

# The Altai

## *Central Asia's Golden Mountains*

### A Greentours Trip Report

27<sup>th</sup> June to 12<sup>th</sup> July 2005

Led by Vladimir Kolbintsev and Phil Benstead

Daily report by Phil Benstead

#### **Day 1      Monday 27<sup>th</sup> June      Journey to Almaty**

This morning saw half of us assemble at Amsterdam airport via various routes. Our onward flight was hassle-free and we then just had to negotiate Almaty airport and meet up with Vlad who quickly got us to the hotel and into our beds for a brief sleep. The short drive into town gave an indication of the recent boom in prosperity in this curious central Asian state.

#### **Day 2      Tuesday 28<sup>th</sup> June      Journey to Ust-Kamenogorsk**

An early start was required in order to catch our onward flight to Ust-Kamenogorsk – or so we thought. We met up with the remainder of the party, all four of whom had flown out earlier and looked decidedly perky compared to the recent arrivees. Although our flight was originally scheduled for 0815 we were eventually informed that it would be taking off at 1200! This meant a lengthy camp out at the airport but the time passed quickly and we were soon on our way.

Passing through the gate security we got onto a bus which took us past rows of immaculate, shiny Astana Air jets before reaching the end the row and dumping us out beside a decidedly tatty looking twin-prop plane! Despite any reservations we may have had it was actually a pleasant flight, allowing views of the desert and the many large lakes to be found between Almaty and Ust-Kamenogorsk. On arrival we had a short wait for our luggage during which time we had good views of black kite and heard a golden oriole fluting in nearby trees. The weather was warm and sunny, with a hint of thunder in the background. Andrei met us at the gate and whisked us off to have a bite to eat and register our passports with the police. Then it was off to the hotel for a rest, or a walk if you had the energy, before dinner. John distinguished himself on a walk along the river by finding a pair of azure tits that displayed themselves at an enviably close range.

### **Day 3      Wednesday 29<sup>th</sup> June      Journey through desert to Zaissan camp**

The birders were up for an hour before breakfast to chase up the azure tit but despite some earnest searching we failed to find the birds and headed back to the hotel. Breakfast was soon over and we climbed aboard the 4WD minibuses for the twelve-hour journey that was to take us to the camp on the shores of Lake Zaissan.

We broke the journey at numerous places. First stop was the first of many in the Kalbinsky Hills, here we saw our first meadow buntings, a fantastic adult imperial eagle, a black stork and got to grips with our first butterflies, many of which were familiar including ringlet and large heath but others that were a bit more spectacular including some truly enormous apolloes and the splendid *Hipparchia autonoe*.

A second stop at a lay-by produced clouds of butterflies that were interested in salts left by evaporated "lay-by fluids". Huge numbers of blues predominated and a number of fritillaries included high brown. The birders had in the mean time wandered off and had found fieldfare, Blyth's reed warbler, more meadow buntings, common rosefinches and a singing Cetti's warbler. Overhead a sub-adult steppe eagle allowed us to appreciate the structural differences between this species and imperial eagle. The botanists meanwhile had disappeared up a hill and came back looking satisfied.

Next stop was in some relict pine forest that was interesting but rather quiet although we heard tree pipit, watched a nice male red-backed shrike and enjoyed a roadside stand of *Dactylorhiza umbrosa*. A short way up the road we stopped again to admire a roadside clump of burning bush *Dictamnus angustifolia*.

Next stop was at a roadside yurt where both before and after a good lunch we searched for plants, butterflies and dragonflies. Butterflies here included northern chequered skipper, *Limenitis sidyi* and *hellmanni*. Golden orioles flew overhead busy feeding their young. Tearing ourselves away we headed for the ferry that was to take us over an arm of the lake. Before the ferry 'terminal' we stopped and searched the sand dunes for the endemic Zaissan toad-headed agama. We found them to be common here and even saw some territorial males curling up their tails and posturing. Also here we saw some black terns and our first steppe gulls.

After the ferry crossing (try the smoked bream) we drove onwards eventually hitting the dirt roads and the desert proper and driving off into the middle of nowhere. A few birds were seen en route, including black lark, but we had little time to stop at this stage and reached our camp at 2015 in time for a late dinner and bed.

### **Day 4      Thursday 30<sup>th</sup> June      Zaissan camp area and Kein Kerish**

We woke up to find the flags of Kazakstan and GB flying proudly over the camp. The birders had a look around before breakfast, Tony found the first of many white-winged larks and there were also a few shorelark around camp. The first white-tailed eagle was applauded but we were to see 3-4 regularly around the shoreline of the lake over the next few days.

After breakfast we headed west along the shoreline towards the peninsula, en route we found some gypsum (desert rose) outcrops and a small aster *Tragopogon marginifolia*. The walk out also produced our first Caspian terns and great black-headed gulls made occasional appearances overhead too. The small pools on the other landward side of the beach were chock-a-block with *Libellula quadrimaculata* and looked a picture covered in fringed water-lily *Nymphoides peltata*. Numerous other species of dragonfly and damselfly were also present and a juvenile bluethroat played hide-and-seek along the edge of the pool ashamed of his dowdy plumage. On the way back we headed through the desert, past a few semi-nomadic families that spend the summer grazing their animals here and searched in vain for sun-watcher. We did get a number of white-winged larks, black larks and short-toed larks for our trouble though.

Lunch was big and taken in the heat of the afternoon made us all a bit drowsy but before long we were back in the buses for the drive across the Kein Kerish. This spectacular rock formation was a large version of our campsite and looked superb from the top of the escarpment where we parked the vans. It was almost impossible to judge scale here as your brain becomes convinced that such a formation must be vast but when you get down you find that things are much smaller than they appear. Navigation is another matter though as the place is a maze. The birders spread out searching for the charismatic Mongolian finch (but sadly we could not find it) in the process we had good views of desert wheatear and John found us a family party of lesser whitethroats (subspecies *halimodendri*). On the valley floor mini-groves of *Nanophytum* delighted us all, with their ancient looking, bonsai-like appearance.

For Van 2 though the best was yet to come. Abandoned by Van 1 we pulled to a stop when Ruth noticed two sandgrouse flying up the road towards us. We all climbed out and they eventually flew on to drink at a pool. They looked good for Pallas's sandgrouse but the distance was too great to be sure. We headed towards them but re-filling took just a short time and soon they were on their way. Luckily they did not fly far and we slowly stalked them becoming more convinced of their identity until we were standing right next to the pair which fed unconcernedly nearby. The views at close range were stupendous and both Tony and Phil entered a state of bliss – for years this bird had occupied their imaginations and now finally it had been laid to rest. The rest of the crew looked on in amusement and enjoyed the excellent views of this beautiful bird. It was unfortunate that the other van was not present though and when we eventually found them along the way they were a little disappointed. But it was time to return for dinner – a spectacular affair of fish soup and fresh zander, pike and catfish (fried and boiled). How we ate.

At 2230 we staggered up the hill and bashed around in the dark for jerboas, things were pretty quiet but we managed poor views of one lesser jerboa, which bounced away rapidly and also connected with a corsac fox as we wound down the campsite wadi.

**Day 5                  Friday 1<sup>st</sup> July                  Lake Zaissan area**

Early morning risers searched in vain around the camp for the Mongolian finch, making do with the modest morning passage of waterfowl going west along the shoreline which this morning included three whooper swans and some tufted duck.

After breakfast we headed off in the vans but before we got going Brenda (who habitually walked the bumpy part of the track) came back to tell us she had just found an eagle owl. We all got out of the vans and walked up to view it – in fact there were two, both fledged chicks that walked around comically on a slope in full view. Fantastic!

Getting back into the vans we headed east along the lakeshore, stopping occasionally to puzzle over distant perched raptors, enjoying the flyby larks, a family of demoiselle cranes and a lovely pond partially covered in flowering fringed water-lily. Eventually we got to a small spit, parallel with the shore, which held a number of breeding terns and a roost of great black-headed gulls, Dalmatian pelicans and Caspian terns. White-winged terns occasionally appeared before heading west and amazingly two black-winged pratincoles flew close overhead also going west. Reptiles were good here too with steppe runner and a fine male sand lizard getting a lot of photographic attention.

At this point Van 2 got a puncture and as the spare was in Van 1 which had gone on ahead there was an enforced break during which time Tony managed to spot two gull-billed terns flying by. Andrei hitched off to catch up with Van 1 and before long we were back in action and checking out the wetland on the other peninsula (east of camp). As we drove in we stopped briefly to photograph the tiny little ringed plover chicks on the track and prayed that none strayed under the vehicle. These little chaps were fluffy little bundles with comical little wing stubs that they flapped occasionally when running. Leaving them to their parent's care we caught up with Van 1, which reported a nice selection of waders including black-tailed godwit and Kentish plover. Black-winged stilt was also present but by now we were late for lunch so we headed back to camp for another fine meal. The afternoon was spent on a mammoth checklist session that took 2.5 hours to complete and then relaxing around camp and enjoying the cool waters of the lake (a fantastic resource that we all used at least twice a day).

## **Day 6            Saturday 2<sup>nd</sup> July            to Markakol**

Today we packed our bags and said goodbye to Zaissan Lake and headed off on the ten hour journey to Markakol. This journey was to take us from the dry steppe desert to the taiga forest of the Markakol area – all in just 260 kilometres. It took some time to work our way out of the desert to the main road however as good birds kept popping up, A saker showed well on nearby telegraph poles before giving a brief demonstration of its aerial prowess. Van 2 screeched to a halt beside a female Pallas's sandgrouse and Brenda crept close to this confiding bird for a photo. Later on we stopped by Van 1, which had located three young Pallas's sandgrouse and nearby a fine male strutted his stuff. At last we had all seen this excellent species. Lastly we all managed views of southern grey shrike, which favoured areas of steppe desert with scattered bushes.

Eventually we came out on the main road and had a quick stretch (there was a great pair of steppe eagles here and a male Montagu's harrier) before facing the trials of bumpy tarmac. The desert dirt roads were much smoother! Driving on the habitat slowly got wetter and before long we could see the impressive Chinese dune system looming up ahead. The bird fauna changed here with roller and bee-eater becoming commonplace for a brief period and the botanists were re-animated as the relative paucity of their desert pickings was replaced with a plethora of new species.

At one point the road ran alongside the border and we stopped briefly by the border for photographs before being waved on by two Kazakh soldiers that materialised from some bushes. These dunes were fascinating, high (perhaps up to 300 metres) and set in an otherwise green landscape of hayfields! Climbing up towards the Marble Pass we could appreciate them better and see that they were part of a desert that stretched away into China. We had lunch near the top of the pass and enjoyed the relative cool and admired the many roadside plants, which included the delicate pink *Dianthus hoeltzeri*, stunning purple *Campanula glomerata* and the delicate bells of *Campanula volgensis*. Whilst mooching around here we disturbed a feisty adder, which quickly made itself scarce.

From here many of us elected to walk on up over the pass and be picked up later. The birders had a field day with the buntings, tracking down singing meadow buntings, more red-headed buntings and a great hybrid yellowhammer x pine bunting. The botanists enjoyed themselves greatly and even the uninitiated enjoyed the fine martagon lilies, more burning bush and a stand of *Clematis integrifolia*.

Moving on we made a few more stops in meadows filled with flowers, corncrake and quail called from deep cover and roadside wires held our first ortolan buntings. We also came to our first taiga village. Strikingly different, these villages are composed of wooden houses and incredibly are occupied year round despite winter temperatures that regularly fall as low as - 50°C. Eventually we had to drag ourselves away from all of this to get on to Markakol and settle in. Before long we all had beds in the house or yurt, had the bedding airing in the garden, and had started the sauna rota off. Nina was installed in the kitchen and busy preparing our dinner – all was well with the world.

## **Day 7          Sunday 3<sup>rd</sup> July          Markakol area**

This morning most of us were up and about before breakfast enjoying the birds close to the house. Lesser spotted woodpeckers called from the willow and birch around the lake and redstarts were busy feeding young in the village. After breakfast we headed out on a track around the lake. Andrei and his team had kindly erected some temporary bridges, which made the stream crossings at the start much easier.

The walk produced good views of five black storks feeding in the shallows and the lake held a number of duck including our first goldeneye. Woodland birds included many of the species that we had seen around the house but included spotted flycatcher, willow and long-tailed tits and for Vlad and Ruth a Siberian rubythroat! Many of us vowed to return in the morning and search for this avian jewel. During the walk the botanists got busy photographing the last of the flowering peonies and enjoying such regional delicacies as *Trollius altaicus*. A map butterfly was a pleasing find and was a first brood individual. During the walk we experienced our only real rain of the trip but only as occasional showers.

Eventually we headed back for another of Nina's enormous lunch spectacles that left us in a dangerously drowsy state so after a short rest we got back into action. We drove up to the top of the pass just outside Markakol (Van 2 scoring a fine corncrake) and walked up a track into the burnt forest. Here Vlad showed us some fine *Iris ruthenica*, and the birders had a field day with a spectacular male pine bunting and then Tony spotted a superb three-toed woodpecker. Ambling down hill we walked through flower-filled meadows and enjoyed the glorious sunny weather. After

an hour the vans picked up those that wanted to get back and explore the village and the remainder walked back all the way enjoying the late afternoon light and the fantastic birds and flowers. On our return the sauna was well up to temperature and everyone looked shiny and clean at dinner – a meal that consisted of the famous ‘internal’ salmon! ‘Big boy’ was pleased.

**Day 8            Monday 4<sup>th</sup> July            Cold Pass**

Today dawned well after rain overnight but we had to contend with a little more rain through the middle part of the day. Those out and about before breakfast included the indefatigable Tony who managed to locate a fine male Siberian rubythroat close to the house.

After breakfast we headed out on the walk up to the Cold Pass, along the way there were a few new things to look at including a family party of *Altai* lesser whitethroats found by John. These birds were undoubtedly different from the *halimodendri* birds we saw in the Zaissan area but the taxonomy of this group is currently rather complex. Climbing onwards we met intermittent showers and then a more serious downpour, which prompted a lunch stop under a large larch for most of the group. Eventually we reached the pass and looked down into a basin filled with grazing horses and cattle.

The flora here was excellent with large stands of blue *Dracocephalum grandiflorum* and the equally blue *Aquilegia glandulosa* being particularly eye-catching. Another favourite was the beautiful sprays of golden *Bupleurum*. We also had a single frog orchid here. The rain/hail had knocked all the butterflies from the sky and many were found resting on vegetation including the tiny *Mellicta centralasiae* and *Erebia theano*. Common lizards were easy to catch in the cold climate of the pass after rain.

We all walked back at differing speeds, Vlad lead the vanguard and they walked back swiftly spotting a small adder en route. The rearguard ambled back, getting superb views of a pair of Siberian rubythroats that were busy feeding young in the nest, and arriving back just as the sauna was free for the next intake. Over dinner Vlad dropped the bombshell that the bridge was down en route to the Burkhat Pass and that now we faced the full 12 hour drive right round the massif. This would mean staying at Maimir en route to Rakhmanovskie and accessing the Burkhat Pass from that side.

**Day 9            Tuesday 5<sup>th</sup> July            The Austrian Road**

Today dawned fine and sunny and stayed that way throughout the day. After breakfast most of us headed out in the vans. Tony and Brenda elected to walk the lake path again and turned up a few new birds for the site and one new bird for the trip – a sparrowhawk.

Driving a short way out of town we stopped briefly at the Mongolian-influenced cemetery for photographs and here we recorded our first scarce fritillary and pearl-bordered fritillary. Moving on we drove further stopping in some low-level hay meadows that produced ortolan bunting and a very close corncrake for John (it remained invisible sadly). Continuing on along an appalling road we

reached the junction of the Austrian road, which looked like a pond with a stream running into it! Before driving this 'road' we stopped to stretch our legs and enjoy a fantastic pair of Siberian rubythroats, more lesser spotted woodpecker and a number of new dragonflies including some rather familiar looking broad-bodied chasers.

In fact driving the Austrian Road was not too bad as the worst bits were done very slowly. En route we stopped to take a few scenic shots of the stunning alpine vistas and stopped again when a mole vole shuffled across the road. Phil captured the indignant beast and we all got photographs. By lunch time we had reached the top of the Alatau Pass and stopped for a picnic in the shade before wandering around a nearby craggy area and on down the road. Along the woodland edge in the shade near the crags we recorded the rather floppy *Atragene sibirica* – a white clematis. Nearby a Siberian chipmunk appeared briefly in a tree before scampering off. Wandering down the botanists had a wonderful time photographing various plants that were in great condition and in perfect light. Ian and Phil took their time and looked at butterflies as they potted downhill until the vans came to them up. As we drifted down the valley picking up the others we reflected on a splendid day in the field and anticipated the sauna to come.

### **Day 10      Wednesday 6<sup>th</sup> July      the big drive to Maimir**

We all elected to go for an early start this morning to get going on the big drive that had been imposed on us by circumstance. Today was a hot one and we spent most of our time in the vans. The total trip time was 13 hours and we bore the journey with stoic cheerfulness. The two ferry journeys broke up the trip into manageable chunks and allowed a great tea break complete with some very tasty pasties. 'Big Boy' had three!

Despite spending most of the time driving we did manage to see some wildlife. We stopped on the far side of the Marble Pass to photograph the white hollyhocks and stretch our legs. Van 2 also elected to stop briefly to look at a family party of black-bellied sandgrouse. Lunch was taken in the desert near the Zaissan camp turn-off in the near 40°C heat. As we barrelled onwards we all spared a thought for Sergei and Nina who were going direct through the desert on atrocious tracks in order to beat us to Maimir and set up our dinner and sauna. Eventually at 2000 we arrived at Maimir and settled into this delightful spot quickly and took dinner. Nina had beaten us by 1.5 hours and had everything in hand as usual.

### **Day 11      Thursday 7<sup>th</sup> July      Maimir to Rakhmanovskie**

On the road again this morning for the journey up to Rakhmanovskie. This time we took frequent stops and made a day of the relatively short and very scenic journey. The early part of the drive was typified by staggering stands of bugloss that literally covered swathes of distant slopes and roadside fields alike.

Next Vlad showed us a great little site that had huge numbers of musk orchid and the unusual yellow gentian *Halenia corniculata*. Ortolan buntings fed young nearby. A marshy pool yielded a moor frog to the swift-handed Vlad and black darter and yellow-winged darter patrolled their

territories. The nearby stream produced a pair of garganey and an unusual blue-eyed species of damselfly that might take some time to identify!

Driving on we left the tarmac and started climbing uphill along the Buktharma Valley. The Buktharma was white – a glacial river. Along the valley we saw some fantastic poplar admirals and brown hawkers zoomed along the road. Lunch was taken under the shade of some pines and nearby black redstart fed young and Altai lesser whitethroat called from the cliffs. Moving ever upwards we joined the smaller Beryl River and continued our climb until one of the vans over-heated and we had an enforced stop. Vlad found a dead Altai pika and its relatives taunted us from the scree. About 7 km out of Rakhmanovskie we stopped to enjoy our first view of Belucha – the highest peak in the Altai.

Our last stop before arrival was at small lake where we saw a number of female and first-year white-winged scoters and some elusive nutcrackers called from nearby trees. Rakhmanovskie was just round the corner and we were soon driving through the ramshackle resort to our cottage. Once installed and after a welcome cup of tea most of us headed down to the lake. Here we found a spectacular male white-winged scoter amongst a number of females and first-years. The number of insects here was incredible and presumably provided food for the equally abundant Central Asian toads that were hopping about all over the place. Tired and starting to get targetted by the abundant mosquitoes we headed back for another of Nina's fabulous soups.

## **Day 12      Friday 8<sup>th</sup> July      Radostniy Pass and Rakhmanovskie area**

Phil and Tony's pre-breakfast walk produced a few birds including two drumming black woodpecker and a splendid example of its smaller congener the wryneck. After breakfast we all headed uphill in splendid sunny conditions for our assault on the nearby Radostniy Pass. Actually it was a pleasant walk. The birding rearguard had a great time. Tony spotted a fine dark phase booted eagle, crossing another bird off our wish-list. Another wryneck appeared but best of all was a fantastic singing male Pallas's grasshopper warbler. Sitting out in the open and singing exposing its tertials and tail for all to see. Tony who had spotted the bird had refused to believe Phil's diagnosis and had to be coaxed to the scope. As we climbed higher we became aware of the alarm calls of the Altai pika and some of us had scope views of this diminutive mammal with outsized ears.

The botanists meanwhile were enjoying some quality wildflower meadows, they looked stunning (the meadows). New plants appeared on the climb up including the lovely violet gentian *Swertia* and *Delphinium elata*. The lovely yellow pansy *Viola altaica* also made an appearance. After three hours most of us were approaching the pass and were eventually greeted with a stunning vista – the centrepiece was the twin peaks of Belucha and from up here we could see into Russia and Mongolia. Up on the saddle we found new birds (water pipit and poor views of plain mountain finch) and many new plants including *Gentiana grandiflora*, Snowdon lily, our first flowering *Bergenia* and we all commented on the lovely dark sepals of *Ranunculus altaica*.

Storm clouds gathered and sent down a bit of warning hail so we all headed down at 1230 for lunch, the rain holding off long enough for us to get down safely. After lunch we had a short break before some of us went on a short walk with Vlad along the shores of the lake. The highlight of this walk was Peter's discovery of the tiny orchid *Listera cordata* – a denizen of mossy forest floors. Whilst



out we were caught in an impressive hail storm and took shelter under some trees and watched the hail smashing into the lake and pinging all around us. Eventually the shower passed and we returned to the cottage to find it had not even rained there.

### **Day 13      Saturday 9<sup>th</sup> July      Rakhmanovskie to Maimir via Burkhat Pass**

Another day in the vans as we headed downhill from Rakhmanovskie and back up the Burkhat Pass before going back down to the main road and on to Maimir. Quite a trek and another hot day but the Pass was great and well worth the effort.

On the way down the hill from Rakhmanovskie we had two family parties of hazelhen, which thrilled the birding contingent! The journey down took longer than anticipated and so we ended up lunching at the foot of the Burkhat Pass. Here the botanists found lovely areas of *Veratrum nigra* and other new plants. Climbing onwards, stopping occasionally to let the vans cool we finally made it to the top of the pass. We had come the long way round to this site and were determined to enjoy it!

Climbing to the snow patches was not exactly effortless but we enjoyed the high density of stunning bluethroats and as usual the flowers were abundant and coloured the meadows. Far in the distance Belucha shone in the sun – it was quite a view. Battling through occasional patches of dwarf birch we finally reached the snow patch and a nearby rock face held some interesting species including *Anemone altaica*. From this craggy spot Phil located some plain mountain finches and by shouting loudly managed to guide Tony along a ridge and on to them from long range. Hardly the most exciting bird but they all count. Eventually though it was time to leave and head for Maimir. We were all pleased when it hove into view and as usual we flushed quail as we drove up the access track.

### **Day 14      Sunday 10<sup>th</sup> July      Maimir and journey to Ust-Kamenogorsk**

Despite some spots of rain at the start we had a hot and humid climb up the valley behind our accommodation at Maimir. Tatiyana had sent us off with a real big breakfast and afterwards we had said goodbye to Nina and Sergei. The walk produced some great butterflies including a second brood map butterfly, black hairstreak, scarce copper and yet another fantastic poplar admiral. Birds were obvious too up here with hobbies buzzing around overhead at Maimir and a large colony of Pacific swifts evident about half way up the valley. Also here were two crag martins and a singing Siberian rubythroat that refused to show itself. The botanists seemed to enjoy themselves but got away from the trailing pack of bird/butterfly types. Eventually, and far too soon, it was time to head back for lunch and the long drive back to Ust-Kamenogorsk. Ian had spent part of the morning with Xenya talking to a local bee-keeper and related his experience to us over lunch.

The drive back was predictably hot, tough and very windy. The lack of cambers on many of the bends and the dense traffic making it especially tedious. We did enjoy, in passing, the impressive stands of back-lit white hollyhocks and the density of roadside honey stands indicated the

importance of this particular crop in the area. We made few stops however as we barrelled back into civilisation.

**Day 15      Monday 11<sup>th</sup> July      Ust-Kamenogorsk to Almaty**

Tony headed out before breakfast today in the hope of connecting with John's azure tits but returned dejected. After breakfast we packed our bags and headed for the airport. Nina met us at the steps of the hotel with yet more going away gifts. At the airport we said goodbye to Andrei, Valerie and Xenya – they really had looked after us very well. So it was back into the transport system and we droned off to Astana. Here John and Kerstin had a bag go astray but after Vlad had steered them through the reporting process we were on again and checking into our flight back to Almaty. We arrived in time to spend some time relaxing before the last supper and the final checklist session.

**Day 16      Tuesday 12<sup>th</sup> July      journey to UK**

We all said goodbye to Vlad at the airport and had a trouble-free if rather slow progression to the gate and onto our flight back to Amsterdam. At Amsterdam we all said goodbye and wished each other safe onward journeys.

## Systematic List Number 1      Birds

Itinerary:

28/6	Almaty to Ust-Kamenogorsk (U-K)
29/6	Ust-Kamenogorsk to Lake Zaissan (LZ)
30/6	Lake Zaissan (peninsula wetland and Kein-Kerish)
1/7	Lake Zaissan
2/7	Lake Zaissan to Markakol (MK)
3/7	Markakol
4/7	Cold Pass (Markakol)
5/7	Alatay Pass (Austrian Road)
6/7	Markakol to Maimir
7/7	Maimir to Rakhmanovskie (RK)
8/7	Radostniy Pass (RK)
9/7	Rakhmanovskie to Burkhat Pass and onto Maimir
10/7	Maimir and on to Ust-Kamenogorsk
11/7	Ust-Kamenogorsk to Almaty.

Records in square brackets indicate that record did not involve a sighting (usually heard only but occasional records generated by sign, egg feathers or droppings). Number of days each species was recorded is expressed as a fraction of the total number of days spent in field (14).

<b>Great crested grebe</b>	<i>Podiceps cristatus</i>	Small numbers at Lake Zaissan. 3/14
<b>Dalmatian pelican</b>	<i>Pelecanus crispus</i>	Up to 13 a day at Lake Zaissan. 3/14
<b>Great cormorant</b>	<i>Phalacrocorax carbo</i>	1-2 daily at Lake Zaissan. 5/14
<b>Great egret</b>	<i>Casmerodius albus</i>	Single en route to Lake Zaissan near ferry terminal. 1/14
<b>Grey heron</b>	<i>Ardea cinerea</i>	Singles at ferry crossing on Lake Zaissan. 2/14
<b>Black stork</b>	<i>Ciconia nigra</i>	One in Kalbinsky Hills. Up to 5 seen daily on Markakol. 5/14
<b>Whooper swan</b>	<i>Cygnus cygnus</i>	LZ – three birds flying west along shoreline over camp one morning. 1/14
<b>Greylag goose</b>	<i>Anser anser</i>	LZ – four birds on one day. 1/14
<b>Ruddy shelduck</b>	<i>Tadorna ferruginea</i>	LZ area – small numbers. 5/14
<b>Common shelduck</b>	<i>T. tadorna</i>	Single at Lake Zaissan. 1/14
<b>Mallard</b>	<i>Anas platyrhynchos</i>	Widespread in small numbers. 9/14
<b>Gadwall</b>	<i>A. strepera</i>	Noted at Lake Zaissan. 2/14
<b>Common teal</b>	<i>A. crecca</i>	Small numbers at ferry crossing on Lake Zaissan. 1/14
<b>Garganey</b>	<i>A. querquedula</i>	Two in boggy area between Maimir and RK. 1/14
<b>Eurasian wigeon</b>	<i>A. penelope</i>	Small numbers on Markakol. 1/14
<b>Tufted duck</b>	<i>Aythya fuligula</i>	Small numbers at Lake Zaissan and Markakol. 3/14
<b>Goldeneye</b>	<i>Bucephala clangula</i>	Small numbers at Markakol and RK. 5/14
<b>White-winged scoter</b>	<i>Melanitta deglandi</i>	Small numbers of East Asian race <i>stejnegeri</i> at RK. 3/14
<b>Osprey</b>	<i>Pandion haliaetus</i>	Up to 3 on the first day around Markakol. Single between Maimir and U-K. 2/14
<b>Black kite</b>	<i>Milvus migrans</i>	Small numbers daily. Large concentration at Markakol. 13/14
<b>Montagu's harrier</b>	<i>Circus pygargus</i>	Widespread in small numbers. 7/14
<b>Hen harrier</b>	<i>C. cyanea</i>	MK – single on Austrian Road. Female at Burkhat Pass and a male at Maimir. 3/14
<b>Northern sparrowhawk</b>	<i>Accipiter nisus</i>	MK – single. Buktharma Valley – single. 2/14
<b>Upland buzzard</b>	<i>Buteo hemilasius</i>	Small numbers around LZ. 2/14
<b>Long-legged buzzard</b>	<i>B. rufinus</i>	Small numbers around LZ. 3/14

<b>Eurasian buzzard</b>	<i>B. buteo</i>	Small numbers throughout. 9/14
<b>Steppe eagle</b>	<i>Aquila rapax</i>	Single in the Kalbinsky Hills. Two birds in desert around LZ. Another seen attacking a souslik en route to RK. 4/14
<b>Imperial eagle</b>	<i>A. heliaca</i>	Single adult birds in Kalbinsky Hills and singles en route to RK and Maimir. 3/14
<b>Booted eagle</b>	<i>Hieraetus pennatus</i>	RK – single dark phase bird. 1/14
<b>White-tailed eagle</b>	<i>Haliaeetus albicilla</i>	3-4 daily at LZ. 3/14
<b>Saker falcon</b>	<i>Falco cherrug</i>	Three birds noted in desert around LZ. 3/14
<b>Northern hobby</b>	<i>F. subbuteo</i>	Single at LZ. Common around Maimir. Several at Astana airport. 6/14
<b>Lesser kestrel</b>	<i>F. naumanni</i>	Several colonies noted whilst driving around. 5/14
<b>Common kestrel</b>	<i>F. tinnunculus</i>	Widespread. 6/14
<b>[Black grouse]</b>	<i>Tetrao tetrix</i>	Feather found at MK. 1/14
<b>Hazel grouse</b>	<i>Tetrastes bonasia</i>	Two family parties on way down from RK. 1/14
<b>Common quail</b>	<i>Coturnix coturnix</i>	Commonly heard in alpine meadows and hay fields lower down. Singles seen by lead bus on track into Maimir. 11/14
<b>Demoiselle crane</b>	<i>Anthropoides virgo</i>	Present in small numbers in the desert around LZ. 4/14
<b>Corncrake</b>	<i>Crex crex</i>	Heard calling from alpine meadows and hay fields. One flushed near MK. 6/14
<b>Moorhen</b>	<i>Gallinula chloropus</i>	LZ – small numbers. 1/14
<b>Eurasian coot</b>	<i>Fulica atra</i>	LZ – small numbers. 1/14
<b>Black-winged pratincole</b>	<i>Glareola nordmanni</i>	LZ – two birds flying west overhead were a trip highlight for some of us. 1/14
<b>Little ringed plover</b>	<i>Charadrius dubius</i>	Common around LZ and surrounding areas. 4/14
<b>Kentish plover</b>	<i>C. alexandrinus</i>	Small numbers around LZ. 2/14
<b>Northern lapwing</b>	<i>Vanellus vanellus</i>	Seen daily around LZ, some large flocks of non-breeders encountered. Also recorded between Markakol and Maimir. 4/14
<b>Black-winged stilt</b>	<i>Himantopus himantopus</i>	2 at Lake Zaissan. 1/14
<b>Oystercatcher</b>	<i>Haematopus ostralegus</i>	Small numbers at Lake Zaissan. 2/14
<b>Green sandpiper</b>	<i>Tringa ochropus</i>	Small numbers daily at Lake Zaissan. 3/14
<b>Common redshank</b>	<i>T. totanus</i>	Small numbers daily at Lake Zaissan and also seen between Markakol and Maimir. 4/14
<b>Common sandpiper</b>	<i>Actitis hypoleucos</i>	Small numbers throughout. 5/14
<b>Snipe sp.</b>	<i>Gallinago</i> sp.	LZ – single distant bird. 1/14
<b>Black-tailed godwit</b>	<i>Limosa limosa</i>	LZ – 11 birds on one day. 1/14
<b>Eurasian curlew</b>	<i>Numenius arquatus</i>	2 flying west along shores of Lake Zaissan. Another displaying bird on plateau near Marble Pass. 2/14
<b>Great black-headed gull</b>	<i>Larus ichthyaetus</i>	Encountered frequently at LZ, with max roosting flock of 40+. Also small numbers at MK. 3/14
<b>Black-headed gull</b>	<i>L. ridibundus</i>	Small numbers around LZ. Also small numbers at MK. 6/14
<b>Steppe gull</b>	<i>L. barabensis</i>	Common at LZ. 5/14
<b>White-winged black tern</b>	<i>Chlidonias leucopterus</i>	Small numbers on one day at LZ. 1/14
<b>Gull-billed tern</b>	<i>Gelochelidon nilotica</i>	2 birds flying west along shoreline of LZ. 1/14
<b>Caspian tern</b>	<i>Hydroprogne caspia</i>	Small numbers at LZ. 2/14
<b>Common tern</b>	<i>Sterna hirundo</i>	Small numbers at U-K and LZ. 6/14
<b>Little tern</b>	<i>Sterna albifrons</i>	Small numbers at LZ. 2/14
<b>Black-bellied sandgrouse</b>	<i>Pterocles orientalis</i>	Two birds on two days at LZ. Three seen in same area en route to Maimir from Markakol. 3/14
<b>Pallas's sandgrouse</b>	<i>P. paradoxus</i>	A fine pair watched at close range on the road to Kein-Kerish. Another five seen on our way out of the desert on the last day including four in the same area.
<b>Feral dove</b>	<i>Columba livia</i>	Ubiquitous. 13/14
<b>Rufous turtle dove</b>	<i>Streptopelia orientalis</i>	Widespread in small numbers. 10/14

<b>Common cuckoo</b>	<i>C. canorus</i>	Widespread in small numbers, hepatic female seen at MK. 7/14.
<b>Northern eagle owl</b>	<i>Bubo bubo</i>	LZ – an adult at dusk and two recently fledged youngsters the next morning near the campsite. 2/14
<b>European nightjar</b>	<i>Caprimulgus europaeus</i>	LZ – single over camp at dusk on the first night. 1/14
<b>Eurasian swift</b>	<i>Apus apus</i>	Large colonies at LZ campsite. 4/14
<b>Pacific swift</b>	<i>A. pacificus</i>	Four on first evening at RK, just two next day. Large colony at Maimir. 3/14
<b>European roller</b>	<i>Coracias garrulus</i>	Noted in small numbers along Chinese border en route to and from Markakol. 2/14
<b>European bee-eater</b>	<i>Merops apiaster</i>	Noted in reasonable numbers (50+) along Chinese border en route to Markakol. Small numbers elsewhere. 4/14
<b>Hoopoe</b>	<i>Upupa epops</i>	Noted in small numbers whilst driving. 3/14
<b>Wryneck</b>	<i>Jynx torquilla</i>	RK – two birds. 1/14
<b>[Black woodpecker]</b>	<i>Dryocopus martius</i>	Heard at RK and plenty of sign here too. 1/14
<b>Lesser spotted woodpecker</b>	<i>D. minor</i>	Common in Markakol area with a number of active nests discovered. 3/14
<b>Three-toed woodpecker</b>	<i>Picoides tridactylus</i>	MK – single on first day in area of burnt forest. 1/14
<b>Sand martin</b>	<i>Riparia riparia</i>	Widespread – especially common at LZ. 6/14
<b>Crag martin</b>	<i>Ptyonoprogne rupestris</i>	Two in gorge at Maimir. 1/14
<b>Barn swallow</b>	<i>Hirundo rustica</i>	Widespread in small numbers. 11/14
<b>House martin</b>	<i>Delichon urbica</i>	Single at MK, noted also between Maimir and U-K. 2/14
<b>Short-toed lark</b>	<i>Calandrella cinerea</i>	Common in steppe desert at LZ. 4/14
<b>[Lesser short-toed lark]</b>	<i>C. rufescens</i>	LZ – identified on voice but never seen well. 1/14
<b>White-winged lark</b>	<i>Melanocorypha leucoptera</i>	Up to 25 daily at LZ. 3/14
<b>Black lark</b>	<i>M. yeltonensis</i>	Encountered in pockets in steppe desert around LZ. 4/14
<b>Shore lark</b>	<i>Eremophila alpestris</i>	Small numbers daily around campsite at LZ. 2/14
<b>Skylark</b>	<i>Alauda arvensis</i>	LZ – commonly heard though hard to see well. Recorded in small numbers elsewhere. 8/14
<b>Tawny pipit</b>	<i>A. campestris</i>	LZ – common. 4/14
<b>Tree pipit</b>	<i>A. trivialis</i>	Widespread. 10/14
<b>Water pipit</b>	<i>A. spinoletta</i>	RK – small numbers. 2/14
<b>Yellow wagtail</b>	<i>Motacilla flava</i>	Widespread – only race identified was <i>beema</i> . 6/14
<b>Grey wagtail</b>	<i>M. cinerea</i>	Ubiquitous along mountain streams. 9/14
<b>Masked wagtail</b>	<i>M. personata</i>	Widespread in small numbers. 14/14
<b>Red-tailed shrike</b>	<i>Lanius phoenicuroides</i>	Small numbers at LZ and MK. 2/14
<b>Red-backed shrike</b>	<i>L. collurio</i>	Widespread in small numbers. 8/14
<b>Lesser grey shrike</b>	<i>L. minor</i>	Noted whilst driving between sites. 3/14
<b>Southern grey shrike</b>	<i>Lanius meridionalis</i>	Birds of the race <i>pallidirostris</i> noted at LZ in small numbers. 3/14
<b>Golden oriole</b>	<i>Oriolus oriolus</i>	Heard in U-K. Seen in Kalbinsky Hills and along the Austrian Road (MK). 5/14
<b>European starling</b>	<i>Sturnus vulgaris</i>	Widespread. 10/14
<b>Rose-coloured starling</b>	<i>S. roseus</i>	Frequently encountered, sometimes in large numbers, in desert area around LZ. 5/14
<b>Indian myna</b>	<i>Acridotheres tristis</i>	Almaty. 2/14
<b>Magpie</b>	<i>Pica pica</i>	Widespread. 11/14
<b>Spotted nutcracker</b>	<i>Nucifraga caryocatactes</i>	Single en route to RK. Common around cottage at RK. 3/14
<b>Jackdaw</b>	<i>Corvus monedula</i>	Widespread, often seen when driving between sites. 5/14
<b>Rook</b>	<i>C. frugilegus</i>	Widespread, often seen when driving between sites. 7/14
<b>Carrion crow</b>	<i>C. corone</i>	Seen most days. 12/14
<b>Hooded crow</b>	<i>C. cornix</i>	Small numbers in U-K. 4/14
<b>Common raven</b>	<i>C. corax</i>	RK. 2/14

<b>White-throated dipper</b>	<i>Cinclus cinclus</i>	Maimir. 1/14
<b>Cetti's warbler</b>	<i>Cettia cetti</i>	Heard in the Kalbinsky Hills and from Marble Pass. 3/14
<b>Pallas's grasshopper warbler</b>	<i>Locustella certhiola</i>	RK – single male on way up to Radostniy Pass, singing from top of false helleborine. 1/14
<b>Blyth's reed warbler</b>	<i>Acrocephalus dumetorum</i>	Widespread and common in suitable bushy and wooded habitat. 8/14
<b>[Great reed warbler]</b>	<i>A. arundinaceus</i>	LZ – birds heard around ferry terminal were probably this species. 1/14
<b>Whitethroat</b>	<i>Sylvia communis</i>	Widespread on scrubby slopes. 9/14
<b>Hume's whitethroat</b>	<i>S. althaea</i>	Family party noted on the Cold Pass walk (MK). Others seen and heard en route to RK. 5/14
<b>Lesser whitethroat</b>	<i>S. curruca</i>	Family party encountered at Kein-Kerish (LZ) were of the subspecies <i>halimodendri</i> . 1/14
<b>Chiffchaff</b>	<i>Phylloscopus collybita</i>	Small numbers in MK and RK. 7/14
<b>Greenish warbler</b>	<i>P. trochiloides</i>	Widespread and always common in suitable habitat. 11/14
<b>Hume's warbler</b>	<i>P. humei</i>	RK – small numbers. 2/14
<b>Spotted flycatcher</b>	<i>Muscicapa striata</i>	MK – small numbers daily. 4/14
<b>Siberian stonechat</b>	<i>Saxicola maura</i>	Widespread. 10/14
<b>Northern wheatear</b>	<i>Oenanthe oenanthe</i>	Widespread. 8/14
<b>Pied wheatear</b>	<i>O. pleshanka</i>	LZ – common. 5/14
<b>Isabelline wheatear</b>	<i>O. isabellinus</i>	LZ – small numbers. 5/14
<b>Desert wheatear</b>	<i>O. deserti</i>	LZ – two pairs noted. 2/14
<b>[Nightingale]</b>	<i>Luscinia megarhynchus</i>	Heard in the Kalbinsky Hill area. 3/14
<b>Bluethroat</b>	<i>L. svecica</i>	LZ – single juvenile. Very common breeding bird at Burkhat Pass. 2/14
<b>Siberian rubythroat</b>	<i>L. calliope</i>	MK – small numbers daily. Also heard at Maimir. 4/14
<b>Common redstart</b>	<i>Phoenicurus phoenicurus</i>	MK – common breeding bird in the village, also at RK. 7/14
<b>Black redstart</b>	<i>P. ochruros</i>	Buktharma valley. Small numbers at RK. 2/14
<b>Black-throated thrush</b>	<i>Turdus atrogularis</i>	MK – small numbers on two days. 2/14
<b>Fieldfare</b>	<i>T. pilaris</i>	Scattered in small numbers. 5/14
<b>Mistle thrush</b>	<i>T. viscivorus</i>	MK – two birds. RK – small numbers. 5/14
<b>Long-tailed tit</b>	<i>Aegithalos caudatus</i>	MK, Maimir – small numbers daily. 4/14
<b>Great tit</b>	<i>Parus major</i>	Recorded in U-K, Kalbinsky Hills and MK. 7/14
<b>Azure tit</b>	<i>P. cyanus</i>	U-K – two birds along small river on first morning. (JP)
<b>Willow tit</b>	<i>P. montanus</i>	Widespread in woodland. 8/14
<b>Nuthatch</b>	<i>Sitta europaea</i>	MK, RK – common. 5/14
<b>House sparrow</b>	<i>Passer domesticus</i>	Present in built up areas throughout. 11/14
<b>Tree sparrow</b>	<i>P. montanus</i>	Widespread. 11/14
<b>[Brambling]</b>	<i>Fringilla montifringilla</i>	Heard at MK.
<b>Chaffinch</b>	<i>F. coelebs</i>	Small numbers in U-K. 2/14
<b>Goldfinch</b>	<i>Carduelis carduelis</i>	MK, RK – <i>caniceps</i> race common at both these sites. 8/14
<b>Linnet</b>	<i>Acanthis cannabina</i>	Recorded in small numbers in the Kalbinsky Hills, MK and RK area. 8/14
<b>Hodgson's mountain finch</b>	<i>Leucosticte nemoricola</i>	Birds flying over Radostniy Pass were probably this species. Two birds on Burkhat Pass. 2/14
<b>Scarlet rosefinch</b>	<i>Carpodacus erythrinus</i>	Common in suitable habitat. 10/14
<b>[Common crossbill]</b>	<i>Loxia curvirostra</i>	Heard on two dates in MK area. 2/14
<b>'Northern' bullfinch</b>	<i>Pyrrhula pyrrhula</i>	A pair at RK. 1/14
<b>Pine bunting</b>	<i>Emberiza leucocephala</i>	MK – single bird on first day. The Marble Pass area ostensibly had singing yellowhammer but all those examined proved to be hybrids with this species. 1/14
<b>Meadow bunting</b>	<i>E. cioides</i>	Small numbers in the Kalbinsky Hill, Marble Pass area (MK). 2/14
<b>Ortolan bunting</b>	<i>E. hortulana</i>	Small numbers in MK and Maimir area. 5/14

<b>Red-headed bunting</b>	<i>E. bruniceps</i>	Recorded en route to LZ, frequent along lakeshore at LZ and also en route to MK. 7/14
<b>Reed bunting</b>	<i>E. schoeniclus</i>	Total of three birds at LZ. 2/14

## Systematic list Number 2      Butterflies

Itinerary:

28/6	Almaty to Ust-Kamenogorsk (U-K)
29/6	Ust-Kamenogorsk to Lake Zaissan (LZ)
30/6	Lake Zaissan (peninsula wetland and Kein-Kerish)
1/7	Lake Zaissan
2/7	Lake Zaissan to Markakol (MK)
3/7	Markakol
4/7	Cold Pass (Markakol)
5/7	Alatay Pass (Austrian Road)
6/7	Markakol to Maimir
7/7	Maimir to Rakhmanovskie (RK)
8/7	Radostniy Pass (RK)
9/7	Rakhmanovskie to Burkhat Pass and onto Maimir
10/7	Maimir and on to Ust-Kamenogorsk
11/7	Ust-Kamenogorsk to Almaty.

Number of days each species was recorded is expressed as a fraction of the total amount of days spent in field (14).

### Papilionidae

<b>Swallowtail</b>	<i>Papilio machaon</i>	Widespread. 6/14
<b>Scarce swallowtail</b>	<i>Iphiclides podalirius</i>	Only at yourt stop in Kalbinsky Hills. 1/14
<b>Apollo</b>	<i>Parnassius apollo</i>	Widespread. 5/14
<b>Small apollo</b>	<i>P. phoebus</i>	Burkhat and Maimir. 2/14

### Pieridae

<b>Orange-tip</b>	<i>Anthocharis cardamines</i>	Widespread. 8/14
<b>Black-veined white</b>	<i>Aporia crataegi</i>	Widespread. 9/14
<b>Eastern pale clouded yellow</b>	<i>Colias erate</i>	Widespread. 4/14
<b>Brimstone</b>	<i>Gonepteryx rhamni</i>	Scattered. 3/14
<b>Wood white</b>	<i>Leptidea sinapsis</i>	Widespread. 7/14
<b>Green-veined white</b>	<i>Pieris napae</i>	Scattered. 3/14
<b>Small white</b>	<i>P. rapae</i>	Only recorded in Zaissan. 1/14
<b>Eastern Bath white</b>	<i>Pontia edusa</i>	Scattered. 4/14

### Lycaenidae

<b>Black hairstreak</b>	<i>Nordmannia pruni</i>	Several on track up valley at Maimir. 1/14
<b>Scarce copper</b>	<i>Lycaena virgaureae</i>	Recorded in Maimir area. 2/14
<b>Holly blue</b>	<i>Celastrina argiolus</i>	Only at yourt stop en route to Zaissan. 1/14
<b>Osiris blue</b>	<i>Cupido osiris</i>	Markakol. 1/14
<b>Small blue</b>	<i>C. minimus</i>	Markakol. 2/14
<b>Green-underside blue</b>	<i>Glaucopsyche alexis</i>	Yourt stop and Markakol. 3/14
<b>Silver-studded blue</b>	<i>Plebeius argus</i>	Widespread. 5/14
<b>Amanda's blue</b>	<i>Agrodiaetus amandus</i>	Yourt stop en route to Zaissan. 1/14
<b>Damon blue</b>	<i>A. damon</i>	Noted at Maimir. 1/14
<b>Common blue</b>	<i>Polyommatus icarus</i>	Overlooked? 1/14



## Nymphalidae

Silver-washed fritillary	<i>Argynnis paphia</i>	Markakol. 1/14
High brown fritillary	<i>A. adippe</i>	Austrian Road. 1/14
Dark green fritillary	<i>A. aglaja</i>	Widespread. 6/14
Cardinal	<i>A. pandora</i>	Kalbinsky Hills. 1/14
Pearl-bordered fritillary	<i>Clossiana euphrosyne</i>	Markakol. 2/14
Queen of Spain fritillary	<i>Issoria lathonia</i>	Scattered. 3/14
Lesser marbled fritillary	<i>Brenthis ino</i>	Markakol. 1/14
Spotted fritillary	<i>Melitaea didyma neera</i>	Scattered. 3/14
Assmann's fritillary	<i>Mellicta britomartis</i> <i>M. centralasiae</i>	Lunch stop en route to Burkhat Pass. 1/14 Markakol. 2/14
Scarce fritillary	<i>Euphydryas maturna</i>	Markakol and Maimir. 2/14
Hungarian glider	<i>Neptis rivularis</i>	Widespread. 7/14
Poplar admiral	<i>Limenitis populi</i> <i>L. sydyi</i> <i>L. helmanni</i>	Favours river valleys and wet areas. 4/14 Yourt stop. 1/14 Yourt stop. 1/14
Yellow-legged tortoiseshell	<i>Nymphalis xanthomelas</i>	Maimir area. 2/14
Small tortoiseshell	<i>Aglais urtica</i>	Widespread. 10/14
Peacock	<i>Inachis io</i>	Markakol. 1/14
Painted lady	<i>Cynthia cardui</i>	Markakol. 1/14
Comma	<i>Polygonum c-album</i>	RK and Maimir. 2/14
Map butterfly	<i>Araschnia levana</i>	Yourt stop, Markakol and Maimir. 3/14
<b>Satyridae</b>		
Hermit	<i>Chazara briseus</i>	Markakol. 1/14
Chestnut heath	<i>Coenonympha glycerion</i> <i>C. amaryllis</i>	Kalbinsky Hills and Markakol. 2/14 Lunch stop en route to Burkhat Pass. 1/14
Scotch argus	<i>Erebia aethiops</i> <i>E. theano</i>	Buktharma Valley. 1/14 Markakol and RK. 5/14
Ringlet	<i>Aphantopus hyperantus</i>	Widespread. 5/14
Dusky meadow brown	<i>Hyponephele lycaon</i>	Widespread. 5/14
Large wall brown	<i>Lasiommata maera</i> <i>Hipparchia autonoe</i>	Cold Pass (MK). 1/14 Kalbinsky Hills. 1/14
<b>Hesperiidae</b>		
Mallow skipper	<i>Carcharodes alceae</i>	Marble Pass. 1/14
Large chequered skipper	<i>Heteropterus morpheus</i>	Yourt stop. 1/14
Large skipper	<i>Ochlodes venatus</i>	Markakol. 2/14
Essex skipper	<i>Thymelicus lineloa</i>	Widespread. 5/14

## Systematic list Number 3      Odonata

Itinerary:

28/6	Almaty to Ust-Kamenogorsk (U-K)
29/6	Ust-Kamenogorsk to Lake Zaissan (LZ)
30/6	Lake Zaissan (peninsula wetland and Kein-Kerish)
1/7	Lake Zaissan
2/7	Lake Zaissan to Markakol (MK)
3/7	Markakol
4/7	Cold Pass (Markakol)
5/7	Alatay Pass (Austrian Road)
6/7	Markakol to Maimir
7/7	Maimir to Rakhmanovskie (RK)
8/7	Radostniy Pass (RK)
9/7	Rakhmanovskie to Burkhat Pass and onto Maimir
10/7	Maimir and on to Ust-Kamenogorsk
11/7	Ust-Kamenogorsk to Almaty.

Number of days each species was recorded is expressed as a fraction of the total number of days spent in field (14).

<b>Red-eyed damselfly</b>	<i>Erythromma najas</i>	LZ
<b>Common blue damselfly</b>	<i>Enallagma cyathigerum</i>	Widespread.
<b>Blue-tailed damselfly</b>	<i>Ischnura elegans</i>	LZ
<b>“blue-eyed damselfly”</b>	??	Noted in large numbers at boggy area between Maimir and RK.
<b>“big blue aeshna”</b>	<i>Aeshna sp.</i>	Several large aeshna hawking along the lower reaches of both ends of the Austrian Road.
<b>Migrant hawk</b>	<i>Aeshna mixta</i>	RK
<b>Brown hawk</b>	<i>A. grandis</i>	Many in the Buktharma Valley (RK).
<b>Lesser emperor</b>	<i>Anax parthenope</i>	Widespread in small numbers.
	<i>Cordulegaster sp.</i>	A huge individual at Kein-Kerish (LZ) – showed huge green eyes and a clubbed but poorly marked abdomen (black with thin yellow markings).
<b>Four-spot chaser</b>	<i>Libellula quadrimaculata</i>	Widespread, often in large numbers.
<b>Broad-bodied chaser</b>	<i>L. depressa</i>	Several males holding territory at bottom of the Austrian Road (MK).
??	<i>Orthetrum sp.</i>	two species?
<b>Red-veined darter</b>	<i>Sympetrum fonscolombei</i>	Common at LZ.
<b>Yellow-winged darter</b>	<i>S. flaveolum</i>	Widespread.
<b>Black darter</b>	<i>S. danae</i>	Noted at boggy area between Maimir and RK.

## Systematic list Number 4      Flora

Recorded in summer 2005 by Greentours group

Day No:	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Date on June-July 2005	28	29	30	1	2	3	4	5	6	7	8	9	10	11
Route	Almaty – Ust-Kamenogorsk	U-Kamenogorsk - Zaysan	Kein-Kerish Canyon	Zaysan Lake surroundings	Zaysan – Markakol Lake	Markakol surroundings	Cold Pass	Alatay Pass	Markakol - Maimyr	Maimyr - Rakhmanovskie	Joyous Pass	To Maimyr via Burkhat Pass	Maimyr – U-Kamenogorsk	U-Kamenogorsk - Almaty

### Lycopodiaceae

<i>Lycopodium annotinum</i>											+			
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### Equisetaceae

<i>Equisetum arvense</i>						+								
<i>Equisetum fluviatile</i>											+			
<i>Equisetum sylvaticum</i>						+								

### Aspleniaceae

<i>Asplenium trichomanes-ramosum</i>												+		
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### Athyriaceae

<i>Cystopteris fragilis</i>						+								
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### Pinaceae

<i>Larix sibirica</i>					+	+								
<i>Abies sibirica</i>					+	+								
<i>Picea obovata</i>					+	+								
<i>Pinus sibirica</i>								+	+	+				
<i>Pinus sylvestris</i>		+									+			

### Cupressaceae

<i>Juniperus sabina</i>					+			+						
<i>Juniperus sibirica</i>						+		+						

### Typhaceae

<i>Typha augustifolia</i>				+										
<i>Typha latifolia</i>									+					

Day No:	1	2	3	4	5	6	7	8	9	10	11	12	13	14
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### Butomaceae

<i>Butomus umbellatus</i>		+	+											
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### Juncaginaceae

<i>Triglochin palustre</i>											+			
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### Lemnaceae

<i>Lemna minor</i>				+										
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### Alismataceae

<i>Alisma plantago-aquatica</i>					+									
<i>Sagittaria sagittifolia</i>					+									

### Poaceae

<i>Alopecurus arundinaceus</i>			+	+										
<i>Alopecurus sp.</i>					+	+								
<i>Anthoxanthum odoratum</i>								+						
<i>Arrhenatherum alatius</i>						+								
<i>Bromus japonicus</i>		+												
<i>Dactylis glomerata</i>		+					+	+						
<i>Deschampsia cespitosa</i>						+								
<i>Elytrigia repens</i>									+	+				
<i>Festuca kryloviana</i>			+											
<i>Helictotrichon schellianum</i>						+								
<i>Leymus angustus</i>			+	+										
<i>Lolium perenne</i>									+	+				
<i>Phleum pratense</i>									+	+				
<i>Phleum alpinum</i>						+								
<i>Phleum phleoides</i>		+												
<i>Phragmites australis</i>									+					
<i>Poa pratensis</i>						+								
<i>Poa trivialis</i>						+								

### Cyperaceae

<i>Blysmus rufus</i>			+	+										
<i>Blysmus compressus</i>					+	+								
<i>Bolboschoenus maritimus</i>			+											
<i>Carex acuta</i>										+				
<i>Carex atrata</i>						+								
<i>Carex canescens</i>							+							
<i>Carex otrubae</i>					+	+								
<i>Carex bohémica</i>				+										
<i>Carex divisa</i>			+	+										
<i>Carex nigrum</i>							+							

Day No:	1	2	3	4	5	6	7	8	9	10	11	12	13	14
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<i>Carex pallescens</i>							+	+						
<i>Carex rostrata</i>					+	+								
<i>Carex spicata</i>					+									
<i>Carex vesicaria</i>							+	+						
<i>Eleocharis palustris</i>			+	+										
<i>Eriophorum polystachyum</i>										+				
<i>Scirpus sylvaticus</i>					+	+								

### Juncaceae

<i>Juncus filiformis</i>						+								
<i>Juncus gerardii</i>			+	+										
<i>Juncus bufonius</i>					+	+								
<i>Luzula pallescens</i>							+							

### Liliaceae

<i>Asparagus neglectus</i>			+											
<i>Erythronium sibiricum</i>						+								
<i>Lilium martagon</i>		+			+	+								
<i>Lloydia serotina</i>											+	+		
<i>Tulipa altaica</i>				+	+									
<i>Tulipa biflora</i>		+												
<i>Veratrum lobelianum</i>		+			+	+								
<i>Veratrum nigrum</i>					+							+		

### Alliaceae

<i>Allium altaicum</i>												+		
<i>Allium sp.</i>												+		
<i>Allium hymenorrhizum</i>						+								
<i>Allium ledebourianum</i>						+	+	+						
<i>Allium senescens</i>								+					+	

### Amaryllidaceae

<i>Ixiolirion tataricum</i>			+		+									
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### Iridaceae

<i>Iris ruthenica</i>		+				+	+	+						
<i>Iris scariosa</i>		+												

### Orchidaceae

<i>Coeloglossum viride</i>							+							
<i>Dactylorhiza fuchsii</i>					+	+				+				
<i>Dactylorhiza incarnata</i>					+					+				
<i>Dactylorhiza umbrossa</i>		+			+	+				+				
<i>Listera cordata (ovata)</i>											+			

Day No:	1	2	3	4	5	6	7	8	9	10	11	12	13	14
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<i>Herminium monorchis</i>										+				
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Salicaceae														
<i>Populus laurifolia</i>										+				
<i>Populus tremula</i>						+								
<i>Salix alba</i>				+										
<i>Salix cinerea</i> s.l.										+				
<i>Salix</i> sp.												+	+	

Betulaceae														
<i>Betula pendula</i>		+			+	+								
<i>Betula rotundifolia</i>										+	+	+		

Ulmaceae														
<i>Ulmus androsowii</i>		+			+									
<i>Ulmus minor</i>		+												

Cannabaceae														
<i>Cannabis sativa</i>		+			+						+			
<i>Humulus lupulus</i>														+

Urticaceae														
<i>Urtica cannabina</i>											+			+
<i>Urtica dioica</i>		+			+	+								+

Polygonaceae														
<i>Persicaria bistorta</i>					+	+								
<i>Persicaria vivipara</i>											+			
<i>Polygonum alpinum</i>					+	+								
<i>Polygonum aviculare</i> s.l.					+	+								
<i>Atraphaxis</i> sp.			+	+										
<i>Rheum altaicum</i>		+											+	+
<i>Rheum nanum</i>			+	+										
<i>Rumex acetosa</i>					+	+								
<i>Rumex crispus</i>					+									

Chenopodiaceae														
<i>Arthrophyton haloxylon</i>		+	+											
<i>Chenopodium album</i>					+	+								
<i>Halocnemum strobilaceum</i>		+												
<i>Nanophyton erinaceum</i>			+											
<i>Salsola kali</i>			+	+										

Day No:	1	2	3	4	5	6	7	8	9	10	11	12	13	14
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### Amaranthaceae

<i>Amaranthus retroflexus</i>	+													
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### Portulacaceae

<i>Claytonia joanneana</i>												+		
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### Caryophyllaceae

<i>Acanthophyllum pungens</i>				+	+									
<i>Cerastium cerastioides</i>						+								
<i>Cerastium dahuricum</i>					+	+								
<i>Cerastium fontanum</i>						+								
<i>Dianthus hoeltzeri</i>		+			+	+	+	+						
<i>Dianthus versicolor</i>												+	+	
<i>Gypsophila paniculata</i>		+												
<i>Herniaria glabra</i>			+	+										
<i>Minuartia biflora</i>													+	
<i>Minuartia sp.</i>										+				
<i>Minuartia verna</i>												+	+	
<i>Moehringia umbrosa</i>								+						
<i>Sagina procumbens</i>						+								
<i>Silene sp.</i>												+		
<i>Silene sp.</i>										+				
<i>Silene latifolia</i>					+									
<i>Silene otites</i>		+												
<i>Silene vulgaris</i>					+	+								
<i>Stellaria graminea</i>						+								
<i>Stellaria media</i>					+	+								
<i>Lychnis chalcedonica</i>		+												+
<i>Cerastium cerastioides</i>		+												
<i>Tunica stricta</i>					+			+						

### Paeoniaceae

<i>Paeonia anomala</i>		+			+	+	+	+						
<i>Paeonia intermedia</i>					+									
<i>Paeonia hybrida</i>		+						+						

### Ranunculaceae

<i>Aconitum leucostomum</i>		+			+	+								
<i>Actaea sp. (erithrocarpa?)</i>														+
<i>Anemone altaica</i>												+		
<i>Aquilegia sibirica</i>								+				+		
<i>Aquilegia glandulosa</i>					+	+								
<i>Atragene sibirica</i>								+		+		+		
<i>Callianthemum angustifolium</i>											+	+		
<i>Caltha palustris</i>						+								

Day No:	1	2	3	4	5	6	7	8	9	10	11	12	13	14
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<i>Clematis integrifolia</i>		+			+			+						
<i>Delphinium altaicum</i>												+	+	
<i>Delphinium elatum</i>		+								+		+		
<i>Pulsatilla patens</i>		+						+						
<i>Ranunculus altaicus</i>											+	+		
<i>Ranunculus auricomus s.s.</i>								+						
<i>Ranunculus hytoborias</i>				+										
<i>Ranunculus polyanthemus</i>						+								
<i>Ranunculus repens</i>						+								
<i>Ranunculus sceleratus</i>												+		
<i>Thalictrum minus</i>								+					+	
<i>Thalictrum simplex</i>		+			+	+	+	+						
<i>Trollius altaicus</i>					+	+	+	+						

### Berberidaceae

<i>Gymnospermium altaicum</i>						+								
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### Papaveraceae

<i>Chelidonium majus</i>		+								+			+	
<i>Corydalis nobilis</i>		+				+	+	+				+		
<i>Papaver croceum</i>												+		
<i>Papaver nudicaule</i>					+	+								

### Peganaceae

<i>Peganum harmala</i>		+											+	
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### Brassicaceae

<i>Arabis glabra</i>												+		
<i>Barbarea vulgaris</i>						+								
<i>Berteroa incana</i>	+	+			+	+								
<i>Bunias orientalis</i>					+					+				
<i>Capsella bursa-pastoris</i>					+	+								
<i>Cardamine macrophylla</i>								+						
<i>Cardaria draba</i>					+									
<i>Descurainia sophia</i>						+								
<i>Hesperis sibirica</i>		+			+	+								
<i>Isatis laevigata</i>		+												
<i>Lepidium latifolium</i>		+	+	+	+									
<i>Rorippa palustris</i>			+	+										
<i>Sisymbrium septulatum</i>						+								
<i>Thlaspi arvense</i>						+								

### Crassulaceae

<i>Orostachys spinosa</i>		+			+									
<i>Rhodiola rosea</i>							+	+				+		



Day No:	1	2	3	4	5	6	7	8	9	10	11	12	13	14
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<i>Rosularia sp.</i>			+											
<i>Sedum hybridum</i>		+												

Saxifragaceae														
<i>Bergenia crassifolia</i>											+			
<i>Saxifraga punctata</i>								+		+	+	+		
<i>Saxifraga sibirica</i>												+	+	

Parnassiaceae														
<i>Parnassia palustris</i>											+	+	+	

Grossulariaceae														
<i>Ribes meyeri</i>						+	+	+						
<i>Ribes nigrum</i>						+	+	+						

Rosaceae														
<i>Agrimonia asiatica</i>					+									+
<i>Alchemilla sibirica</i>						+								
<i>Cotoneaster melanocarpus</i>		+			+									
<i>Dryas oxyodonta</i>												+		
<i>Filipendula ulmaria</i>					+									
<i>Filipendula vulgaris</i>		+			+									
<i>Fragaria vesca</i>					+	+								
<i>Fragaria viridis</i>														+
<i>Geum aleppicum</i>						+					+			
<i>Geum hispidum</i>						+	+							
<i>Geum rivale</i>						+								
<i>Geum urbanum</i>														+
<i>Potentilla argentea s.l.</i>											+			
<i>Potentilla orientalis</i>		+			+									
<i>Potentilla fruticosa</i>					+	+								
<i>Potentilla recta</i>						+								
<i>Prunus padus</i>								+						
<i>Rosa acicularis</i>						+								
<i>Rosa kokanica?</i>					+	+								
<i>Rosa spinosissima</i>					+									
<i>Rubus idaeus</i>						+								
<i>Rubus saxatilis</i>											+			
<i>Sanguisorba officinalis</i>					+	+								
<i>Sibbaldia procumbens</i>												+	+	
<i>Sorbus sibirica</i>													+	
<i>Spiraea hypericifolia</i>		+	+								+			
<i>Spiraea media</i>						+		+						
<i>Spiraea pilosa</i>		+												

Day No:	1	2	3	4	5	6	7	8	9	10	11	12	13	14
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Fabaceae														
<i>Astragalus alopecurus</i>					+									
<i>Astragalus danicus</i>					+	+		+						
<i>Astragalus sp.</i>										+				
<i>Caragana sp.</i>													+	
<i>Caragana sp.</i>												+		
<i>Halimodendron halodendrun</i>		+												
<i>Hedysarum consanguineum</i>		+						+	+				+	
<i>Hedysarum sp.</i>										+				
<i>Lathyrus gmelinii</i>						+	+	+						
<i>Lathyrus pratensis</i>					+	+								
<i>Lathyrus tuberosus</i>										+				
<i>Lathyrus sp.</i>													+	
<i>Medicago falcata</i>		+			+	+								
<i>Medicago lupulina</i>					+									
<i>Medicago sativa</i>					+									
<i>Medicago x varia</i>					+									
<i>Melilotus alba</i>		+			+									
<i>Melilotus officinalis</i>		+			+									
<i>Onobrychis viciifolia</i>		+			+									
<i>Orobus luteus</i>					+	+								
<i>Oxitropis sp.</i>													+	
<i>Oxitropis sp.</i>													+	
<i>Sophora alopecuroides</i>		+			+									
<i>Trifolium medium</i>		+												
<i>Trifolium lupinaster</i>					+	+	+	+						
<i>Trifolium pratense</i>					+	+								
<i>Trifolium repens</i>					+	+								
<i>Trigonella hybridum</i>										+				
<i>Vicia orobus</i>					+									
<i>Vicia sepium</i>					+	+								
<i>Vicia cracca</i>					+									
<i>Vicia tenuifolia</i>		+												

Dipsacaceae														
<i>Scabiosa songarica</i>		+												
<i>Scabiosa ochroleuca</i>													+	

Geraniaceae														
<i>Geranium sibirica</i>		+			+	+								
<i>Geranium albiflorum</i>					+	+								
<i>Geranium collinum</i>								+						
<i>Geranium pratensis</i>		+												

Day No:	1	2	3	4	5	6	7	8	9	10	11	12	13	14
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### Linaceae

<i>Linum altaicum</i>		+												
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### Rutaceae

<i>Dictamnus angustifolius</i>		+			+									
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### Polygalaceae

<i>Polygala hybrida</i>		+			+	+								
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### Euphorbiaceae

<i>Euphorbia palustris</i>					+									
<i>Euphorbia pilosa</i>								+						

### Aceraceae

<i>Acer negundo</i>		+			+									
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### Malvaceae

<i>Alcea nudiflora</i>		+			+								+	
<i>Lavatera thuringiaca</i>		+			+								+	

### Solonaceae

<i>Hyoscyamus niger</i>		+												
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### Thymelaeaceae

<i>Daphne altaica</i>					+									
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### Hypericaceae

<i>Hypericum elongatum</i>		+			+			+						
<i>Hypericum perforatum</i>		+			+									
<i>Hypericum scabrum</i>					+									

### Tamaricaceae

<i>Tamarix hispida</i>		+		+	+									
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### Violaceae

<i>Viola altaica</i>						+					+	+		
<i>Viola biflora</i>										+		+		
<i>Viola disjuncta</i>		+			+	+	+	+						

### Onagraceae

<i>Chamerion angustifolium</i>		+			+	+								
<i>Epilobium latifolia</i>								+						
<i>Epilobium palustre</i>											+	+		

Day No:	1	2	3	4	5	6	7	8	9	10	11	12	13	14
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### Callitrichaceae

<i>Callitriche palustris</i>					+									
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### Lythraceae

<i>Lythrum salicaria</i>									+					
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### Apiaceae

<i>Angelica decurrens</i>		+			+	+		+						
<i>Anthriscus sylvestris</i>						+								
<i>Bupleurum aureum</i>					+	+	+	+						
<i>Bupleurum longifolium</i>		+			+	+	+	+				+		
<i>Conium maculatum</i>												+		
<i>Ferula krilovii</i>			+											
<i>Ferula sp.</i>								+						
<i>Heracleum dissectum</i>								+						
<i>Heracleum sibiricum</i>					+	+		+						
<i>Prangos ledebourii</i>		+												

### Ericaceae

<i>Vaccinium myrtillus</i>								+						
<i>Vaccinium vitis-idaea</i>										+				

### Pyrolaceae

<i>Orthilia secunda</i>												+		
<i>Moneses uniflora</i>								+						
<i>Pyrola minor</i>								+				+		
<i>Pyrola rotundifolia</i>										+				

### Primulaceae

<i>Androsace lactiflora</i>					+	+						+		
<i>Androsace maxima</i>		+												
<i>Cortusa altaica</i>												+		
<i>Primula algida</i>										+		+		
<i>Primula veris</i>		+												

### Plumbaginaceae

<i>Limonium gmelinii</i>			+	+										
<i>Limonium sp.</i>		+	+	+										

### Gentianaceae

<i>Gentiana barbata</i>										+			+	
<i>Gentiana cruciata</i>										+		+	+	
<i>Gentiana grandiflora</i>								+			+	+		
<i>Gentiana uniflora</i>								+						

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<i>Halenia corniculata</i>										+				
<i>Swertia obtusa</i>											+	+		

### Menyanthaceae

<i>Nymphoides peltatum</i>			+	+										
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### Polemoniaceae

<i>Polemonium caeruleum</i>		+			+	+								
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### Convolvulaceae

<i>Calystegia sepium</i>					+									
<i>Convolvulus arvensis</i>					+									

### Cuscutaceae

<i>Cuscuta campestris</i>					+									
<i>Cuscuta sp.</i>													+	

### Boraginaceae

<i>Cynoglossum officinale</i>					+									
<i>Echium vulgare</i>		+			+									
<i>Lapula sp.</i>		+			+									
<i>Lithospermum arvense</i>										+				
<i>Myosotis laxa</i>						+								
<i>Myosotis scorpioides</i>					+									
<i>Nonea pula</i>										+				
<i>Onosma gmelinii</i>		+												

### Lamiaceae

<i>Dracocephalum grandiflorum</i>						+	+	+						
<i>Dracocephalum integrifolia</i>		+			+	+	+	+						
<i>Dracocephalum nutans</i>										+				
<i>Dracocephalum sp.</i>												+		
<i>Dracocephalum sp.</i>										+				
<i>Eremostachys molucelloides</i>					+									
<i>Eremostachys speciosa</i>														
<i>Hyssopus officinalis</i>					+									
<i>Lagochilus daicanthopyllus</i>			+											
<i>Lamium album</i>		+			+	+	+	+						
<i>Leonurus glaucescens</i>		+			+	+								
<i>Mentha asiatica</i>					+									
<i>Nepeta pannonica</i>									+	+			+	
<i>Nepeta sp.</i>													+	
<i>Origanum vulgare</i>		+			+	+								
<i>Phlomis oreophila</i>							+	+		+				
<i>Phlomis tuberosa</i>		+			+					+				

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<i>Prunella vulgaris</i>					+									
<i>Salvia deserta</i>		+			+									
<i>Scutellaria galericulata</i>					+					+		+		
<i>Scutellaria orientalis</i>				+			+	+						
<i>Scutellaria sp.</i>					+									
<i>Thymus altaicus</i>														
<i>Ziziphora clinopodioides</i>														

### Scrophulariaceae

<i>Gratiola neglecta</i>				+										
<i>Euphrasia tartarica</i>										+				
<i>Lagotis integrifolia</i>												+		
<i>Linaria vulgaris</i>					+		+							
<i>Linaria popovii?</i>		+												
<i>Linaria sp.</i>										+				
<i>Pedicularis amoena</i>		+												
<i>Pedicularis tristis</i>						+	+	+						
<i>Pedicularis sp.</i>													+	
<i>Pedicularis elata</i>					+	+	+	+						
<i>Pedicularis proboscidea</i>		+				+	+	+						
<i>Rhinanthus songoricus</i>					+									
<i>Verbascum phoenicum</i>		+												
<i>Verbascum songoricum</i>		+												
<i>Verbascum thapsus</i>					+									
<i>Veronica beccabunga</i>					+	+								
<i>Veronica chamaedrys</i>						+								
<i>Veronica laeta</i>		+			+									
<i>Veronica longifolia</i>					+	+								
<i>Veronica sp.</i>											+	+		
<i>Veronica serphillifolia</i>						+								
<i>Veronica spicata</i>		+			+	+								
<i>Veronicea teucrium</i>					+									

### Orobanchaceae

<i>Orobanche uralensis</i>		+	+											
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### Plantaginaceae

<i>Plantago lanceolata</i>							+							
<i>Plantago major</i>				+										
<i>Plantago media</i>		+												

### Rubiaceae

<i>Galium boreale</i>										+				
<i>Galium album</i>					+	+								

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<i>Galium verum</i> s.l.		+			+	+								
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Caprifoliaceae														
<i>Linnaea borealis</i>								+		+				
<i>Lonicera nummulariifolia</i>						+							+	
<i>Lonicera tatarica</i>						+	+	+						
<i>Viburnum opulus</i>										+				

Valerianaceae														
<i>Patrinia intermedia</i>		+								+				
<i>Patrinia sibirica</i>												+		
<i>Valeriana officinalis</i> s.l.						+								

Campanulaceae														
<i>Adenophora lilifolia</i>												+	+	
<i>Campanula glomerata</i>					+	+				+				
<i>Campanula latifolia</i>														
<i>Campanula sibirica</i>		+								+				
<i>Campanula volgensis</i>					+	+								

Asteraceae														
<i>Achillea millefolium</i>		+			+	+								
<i>Alfredia cernua</i>								+						
<i>Antennaria dioica</i>						+								
<i>Arctium tomentosum</i>					+									
<i>Artemisia absinthium</i>					+									
<i>Artemisia vulgaris</i>						+								
<i>Aster alpinus</i>						+								
<i>Aster altaicus</i>		+												
<i>Centaurea ruthenica</i>		+												+
<i>Cicerbita azurea</i>												+		
<i>Circium arvense</i>					+	+								
<i>Doronicum altaicum</i>											+			
<i>Echinops nanus</i>		+												
<i>Erigeron acer</i>					+									
<i>Erigeron sp.</i>								+						
<i>Gnaphalium norvegicum</i>											+	+		
<i>Gnaphalium sylvaticum</i>							+					+		
<i>Hieracium aurantiacum</i>												+		
<i>Hypochoeris maculata</i>					+									
<i>Inula salicina</i>				+										
<i>Lactuca seriola</i>		+												
<i>Lactuca sibirica</i>				+										
<i>Ligularia alpigena</i>												?		
<i>Onopordum leptolepis</i>		+			+									

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<i>Pilosella cymosa</i>					+									
<i>Rhaponticum carthamoides</i>					+	+					+	+		
<i>Senecio aquatica</i>				+										
<i>Senecio jacobaea</i>					+									
<i>Senecio vernalis</i>		+												
<i>Serratula latifolia</i>										+			+	
<i>Solidago virgaurea</i>					+									
<i>Sossurea sp.</i>	.											+		
<i>Sossurea sp.</i>												+		
<i>Tanacetum santolina</i>			+											
<i>Tanacetum tanacetoides?</i>		+			+									
<i>Tragopogon crocifolius</i>						+								
<i>Tragopogon marginifolium</i>			+											
<i>Tragopogon pratensis</i>					+			+						
<i>Tussilago farfara</i>					+									
<i>Xanthium strumarium</i>		+	+	+										