / subadults and 4 foals

Jiguur	stallion	12.06.92	13	Langenberg		2363	486	1772
Khaliunaa	mare	16.03.88	17	Australien, Monarto		1669	954	982
Sogoo	mare	01.12.92	12	Australien, Dubbo		2586	974	787
Od	mare	23.04.94	11	Prag		2645	1847	1135
Gurguul	mare	07.05.95	10	Winterthur		2786	1879	1742
Khongoroo	mare	10.05.95	10	Tachin Tal		3038	1972	1159
Sonja	mare	13.06.00	5	Salzburg	14.06.02	3415	2017	1433
Osama	stallion	11.09.02	3	Tachin Tal		T612	2586	2363 or 1818
Shijee	stallion	03.04.03	2	Tachin Tal		?	2786	2363
Saran	mare	09.04.03	2	Tachin Tal		?	2645	2363
Gurguuls foal	mare	28.04.04	1	Tachin Tal		?	2786	2363
Ods foal	stallion	02.05.04	1	Tachin Tal		?	2645	2363
Sogoo foal	stallion	12.05.04	1	Tachin Tal		?	2586	2363
Khaliunaa foal	stallion	07.07.04	1	Tachin Tal		?	1669	2363

Hubsgul group (former mare group) - 13 adults / subadults

Itgel	mare	12.06.96	9	Köln (D)/WPL	10.06.04	2948	1557	1118
Hubsugul	stallion	21.05.97	8	Langenberg		3233	1320	1374
Beltes	mare	07.05.98	7	Ahaus (D)/WPL	10.06.04	3145	2318	1118
Zur	mare	06.06.99	6	Köln (D)/WPL	10.06.04	3301	1022	1852
Shandas	mare	11.06.99	6	Ahaus (D)/WPL	10.06.04	3312	3312	1852
Nergui	mare	26.04.02	3	WPL	10.06.04	T337	2018	2805
Mandhai	mare	13.05.02	3	Winterthur (CH)	10.06.04	T325	1897	1742
Udam	mare	15.05.02	3	Wien (A)	10.06.04	T330	1386	2444
Zuram	mare	02.06.02	3	Karlsruhe (D)	10.06.04	T203	2638	2397
Orgio	mare	04.06.02	3	Winterthur (CH)	10.06.04	T326	2483	1742
Ners	mare	10.06.02	3	Karlsruhe (D)	10.06.04	T204	1648	2397
Tolbo	mare	30.06.02	3	Wien (A)	10.06.04	T332	2173	2444
Zolboo	mare	19.10.02	2	Stuttgart (D)	10.06.04	T202	1767	2480

Monitoring of the free-roaming groups with GPS/ARGOS transmitters

In March 2005 only one takhi (*Mondor* in TAYAN group) still has a satellite collar. All other collars were removed or went silent, but rangers regularly locate all takhi groups and fill in observation forms. A first quick and dirty comparison of availability and use of takhis versus khulan suggests a preference of *Stipa glareosa – Anabasis brevifolia* and *Achnaterum* communities and an avoidance of the *Haloxylon* (Saxaul) steppe, whereas khulan seem to largely use the plant communities in relation to their availability. However, detailed statistical analysis of the radio tracking data are presently underway and thus results presented here should be treated with caution and as preliminary (Fig. 3).

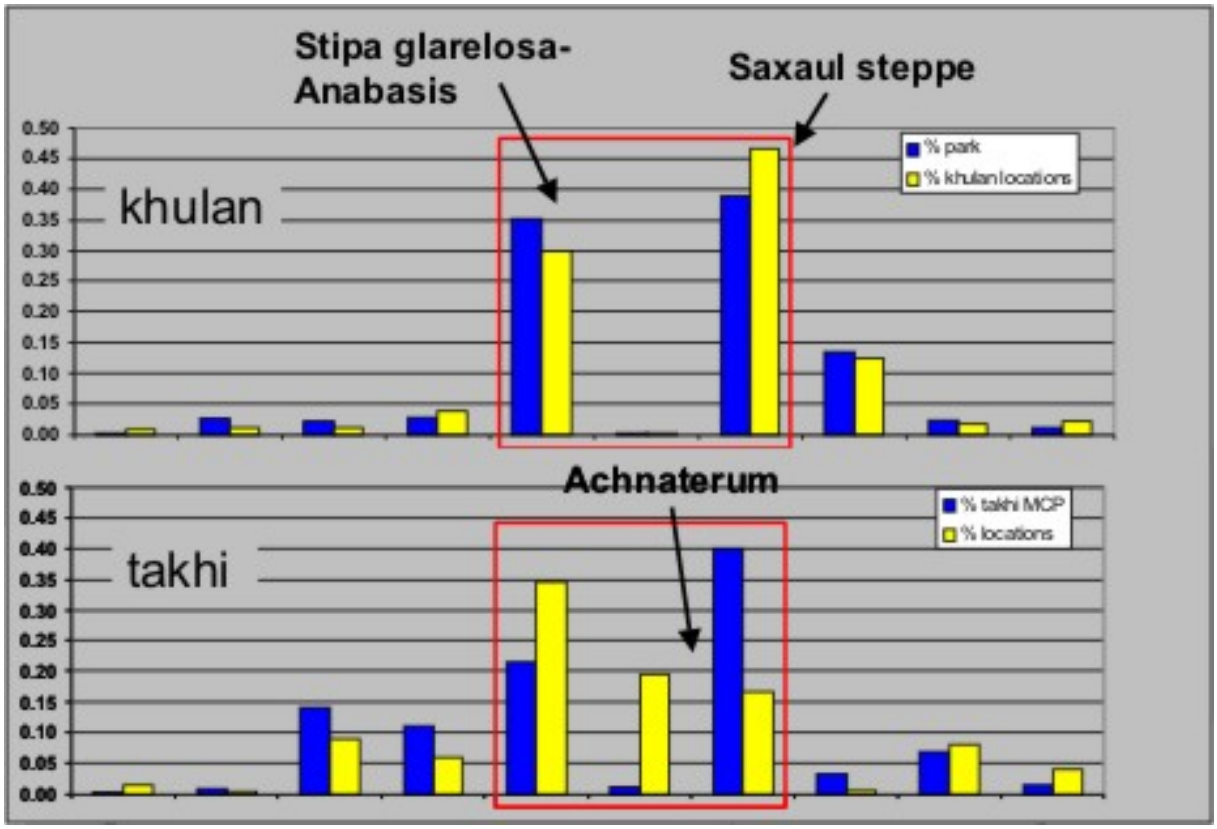

*Fig. 3: A first **quick and dirty** comparison of % available and % use suggests avoidance of the saxaul steppe and preference for the Stipa glarelosa – Anabais brevifolia and Achnaterum communities by takhi (5 groups) and use according to availability by khulan (7 individuals).*

2 Wolf population status and feeding ecology

Wolf monitoring

The radio collar of the adult female *Boroo* is still regularly transmitting data, although battery power was expected to expire in October 2004. This is very fortunate, because until December *Boroo* largely used the same range as in 2003 covering about 500 km² (95% MCP). However, in mid December *Boroo* suddenly shifted her activity to the west in the direction of Takhi us, expanding her range to 2,878 km² (n=990; Fig. 4). It will be interesting to see if she intends to settle down in the new area or returns to her old home range.

The adult male *Tzimzik* turns out to be a real wolf nomad. Shortly after his capture he left the park, but during the summer seemed to settle in the southern tip of the Altai range. However in October he resumed travelling and first moved west all the way to Altai of Khovd, then turned back and came close to his capture point in the park, just to head east, coming within 40 km of Great Gobi A SPA. So far *Tzimzik* covered an area of 22,232 km² (n=331; Fig. 4). The most distant points are almost 300 km apart!

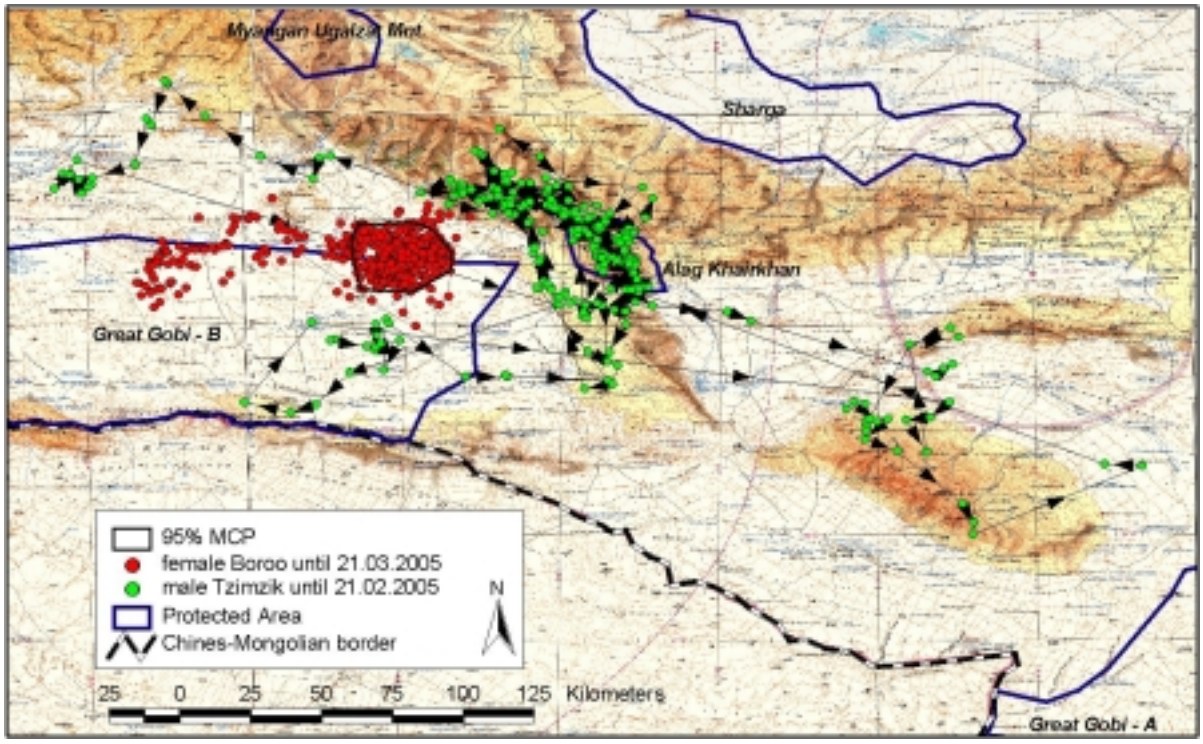

Fig. 4: Home range of female Boroo *(2003-2004) and movements of male* Tzimzik *(2004). Both wolves were captured as adults in the Great Gobi B SPA.*

3 Khulan movements and habitat use

Radio tracking of khulans

Unfortunately monitoring of khulan ended in August 2004, two collars had pre-programmed breakaway dates on 1. August, one collar was shed and the other collars went silent prematurely. We recovered the shed collar, which looked severely beaten and on which the pre-programmable breakaway had been shattered, most likely by a violent kick with a hoof. Nevertheless, we now have data for two years on two khulans and for one year on another five khulans (Fig. 5).

The additional individuals support the previous picture – animals have huge home ranges, but hardly leave the park at all (Fig. 6 & 7).

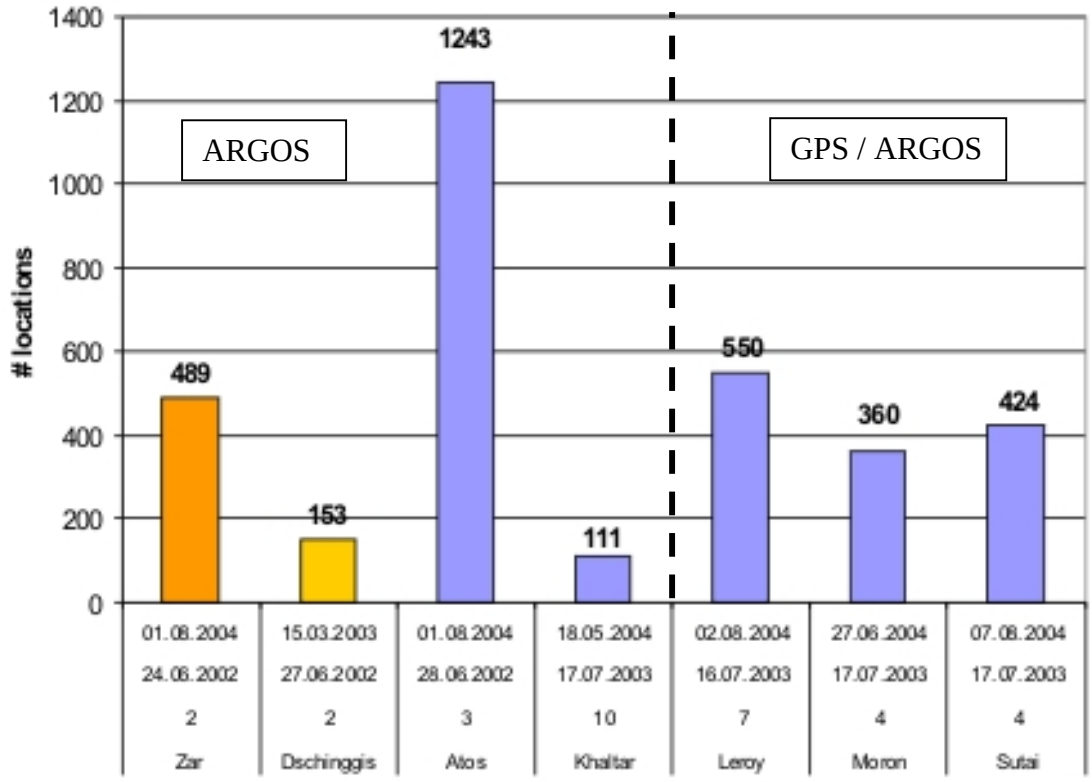

Fig. 5: Data and monitoring period for 7 khulan in the Great Gobi B SPA 2002-2004.

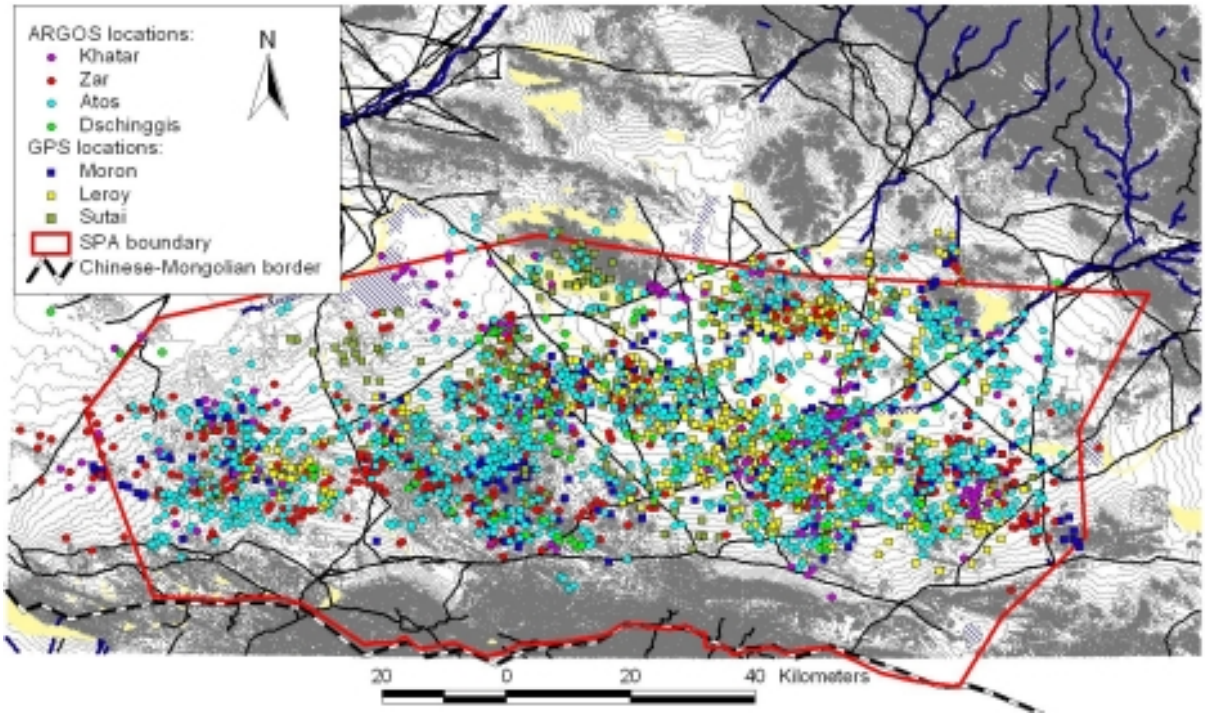

Fig. 6: Locations of 7 khulans monitored from 2002-2004 in the Great Gobi B SPA.

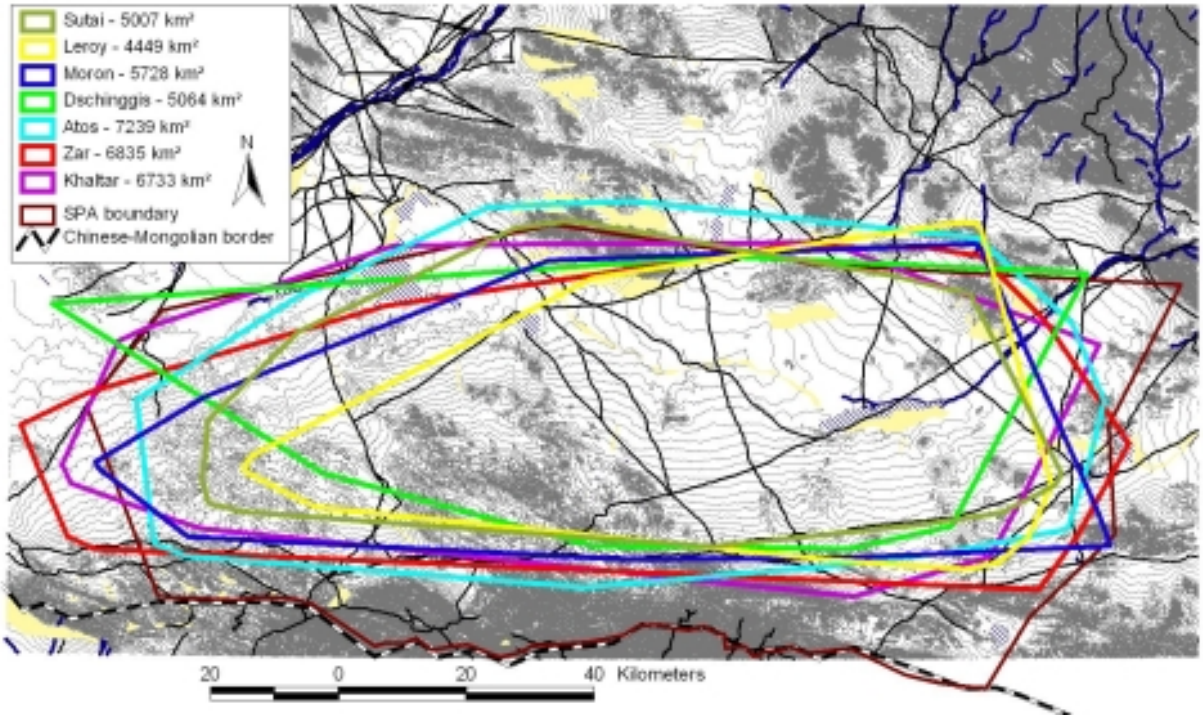

Fig. 7: Home ranges of 7 khulans monitored from 2002-2004 in the Great Gobi B SPA.

Monitoring of khulan presence at Toodog water point

Anne-Camille Souris, Marie Curie University in Paris, France and Javkhaas, National University of Mongolia monitored khulan presence and group sizes at the water point Toodog in June and July. They observed a total of 2,271 khulans in 455 groups which came to drink during all 24 hours of the day (P>0.05 for test of equal distribution; Fig. 8). For 460 groups where it was possible to distinguish between adult and subadult khulans versus foals, the observed foal rate was 17%.

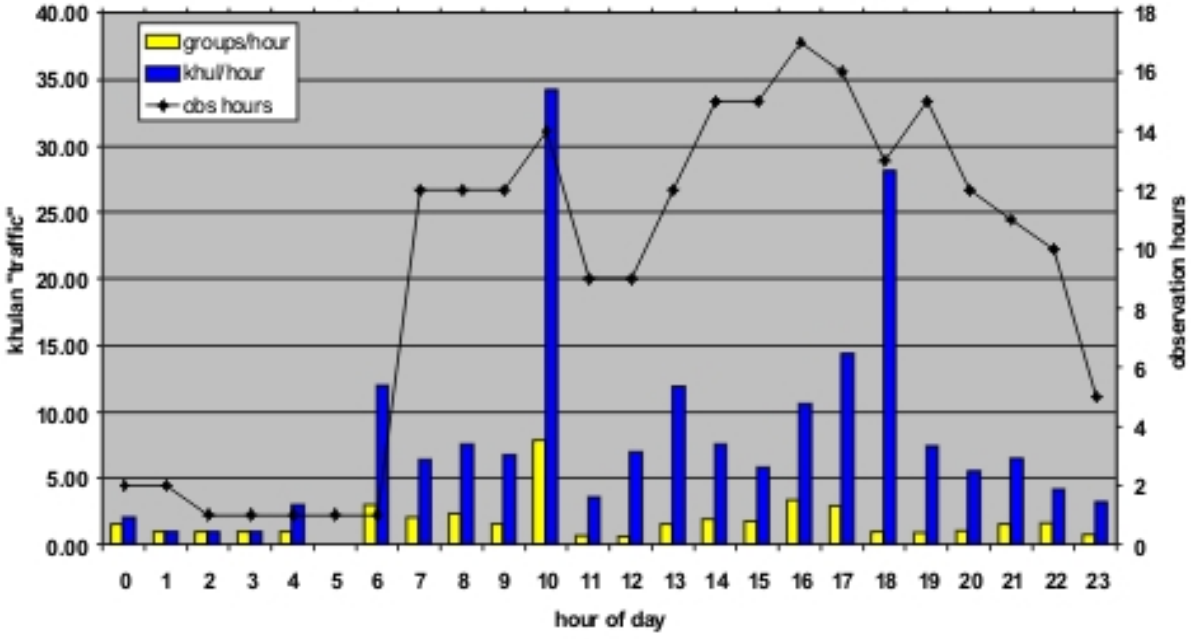

Fig. 8: Observation hours and timing of khulan visits to Toodog water point in June and July 2004.

Local herders attitude towards khulan

In order to evaluate the attitude of local herders towards khulan and khulan management, Javkhaas interviewed 50 women and 50 men in their summer camps in the Altai mountains.

We were surprised about the general positive attitude of local people towards khulan - 62% claimed to like khulan. However, the ability to harvest would most likely further improve attitudes: 86% of respondents favoured the harvest of khulan by local people, all opposed the hunting of khulan by outsiders and 73% stated that they would be more interested in protecting khulan if there were the possibility for a legal harvest. Only 47% agreed that there were too many khulan in the gobi and 46% that khulan are important pasture competitors for livestock.

Market survey

In order to obtain information on the demand and trans-border traffic of wildlife products we started to monitor local markets (Fig. 9) near the Great Gobi B SPA and the closest border market for wildlife on the Chinese side (Baitag). In winter Baitag was open from the 4-14 December. During this period our market patrols counted 350 whole wolf carcasses, 290 fox furs and 1 red deer penis. Data from local markets was not available, yet.

Fig. 9: Ranger checking wildlife furs on the local market in Bulgan in November 2004.

4 Wildlife monitoring

Wildlife counts in the eastern part of the SPA were conducted almost every month. In addition Ganbaa and his ranger team also completed 4 whole park surveys (Fig. 10). Although the data does not really allow for a good population estimate of khulan (Fig. 11), it provids valuable information on the seasonal distribution of wild and domestic ungulates in the park. In addition, ranger presence is finally guaranteed once a month in all parts of the park. In the near future monitoring will be further facilitated by using Cybertracker®.

Monitoring activities and law enforcement will be facilitated in the future, because the ministry agreed to employ 4 additional rangers. Ganbaa already hired and started to train the new rangers.

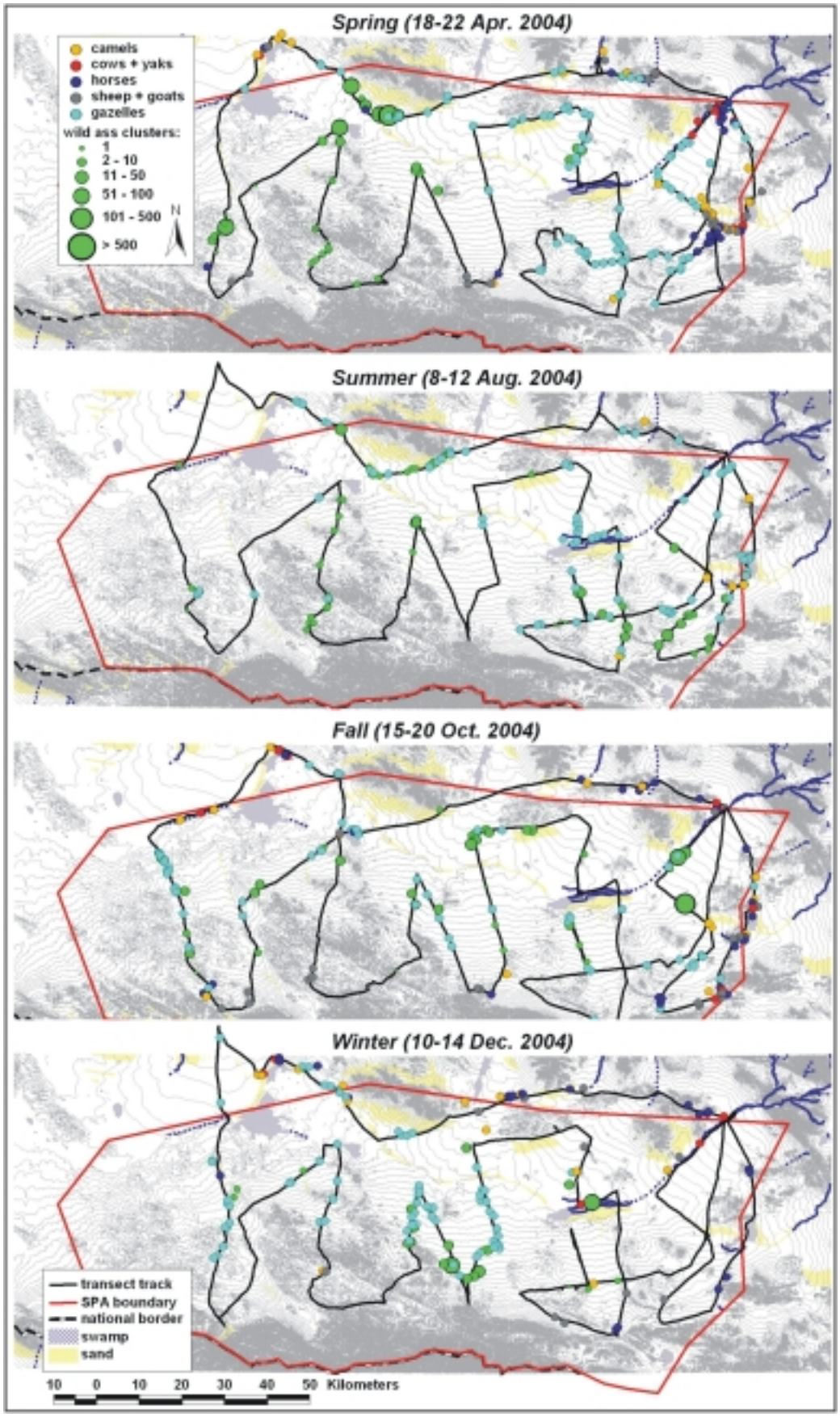

Fig. 10: Whole-park surveys and ungulate distribution in spring, summer, fall and winter 2004.

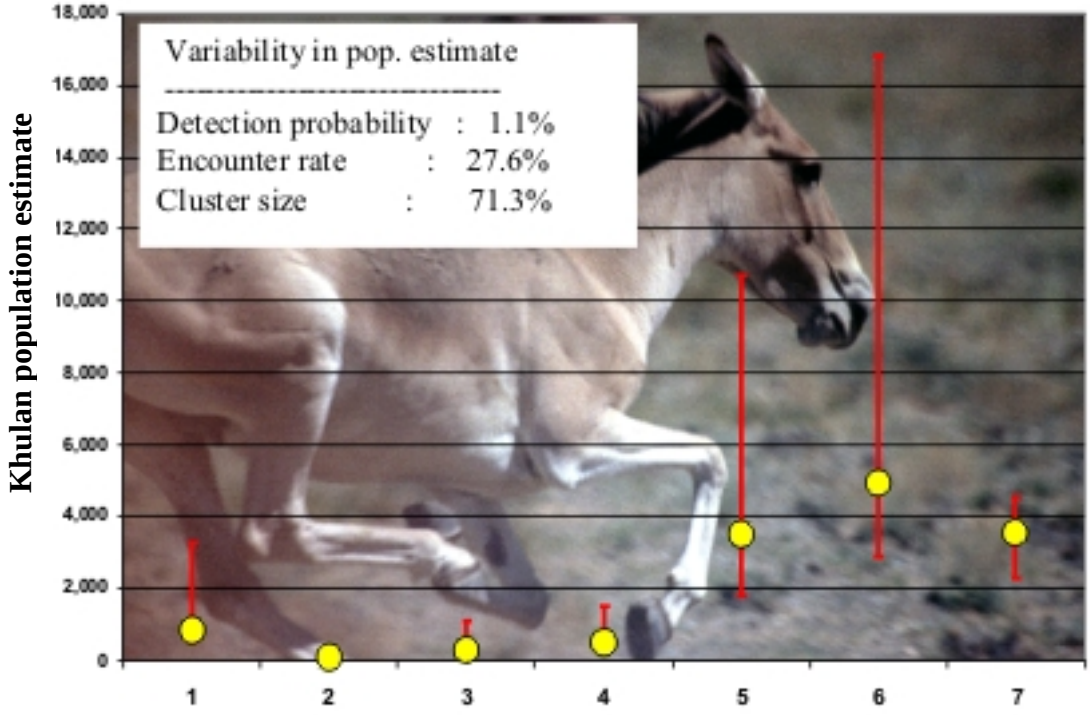

Fig. 11: Population estimates based on DISTANCE sampling from seven ground based line transects in the eastern part of the Great Gobi B SPA in 2003. The large variation in cluster size and the clumped distribution result in huge 95% confidence intervals and shows how unsuitable this method is to estimate population size or detect trends.

5 Other activities

Bat survey

D. Lkhagvasuren of the National University of Ulaanbaatar started on a bat survey this summer. His report, in Mongolian, is available on the takhi and wildvet website.

Veterinary Research - Feeding ecology of reintroduced Przewalski's Horses

Jochen Lenger has also left the Zoo Salzburg and is now working as veterinarian-curator for the Zoo Herberstein in Styria. He is working up the samples collected in late 2004 and hopes to begin the final evaluation within the next few months.

Cybertracker

Tom Lipp has completed his diploma on the use of Cybertracker for wildlife monitoring in Takhin Tal. His thesis will soon be available on the websites.

More electricity

Thanks to a personal donation from the director of the Basel Zoo (Switzerland), Dr. Pagan, Takhin Tal station now has a wind generator (Fig. 12). This generator has proven sturdy and reliable on the Pagan's sailboat, twice crossing the Atlantic. Everybody is really happy with the new piece of equipment. The generator nicely complements the solar panels and we now have no power shortage during bad weather phases. The latter almost always brings strong winds.

Fig. 12: Wind generator mounted next to the solar panels.

Stove workshop

To reduce the use of fuel and thus the drain of protected saxaul and juniper stands in Great Gobi B SPA ITG sponsored an "improved oven workshop" in summer (Fig. 13). The workshop was organized by personnel of the IPECON / NZN and proved a big success.

Fig. 13: Oven workshop in Takhin Tal, summer 2004.

6 Acknowledgements and Funding

The project is conducted within the framework of the Przewalski horse reintroduction project of the International Takhi Group (ITG), in cooperation with the Mongolian Ministry of Nature and Environment and the National University in Ulaan Baatar, Mongolia. Funding for the research part on takhis, wolves and khulans is provided by the Austrian Science Foundation (FWF project P14992) and the Austrian National Bank (Jubiläusfondprojekt Nr. 10301) through the Zoo Salzburg (Research for Conservation). Funding for the piroplasmosis project is provided by the Forschungskredit 2003 of the University of Zürich. In Mongolia work would not have been possible without the help of the rangers ("takhi men") and local people from Tachin Tal – many thanks for their help, patience and their incredible hospitality.