# TRIP REPORT MONGOLIA

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# Introduction

Ultimate freedom, that is what our trip through Mongolia approaches. It is also something that we strive to achieve, going about without a local driver, without a guide, without a local sim-card. It is not that we do not want to support the Mongolian mammal guides, we just do not want to be attached to anything but our own plan. Most tours in Mongolia make use of local guides, and we certainly heard good stories about e.g. Tumen (Tum-Eco Tour) and Munkhnast Dalannast (Menentour). However, we wanted to drive and find out everything for ourselves.

Our initial plan was to go in May and June 2020. Ruben and Lotte had planned to go on a four month world trip with their Land Cruiser from Holland via Russia through Central Asia to Mongolia and back via Turkey. We, Jacob, Chantal, Jurriën and I, would join them for a month in Mongolia. Then covid came and we had to postpone. 2021 was no different from 2020 and in May 2022, a broken leg as well as geopolitical issues with both Ukraine, Russia and the Xinjian part of China forced Ruben and Lotte to change their plan. They would now go in July and August and rent a Land Cruiser, while we would join them in August with a second rented Land Cruiser. With two cars, no local driver or guide, our adventure began on August 11th 2022, to return to the Netherlands on September 7th.

# Mongolia

The vastness and variation in landscapes, fauna and flora is stunning. See the map on p. 5 for a general overview of habitat types. The Mongolians are a lovely, friendly, hospitable people, generally with a good sense of humour. Outside Ulaanbaatar, it is nearly impossible to communicate in English. I therefore familiarised myself with the Cyrillic alphabet and some useful words, see the glossary in the chapter 'Useful words'. Nevertheless, it was sometimes difficult to understand each other, especially during the traditional visiting of our camps. Locals always come and check up on you to see if everything is alright or if you need help. This is a nice thing in a country so vast. It often is paired with exchange of food, so we always had cookies with us to share. Despite the huge size and low population of the country, it is noteworthy that along the many tracks, there were almost always people nearby, even in the mountains and deserts. Only in certain areas in the southwest we did not see people for hours on end.

Food and drinks and gasoline were easy to acquire, as long as you plan villages and towns on your route. As long as you know what "Supermarket" and "Mini market" are in Cyrillic, you'll find the food and water you need, as there are always several per village. There is also almost always one or more gas station in each village, but sometimes no one is there. We found out that if bystanders notice you need "Benzeen", they are very helpful and quickly telephone the pump employee, who will arrive on his or her motorcycle quite quickly. Almost everywhere it is possible to pay with credit card.

August and the beginning of September turned out to be very changeable in weather. We experienced almost all types of weather you can imagine; a snowstorm on Ikh Bogd mountain, freezing nights on the steppe, hours of drizzling rain in the Northern Gobi and in the taiga, thunder and short showers in the hills and mountains, winds and sandstorms that blew my tent kilometers away in the Ömnögov, decent heat in the Great Gobi A, but a great deal of the time also pleasant temperatures with sun or a little overcast. It was awesome to experience, but be sure to



The mountain pass to Tsogt © Ruben Vermeer

prepare yourself for everything in your clothes and camping gear. August is apparently one of the wetter months for Mongolian standards, but the advantage is that the number of mosquitoes is a lot lower than in July.

Most birding trips plan their visit to Mongolia in the end of May and first half of June, which would also have been our plan if it were not for uncontrollable circumstances. This time of year is excellent for mammals as well, but later in the summer the number of mammals is higher, so we were happy to go in August and beginning of September, hoping to get a good bit of southward migration of birds as well. It turned out that the best migration of passerines still had to start, while the best wader migration was in July as Ruben and Lotte had found out. Still we had a lot of good migratory species, but for targets like Black-billed capercaillie (best in spring), Siberian crane (apparently best in June) and Snow leopard (apparently best in September and October), we were out of luck.

# Equipment

A self-organised trip to Mongolia requires extraordinary preparation. Without the right equipment, you can get into serious trouble in the remote parts of the country. Here below I will list our gear in different categories.

#### Cars

We drove two Toyota Land Cruiser 100 series that we rented at the company called Drive Mongolia. As far as we could find this is the only company that rents these cars without driver. That was something we really wanted, but if you don't want to drive yourself, there are plenty of possibilities. Cars with a driver might even be cheaper, as you also pay for the chance you need a car reparation that you cannot fix yourself. It turned out this service, where help comes from Ulaanbaatar for spare parts, was very convenient, as you will read in further on. Flat tires are very common in Mongolia, so make sure there are two spare tires per car. In every village there is someone who can fix punctures in tires. In total we suffered from 9 flat tires(!) So make sure you have the right equipment to change tires and do simple car reparations. Extra tanks for fuel are recommended and indispensable when you want to go far into the Gobi. All these things are usually provided by the car rental. Our cars suffered from several issues caused by wear, such as our tires, a bearing of the tension belt, the muffler and our radiator.

#### Camping gear

Drive Mongolia provided us with camping gear, but we brought our own sleeping bags and sleeping pad, which turned out to be a very good decision as many things were old and worn. Keep in mind that you can suffer from all types of weather conditions in Mongolia in August. Camping can be done almost everywhere, which is what we did, only taking a hotel on a few occasions. Winds, erratic, unexpected and strong, can cause problems while camping, so always use all your guy lines and tent pegs and if possible use extra stones to anchor your tent at all times, even when the weather seems nice at dusk. We advise against using a rooftop tent, mainly because of the wind, but also because a normal tent is much more convenient when you want to drive around at night.

#### Electronics

As we drove around almost every day, we were able to charge our electronic devices in the cars thanks to an ingenious network of voltage adaptors we brought. Our electronic devices included smartphones, a garmin satellite gps tracket with satellite connection in case of emergen-



Top: Campsite east of Hustai © Jurriën van Deijk. Middle: scanning for wildlife © Chanta Polman. Below: construction of thermal scope to torch © Jurriën van Deijk

cies, walky talkies (very handy to communicate between the two cars and while looking for animals), cameras, sound recorder, thermal scope chargers. In hotels, you can use the sockets without adapter if you are from Europe.

By the way, it is perfectly possible to buy a local sim card, with which you apparently have decent coverage for Internet in many parts of the country (sometimes only on mountain tops and certainly not in Gobi A). We did not want to be connected to the world however, and it felt very nice to just be on your own without Internet. However, if you would have had Internet, certain things would be easier, such as access to satellite maps, asking for help in case of emergency or finding extra locations on Observation.org, eBird or iNaturalist. This is just to let you know this option exists, as we thorougly enjoyed our trip with minimal connection to the rest of the world (wifi was often available in hotels and restaurants).

#### Birding and Mammalwatching gear

The six of us all brought binoculars, cameras with telelenses and macro lenses, four telescopes (very important for camel and snow leopard searching, as well as for birding of course), one thermal scope, one sound recorder, a small moth trap, an insect net, six handheld torches, three cheap "trip trap" life traps and two yoghurt pots as pitfall traps. The thermal scope worked very well except in the mountains where there were too many warm stones and apparently no animals (but this might work better with a more expensive model). I attached my Nitecore P30 to my Liemke Keiler Pro thermal scope using a gun mound and a metal plate (see figure on p. 3), which worked very conveniently. I brought two pitfall traps (empty yogurt pots) and three plastic life traps. At the beginning I set them out a lot, but not a single time I caught something, and because of bad weather conditions I gradually gave up. Besides for catching mayflies, I also brought my insect net with the intention of catching blinded jerboas at night. We could have easily done it, but I either forgot the net, or it was not necessary as we could apparently see both the upper and underside or the tails in the field.

#### Observations

We love to document and record our observations. We recorded every mammal and bird we could identify and submitted the observations to the citizen science platform of Observation.org. That means that birds we were not able to id to species level were unrecorded, resulting in skewed observation numbers for species pairs like kestrel/lesser kestrel and the short-toed larks, but all the rest was recorded, resulting in a total of 4731 observations, of which there are 3820 observations of birds (56670 individuals of 228 species) and 707 of mammals (3009 individuals of 46 species).

Documentation of our observations was done by means of videos, photographs and sound recordings. The latter two media are submitted to the observations on Observation. org and can be found via these links: <a href="mailto:mammal photos">mammal photos</a>, <a href="mailto:mammal photos">mailto:mammal photos</a>, <a href="mailto:mammal photos">ma



Top: Campsite at Bööhn Tsagaan © Lotte Stor. Middle: Weather at Khurkh © Lotte Stor. Below: Campsite east of Hustai © Jurriën van Deijk.

#### Maps and navigation

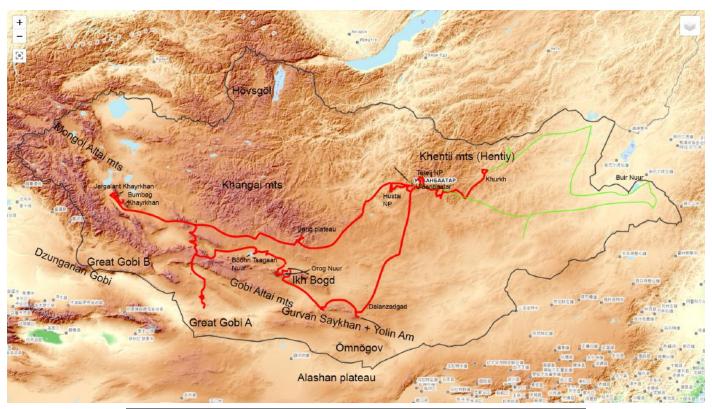
It has been said in every trip report and I'll say it again: do not expect to travel in Mongolia according to schedule. Bumpy tracks and broken down cars are standard, so we calculated a lot of time per kilometer and planned three "bonus days" that we could use for extra birding and mammaling in case everything suddenly went according to plan. In the end we could use only one of these days for searching bushchat on Barig plateau.

Orientation is crucial in Mongolia, so we took everything we could to not get lost. Most importantly were the free apps on our phone. We discovered Mapy.cz, which had altitude lines (contrary to the other apps). We gathered loads of observations of desired species, which we could not plot on Mapy, so we used Maps.me for that. Both apps have many routes and tracks on them, but certainly not all. A combination with a "normal" map worked pleasantly (we had two types of road maps with us, of which this one worked best: ISBN 9783831773039). Another great feature of Mapy.cz is that you can start a tracker, which saved us a lot of trouble when doing spotlighting in the dark to get back to our camp. The Garmin device with compass was also a good addition. Despite all this, keep in mind that the country is ever-changing due to the nomadic lifestyle of the Mongolians. Place names are frequently changed of spelled differently and we found out that villages, tracks, tarmac roads and gas stations frequently dissappear from the map or appear on places that should be empty according to the maps. Additionally certain place names can be found multiple times across the country. Luckily Mongolians are often nearby and able to help you with directions!

#### Literature

Field guides for birds are easier to find than field guides for mammals in Europe. For birds, two field guides are easily available that cover the whole of Mongolia. Sundev & Leahy, *Birds of Mongolia* (Helm) and Ganbold & Smith, *Birds of Mongolia* (John Beaufoy publ). The first has much better illustrations, the latter has the advantage that it has the Mongolian names of the birds too. For mammals there is an excellent field guide that had is third print in 2022: Batsaikhan et al., *Field guide to the Mammals of Mongolia*. The problem is that you cannot get it on the internet, but we knew that it was available on the airport of Ulaanbaatar and in the souvenir shop of Hustai NP. No problem, you would say, but it turned out that the bookshop of the airport was in the departure hall, inaccessible when you arrive, and the souvenir shop of Hustai was closed when we came there on our second day of the trip. That meant that I only could buy the book on the second to last day of the trip, when we visited Hustai for the second time. The souvenir shop was still closed, but we met the manager who directly was willing to open the shop. Luckily I had prepared well and put together a document for identification of rodents in Mongolia. This document will function as scratch for a provisional field guide for Mongolian squirrels I will publish hopefully in a short while, and for the ID-help on p. 17.

# **Itinerary**



Map with our itinerary in red (clockwise) and in green the prequel (also clockwise). Important location names are given.

# Chronological report

Description per location and important species to be expected. See for GPS the trip list on p. 19.

# The prequel

Ruben and Lotte arrived in Monolia one month before us and did a tour in the east. Their itinerary can be seen in green on the map and their observations can be found via this link. They saw some wonderful species. Some of these are confined to the east, others are typical summer species and some are highlights where you might reconsider your plans for. Their highlights included a nest of Pallas's cats at Khalzan (this is a spot where many tours and researchers go to), Siberian cranes, Chestnut bunting, Chestnut-eared bunting and Daurian ground squirrel in the Dornod, Blackbilled Capercaillie at Terelj NP, Marsh grassbird south of Buir Nuur, Little whimbrels and Far-eastern curlews at Buir Nuur. They also saw Eastern spot-billed duck, Stejneger's scoter, Great bustard, Brown-cheeked rail, Oriental plover, Asian dowitcher, Pied harrier, White-backed woodpecker, Chinese grey shrike, Azure-winged magpie, Oriental reed warbler, Grey-capped greenfinch, Siberian long-tailed rosefinch, Japanese reed bunting and Black-faced bunting as species where we had much more difficulty with in the west and in August.

#### Hustai NP

After we met Ruben and Lotte at the car rental in Ulaan Baatar, we drove the shortest route to Hustai National Park, but first visiting the Tuul river for some quality birding, with Azure tit and White-crowned penduline tit. Hustai is a mammal walhalla best known for its successful reintroduction of Przewalski's horse. The first night we camped in a valley 10 km east of the border of the park where the prequel had Meadow buntings, which were still present when we were there on the 11th of August. Remarkably, there was a lot of mammal wildlife here as well with groups of Argali, Wapiti, Mongolian gazelle, Tolai and (albeit more shy compared to in the park itself) Tarbagan marmots. The next day we visited the park itself where the Tarbagans were very abundant. The first Long-tailed ground squirrels were noted, but we could not find any Daurian ground squirrels alas... The Przewalski's horses were found on several occasions on the hills, just like a single one during our night drive at the western edge of the park, which also produced lots of Corsac foxes, Mongolian five-toed jerboas and some Wapiti, but no polecats.

# Terelj NP

Our first experience with the taiga was beautiful, but very wet. A constant drizzle made our search for Black-billed capercaillie very hard during the two days we were on the site where Ruben and Lotte had seen them in July, and so we dipped on these birds. It was a good experience nevertheless, with lots of Siberian chipmunks, Red squirrels, Wapiti, Siberian roe, Chinese bush warbler, classic taiga avifauna and a nice campfire just before our night walk which produced a stunning Ural owl but no Eurasian flying squirrel or Siberian musk deer (both would have been a very unexpected bonus though). During our journey further east, the rain stopped and we stopped at a recreational area at the village of Terelj itself, along the river which provided some very good birding, including Two-barred warblers, Asian brown flycatchers, Dark-sided flycatchers, Daurian redstarts, Red-throated thrushes and more.

# Khurkh ringing station and crane lakes

Our next destination was Khurkh, where a bird ringing station is situated in a relatively narrow valley that stretches from north to south with willow bushes around a small brook, creating a perfect migrant trap amidst the vast surrounding steppes, amidst singing **Daurian pikas**. These bushes, protected from hungry cattle by a fence, also provide breeding habitat for many Siberian goodies. The ringing team allowed us to bird these bushes, which resulted in highly wanted observations of **Pallas's grasshopper** warblers, **Yellow-breasted buntings** and **Siberian rubythroats**. The head of the ringing station told us that we were probably too late for Siberian cranes, which was quite a deception as I thought that August would be a very suitable month, but she was right and during our birding of



Above: Siberian Chipmunk, Terelj river © Daan Drukker. Below: the edge of the Taiga, Terelj © Jurriën van Deijk.

the surrounding lakes the next day, the enigmatic white cranes were nowhere to be found. Apparently June is much better. The birding was very enjoyable however, with two **Hooded cranes**, lots of **White-naped cranes** and a group of seven **Little whimbrels** as highlights.

# Bagan Nuur and Bayandelger

North of this village there is a hill system that looked suitable for the range restricted Hoffmann's pika. I did not have any exact locations for this species so we just tried something. There was no pika to be found, only **Long-tailed ground squirrels**, until Jurriën saw something fat run up the hill from the car. I picked it up quickly and it stood still for a brief moment, looking at us before it jumped into a crevice on the rocky hilltop: **Manul!** A **Pallas's cat!** The rest hadn't seen it, so first we decided to wait on both sides of the hilltop into which it had disappeared. This was fruitless, but luckily Ruben had read in a trip report that in cases like this you might find them by searching all crevices with torches. So that is what we tried and within minutes, there it was! Staring at us with its grumpy, flashing eyes. After some photos we left the hills on our route southbound, satisfied, even without pika.



Top left: habitat of Pallas's Cat, Bayandelger © Jurriën van Deijk. Bottom left: Yellow-breasted Bunting, Khurkh © Jurriën van Deijk. Right: Pallas's Cat, Bayandelger © Jacob Lotz. Below: Gobi Altai Mountain Vole, Yolin Am © Jurriën van Deijk.

#### Yolin Am

The Valley of the Lammergeiers is situated just south of Dalanzadgad and can be reached completely by tarmac from Ulaanbaatar, which makes it a popular destination for birders and mammalwatchers, resulting in many observations. However, it is noteworthy that in hindsight, we saw all these species on other locations as well (except for Red-mantled rosefinch), so that you could consider skipping Yolin Am and spending more time on other locations (such as Ikh Bogd and Great Gobi A). Nevertheless, the birding and mammalwatching was very entertaining, and we never saw Wallcreepers and Gobi Altai mountain voles as good as here during the rest of the trip.



# The Ömnögov and Gurvan Saykhan

Yolin Am is the outermost mountain ridge of the Gobi Altai and it is surrounded by the Ömnögov desert. Here, many interesting species can be found. We decided to try our luck on our route in northwestern direction. One could also decide to try the southeast to Ulaan Khuree (see report of Webb) or go straight west towards the Great Gobi A (see report Jon Hall). Both alternatives have the advantage that you come accross sites for Long-eared Jerboa. We made the decision not to take these routes. We did not have enough time to go southeast, and we considered it too risky to go straight west in to the Great Gobi A because we had no local guides and we slightly distrusted our cars (with good reason as it turned out, as you will read in the part about Ikh Bogd mountain and our way back). Our plan was to go to Orog Nuur via the villages of Bulgan and Bayanlig as stopovers. We ended our day's drive from Yolin Am on the southwestern side of the Gurvan Saykhan range near the spectacular sand dunes of Khoolt. En route we saw Pallid ground Squirrel on the steppes and lots of Alashan ground squirrels on the pass. We camped in the desert and had lots of fun with our night drive. That produced Long-eared hedgehog, Yarkand gazelle, Andrew's three-toed jerboa, Northern three-toed jerboa, Gobi jerboa, Roborov's desert hamster and Thick-tailed pygmy jerboa. The next morning we searched for Asiatic wild ass with success, finding one near a group of Yarkand gazelles. We wanted to reach Orog Nuur in two days, on one occasion having to cross an area without any tracks. Desert birding was all right, but our only real acquired target was our first Mongolian ground jay. We failed to see Saxaul sparrow on the locations where they were recorded by others.



Top left: Long-eared Hedgehog, Omnögov © Jacob Lotz. Bottom left: Roborov's Desert Hamster, Omnögov © Jurriën van Deijk. Top and bottom right: blizzard impairs snow leopard search at Ikh Bogd © Jurriën van Deijk.

### Orog Nuur and Ikh Bogd Mountain

The eastside of Orog Nuur provided lovely birding with a wide variation of migrating waders. We knew a spot for White-throated stonechat on the Ikh Bogd Mountain that lies on the southside of the lake. We decided to go and try for it and if it would take too long we would offer up one of our "bonus days". After a steep ascent we arrived on the grassy plateau from where you had to drive west until the road becomes too rocky according to the report of Max Berlijn. We did not get that far however, because right there, on top of the cold and windy mountain, our car broke down. The bearing of the tension belt was broken, and we needed spare parts to get it fixed. Luckily our car rental came with a service that guaranteed help within 24 hours, but we needed cellphone reception... Our salvation came on a motorbike from one valley further on. It turned out that a local shepherd and his wife had just started some gers for tourists to rent and he also knew the peak on which there was a little phone reception. While waiting for help we stayed at his ger and even better, he knew a spot where Snow leopard could be seen! He had seen it with tourists even a few days ago, so the next morning we set our alarms at 4:30 and joined him for a seven km drive and a 1 km walk to a viewpoint. However, at 3:30 it had started snowing and we ended up right in a blizzard. Conditions were horrible and the slope was mostly covered in either clouds or snow storm. We returned in the afternoon when the weather had improved, but it did not yield us Snow leopard or White-throated bushchat. Nice bonuses were Kozlov's and Altai accentor, Altai snowcocks and Güldenstad's redstarts. In the meantime help had arrived and the car was fixed, and the next morning we decided to continue our plan and drive down the mountain, also because we ran out of cash money for the gers.

#### Bööhn Tsagaan Nuur

A few days later than planned we finally arrived at Bööhn Tsagaan lake at the river mouth we set up camp, washed ourselves and our clothes and dipped on Relict gull once again, but that was compensated by lovely birding overall with stunning **Little whimbrels** and two **Pallas' fish eagles** as absolute highlights. On our way westward we camped at an oasis 30 km east of Biger, where we saw many jerboas, jirds and hamsters on our nightwalk, including **Roborov's hamster**, **Northern three-toed jerboa** and **Midday jird**.



Left: Little Whimbrel © Jurriën van Deijk. Right: Pallas's Fish Eagle © Jacob Lotz. Both at Bööhn Tsagaan.

#### Great Gobi A

In Jon Hall's report, we read that their route went from Tseel and Mother Mountain in the northwest via the Gobi bear station to Gurvantes in the southeast. Our initial plan was to do that the other way around, but the problem was that we did not trust our rental cars completely, which our engine failure on Ikh Bogd Mountain (see there) confirmed. That is why we traveled from Dalanzadgad via Bööhn Tsagaan lake, Biger and Tsogt to Bayantorooi, so that we could travel a slightly more populated area in case of car troubles. Bayantooroi is an excellent base to get into the Gobi A strictly protected area. There is a research station, where we tried to get some information. We came into contact with X. Ариунбуян, who offered to show us the breeding centre of Wild camels that evening so that we could spotlight our way back to Bayantooroi in search of Long-eared jerboa. Even though we do not care too much about breeding centre camels, we agreed to this, as it would be good practice to recognise them from the omnipresent domesticated camels. When we arrived at the gate however, it turned out the 30+ camels of the breeding centre had escaped! Ариунбуян told me afterwards that they were able to catch them a few days later. The trip was not in vein because at the gate we saw our only **Saxaul sparrows** of the trip. The spotlighting and thermal scoping back did not bring us Long-eared jerboa, but it was enjoyable with **Gobi jerboa, Northern three-toed jerboa, Long-eared hedge-hog, Midday jird** and **Roborov's desert hamster**.

Due to our delay on Ikh Bogd mountain, we did not have enough time to go all the way to the bear feeding station. We decided that we would travel one day into the Gobi A strictly protected area, see how far we could get and go back the next day. We found a dotted line on Mapy.cz which we could follow south through a mountain chain deep into the strictly protected area. In the mountains we encountered researchers from Ulaan Baatar who were setting up camera traps for Wild camels. They told us that Wild camels occur from that mountain chain southward. On our way we saw large numbers of **Mongolian ground jay**, but our track ended at an oasis 30 km south of the mountain chain. We set up camp there and hoped to find Long-eared jerboa while spotlighting on foot that evening, without success. The next morning Jurriën telescoped from the top of our car's roof and after some domesticated camels and four **Asian wild asses**, he found a lighter camel 4 km south of the oasis. It looked very promising, but our car could not penetrate the oasis's bushes, so we approached it on foot. It was a long walk, but every time we got closer, the camel looked more and more promising! The humps were very conical compared to the domesticated camels, the colour was lighter brown and the animal was not as hairy and more slender. This had to be **a true Wild came!!** When we were around 700 meters distance, the camel decided we were too close and ran away (in tölt of course), which in our opinion pleads even more in favour of a wild animal and not a habituated reintroduced specimen, although that is of course hard to prove. Target acquired!



Left: Wild Camel, Great Gobi A © Daan Drukker. Middle: Mongolian Ground Jay, Great Gobi A © Daan Drukker. Right: Wild Ass, Ömnögov © Jacob Lotz.

## Jargalant Khayrkhan

Our next objective was the Snow leopard, which is supposed to be "easiest" at the mountain chain of Jargalant Khayrkhan southwest of the city of Khovd. To get there, we crossed the Altai from the Great Gobi A, seeing **Pere David's snowfinches** on our way and camping on the northside of the last pass before the city of Altai, where we took a hotel to finally get a shower and fix our car the day after (two flats and a broken muffler in the Gobi and Altai). Travel from Altai northwestward went much faster as there is a perfect tarmac road to Khovd. We scanned some lakes on our way in vein search of Relict gull, but we did see several small groups of **Saiga** on our way! The groups we saw all consisted of a female with one or two young, mostly on the plains just in front of Jargalant Khayrkhan.

Our search for Snow leopard was intense but fruitless. We analysed the possible reasons why we missed this highly wanted species and aside from pure bad luck, there are several logical explanations. The first and most important reason was that we were too stubborn to hire a guide. Not that we didn't try that though. In the preparation we contacted a guide, but he was based in Ulaanbaatar and that would mean that we had to fly him over to get to Jargalant. We did not feel anything for that idea, so our next plan was to ask around in the area when we got there. That turned out to be more challenging than expected and when we found someone, we were already two days on the spot that we had chosen based on observations from 2019. That spot had very good viewpoints on high altitude, but after two days of intensive scoping with 4 telescopes and 2 binoculars, we had only seen lots of Siberian ibexes, distant Marmots and Altai snowcocks. We were approached by two marmot poachers, one of which spoke little English and had done some guiding for Snow leopard in winter. He told us that these valleys where we were looking this year did not have any snow leopards, and that other valleys were better, but less easy to visit. Our time was slowly running out and we made the decision to change our plan, as we had heard from someone at the ringing station that a mother and cub were seen in a valley at Bumbag Khayrkhan, the chain 50 km south of Jargalant. We had the name of this valley and we asked the locals in the plain where it was. It seemed to be well findable, but finally we ended up at the wrong place. As it was late and the track was challenging we set up camp at a brook and looked from that area. The forested brook was very enjoyable for birds (mainly Hume's leaf warbler, Godlewski's bunting and Twite), and there were **Ibexes** on the slopes. As our last days went by our hopes on seeing Snow leopard diminished though, and finally we admitted defeat and started our way back to Ulaanbaatar.

Tl;dr: if you want to increase your chance on Snow leopard, invest in finding a local guide that is based in the area of Khovd (and plan more time than us, as our schedule was a little too tight, partly due to car problems).

# The return to Ulaanbaatar

We drove back to Ulaanbaatar in three days. Khovd to UB can be done entirely on asphalt(!) We had some very nice stops along the road. The first day we made the most kilometers, driving via Altai to Bayankhongor, camping on the riverside just outside of town. The next day we drove to the Barig plateau, a very enjoyable plateau in the Khangai mountains. This place is known for observations of White-throated bushchat and this is what we tried. On our way to the plateau we saw hundreds of Pere David's snowfinches, but we couldn't find a bushchat. We asked a local shepherd and he immediately recognised the bird in our book and offered to bring us to a site where he knew they breed. He indeed brought us to an area with perfect habitat. The wet, boggy boulder field had many birch bushes, but we could not find the bushchat. As it was already the 4th of September, it might be the case that the chat had left on its migration to India. We did have nice mammalian bycatches with our only Mountain hare, a Stoat and many Long-tailed ground squirrels and Marmots. The best mammal was our only colony of Alpine pika! We had seen many Pallas's pika, even on the Barig plateau on the slopes, but on the boulder fields there were Alpine pika's. As we drove further northeast we noticed a dramatic increase in **Upland buzzards**, and indeed everywhere we stopped we heard the characteristic sounds of Brandt's voles. When it was time to stop we chose a camping site with many voles and spotlighted there in the evening near Nessuelas which was unexpectedly good! Aside many Corsac foxes and Siberian jerboas, we saw Steppe Polecats, Campbell's hamster and a night active Brandt's vole (which is said to be exclusively diurnal by the literature, so do not fall for that!). The next day we drove to Hustai where Ruben and Lotte added three Wolves to the trip list and we saw Daurian hedgehog as last new mammal addition.



Left: Mongolian Jird, Ikh Bogd © Jurriën van Deijk. Right: Saiga, Altai © Daan Drukker.

# Target species groups

In **bold** the target species that we have seen. I have <u>underlined</u> the targets that we missed or didn't try. See for more information the target list. Exact locations can be found on Observation.org, linked via the buttons on the right of the trip list. I also give GPS-coordinates in cases it might come in handy.

# **Mammals**

#### Insectivores

As always, <u>shrews</u> require extra attention if you want to spot them, and even though I tried pitfalltrapping with the right bait on several occasions in the North, I did not catch a single <u>shrew</u>. Since we were not within range of the <u>Altai mole</u> that lives in the Northwest of Mongolia, our only chances on Eulypotyphla were hedgehogs. We saw both species during nigthdrives. **Long-eared hedgehogs** were found with the spotlight south of the Gobi Gurvan Saykhan range and in an oasis of the Great Gobi A. On the last night we saw a **Daurian hedgehog** north of the Hustai NP, discovered with the thermal scope.

#### **Bats**

We did not bring mist nets or bat detectors, so identifying bats was a bit complicated. My recorder can record sounds up to 47kHz, so if a bat calls below that frequency, we can analyse the sonograms. That went particularly well in Khurkh, where **Parti-coloured bats** were singing. These courtship calls are well audible by the human ear. <u>Asian parti-coloured bat</u> can be expected here too, but this species is not known to sing like that. Another place where we put effort in bats was Yolin Am. On sight, we saw to species flying around there, a smaller one and a larger one. We were able to photograph the larger one thanks to a good collaboration of torchlight and zoom lens, and I was able to connect that to the calls. Nils Bouillard helped to identify the calls on the sonograms and it turned out that the smaller species was **Alashanian pipistrelle** (with echolocation calls above 30kHz), while the larger species had calls lower than 30kHz. Nils confirmed this must be an *Eptesicus*, and the only species of that genus in this part of Mongolia is **Gobi big brown bat** (Northern bat only occurs in the north of Mongolia). The calls of this species are unknown to this date, so that is very interesting.

# Squirrels

Squirrels always have my utmost attention, and the squirrels of Mongolia are good! But first the dips: rain during our nights in the taiga might have been the reason we did not find <u>Eurasian flying squirrel</u> during our night walk and the most painful miss was <u>Daurian ground squirrel</u>. I should have prepared more exact locations for that species around Hustai. Lucklily Ruben and Lotte saw and photographed the species in July in the east of Mongolia. <u>Gray marmots</u> can only be found in the far west of Mongolia, not within our scope. The similar looking **Tarbagan marmot** was quite common and we saw many in the Altai mountains and in the Northern steppes, although they only show themselves well in places where the hunting ban is actually enforced, such as Hustai NP and Ikh Bogd mountain. If you want to get a close look at them, you might want to try on a pair of bunny ears. Young marmots find these very interesting and come have a look. It is a trick we saw marmot poachers use at Jargalant (although they seemed to have less success). **Red squirrels** and **Siberian chipmunks** were seen in good numbers in the Taiga of Terelj NP, which was good fun. The **Red squirrels** are of the dark *fusconigricans* subspecies. **Long-tailed ground squirrels** were widespread in the mountains and in the northern hills, while we saw **Pallid ground squirrel** (formerly a subspecies of Red-cheeked ground squirrel) in the desert steppes. In the Alashan mountains of Yolin Am, Gurvan Saykhan and Ikh Bogd, it was very obvious that as soon as you gained some altitude from the steppes, the **Alashan ground squirrels** were found. Further to the northwest they were replaced in this habitat by **Long-tailed ground squirrels**.



Left: Long-tailed Ground Squirrel, Hustai © Jacob Lotz. Right: Alashan Ground Squirrel, Yolin Am © Daan Drukker.

#### Other rodents

See also "Identification Help" below. Rodents in Mongolia are awesome, especially the Long-eared jerboa speaks to the imagination. All the more unfortunate that we did not see this species. It occurs deep in the Gobi desert, which is hard to reach and where we only could spend one spotlighting night. Jerboas and jirds we did see were the amazing Ghibli-esque Kozlov's pygmy jerboa, Northern three-toed jerboa, Andrew's three-toed jerboa, Siberian Jerboa, Gobi Jerbo, Midday iird, Mongolian iird and Great Gerbil. All these species are desert dwellers accept for the Siberian jerboa which can be found in the northern steppes. Identifying jerboas can be challenging, especially the medium-long-eared species. In the desert region these Allactaga's really need to be caught to check both the upper- and underside of the tail. Identifying jirds turned out to be easier than expected. Only when you go to the Dzungarian basin (Great Gobi B), you have to be wary of a third species, while on our route only the Midday jird (mostly nocturnal, orange brown, light nails and no black tail tuft) and Mongolian jird (all day, greyish brown, dark nails and black tail tuft) look a bit like each other. Mongolia holds six hamster species, of which we saw the two coolest: lots of Roborov's desert hamsters in the Gobi and a single Campbells' hamster in the steppe. Brandt's vole is the only strictly diurnal vole of Mongolia, and as soon as you are familiar with their characteristics calls they produce from their burrows, you find them everywhere. At night in the steppe we saw one *Lasiopodomys* which should be Narrow-headed vole, if the strictly diurnal thing would be true, but it looked an awful lot like a Brandt's vole too, and this was confirmed by Andrey Lissovsky, who mailed me that they can be active at night too. In Yolin Am we saw the Gobi Altai mountain vole in good numbers, both on the slopes as on the religious piles of stones. The only "real mouse" we saw was a House mouse in a ger on Ikh Bogd.

## Hares and Pikas

Tolai hares are common throughout Mongolia in a range of steppe, mountain and desert habitats. We saw one Mountain hare at the Barig plateau. Pikas are a lovely attraction of Central Asia. The identification of the five possible species is quite challenging however, especially without experience. Field guides and other books have trouble describing subtle field characteristics and sounds, so before the trip started I only had a slight idea on how to ID the pikas. We therefore decided to sound record and photograph as many pikas as possible. This resulted in a long list of Pallas's pika observations, a species that also is quite well recognisable in the field by the head shape that is different from the other species. This difference is mainly caused by a high orbit of the eye and a more slender neck. The only other species we saw was on the second to last day, where we found Alpine pikas on the boulders of Barig plateau. This species is darker brown and has a sharper alarm call. More importantly, the orbit is lower, resulting in a "cuter" face. We did not see Daurian pika (except for Jurriën who saw one while we drove by quickly), but fortunately the mystery sound we heard at Khurkh turned out to be singing males of **Daurian pika!** These animals sing from there burrows even at night. We heard them in the evening and early morning. Unfortunately we did not see Norhtern (not really tried), **Daurian** (luckily we heard them) and <u>Hoffmann's pika</u>, but a search to that latter species did produce a very cool cat, see next chapter. By the way, when we finally were able to get the mammal field guide of Mongolia, it turned out that we searched in the wrong habitat for Hoffmann's pika, as it prefers woodlands with rocks and we searched on rocky hilltops without woody vegetation. We saw open woodlands further up the hills, but there were no tracks towards them (and we did not know we had to go there).



Left: Pallas's Pika, Bulgan © Daan Drukker. Right: Alpine Pika, Barig plateau © Jacob Lotz.

#### Carnivores

One of our best sightings came completely unexpectedly during our search for <u>Hoffmann's pika</u> in the hills north of the village of Bayandelger. A **Pallas's cat** ran up the hill when we were driving back and disappeared in the crevices at a rocky hilltop. We waited for a bit if it would reappear, but that was fruitless. However Ruben had read that it might work to spotlight in the crevices, so we did that and soon enough we found it! Awesome yellow eyes were staring at us and it was definitely one of the highlights of the trip. The other cat was a different story. Mongolia is one of the

best places on earth to see <u>Snow leopard</u>, but apparently not for us. See "Jargalant Khayrkhan" in the chronological report for our analysis of this dip. We saw plenty of other carnivores, including **53 Corsac foxes**, **13 Red foxes**, **3 Wolves**, **2 Stoats** and **2 Steppe polecats**.



Left: Stoat, Barig plateau © Jacob Lotz. Right: Corsac Fox, Umnudelger © Jurriën van Deijk.

## Ungulates

The rarest species of mammal that can be found in Mongolia is the critically endangered Wild camel. According to the IUCN, only 950 mature individuals remained by 2004, 350 of them in Mongolia and the rest in China. Wild camels are actually very well identifiable from their domesticated descendants. Their humps are much more conical and narrow, their overall colour is a lighter sandy brown, they are more slender, longer legged and smaller eared. To find them, one must overcome several challenges. The first challenge is to get to the Great Gobi A Strictly Protected Reserve, the only place where they can be found. We decided use Bayantooroi as basis and not go from Gurvantes. See "Great Gobi A" and "Itinerary" for our exact route. The next challenge is to not see the habituated camels from the breeding centre. We succeeded in that with flying colours, as the breeding centre camels had broken out of their fence and we did not see any Wild camel outside the strictly protected reserve. Due to time constraints we decided not to go as far south as the Gobi bear feeding station, just travelling one day south and back the next day. To get into the protected reserve we decided to take a pass through the mountain range south of Bayantooroi. This beautiful pass full of Mongolian ground jays led us to the saxaul-filled desert and we ended up at an oasis 15 km deep into the strictly protected reserve. This oasis was impenetrable for our cars due to the saxaul and tamarisks, so we set up camp there. The next morning Jurriën found a sandy coloured camel with the telescope from top of our cars' roof. Even with an unexpected hangover and at a distance of 4,5 km, it stood out from all the other camels we had seen. This was very promising, but it was south of the oasis. That meant we had to approach it on foot. Using old river valleys and saxaul bushes as cover, we were able to get as close as 1 km before the camel decided that we were to close. In the meantime, everytime we got closer, we were more and more convinced of the identification as Wild camel, and as it ran away at quite a distance, our fears of a habituated reintroduced animal were taken away. Awesome experience for an awesome species.

Two other domesticated ungulates that have become very rare in the wild roam the Mongolian wilderness. **Asian wild ass** or **Khulan** can be found in the Gobi. We saw four during our scoping for camels in the Great Gobi A, but our best observation was south of the Gurvan Saykhan range, where a single individual could be observed near a group of **Black-tailed gazelle**. It was very wary and shy, and approaching it with our car would be impossible. While there are still wild camels and donkeys, it was almost too late for the Wild horse. The last **Przewalski's horses** were caught in the wild and bred in captivity, in order to reintroduce them on several sites in Mongolia in China. The most famous



Left: Black-tailed Gazelle, Bayaantooroi © Jurriën van Deijk. Right: Mongolian Gazelle, Hustai © Daan Drukker.

herd roams Hustai NP, where they can be found easily at daytime in the higher parts. At night they descend into the lower plains and we even encountered them during our nightdrive north of the edge of the park.

Wapiti and Siberian roe deer can be found in Hustai NP and in the taiga at Terelj NP, just like Wild boar. Unfortunately, we did not see Siberian musk deer, which might require some more preparation. We saw Argali in the hills and lower parts of mountains at Hustai, Yolin Am, Ikh Bogd, Gobi A and Jargalant. Siberian ibex preferred the slightly higher slopes and we saw them at Yolin Am, Altai, Jargalant and Bumbag. Three species of gazelle occur in Mongolia. In the North and the East of the country, there is the Mongolian gazelle (a.k.a white-tailed gazelle). Especially on the eastern steppes, this species can still be found in groups of thousands, and Ruben and Lotte indeed saw a group of 3500 in the Dornod province in July. Our biggest group was around 300 in Hustai, and we saw 1109 individuals in total. The second species is the yarkandensis subspecies of Goitered gazelle (a.k.a. black-tailed gazelle or Yarkand gazelle). This one can be found in the deserts and steppes in the South and West of Mongolia. It occurs in smaller groups and we saw 119 in total. The last species is the enigmatic Saiga. Characterised by their running with their head down, we saw our first family groups east of the city of Altai in the desert steppe. We saw several more on our way to Jargalant, on the plain bordering the mountain. In Mongolia, the mongolicus-subspecies has become isolated from the western subspecies due to overhunting, and as is the case in the entire species, the sex ratio is skewed. There are hardly any males and we did not see any either.

## Birds

#### Grouse

Great attractions are the <u>Black-billed capercaillie</u> at Terelj NP and **Altai Snowcock** on the higher Altai slopes. We missed the capercaillie just north of Terelj NP on the spot where Ruben saw five females in July. The **Altai snowcocks** were seen in family groups on Ikh Bogd mountain, Jargalant and Bumbag. They occur much higher than the **Chukars**, that form large family groups in August too. **Daurian partridge** was not frequent. We flushed a single male on our second day just east of Hustai NP and on our last day we saw a large family group within the national park of Hustai. A nice surprise was the large number of **Japanese quail** calling around Khurkh and the crane lakes.

#### Waterbirds and cranes

It was very nice to see widely kept species like **Bar-headed goose** and **Swan goose** in their natural habitat. They were common near lakes. These lakes harboured a nice variety of ducks and geese, but unfortunately we could not find any <u>Spot-billed ducks</u>. The rarest ducks we saw were a couple of **White-headed ducks** along the road from Altai to Hovd. The wetlands of Mongolia are well known for their exceptional diversity of cranes, especially in the northeast. We only visited the lakes around Khurkh. Overall **Demoiselle crane** is the most common, followed by **Common crane**. **White-naped crane** was seen in small family groups at nearly every northeastern lake, but absent in the rest of our trip. We saw two **Hooded cranes** at the largest lake near Khurkh (48.3403, 110.5362). Unfortunately there were no <u>Siberian cranes</u> at the time we were there. They are irregular apparently at this site, but Ruben and Lotte saw them in July much further to the east, in the Dornod province east of Dashbalbar.

## Shorebirds and gulls

Wader watching in Mongolia is very exciting. July is by far the best month when we compared what we saw in our consecutive visits of the same lakes, but August is still very good. For example, we saw only a single **Gray-tailed tat-ler** and no <u>Terek</u> or <u>Asian Dowitcher</u>, while these species were present in decent numbers in July at the same lakes. The best sites were Bööhn Tsagaan Nuur, Orog Nuur, Bagan Nuur and the lakes around the crane spots near Khurkh. The absolute stars were the **Little whimbrels**. We saw a group of nine near Khurkh and several groups at Bööhn Tsagaan, some of them came very close to the car. Staying in the car worked also good for Ruben and Lotte in July in



Left: Broad-billed Sandpiper, Ömnögov © Jacob Lotz. Right: Little Whimbrel, Bööhn Tsagaan © Jurriën van Deijk.

the far east near Buir Nuur, where they saw larger groups. There were many other species to be seen, check our list <a href="https://here">here</a>. While Mongolian gull was common, Pallas's gull was only found at Bööhn Tsagaan and we dipped on Relict gull. They might have dispersed already from their breeding lakes by August, as they are rarely seen in August according to eBirds <a href="https://example.com/barchart">bar chart</a>.

# Raptors

Many interesting raptors can be seen in the open landscapes of Mongolia. Bearded vultures can be found at almost any mountain range, and we saw 27 individuals. Himalayan vultures were seen in groups, mainly at Yolin Am and Ikh Bogd. Cinereous vultures were common on the steppes, and we saw no less than 438 individuals en route. We saw a single Crested honeybuzzard migrating through the Altai. Of the eagles, Steppe was the most common (82) followed by Golden (23) and Booted (10). We saw a single Imperial eagle. The best raptor species of the trip was Pallas's fish eagle. We saw two stunning adults at Bööhn Tsagaan. The division between Eastern and Western Marsh harrier lies in Mongolia and we saw both species. Upland buzzard (395) and Eastern black kite (838) were by far the most dominant raptors. Due to identification problems, kestrels were a bit underreported. Both Lesser and Common kestrel occur in almost the entire country and we saw both species on several occasions. Real falcon attractions were the Amur falcons in the northeast (44) and Saker (56, widespread). Other falcons were a Merlin, a Hobby and several babylonicus Peregrine falcons. The best owl of the trip was a wet but beautiful Ural owl during our nightwalk in the Terelj taiga, found with the thermal scope.

# Songbirds

Corvids were well represented in Mongolia, although we missed Azure-winged magpie at a river in Terelj where Ruben had seen them in July. The most attractive and sought-after corvid is the Mongolian ground jay. We saw a staggering 34 individuals, much more than we expected. They were particularly common in the Great Gobi A, but we also saw them in the Ömnögov and near Jargalant. **Daurian jackdaw** was common on the northern steppe regions. Shrikes were plentiful, but identification of Isabelline, Brown and Turkestan was in some cases a nice challenge. We only saw Azure tit along the Tuul river, which was also a good spot for White-crowned penduline tit. The larks were widespread, especially on the steppes, and Hustai and the Ömnögov are great to familiarise yourself with them. Mongolian lark is common in the north, and both the Mongolian and Asian short-toed larks are more common towards the desert steppes. We had a lot of fun with the warblers. **Hume's** and **Yellow-browed warbler** co-occurred, and especially at Bumbag we saw a lot of **Hume's**. Bumbag was also the best place for **Godlewski's bunting**, although we had a lot of this species in Yolin Am and on Ikh Bogd as well. Ortolan bunting and Grey-necked bunting started to come through Bumbag as well. Arctic, Two-barred, Chinese bush warbler, as well as Red-flanked bluetail all occurred if forests and bushes at Terelj especially and one Chinese bush was ringed at Khurkh when we were there. The bushes around Khurkh produced much more, such as our first Black-headed bunting, family of Siberian rubythroats, Thick-billed warbler, Pallas's grasshopper warbler, Dusky warbler and Stejneger's stonechat. The Nuthatches are of the beautiful asiatica subspecies. We had stunning views of Wallcreeper at Yolin Am. A White-cheeked starling using our moving car as coverage from a Saker was a highlight while driving on the highway south of Ulaanbaatar near Zuumod. Taiga, Asian brown and Dark-sided flycatcher were best observed in the Terelj river valley. We missed Eversmann's redstart, but luckily we did see Güldenstads (high elevations of Ikh Bogd especially) and Daurian (around Terelj). We only saw our first **Pere David's snowfinch** in the last week of our stay, but then they came in big numbers. We saw groups of hundreds along the road between Bayanhongor and Ulaanbaatar, and even more on the Barig plateau. Saxaul sparrow might be the toughest near-endemic of Mongolia to get a glimpse of. We only saw (and heard) them once, at the Wild camel breeding centre near Bayaantorooi at the Great Gobi A. Accept for Black-throated, we saw decent accentor species. Kozlov's and Altai on Ikh Bogd, Siberian at the Hustai visitor centre and Brown on every mountain we visited. The (rose)finches of high altitudes were rare, and we only saw Red-mantled rosefinch in Yolin Am. Meadow bunting was a specialty of our camping site just east of Hustai, while we saw migrating Pallas's reed buntings on several occasions in desert oases.



Left: Père David's Snowfinch, Barig plateau © Jacob Lotz. Right: Thick-billed Warbler, Khurkh © Jacob Lotz.



Left: Siberian Rubythroat, Khurkh © Jacob Lotz. Right: Wallcreeper, Yolin Am © Jacob Lotz.

#### Insects

We studied some nice insects, with cool mayflies along the Khurkh stream, many moths on places with warmer nights and some vegetation, a few diurnal butterflies and dragonflies, and many remarkable grasshopper species (see <a href="here">here</a> for my identifications, photos and recordings of Orthoptera). Follow our Observation pages for our total lists and photos and recordings of species we identified.

# Herpetofauna

We did not see an awful lot of reptiles and amphibians. Cool was the **Halys pit viper** we found east of Hustai. **Toad-headed agama's** were common in the desert regions. **Mongolian toad** was common in wetter steppes and we saw one **Siberian wood frog** at the crane lakes of Khurkh.



Left: Haly's Pit Viper, Hustai © Daan Drukker. Right: Compsorhipis bryodemoides © Daan Drukker.

# Useful words

In search of mammals it is always a good idea to ask the locals if they know a place. Here is a list of words that might come in handy when you want to ask something.

Ground squirrel = зурам = zouram

Pika = огдой = ogdoi (my interpretation of a local shepherd on Ikh Bogd, sounding a bit different than the Mongolian name in the books)

Snow leopard = ирвэс = irves

# Acknowledgements

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# Identification help

As said before, the Field Guide to the Mammals of Mongolia can only be bought in Mongolia itself. So in preparation, I have gathered information on identifying certain mammal groups, which I have worked out using the experience of the trip.

For **Squirrels, Marmots** and **Pika's** (including their sounds), see the **Provisional Field Guide to the Squirrels of Mongolia** that is available on the Mammalwatching.com website.

Mongolian Jerboa species can be divided into four main groups, best grouped by ear size

- 1. (extremely) Long-eared Jerboa (1 species, unmistakable)
- 2. The quite long-eared species (Balikun, Gobi, Small Five-toed, Mongolian Five-toed, Dwarf Fat-tailed)
- 3. The **normal eared** species of three-toed jerboas (Nothern Three-toed, Andrew's Three-toed, Mongolian Three-toed)
- 4. The very round bodied and thick tail based **Pygmy Jerboas** (Kozlov's Pygmy, Thick-tailed Pygmy, Five-toed Pygmy)

**Quite long-eared jerboa's:** To be certain, specimens in the desert can best be caught with butterfly net in order to check both sides of the tail!

Species	Tail	Other
Dwarf fat-tailed Jerboa P. pumilio	tail tuft not as prominent, the black portion narrow when viewed from the sides, white tip narrow (only 10–15 mm).	Typical round face and body, very narrow ears. Somewhat intermediate between the normal-eared jerboas
Small Five-toed Jerboa S. elater	The dark portion of the tail tuft is black, and the tip pure white. A whitish line divides the tail tuft along the medial surface to the tip of the tuft in most specimens	Small and slender. Only in Dz- ungarian Gobi / Great Gobi B
Mongolian Five-toed Jerboa or Siberian Jer- boa <i>O. sibirica</i>	tip of tail well furred. Black on upper side continuous. Black on underside either continuous or with white median line .	Very long and slender ears. Large. Only Quite-long-ear in the northern steppes, but also occurs in deserts.
Balikun Jerboa <i>O. bali-kunica</i>	erboa <i>O. bali</i> - Upper side of tuft with continuous black band. Under side of tail with the black band divided by a white area with a very narrow black median line.  Wavy hairy a	
Gobi Jerboa <i>O. bullata</i>	Upper side of tail tuft divided by narrow white line or with continuous black. Under side of tail tuft divided by broader white line.	Overall colour lighter and slightly more reddish than that of balikunica. Southern deserts and central desert steppes

#### Normal-eared (three-toed) jerboa's:

species	tail	other	
Dipus sagitta	Tuft black with white tip All species' con chaotic		
Stylodipus andrewsi	Tuft entirely black	Not in Dzungarian Gobi	
Stylodipus sungorus	Tuft entirely black	Only in Dzungarian Gobi	



Left: Dipus sagitta, Ömnögov © Daan Drukker. Right: Stylodipus andrewsi, Ömnögov © Daan Drukker.

# Pygmy jerboa's

species	tail	Hind feet
Five-toed PJ C. paradoxus	Tail fat (rarely slender), no tuft, relatively short	5 toes (hard to see)
Kozlov's PJ S. kozlovi	Slender and long, with small black tuft	3 toes
Thick-tailed PJ S. crassicauda	Tail base fat, no tuft but some long hairs	3 toes

**Gerbils** and **Jirds** each species is quite recognisable by their jizz (except maybe for the pair *meridianus* and *tamariscinus*), but that is hard to describe. See also the <u>piece by Paul Carter</u> on the Mammalwatching website.

Species	activity	Tail and body	Feet
Great Gerbil R. opimus	Diurnal	Full and large	
Tamarisk Jird <i>M. tam-ariscinus</i>	Diurnal and nocturnal, only in Dzungarian Gobi	Black tail tuft and sharp distinction between white underside and brown upperside	Claws nearly white. Soles of feet with long brown spots
Midday Jird M. merid- ianus	Nocturnal. Widespread in deserts	Very few black hairs in tail tuft. Body brown above and whitish be- low	Claws white, feet uni- formly haired
Mongolian Jird M. un- guiculatus	Diurnal and nocturnal. Widespread in deserts, steppes and mountains	Some black hairs in tail tuft. Rest of the body dull	Claws dark gray, feet uniformly haired



Left: Mongolian Jird, Barig plateau © Daan Drukker. Right: Midday Jird, Ömnögov © Daan Drukker.

## **Hamsters**

species	Tail	Back stripe	other
Gray Hamster	Medium	present	Extreme SW
Long-tailed Hamster	Long	absent	
Striped Hamster	Medium	present	Middle + NE
Sokolov's Hamster	Medium	present	
Roborov's Hamster	Short	absent	Eyebrow + rusty
Campbell's Hamster	Short	present	
Mongolian Hamster	Short	absent	No eyebrow + gray

Mammal checklist and species seen there are similar species nearby	English name good photo or recording is advised	notes
there are very similar species nearby	very good photo or trapping needed	
species is an important target	mostly due to being (slightly) range	estricted
Hemiechinus auritus	Long-eared Hedgehog	
Mesechinus dauuricus	Daurian Hedgehog	Hustai is place to be. 47.8077, 105.9092
Crocidura suaveolens	Lesser White-toothed Shrew	note taxonomy
Crocidura shantungensis	Manchurian White-toothed Shrew	
Neomys fodiens	Eurasian Water Shrew	
Sorex araneus	Common Shrew	
Sorex caecutiens	Laxmann's Shrew	
Sorex daphaenodon	Siberian Large-toothed Shrew	
Sorex isodon	Taiga Shrew	
Sorex minutissimus	Eurasian Least Shrew	
Sorex roboratus	Flat-skulled Shrew	
Sorex tundrensis	Tundra Shrew	
Talpa altaica	Altai Mole	only in lake depression
Eptesicus gobiensis	Gobi Serotine	see chapter Bats, Yolin Am
Eptesicus nilssoni	Northern Bat	
Myotis sibirica		
Myotis davidii		
Myotis pelax	Eastern Water Bat	
Myotis ikonnikovi	Ikonnikov's Myotis	
Myotis bombinus		
Myotis longicaudatus		
Myotis blythii		
Nyctalus noctua	Noctule	only in extreme western Mongolia
Hypsugo alashanicus	Alashan Pipistrelle	see chapter Bats, Yolin Am
Hypsugo stubbei		•
Plecotus ognevi	Ognev's Long-eared Bat	
Plecotus strelkovi		
Plecotus gobiensis		
Plecotus kozlovi	Kozlov's Long-eared Bat	
Vespertilio murinus	Parti-coloured Bat	Khurkh, singing
Vespertilio sinensis	Asian Parti-coloured Bat	see chapter Bats
Murina hilgendorfi	Hilgendorf's Tube-nosed Bat	1
Canis lupus	Wolf	only seen by Ruben and Lotte near Hustai
Nyctereutus procyonoides ussuriensis	Raccoon Dog	
Vulpes corsac	Corsac Fox	
Vulpes vulpes	Red Fox	
Felis lybica ornata	Wildcat	
Lynx lynx	Lynx	
Otocolobus manul	Pallas's Cat	Bayandelger 47.7569, 108.1039
Panthera uncia	Snow Leopard	
Lutra lutra	Otter	
Meles leucurus	Asian Badger	
Gulo gulo	Wolverine	
Martes foina	Beech Marten	
Martes zibellina	Sable	
Mustela altaica	Mountain Weasel	
Mustela erminea	Ermine	
Mustela eversmannii	Steppe Polecat	46.8550, 103.4896
Mustela nivalis	Least Weasel	
Mustela sibirica	Siberian Weasel	
Mustela vison	American Mink	
Vormela peregusna	Marbled Polecat	
Ursus arctos	Brown Bear and Gobi Bear	
Equus callabus przewalskii	Przewalski's Horse	Hustai is place to be
Equus hemionus	Onager	Gobi 44.4485, 96.7692 and 43.7681, 102.4965
Sus scrofa	Wild Boar	only seen by Jacob at Terelj
Camelus ferus	Wild Camel	whoop whoop 44.4042, 96.7616
Moschus moschiferus	Siberian Musk Deer	perhaps contact author of field guide
Cervus candensis sibiricus	Asian Wapiti or Maral	Hustai is place to be
Alces alces cameloides	Moose	·
Capreolus pygargus	Siberian Roe	only seen in glimpse at Terelj
Rangifer tarandus valentinae	Reindeer	Hovsgol?
Gazella subgutturosa yarkandensis	Goitered Gazelle	Gobi and desert steppe
Procapra gutturosa	Mongolian Gazelle	most abundant in Hustai and esp. the eastern steppes
Saiga tatarica mongolica	Saiga	desert steppe between Altai and Jargalant e.g. 46.3705, 95.61
Capra sibirica	Siberian Ibex	common on the steeper mountains
Ovis ammon	Argali	Hustai and Gobi Altai range. Check taxonomy
Marmota baibacina	Gray Marmot	only in extreme western Mongolia
Marmota sibirica	Tarbagan Marmot	
Sciurus vulgaris	Eurasian Red Squirrel	
Spermophilus alashanicus	Alashan Ground Squirrel	Yolin Am, Gurvan Sayjhan and Ikh Bogd
Spermophilus dauricus	Daurian Ground Squirrel	seen on the prequel
Spermophilus pallidicauda	Pallid Ground Squirrel	Taxonomy not yet resolved
Spermophilus brevicauda	Brandt's Ground Squirrel	In Dzungarian Gobi, Brandt's ground squirrel might occur
Urocitellus undulatus	Long-tailed Ground Squirrel	gaa aaa., a.anaca graana squirrer migne occur
Tamias sibiricus	Siberian Chipmunk	
Pteromys volans	Siberian Flying Squirrel	
Pteromys volans Castor fiber	Beaver	
		underside of tail is necessary!
Orientallactaga balikunica	Balikun Jerboa	underside of tail is necessary!
Orientallactaga bullata	Gobi Jerboa	underside of tail is necessary!
Orientallactaga sibirica	Mongolian Five-toed Jerboa	only large jerboa in the northern steppes
Scarturus elater	Small Five-toed Jerboa	only in Dzungarian Gobi
Pygeretemus pumilio	Dwarf Fat-tailed Jerboa	looks intermediate between Allactaga and Stylodipus
Cardiocranius paradoxus	Five-toed Pygmy Jerboa	
Calainantus	Thick-tailed Pygmy Jerboa	42 7540, 402 2004
Salpingotus crassicauda	Kozlov's Pygmy Jerboa	43.7610, 102.3991
Salpingotus kozlovi	Norhtern Three-toed Jerboa	common
Salpingotus kozlovi Dipus sagitta		43.7785, 102.4103
Salpingotus kozlovi Dipus sagitta Stylodipus andrewsi	Andrew's Three-toed Jerboa	
Salpingotus kozlovi Dipus sagitta Stylodipus andrewsi Stylodipus sungorus	Andrew's Three-toed Jerboa Mongolian Three-toed Jerboa	only in Dzungarian Gobi
Salpingotus kozlovi Dipus sagitta Stylodipus andrewsi Stylodipus sungorus Euchoreutus naso	Andrew's Three-toed Jerboa Mongolian Three-toed Jerboa Long-eared Jerboa	
Salpingotus kozlovi Dipus sagitta Stylodipus andrewsi Stylodipus sungorus Euchoreutus naso Sicista subtilis	Andrew's Three-toed Jerboa Mongolian Three-toed Jerboa Long-eared Jerboa Southern Birch Mouse	only in Dzungarian Gobi
Salpingotus kozlovi Dipus sagitta Stylodipus andrewsi Stylodipus sungorus Euchoreutus naso	Andrew's Three-toed Jerboa Mongolian Three-toed Jerboa Long-eared Jerboa	

Eolagurus Iuteus Eolagurus przewalskii Przewalski's Steppe Lemming Steppe Vole 1 Lasiopodomys brandtii Lasiopodomys brandtii Lasiopodomys mandarinus Mandarin Vole Lasiopodomys gregolis Alexandromys fortis Alexandromys Iimnophilus Alexandromys maximowiczii Maximowicz's Vole Alexandromys maximowiczii Maximowicz's Vole Alexandromys maximowiczii Maximowicz's Vole Alexandromys oeconomus Microtus arvaiis Ondatra zibethicus Aliocricetulus curtatus Mongolian Hamster Cricetulus brabensis Cricetulus sokolovi Sokolov's Hamster Cricetulus sokolovi 1 Phodopus campbelli 1 Phodopus campbelli 2 Phodopus campbelli 3 Meriones tamarascinus Mongolian Iird Meriones tamarascinus Mongolian Iird Meriones tamarascinus Mongolian Iird Meriones unquiculatus Mongolian Iird Apodemus grarius Apodemus grarius Apodemus grarius Apodemus grarius Apodemus grarius Apodemus preninsuloe Apodemus uralensis Micromys minutus Harvest Mouse House Mouse Rattus norvegicus Narrow-headed Vole Autoriore Lasiopud Autorius Steppe Lemming Steppe Vele wery common, well identifiable on sound and diurnal activity very common, well identifiable on sound and diurnal activity wery common, well identifiable on sound and diurnal activity wery common, well identifiable on sound and diurnal activity very common, well identifiable on sound and diurnal activity wery common, well identifiable on sound and diurnal activity wery common activity avery common, well identifiable on sound and diurnal activity wery common, well identifiable on sound and diurnal activity avery common, well identifiable on sound and diurnal activity avery common, well identifiable on sound and diurnal activity avery common, well identifiable on sound and diurnal activity avery common, well identifiable on sound and diurnal activity avery common in destrancy only in extreme western Mongolia Ondor only in ex		,		
Avicola amphibius Grasemys rufocanus Myodes rufilins Nothern Red-backed Vole Myodes rufilins Nothern Red-backed Vole Myodes rufilins Nothern Red-backed Vole Bolagurus przewalskii Eolagurus przewalskii Steppe Vole 1 Lasiopodomys brandtii Lasiopodomys brandtii Lasiopodomys mandarinus Losiopodomys grandtii Lasiopodomys mandarinus Losiopodomys grandrinus Mandarin Vole Alexandromys frortis Alexandromys frortis Alexandromys frortis Alexandromys minophilus Alexandromys minophilus Alexandromys minophilus Alexandromys minophilus Alexandromys minophilus Alexandromys minophilus Alexandromys monophilus Alexandr				Mongol Altai mts
Caseomys rufocanus Nothern Red-backed Vole Nothern Red-backed Vole Elobus toncrel Estaturaria Note Vole Elobus toncrel Estaturaria Stepe Lemming Estagurus prewatskii Przewatskii Stepe Lemming Lagurus Isteus Prawatskii Stepe Lemming Stepe Vole Stepe Vole Stepe Vole Stepe Lemming Lagurus Isteus Prawatskii Stepe Lemming Lagurus Isteus Prawatskii Stepe Lemming Stepe Lemming Stepe Vole Stepe Vole Stepe Lemming Lagurus Isteus Prawatskii Isteus	1			Hovsgol and extreme NW
Myodes rutilius   Nothern Red-backed Vole   Eastern Mole Vole   Cologurus Intreus   Yellow Steppe Lemming   Eologurus Intreus   Yellow Steppe Lemming   Eologurus przewolskii   Przewalski's Steppe Lemming   Logurus Integrus   Steppe Vole   Losiopodomys brandtii   Brandt's Vole   Losiopodomys mandarinus   Mandarin Vole   Losiopodomys gregolis   Narrow-headed Vole   Alexandromys grimophilius   Lacustrine Vole   Alexandromys minmophilius   Lacustrine Vole   Alexandromys minmophilius   Maximowicz's Vole   Alexandromys minmophilius   Maximowicz's Vole   Alexandromys mongolicus   Mongolian Vole   Morotus arveilis   Common Vole   Myopus schisticolor   Wood Lemming   Ondatra zibethicus   Common Vole   Myopus schisticolor   Wood Lemming   Cricetulus barabensis   Cricetulus barabensis   Cricetulus barabensis   Cricetulus sonicolor   Cricetulus barabensis   Cricetulus sonicolor   Cricetulus sonicolor   Sokolov's Hamster   Cricetulus sonicolor   Cricetulus sonic		Arvicola amphibius	Eurasian Water Vole	
Selbolus tancrei   Eastern Mole Vole   Elogrurs Interest   Fologrurs prevalskii   Przewalskii   Steppe Lemming   Fologrurs prevalskii   Przewalskii   Steppe Lemming   Fologrurs prevalskii   Przewalskii   Steppe Lemming   Lasisopodomys brandtii   Brandt's Vole   Lasiopodomys pregalis   Narrow-headed Vole   Alexandromys gregalis   Narrow-headed Vole   Alexandromys profits   Reed Vole   Alexandromys interest   Narrow-headed Vole   Alexandromys moximowiczii   Maximowiczis Vole   Alexandromys moximowiczii   Maximowiczis Vole   Alexandromys moximowiczii   Maximowiczis Vole   Alexandromys moximowiczii   Maximowiczis Vole   Alexandromys mozimowiczii   Maximowiczis Vole   Alexandromys pregorius   Common Vole   Wood Lemming   Ondotra zibethius   Common Muskrat   Allocricetulus curtous   Common Muskrat   Allocricetulus curtous   Common Muskrat   Cricetulus branchesis   Striped Hamster   Cricetulus branchesis   Striped Hamster   Cricetulus sondorus   Compalis Hamster   Cricetulus sondorus   Compalis Hamster   Allocricetulus sondorus   Campbell's Hamster   Allocricetulus sondorus   Anodemus sondorus   Anodemus sondorus   Anodemus sondorus   Anodemus sondorus   Campbell's Hamster   Anodemus sondorus	1	Craseomys rufocanus	/	
Folgarus Iuteus   Przewalski's Steppe Lemming   Folgarus przewalskii   Przewalski's Steppe Lemming   Stagurus   Steppe Vole   Stasipodomys brandtii   Brandt's Vole   Lasipodomys mandarinus   Mandarin Vole   Lasipodomys gregolis   Narrow-headed Vole   Alexandromys fortis   Reed Vole   Alexandromys fortis   Reed Vole   Alexandromys mangolius   Alexandromys mangolius   Alexandromys mangolius   Mangolian Vole   Alexandromys mangolius   Mangolian Vole   Alexandromys mongolius   Mongolian Vole   Alexandromys mongolius   Mongolian Vole   Alexandromys precipius   Mongolian Vole   Alexandromys precipius   Mongolian Vole   Alexandromys mangolius   Mongolian Vole   Alexandromys oeconomus   Root Vole   Mryopus schizticolor   Wood Lemming   Mongolian Vole   Alexandromys oeconomus   Root Vole   Mryopus schizticolor   Wood Lemming   Mongolian Vole   Alexandromys oeconomus   Root Vole   Mryopus schizticolor   Wood Lemming   Mongolian Vole   Alexandromys oeconomus   Root Vole   Mryopus schizticolor   Wood Lemming   Mryopus schizticolor   Wood Lemming   Mryopus vole   Mryopus schizticolor   Mongolian Hamster   Gricetulus borabensis   Striped Hamster   Gricetulus sondolovi   Gray Hamster   Gricetulus sondolo		Myodes rutilus	Nothern Red-backed Vole	
Solagurus przewalskii   Steppe Lemming   Steppe Vole   S	х	Ellobius tancrei	Eastern Mole Vole	only seen their mounds
Lasipopdomys brandtil   Brand'ts Vole   very common, well identifiable on sound and diurnal activity   Lasipopdomys amadarinus   Mandarin Vole		Eolagurus luteus	Yellow Steppe Lemming	not possible?
1 Lasiopadomys brandtii Lasiopadomys argadis Lasiopadomys argadis Alexandromys fortis Alexandromys fortis Alexandromys fortis Alexandromys maximoukciii Alexandromys aceanomus Alexan		Eolagurus przewalskii	Przewalski's Steppe Lemming	
Lasiopodomys mendarinus Lasiopodomys gregalis Alexandromys fortis Alexandromys fortis Alexandromys fortis Alexandromys monophilus Alexandromys monophilus Alexandromys monophilus Alexandromys monophilus Alexandromys ocenomus Apodemus peninsuloe Apodemus peninsuloe Apodemus peninsuloe Apodemus peninsulos Anodemus orgarius Alexandromys ocenomus Apodemus peninsuloe Apodemus p		Lagurus lagurus	Steppe Vole	
Lasiopadomys gregalis Alexandromys fortis Alexandromys Immophilus Alexandromys maximowiczii Alexandromys maximowiczii Alexandromys maximowiczii Alexandromys maximowiczii Alexandromys oeconomus Microtus arvalis Myopus schisticolar Ondatra zibethicus Aliocrieetulus curatus Cricetulus barabensis Cricetulus barabensis Cricetulus barabensis Cricetulus sungiacuadatus Cricetulus songiacuadatus Cricetulus songiacuadatus Cricetulus songionale 1 Phodopus campbelli 1 Phodopus campbelli 2 Roborovs's Hamster Cricetulus sungiulus Meriones tamarascinus Meriones tamarascinus Meriones tamarascinus Apodemus agranius Apodemus agranius Apodemus agranius Apodemus uralensis Micromys minutus Harvest Mouse Mus musculus Rattus norvegicus Roborovis Minutus Harvest Mouse Myospalox aspilurus Dryomys nitedula Dryomys nitedula Chotona dulana Aliaimts and some steppes	1	Lasiopodomys brandtii	Brandt's Vole	very common, well identifiable on sound and diurnal activity
Alexandromys fortis Alexandromys inmonphilus Alexandromys minoviciii Alexandromys mongolicus Myopus schisticolor Ondatra zibethicus Common Vole Myopus schisticolor Ondatra zibethicus Cricetulus curatus Cricetulus curatus Cricetulus barabensis Cricetulus singratorius Cricetulus sokolovi 1 Phodopus campbelli Campbell's Hamster Cricetulus sokolovi 1 Phodopus robrovskiii 1 Robrovs's Hamster 1 Phodopus robrovskiii 2 Robrovs's Hamster 1 Meriones meridianus Meriones tamarascinus Meriones tamarascinus Meriones tamarascinus Mongollan Jird Meriones unguiculatus Mongollan Jird Apodemus agrarius Apodemus peninsulae Apodemus uralensis Micromys minutus Harvest Mouse Apodemus uralensis Micromy minutus Harvest Mouse Rattus norvegicus Brown Rat Myospalax aspalax Myospalax aspalax Myospalax spalax Steppe Zokor Only seen their mounds North China Zokor Dryomys nitedula Dry		Lasiopodomys mandarinus	Mandarin Vole	
Alexandromys limnophilus Alexandromys maximowiciii Maximowicz's Vole Alexandromys mogolius Alexandromys oeconomus Mogolian Vole Microtus arvalis Myopus Schisticolor Ondatra zibethicus Allocricetulus curtatus Cricetulus barabensis Cricetulus barabensis Cricetulus longicaudatus Cricetulus sokolovi Sokolov's Hamster Cricetulus sokolovi Sokolov's Hamster Cricetulus sokolovi 1 Phodopus cobrovskii Roborovs's Hamster Cricetulus sokolovi 1 Meriones meridianus Midday Jird Meriones meridianus Midday Jird Meriones unguiculatus Apodemus agrarius Apodemus agrarius Apodemus agrarius Apodemus agrarius Apodemus peninsulae Apodemus peninsulae Apodemus maximolius House Mouse Rotus movegicus Brown Rat Myospalax aspalax Myospalax aspalax Myospalax aspalax Myospalax aspalax Myospalax psilurus Dryomys nitedula Daurian Pika Ochotona dauurica Ochotona dauurica Ochotona pallasi Lepus timidus Mongolias Montain Hare Montain Hare  Only in extreme western Mongolia Allocrice was demonal over Mongolias Apodemus arvies  Alexandromys aromus Common Nuskrat Alexandromys admuse Apodemus agrarius Apodemus geninsulae Apodemus aralensis Micromys minutus House Mouse Rotus norvegicus Brown Rat  Myospalax aspalax Myospalax aspalax Myospalax psilurus Dryomys nitedula Ochotona dauurica Ochotona dauurica Ochotona pallasi Pallas's Pika Altai mts and Some steppes Khangai mts		Lasiopodomys gregalis	Narrow-headed Vole	
Alexandromys maximowiczii Maximowicz's Vole Alexandromys mongolicus Mongolian Vole Alexandromys oeconomus Microtus arvalis Common Vole Myopus schisticolar Wood termining Ondatra zibethicus Common Muskrat Allocricetulus curtatus Allocricetulus curtatus Allocricetulus sorabensis Cricetulus bongicaudatus Cricetulus sonipatorius Cricetulus migratorius Gray Hamster Cricetulus sololovi Sokolov's Hamster Cricetulus sorabelli Campbell's Hamster I Phodopus campbelli Campbell's Hamster I Meriones merdianus Midday Jird Meriones tumaraschus Tamarisk Jird Only in Dzungarian Gobi Meriones unguiculatus Mongolian Jird I Rhombomys opimus Apodemus agrarius Apodemus gerainus Apodemus peninsulae Apodemus peninsulae Apodemus peninsulae Apodemus minutus Harvest Mouse Micromys minutus Harvest Mouse North China Zokor Oryomys nitedula Cochotona dajuina Alpine Pika Ochotona dajuina Alpine Pika Ochotona pallasi Palas's Pika Altai mts and Some steppes Changa imts Chatona pallasi Palas's Pika Altai mts and some steppes Changa imts Chatona pallasi Palas's Pika Altai mts and some steppes Changa imts Chatona charachicus Cha		Alexandromys fortis	Reed Vole	
Alexandromys mongolicus Alexandromys acconomus Root Vole Myopus schisticolor Ondarta zibethicus Common Muskrat Allocricetulus curatus Cricetulus toratus Cricetulus sarabis Cricetulus singitacudatus Cricetulus singitacudatus Cricetulus singitacudatus Cricetulus singitacudatus Cricetulus singitacudatus Cricetulus sokolovi 1 Phodopus campbelli 2 Phodopus campbelli 3 Phodopus campbelli 4 Phodopus campbelli 5 Phodopus campbelli 6 Campbell's Hamster Cricetulus songitacudatus Midday Jird Meriones meridianus Midday Jird Meriones tamarascinus Mongolian Jird 1 Meriones tamarascinus Mongolian Jird 1 Meriones unguiculatus Mongolian Jird Apodemus agrarius Apodemus gararius Apodemus geninsulae Apodemus peninsulae Apodemus uralensis Micromys minutus Harvest Mouse Apodemus uralensis Micromys minutus Harvest Mouse Apodemus agrarius Apotacus uralensis Micromys minutus Harvest Mouse Apodemus peninsulae Apodemus		Alexandromys limnophilus	Lacustrine Vole	only in extreme western Mongolia
Alexandromys oeconomus Microtus arvalis Common Vole Myopus schisticolor Ondatro zibethicus Allocricetulus curtatus Mongolian Hamster Cricetulus barabensis Cricetulus ologicuadatus Cricetulus sokolovi I Phodopus campbelli Campbelli Ramster Cricetulus sokolovi I Phodopus campbelli Campbelli Ramster Common in deserts Meriones meridianus Midday Jird Meriones tomarascinus I Meriones tomarascinus I Meriones unquiculatus Mongolian Jird I Rhombomys opimus Apodemus gararius Apodemus peninsulae Apodemus peninsulae Apodemus uralensis Micromys minutus I Mussculus Rattus norvegicus Rattus norvegicus Rattus norvegicus Rattus norvegicus Brown Rat  X Myospalax aspalax Myospalax aspalax Myospalax psilurus Dryomys nitedula Ochotona lapina Ochotona dauurica Ochotona hoffmanni Ochotona pallosi Plass Possible Common in deserts  46.8645, 103.4848 Common in deserts  46.864		Alexandromys maximowiczii	Maximowicz's Vole	
Microtus arvalis Myopus schisticolor Modal Cemming Ondator albethicus Allocricetulus curtatus Cricetulus barabensis Striped Hamster Cricetulus migratorius Cricetulus migratorius Cricetulus sokolovi Phodopus campbelli Campbell's Hamster Cricetulus roborovskii Roborovs's Hamster Ondoros striped Hamster Cricetulus sokolovi Ameriones meridianus Midday Jird Meriones tamarascinus Tamarisk Jird Meriones unquiculatus Mongolian Jird Apodemus agrarius Apodemus agrarius Apodemus peninsulae Apodemus peninsulae Apodemus varalensis Micromys minutus Harvest Mouse Apodemus nalensis Micromys minutus Harvest Mouse Rottus norvegicus Ro		Alexandromys mongolicus	Mongolian Vole	
Myopus schisticolor Ondatra zibethicus Common Muskrat Allocricetulus curatus Cricetulus barabensis Cricetulus migratorius Cricetulus nigratorius Cricetulus sokolovi 1 Phodopus campbelli 1 Phodopus roborovskii 1 Meriones meridianus Meriones tamaroscinus 1 Meriones tamaroscinus 1 Meriones unguiculatus Apodemus agrarius Apodemus aprarius Apodemus peninsulae Apodemus uralensis Micromys minutus 1 Mus musculus Rattus norvegicus Rattus norvegicus Roborovskii Roborovs Apodemus Rattus norvegicus Rown Rat Myospalax aspalax Myospalax aspalax Myospalax aspalax Dryomys nitedula Forest Dormouse Ochotona dajurica Ochotona dajurica Ochotona dajurica Delicitus indication Dryomys niledus Palas's Pika Altai mits and Some steppes Altai mits and some steppes Lepus timidus Hentiy mts Altai mits and some steppes Khangai mts Altai mts and some steppes		Alexandromys oeconomus	Root Vole	
Ondatra zibethicus Allocricetulus curtatus Mongolian Hamster Cricetulus barabensis Striped Hamster Cricetulus longicaudatus Cricetulus migratorius Cricetulus migratorius Gray Hamster Cricetulus sokolovi Phodopus campbelli Campbell's Hamster Common in deserts  Meriones meridianus Midday Jird Meriones tamarascinus Mariones unguiculatus Mongolian Jird Apodemus agrarius Apodemus peninsulae East Asian Field Mouse Apodemus peninsulae Apodemus peninsulae East Asian Field Mouse Apodemus peninsulae Aposenus peninsulae East Asian Field Mouse Apodemus peninsulae Aposenus peninsulae East Asian Field Mouse Apodemus peninsulae Forest Dormouse  Ochotona dpilina Ochotona dpilina Ochotona pallasi Pallas's Pika Alti mts and some steppes Khangai mts Alti mts and some steppes Lagus timidus Alti mts and some steppes Lagus timidus Alti mts and some steppes Khangai mts Alti mts and some steppes Khangai mts Khangai mts Khangai mts Khangai mts Alti mts and some steppes Khangai mts Khangai mts Khangai mts Khangai mts Alti mts and some steppes Khangai mts		Microtus arvalis	Common Vole	
Allocricetulus curtatus Cricetulus barabensis Striped Hamster Cricetulus migratorius Cricetulus migratorius Cricetulus sokolovi 1 Phodopus campbelli Campbell's Hamster Cricetulus migratorius 1 Phodopus compbelli Campbell's Hamster Cricetulus migratorius 1 Phodopus compbelli Campbell's Hamster 1 Meriones meridianus Midday Jird Meriones meridianus Midday Jird Meriones unquiculatus Mongolian Jird 1 Rhombomys opimus Apodemus agrarius Apodemus garrius Apodemus peninsulae Apodemus penins		Myopus schisticolor	Wood Lemming	
Cricetulus barabensis Cricetulus migratorius Gray Hamster Cricetulus sokolovi 1 Phodopus campbelli 1 Phodopus campbelli 1 Phodopus campbelli 1 Phodopus cambelli 1 Phodopus roborovskii 1 Meriones meridianus 1 Meriones tamarascinus 1 Meriones tamarascinus 1 Meriones tamarascinus 1 Meriones unguiculatus 1 Mongolian Jird 1 Rhombomys opimus Apodemus agrarius Apodemus agrarius Apodemus uralensis Micromys minutus 1 Harvest Mouse Apodemus uralensis Micromys minutus 1 Harvest Mouse Apodemus uralensis Micromys minutus 1 Harvest Mouse Apodemus agralus Rattus norvegicus  X Myospalax aspalax North China Zokor Dryomys nitedula 1 Ochotona alpina 1 Ochotona dauurica Ochotona hoffmanni Ochotona pallasi 1 Lepus tolai 1 Lepus tolai		Ondatra zibethicus	Common Muskrat	
Cricetulus longicaudatus Cricetulus migratorius Cricetulus sokolovi Sokolov's Hamster Phodopus campbelli Campbell's Hamster Cricetulus sokolovi Apodepus roborovskii Roborovs's Hamster  Meriones meridianus Midday Jird Meriones tamarascinus Meriones tamarascinus Mongolian Jird Apodemus agrarius Apodemus agrarius Apodemus peninsulae Apodemus peninsulae Apodemus peninsulae Apodemus malensis Micromys minutus Harvest Mouse Rattus norvegicus Rottus norvegicus North China Zokor Dryomys nitedula  Ochotona dajuria  Ochotona dajuria Ochotona hoffmanni Ochotona pallasi Lepus tolai Lepus tolai  Loga tolai  Ochotona (Laguarda)  Apodemus peninsulae Apod		Allocricetulus curtatus	Mongolian Hamster	
Cricetulus migratorius Cricetulus sokolovi Sokolov's Hamster 1 Phodopus campbelli Campbell's Hamster 2 Phodopus roborovskii Roborovs's Hamster Meriones meridianus Midday Jird Meriones tamarascinus Meriones unquiculatus Mongolian Jird Apodemus agrarius Apodemus agrarius Apodemus peninsulae Apodemus uralensis Micromys minutus Harvest Mouse Rattus norvegicus Robus Myospalax aspalax Myospalax aspalax Myospalax psilurus Dryomys nitedula Ochotona alpina Ochotona dauurica Ochotona hoffmanni Ochotona plalasi Lepus tinidus Lepus tolai Mounda Midday Jird Mongolian Jird 44.5612, 96.8494  44.5612, 96.8494  44.5612, 96.8494  Alfola Pyla Micromys minutus  44.5612, 96.8494  Mountain Hamster Midday Jird Midday Jird Midday Jird Midday Jird Midday Jird Midday Jird Mouse Apodemus agrarius Alea Gestia Mouse Alea Mouse Apodemus agrarius Alea Mouse		Cricetulus barabensis	Striped Hamster	
Cricetulus sokolovi 1 Phodopus campbelli 2 Campbell's Hamster 46.8645, 103.4848 common in deserts  Meriones meridianus Meriones unguiculatus 1 Meriones unguiculatus 1 Rhombomys opimus Apodemus agrarius Apodemus uralensis Micromys minutus 1 Mus musculus Rattus norvegicus Rattus norvegicus North Chia Zokor Dryomys nitedula 1 Ochotona alpina 1 Ochotona pallasi Ochotona pallasi Ochotona pallasi 1 Lepus tolai 1 Clepus tinidus Apolemus or archivaria (As.8645, 103.4848 common in deserts 46.8645, 103.4848 common in deserts 48.8645, 103.4848 common in deserts 66.845, 103.4848 common in deserts 66.84 66.84 66.845, 103.4848 common in deserts 66.84 66.84 66.84 66.84 66.84 66.84 66.84 66.84 66.8		Cricetulus longicaudatus	Long-tailed Hamster	
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Ochotona hoffmanni     Hoffmann's Pika     very rare in woods north of Bayandelger       Ochotona hyperborea     Northern Pika     Hentiy mts       1 Ochotona pallasi     Pallas's Pika     Altai mts and some steppes       1 Lepus timidus     Mountain Hare     Khangai mts       1 Lepus tolai     Tolai Hare	1	Ochotona alpina	Alpine Pika	Khangai mts and Mongol Altai mts, 46.1014, 101.3219
Ochotona hyperborea     Northern Pika     Hentiy mts       1 Ochotona pallasi     Pallas's Pika     Altai mts and some steppes       1 Lepus timidus     Mountain Hare     Khangai mts       1 Lepus tolai     Tolai Hare	1	Ochotona dauurica	Daurian Pika	steppes
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	1	Lepus timidus	Mountain Hare	Khangai mts
46	1	Lepus tolai	Tolai Hare	
	46			

Top left: Kozlov's Pygmy Jerboa © Jurriën van Deijk. Top right.Great Gerbil, Great Gob A © Jurriën van Deijk. Bottom left: us © Jurriën van Deijk. Bottom right: Campbell's Desert Hamster, central steppes © Daan Drukker.

