

Borneo at night

Mammal watching

A Greentours trip report

2nd to 15th October 2023

Led by Phil Benstead and Mike Gordon

Summary

This post-Covid foray to Sabah was hard work and rather sobering. Since our last visit the bearded pig population in Sabah has been ecologically lost to the African swine fever virus and this loss will doubtless have a huge impact on both large predators and species relying on them for wallow creation in the forest in the near-future. Hopefully the pig population will recover. Our track record at finding other 'edible' species (deer) was also poor compared with previous trips. We only saw one chevrotain and this so poorly we could not identify it and we saw tracks of muntjak on just one day. This paucity of records may reflect hunting pressure during the time when tourism came to a halt during the pandemic. That said we worked hard at Deramakot and saw some good things but just lacked a real 'champagne' mammal sighting that would have made our trip complete. Our elephant encounter there was very special though and incredibly we recorded multiple Bornean tarsier and long-tailed porcupine sightings. Evidence of recent sun bear and banteng activity on the tracks here just underlined how close we were getting to glory... Finally at Sukau the river was running way too high for flat-headed cat spotting and on our three night forays here we simply could not catch a break.

Daily diary

2/10 KL to Sepilok

We all met up at the gate in KL and waited patiently for a delayed last leg – the flight to Sandakan. The flight left about 40 minutes late in the end but we were on our way. Arriving at the small airport at Sandakan we got through immigration (again) and picked up our bags. Henry was there to pick us up and we drove up to the resort over the next half hour. The delay meant we arrived too late for lunch but no-one was really hungry. Settled into our rooms we had a little time to rest or explore the garden. Phil had time for some odonates around the pond (including *Mortonagrion alcyone* and *Xiphiagrion*) and our first mammal appeared, a solitary male southern pig-tailed macaque.

At 1730 we took to the bus for the short drive to the centre and the canopy walkway, a lovely robust structure. Walking to the flying squirrel viewing area we saw our first Prevost's squirrel – a handsome jet black and red animal – the subspecies *pluto*. At dusk the red giant flying squirrels performed beautifully, at least two gliding over the walkway we were on. Next up was a short

nightwalk that became a rather protracted affair as we kept seeing and photographing good things. Our ranger had a blacklight with him that lit up scorpions in a very exciting way. We found a nice lowland litter frog and a sleeping Borneo forest dragon. Our first Malay civet was glimpsed only by a few but we all got fantastic views of our first Bornean slow loris. Lastly our ranger guide found us a dinky little young viper (*Tropidolaemus subannulatus*). Eventually fatigue caught up with some of us after a long 'day' travelling and we had to extract by van to get back in time for dinner. A nice start to the tour though.

3/10 **Sepilok (the rehab centres) and the journey to Imbak Canyon**

This morning we managed a lie-in unless you got the gibbon wake-up call at 0530. A leisurely breakfast was followed by a short walk to the orangutan rehab centre which we did, seeing one of the resident big males was impressive and we enjoyed watching the pig-tailed macaques gingerly stealing food from this huge beast. There were other things to look at, we recorded our first plantain squirrels and photographed a banded lipinia on the boardwalk. After the oranges we crossed the road to check out the sun bears. Marshy areas in the forest and streams had *Agrionoptera insignis*, *Elatoneura analis* and *Prodasineura hyperythra*. Job done we headed back to base to have a quick shower and load the van with all our bags.

The slow drive to Telupid was a bit onerous but eventually we arrived at this small town for lunch in a Chinese restaurant and a bit of shopping (for all important electrolytes). After lunch we loaded ourselves and all our stuff into three 4WDs and headed off on the next leg of the journey. We bumped along the rough track into Imbak Canyon recording a few new birds and our first troupe of long-tailed macaque. Settling into our rooms we had time for a short break before dinner and the first night drive. This started with a bang when a long-tailed porcupine ran in front of the car whilst we were loading for the drive. A seldom-seen (or often mis-identified?) mammal and a great start. Henry worked hard for us with the spotlight and the drive was punctuated by regular things worth stopping for. Mammalwise we found three small-toothed palm civets, a Philippine civet, two Thomas's flying squirrels, a superb and speedy greater pencil-tailed tree mouse and a nice male sambar. We also found our first prickly phasmid (a *Haaniella*), a roosting yellow-bellied prinia, and dark-eared and file-eared tree frogs. A good start to proceedings. Back at our rooms we found a number of nice things attracted to the lights including the impressive stag beetle *Odontolabis castelnaudi*.

4/10 **Imbak Canyon**

We breakfasted at 0700 this morning and headed out in the 4WD for the short run to the road into the nearby research centre. Bumping along we stopped for a brief encounter with our first pale giant squirrel and another stop to photograph our first and always impressive giant golden orbweaver (*Nephila pilipes*). Having negotiated the very rolling topography in the vehicle we took to our feet to walk the level track in to the research centre. Our aim this morning was to get good views of the gibbon and we did eventually, working a rather elusive family party into crossing the road through the trees in full view. Speedy swinging but conclusive. A nearby fig tree was busy with barbets and we vowed to return after dark for binturong. Also along the trail we got to grips with some nice invertebrates including several (often elusive) *Lyriothemis cleis* dragonflies and the seldom-recorded damselfly *Lestes praeivus*. Big *Idea stollii* floated past. Bumping back in the car we stopped to admire

first a female fireback pheasant and then later a nice pair. Back at base we found an Eastern yellow wagtail had dropped into the clearing overnight.

After lunch we had some down time before we starting activities at 1530. Phil spent some time down in the river for a few odonates including *Euphaea subcostalis* and *Libellago semiopaca*. Back into the vehicle afterwards and a short drive to the start of the waterfall road. We walked along spotting a few birds, our first whiskered treeswift was well received and perched nicely for photography and we also had encounters with dark-sided flycatcher and crimson-breasted flowerpecker. A roadside pond had two large libellulids – *Camacinia gigantea*. Eventually we reached a splendid waterfall and had fleeting views of both Pacific reef egret and striated heron. Tiger beetles on the sand here included the widespread *Cosmodela aurulenta* but also the rarely-recorded Sundaic endemic *Calomera crespignyi*. The only mammal of the afternoon session came back at the resort where some long-tailed macaques were sitting in a wild breadfruit tree.

During dinner we were entertained by a number of attractive moths including the very large *Lyssa menoetius* and some great beetles including a large *Chalcosoma* and a huge longhorn (*Trirachys* sp.). After dinner we just managed to squeeze in a three-hour night drive before a significant rain event. First up was our first buffy fish-owl in the resort clearing and then a surprised-looking roosting wreathed hornbill. But it was of course mammals that we aimed for and we got a nice selection this evening with another sambar stag, our only banded civet, incredibly another long-tailed porcupine (half-tailed), the hoped-for binturong in the fruiting fig and best-of-all Henry found us a ridiculously gnomic Bornean tarsier. A difficult mammal to spot as they give no eyeshine and a great end to the session. Back at our rooms a huge cossid moth greeted us – the impressive *Xyleutes strix* – and another enormous moth (a *Mahanta*?).

5/10 to Deramakot

After breakfast we packed up the 4WDs again, overhead a couple of grey-rumped treeswifts. The 4.5 hour drive over to Deramakot was onerous. At the halfway stage we said goodbye to Henry and Roy. The drive was largely wildlife-free although a few new birds were spotted including; black eagle, Brahminy kite, chestnut munia and common sandpiper. A small squirrel and a snake crossing the road (not together...) went unidentified. The overnight downpour had played havoc with some sections of the road which made things interesting at times. Eventually we pulled into the base camp and met up with Mike (our new Henry) and got stuck into lunch.

After lunch despite the heat some of us checked out the ponds in the 'garden' to stretch our legs after the journey. These were good for dragonflies predictably and we saw a nice range of libellulids. The most interesting record being the abundant *Pseudothemis jorina*, a new site for this species in Sabah no less. Eventually the heat got the better of us and we made our way slowly back up to our rooms for a rest.

After a tasty dinner we headed out for a 3.5 hour nightdrive. This produced a steady trickle of sightings. Birds included barred eagle owl and brown wood owl, the latter seemingly oblivious to a very close Thomas' flying squirrel. A fruiting tree had another binturong and also a small-toothed palm civet. We enjoyed close views of our first Sunda leopard cat. A Malay civet crossed the road in front of us and our first large flying-fox flew by. Two slow loris made an appearance during the drive. Frustratingly we got close to elephant, with plenty of fresh sign but we did not get lucky tonight.

6/10 Deramakot

A shorter nightdrive last night meant we could convene at 0630 for a squirrel walk. Walking the road did eventually produce two noisy squirrels that Mike diagnosed as ear-spot but try as we might we could not nail the diagnostic feature. This was the only mammal seen during our pre-breakfast amble but we did get a huge flock of ten or more Bornean bristleheads – an honorary mammal. We were eventually picked up and driven back for breakfast.

Afterwards some of us went to check the river and Domingo's Management Trail. Plenty of odonates but few bird or mammal species as the heat of the day built in the very dry forest. Whilst the others returned to base, Phil stayed back and worked the Mannam river for odonata, gorgeous male *Rhinocypha cucullata* sparred with each other in sun spots and *Euphaea impar* was seen for the first time. Back at base the pond had *Camacinia*, *Hydrobasileus* and an undescribed damselfly that Phil had discovered in January at Danum. The lights at our accommodation block had attracted the impressive longhorn beetle *Cyriopalus wallacei* and a big prominent moth *Phalera javana*.

After dinner we headed out spotlighting. Again we encountered civets (three species), a leopard cat and the occasional flying squirrel. The most bizarre sighting came when we rounded a corner to discover a female great argus by the side of the road. We were not sure if it was OK but after a while it flew back into the woods quite strongly. Other highlights included; sleeping *Gonocephalus grandis* and a superb cat gecko, a fleeting East Asian porcupine and another Bornean tarsier. The ghostly white spider during the ride was an unidentified giant huntsman (*Heteropoda*, sadly not the one named recently for David Bowie). Mike spoiled the party by finding a pencil-tailed tree-shrew during our coffee break which did not wait for the rest of us to arrive. Still plenty left to find but an enjoyable session.

7/10 Deramakot

A few of us took a walk after breakfast. The Management trail was very dry and quiet although odonates were busy on the swamp at the end. Phil continued on for another kilometre or two finding several nice dragonfly species including four male *Leptogomphus coomansi*, which were a nice surprise. The only mammal recorded was a pale giant squirrel.

After a late lunch we had arranged to go out in the vehicle to search for primates and take dinner at the station out in the forest. This worked well although we could not resist stopping for mud-puddling Rajah Brooke's birdwing which allowed a nearby orangutan to plan its escape. We had looks at a lone gibbon. We caught up with it just as it dropped out of sight. The rest of the drive was spent searching for another and just at dusk after a pair of fireback pheasants Phil spotted one swinging wildly in a tree that was being buffeted by a squall ahead of the rain that hit us during dinner. Inside the room we ate in was a fine Bornean bark mantis (*Theopompa borneana*).

The night drive back was punctuated by the usual number of mammal-related incidents. We suffered a puncture but the thermal scope produced our first colugo whilst the team quickly put on the spare. The journey onward was enlivened by two encounters with obliging leopard cats and our first, albeit brief, diademed roundleaf bat. Just before base we stopped for a pair of close buffy fish-owls and that was our lot for the night.

8/10

Deramakot

After breakfast Phil got out to search for odonates. It was quiet but Mike later reported that he could hear Saban grey langur nearby from his chalet. The odonates were excellent with several very photogenic species (including *Rhinagrion elopurae* and *Libellago phaeton*) and the huge *Epopthalmia* cruised past frequently on the pond. The discovery of a single male *Rhyothemis regia* on the pond added a third province site for this recent addition to the Sabah checklist.

After a late lunch we headed out again in the vehicle. During the daylight part of the journey we logged two female orangutan with small youngsters. Finally getting the views we deserved. The first sighting was of a mother who had called it a day and was lounging in a nest with the youngster mucking about dangling from it and looking at us. The second had parked her youngster low down and climbed into a fig with epicormic fruit and we had plenty of time to enjoy this adult as it swung from branch to branch chasing the ripest figs. We dined again down at the station by the Kinabatangan and as we approached at dusk we spotted a bathawk and later a large feeding group of wrinkle-lipped bats. The night safari was a session of could-have-beens. We nearly spotted our first black flying squirrel (it was double 'leader-only' in the end). Later we started tracking elephants, first by signs of feeding and then by using the thermal scope to assess the heat of fresh dung. Eventually we caught up with them just by the road, there were fleeting glimpses for some and a massive heat signature through the scope. Much rumbling and a single trumpet and then just the occasional noisy feeding ensued. We did not know at the time that they had already been seen on the road by other vehicles and after a while we continued on our way. The rest of the journey was spent searching and finding common things. We enjoyed two more encounters with leopard cats and bagged the usual civets. Nearly a great session but in the end we failed to deliver the birthday present that Bob deserved.

9/10

Deramakot

Those perky enough to get out this morning before breakfast reported a lot of bird activity after the evening's torrential rain (missed by us thankfully during our night drive). Even after breakfast things were much busier than normal and we actually saw some birds. Otherwise dragonflies and butterflies kept us busy until it got too warm and we retired.

The late afternoon and night drive was a great success. First up was our first 'flanged' male orangutan, not quite a full alpha but great to see. We just managed to stop the car before we ran over a fine red-tailed green ratsnake that posed nicely on the track for photographs. Then we rounded a corner and saw an elephant retreating into the vegetation. We stopped and luckily a car came past in the other direction. The elephants thought we had gone and before we knew they started walking back out into the road. Seven in total they walked towards us and stared, eventually deciding we were blocking their route and then being recalled by the matriarch. They retreated again and not wanting to block their movement up the road we pulled into a side clearing and waited for them to come out. They did and this time they got a little cross! They all went through various threat display, the youngsters mimicking the adults. There was the usual ear flapping and noise but also an impressive blowing of dust in an inverted mushroom cloud. Eventually we hissed at them and started the engine and they retreated again into the forest. A magical encounter. It was rather quiet for the rest of the drive to the river.

After dinner we worked our way back to base, there were plenty of leopard cats out this evening (at least five) but then a lengthy shower commenced and we hunkered down. Mike was still working hard though and in a brief lull in the rain I think we all managed to see the 'tail-less' long-tailed porcupine that scuttled across the track in front of the vehicle. A giant river frog appeared on the road. Back at the chalets a barred eagle owl was sitting on the corner of the roof with prey.

10/10 Deramakot

The pre-breakfast team (Susan & Simon) reported both maroon langur and least pygmy squirrel on the management trail this morning. Alison and Phil checked it out and amazingly Alison found the diminutive squirrel almost immediately low down clinging to the trunk of a large tree. We could hear the langurs from the start of the trail and climbing to the high point we had good views of a single adult as it lounged high above us occasionally selecting a juicy new leaf. Chestnut-winged babblers were noisy here and we had a brief encounter with a single Horsfield's babbler. Phil continued wandering but the overcast conditions did not favour invertebrates and no new mammals appeared. The highlight came in a swampy oxbow which had a nice South Asian box turtle loafing on a mossy log.

We convened for lunch at 1400 but our intended departure and afternoon session was cancelled due to the threat of rain. This gave us time to photograph the acuminate horseshoe bats under one of the chalets before we headed back for a lie down before dinner. The long night drive this evening took us the other way towards the entrance and away from the other vehicles working the site. Highlights included reddish scops owl (heard only), a nice trefoil roundleaf bat and good views of colugo at last (again the thermal scope proved its worth). Perhaps our most interesting sighting was a buffy fish-owl perched over a large predated Borneo pit viper. We also recorded another brown wood owl before getting back to base.

11/10 Deramakot

After a late night last night it was hard to get up but some of us got out for the otter patrol by the river (no luck). Phil did a midday walk for invertebrates picking up calling black crowned pitta and some good odonates including looks at a *Tetracanthagyna* sp., *Rhinocypha humeralis* and *Ceriagrion bellona*.

After lunch we headed out again for a late afternoon/dinner/night drive. The daylight part of the session produced two orangutans. Jacqui spotted some maroon langurs and we also had a group of long-tailed macaques (scarce here). After dinner the night session produced three colugo, two randy East Asian porcupines and two noisy leopard cats interacting with each other plus at least another two on the track. The best sighting was a fab dog-toothed cat snake searching diligently through trackside vegetation for a roosting bird snack. Finally we heard elephant again but hurried past so as not to disturb them.

12/10 to the Kinabatangan

We woke to find the chalet adorned by a lovely emperor moth – *Antherea helferi* – and the diaphanous *Carriola ecnomoda*. The transfer to the lodge on the Kinabatangan took all morning, first by 4WDs to

the main road and then minibus to the jetty and then a short boat ride on the river. During the journey we stopped for fresh fruit and fried bananas. At the jetty Phil was interested to find the dragonfly *Brachythemis contaminata* – a recent arrival in Sabah. We took lunch at the lodge and had an afternoon boat ride till dusk.

The boatman took us upriver and along a narrow channel and into a majestic oxbow. Here we had a lovely time. The sun dropped making the light great for photography and soon we were snapping away at hornbills, perched and in flight. Oriental pied were common. Wrinkleds flew across the river in a steady stream to roost and we had at least three white-crowned hornbills! Phil has spent weeks on this river and never had an experience like this, the light was perfect and the hornbills were so well-behaved! Hopefully some good photographs were bagged.

Further on a female orang and youngster were well-received but we soon moved on as proboscis monkeys were spotted. Our first group were hard to pin down but as dusk approached they became easier to get good looks at and we started seeing the huge males. Our final primate encounter was with a troupe of silvered langurs and we got good looks at a peachy morph adult. Other excitement included our first Storm's stork, another bathawk and a multitude of green imperial pigeons.

After dinner we took to the boat again for a journey that took us up a sidechannel away from the main river. Before we got there though Phil spotted something large on the thermal scope. A faint hint of heat that proved to be a massive 4-metre saltwater crocodile that we followed for some time. It was huge. The loss of bearded pigs from the ecosystem here is bound to have impacted on this species and we all hoped they were finding alternate prey easily and would not resort to boat-based snacking. The riverside vegetation delivered roosting small birds and kingfishers and a nice painted bronzeback. We had been warned that the high water level in the river would make searching for flat-headed cat difficult and this certainly seemed the case tonight. High levels did not stop us photographing the first of many dark-tailed tree rats though. Back at base the lights in the compound had double-spotted geckos lurking in the foliage.

13/10 Sukau

Our pre-breakfast boat trip took place under an overcast sky. We stopped again for a troupe of proboscis monkeys. A peregrine perched atop a dead snag failed to stay for lengthy examination but we got good views of a lesser fish eagle. Storm's stork were once again a feature and we saw many Oriental pied hornbills. Black magpies 'belled' from the treetops. Sneaking up a side channel led to views of many kingfishers including our first collared and common. A dollarbird was unobliging. New dragonflies up this channel included swarms of *Rhyothemis phyllis* and a few *Orthetrum sabina* and *Pseudagrion microcephalum*. The reedy channel into oil palm produced yellow and cinnamon bittern and striated heron. But we had overstayed somewhat and had to turn back for a late breakfast.

During the morning break after breakfast some of the team were shown a superb colugo mother with young perched low down in the garden. I think we all got to see this although it climbed higher during the day. This female colugo started our afternoon session too, it had moved tree and was lower down thankfully. Rain had been falling since lunch but we headed out and managed to avoid any serious precipitation. The light for photography was rather bad but we saw some new things and got plenty of repeat custom. Proboscis monkey, silvered langur and the two macaques were available. New birds included a group of dusky broadbill and grey-and-buff woodpecker. Bushy-

crested hornbill surrendered properly. Our night boat ride was fun we chased a lot of dark-tailed tree rats and finally found a brown morph colugo.

14/10 Sukau

Our last morning ride produced nine thermalling Storm's stork, plantain squirrel, more white-bellied sea eagle, an *Archibasis* damsel (*incisura*), more chances to photograph monkeys and an obliging dollarbird.

After breakfast we walked out the back which immediately produced good views of pale giant squirrel and plantain squirrel. Also here hooded pitta (heard only), a nice pair of scarlet rumped trogon, black-crowned pitta (heard only), a fine terrestrial orchid (*Plocoglottis plicata*) and Phil had a nice damsel (*Teinobasis laidlawi*). Frustratingly we discovered that pangolin were active here when we found recent burrow diggings.

Our afternoon boat ride on the main river was marred by very light rain but we enjoyed more silvered langurs (the alpha male being called on to do his duty with startling regularity), a single osprey, two lesser fish eagles, a nice look at a rhino hornbill and a single banded woodpecker.

Our final session of the trip after dinner was a valiant attempt to find a flat-headed cat but the river was running high still and we were unsuccessful. We did see a couple of pairs of roosting black-and-red broadbill, a yellow bittern, a large rat (?) and a *Myotis* bat. The best of it came at the end just before the resort when we had great views of slow loris in the grass. The trip effectively book-ended by great views of this splendid mammal.

Systematic List 1 – MAMMALS

Nomenclature follows iNaturalist taxonomy.

[Moonrat]	<i>Echinosorex gymnurus</i>	Smelt at night at Deramakot. Not an easy animal to see...
Pentail treeshrew	<i>Ptilocercus lowii</i>	One at night at Deramakot (Mike only).
Lesser treeshrew	<i>Tupaia minor</i>	1 at Deramakot.
Sunda colugo	<i>Galeopterus variegatus</i>	A total of 4 seen at Deramakot. A mother and pup during the day at Sukau. Another brown morph adult there at night.
Large flying fox	<i>Pteropus vampyrus</i>	Deramakot.
Lesser long-tongued nectar bat	<i>Macroglossus minimus</i>	Single seen poorly at Deramakot.
<i>Myotis</i> sp.	<i>Myotis</i> sp.	One hanging over a narrow channel at Sukau one night. Whiskered or Horsfield's?
Acuminate horseshoe bat	<i>Rhinolophus acuminatus</i>	Three under one of the chalets at Deramakot.
Trefoil horseshoe bat	<i>Rhinolophus trifolius</i>	One of these orange-faced monsters hanging near the track one night at Deramakot.
Diademed roundleaf bat	<i>Hipposideros diadema</i>	We managed to photograph a few at Deramakot where they were quite common.
Wrinkle-lipped bat	<i>Tadarida plicata</i>	Feeding swarm on one night at Deramakot.
Bornean slow loris	<i>Nycticebus menagensis</i>	Excellent views of our first at Sepilok on the night walk. Just a few thereafter and we ended the tour with another great view in damp riverside grass at Sukau.
Bornean tarsier	<i>Cephalopachus bancanus borneanus</i>	One on the second nightdrive at Imbak Canyon. Another at Deramakot. A good effort.
Silvered leaf monkey	<i>Trachypithecus cristata</i>	Sukau – both days.
Maroon leaf monkey	<i>Presbytis rubicunda</i>	Only on two days at Deramakot.
Proboscis monkey	<i>Nasalis larvatus</i>	Common at Sukau on both days
Long-tailed macaque	<i>Macaca fascicularis</i>	Our first record was a gang of 20+ on the road into Imbak Canyon. A few the next day there. A few encounters at Deramakot and abundant at Sukau.
Southern pig-tailed macaque	<i>Macaca nemestrina</i>	A few at Sepilok. A lone male at Imbak Canyon. Also noted at Deramakot and Sukau.
North Bornean grey gibbon	<i>Hylobates funereus</i>	Heard on the first morning at Sepilok. Family of five seen well at Imbak Canyon. Single at Deramakot, otherwise heard on several occasions there.
Northeast Bornean orangutan	<i>Pongo pygmeus morio</i>	A total of 12 seen at Deramakot and also 2 at Sukau.
[Pangolin]	<i>Manis javanica</i>	Burrows attributed to the diggings of this species were fresh behind the lodge at Sukau.
Pale giant squirrel	<i>Ratufa affinis</i>	Deramakot, Imbak and Sukau.

Prevost's squirrel	<i>Callosciurus prevostii pluto</i>	widespread – seen on every day bar one. The Prevost's in north-east Borneo are all considered to be of the subspecies <i>pluto</i> .
Plantain squirrel	<i>Callosciurus notatus</i>	Sepilok and Sukau.
Least pygmy squirrel	<i>Exilisciurus exilis</i>	Deramakot (two sightings).
Thomas's flying squirrel	<i>Aeromys thomasi</i>	Two on our first night drive at Imbak Canyon. By far the commonest flying squirrel at Deramakot where numbers seen every night.
Red giant flying squirrel	<i>Petaurista petaurista</i>	First seen at dusk on our first day (Sepilok). Very common at Deramakot.
Black giant flying squirrel	<i>Aeromys tephromelas</i>	Just one seen poorly at Deramakot. A terrible result.
Dark-tailed tree rat	<i>Niviventer cremoriventer</i>	Common at Sukau.
Sundaic lenothrix	<i>Lenothrix canus</i>	One in the restaurant at Sepilok.
Greater pencil-tailed tree mouse	<i>Chiropodomys major</i>	One at Imbak Canyon.
Ranee mouse sp.	<i>Haeromys</i> sp.	1 at Deramakot for Mike. The two species are hard to separate and probably need lumping. Mice frequently seen on the thermal scopes were doubtless this genus.
Long-tailed porcupine	<i>Trichys fasciculata</i>	One at the accommodation block at Imbak Canyon on the first night. Amazingly another the next night on the drive there. One at Deramakot in the pouring rain. Rarely recorded at Deramakot.
East Asian porcupine [Sun bear]	<i>Hystrix brachyura</i> <i>Helarctos malayanus</i>	A total of three at Deramakot. Feeding sign at Imbak Canyon and Deramakot. Fresh faeces one night at Deramakot.
Malay civet	<i>Viverra zangalunga</i>	One on our nightwalk on the first night at Sepilok. One in the resort at Imbak Canyon. Common at Deramakot.
Small-toothed palm civet	<i>Arctogalidia trivirgata</i>	Small numbers at night at Imbak Canyon. Common at Deramakot, seen on every night drive, usually several.
Philippine palm civet	<i>Paradozurus philippinensis</i>	First seen at Imbak. Common at Deramakot, seen on every night drive, usually several. Also noted at Sukau.
Binturong	<i>Arctictis binturong</i>	One at Imbak Canyon on the second night drive. Single at Deramakot.
Banded civet	<i>Hemigalus derbyanus</i>	One seen quite well on the second nightdrive at Imbak Canyon.
Sunda leopard cat	<i>Prionailurus javanensis</i>	Deramakot – many excellent views of this lovely little cat.
Bornean elephant	<i>Elephas maximus borneensis</i>	Recorded on three dates at Deramakot, with a fantastic encounter with a herd on one day.
an oriental chevrotain	<i>Tragulus</i> sp.	One seen very poorly at Deramakot, surprisingly scarce.
[Southern red muntjac]	<i>Muntiacus muntjak</i>	Tracks at Imbak Canyon. Surprisingly scarce.

Sambar

Cervus unicolor

Nice stag on the first night at Imabak Canyon. Another on the second drive there. A scatter of records at Deramakot. Surprisingly scarce.

[Banteng]

Bos javanicus

Tracks after rain at Deramakot on one night.

Systematic List 2 – BIRDS

We were concentrating on mammals and out a lot at night so the bird sightings are largely incidental.

Oriental darter	<i>Anhinga melanogaster</i>	Sukau.
Grey heron	<i>Ardea cinerea</i>	One at Sukau.
Purple heron	<i>Ardea purpurea</i>	Sukau.
Little heron	<i>Butorides striatus</i>	Imbak and Sukau.
Cattle egret	<i>Bubulcus ibis</i>	Throughout.
Little egret	<i>Egretta garzetta</i>	Scattered singles.
Pacific reef egret	<i>Egretta sacra</i>	A dark phase individual at the falls at Imbak Canyon.
Great egret	<i>Casmerodius albus</i>	Sukau.
Intermediate egret	<i>Mesophoyx intermedia</i>	Sukau.
Black-crowned night heron	<i>Nycticorax nycticorax</i>	One at Sukau.
Yellow bittern	<i>Ixobrychus sinensis</i>	Sukau.
Storm's Stork	<i>Ciconia stormi</i>	Frequent at Sukau.
Osprey	<i>Pandion haliaetus</i>	Single at Sukau.
Bat hawk	<i>Macheiramphus alcinus</i>	One at Deramakot. Another at Sukau. A good effort.
Brahminy kite	<i>Haliaastur indus</i>	Road into Deramakot. Sukau.
White-bellied sea eagle	<i>Haliaeetus leucogastor</i>	Sukau.
Lesser fish-eagle	<i>Ichthyophaga humilis</i>	Sukau.
Crested goshawk	<i>Accipiter trivirgatus</i>	Singles at Deramakot and Sukau.
Crested serpent eagle	<i>Spilornis cheela</i>	Widespread, seen almost daily.
Black eagle	<i>Ictinaetus malayensis</i>	Seen en route to Deramakot. Single at Deramakot.
Rufous-bellied eagle	<i>Hieraaetus kienerii</i>	One at Deramakot.
Wallace's hawk-eagle	<i>Spizaetus nanus</i>	Imbak Canyon and Sukau.
White-fronted falconet	<i>Microhierax latifrons</i>	Pair at Deramakot.
Peregrine	<i>Falco peregrinus</i>	One at Sukau.
[Sabah partridge]	<i>Tropidoperdix graydoni</i>	Heard frequently at Deramakot.
Bornean crested fireback	<i>Lophura ignita</i>	Three on the track at Imbak Canyon. A few at Deramakot.
Great argus	<i>Argusianus argus</i>	Heard frequently. A female on the side of the road at night at Deramakot was a surprise!
White-breasted waterhen	<i>Amaurornis phoenicurus</i>	Sukau and in transit on roadside wetlands.
Common sandpiper	<i>Actitis hypoleucos</i>	En route to Deramakot. Sukau.
Green imperial pigeon	<i>Ducula aenea</i>	Common at Sukau.
Pink-necked green pigeon	<i>Treron vernans</i>	Sukau.
Little green pigeon	<i>Treron olax</i>	Sukau.
Rock pigeon	<i>Columba livia</i>	Towns.
Spotted dove	<i>Streptopelia chinensis</i>	Villages, palm oil plantations etc.
Zebra dove	<i>Geopelia striata</i>	Recorded.
Emerald dove	<i>Chalcophaps indica</i>	Two singles at Deramakot. One at Sukau.
Blue-crowned hanging parrot	<i>Loriculus galgulus</i>	Common throughout.

Raffle's malkoha	<i>Phaenicophaeus chlorophaeus</i>	Deramakot.
Chestnut-breasted malkoha	<i>Phaenicophaeus curvirostris</i>	Deramakot.
Greater coucal	<i>Centropus sinensis</i>	Imbak Canyon. Deramakot.
[Oriental bay owl]	<i>Phodilus badius</i>	Heard at Sepilok.
Barred eagle owl	<i>Bubo sumatranus</i>	One or two seen most nights at Deramakot.
Buffy fish owl	<i>Ketupa ketupu</i>	Up to five a night!
Brown wood owl	<i>Strix leptogrammica</i>	Seen on a couple of nights at Deramakot And one from the boat at Sukau.
[Reddish scops owl]	<i>Otus rufescens</i>	Heard at Deramakot.
[Sunda frogmouth]	<i>Batrachostomus cornutus</i>	Heard at Sukau.
[Large frogmouth]	<i>Batrachostomus auritus</i>	Heard one night at the lodge at Sukau.
Nest swiftlets	<i>Collocalia</i> sp	Sepilok and Sukau.
Glossy swiftlet	<i>Collocalia esculenta</i>	Widespread.
Brown-backed needletail	<i>Hirundapus giganteus</i>	One at the lodge at Sepilok.
Silver-rumped swift	<i>Raphidura leucopygialis</i>	Forest sites throughout.
Whiskered treeswift	<i>Hemiprocne comata</i>	Common at Deramakot and Imbak.
Grey-rumped treeswift	<i>Hemiprocne longipennis</i>	Imbak Canyon.
Scarlet-rumped trogon	<i>Harpactes duvaucelii</i>	Pair at Sukau behind lodge.
Common kingfisher	<i>Alcedo atthis</i>	Sukau.
Blue-eared kingfisher	<i>Alcedo meninting</i>	Imbak Canyon. Deramakot. Sukau.
Rufous-backed kingfisher	<i>Ceyx rufidorsa</i>	Occasional brief views at Sukau.
Stork-billed kingfisher	<i>Pelargopsis capensis</i>	Deramakot. Sukau.
Collared kingfisher	<i>Todirhamphus chloris</i>	One at Sukau.
Blue-throated bee-eater	<i>Merops viridis</i>	Widespread.
Blue-tailed bee-eater	<i>Merops philippinus</i>	One at Deramakot.
Red-bearded bee-eater	<i>Nyctyornis amictus</i>	One at Deramakot.
Dollarbird	<i>Eurystomus orientalis</i>	Sukau.
Bushy-crested hornbill	<i>Anorrhinus galeritus</i>	Deramakot and Sukau.
White-crowned hornbill	<i>Aceros comatus</i>	One at Deramakot. Three on the first boat trip at Sukau put on a staggering display.
Wrinkled hornbill	<i>Aceros corrugatus</i>	Common at Sukau.
Wreathed hornbill	<i>Aceros undulatus</i>	Five at Imbak Canyon, including one at night. Singles seen occasionally at Deramakot and Sukau.
Asian black hornbill	<i>Anthracoceros malayanus</i>	Widespread.
Oriental pied hornbill	<i>Anthracoceros albirostris</i>	Common at Sukau.
Rhinoceros hornbill	<i>Buceros rhinoceros</i>	Heard at Sepilok. First seen at Deramakot, a few at Sukau.
Helmeted hornbill	<i>Buceros vigil</i>	Single over at Deramakot and heard at Imbak – wonderful!
Gold-whiskered barbet	<i>Megalaima chrysopogon</i>	Imbak Canyon. Heard elsewhere.
[Red-throated barbet]	<i>Megalaima mystacophanus</i>	Heard at Deramakot.
Blue-eared barbet	<i>Megalaima australis</i>	Sepilok.
Brown barbet	<i>Calorhamphus fuliginosus</i>	A couple of flocks at Deramakot.
Rufous piculet	<i>Sasia abnormis</i>	Deramakot.
Buff-rumped woodpecker	<i>Meiglyptes tristis</i>	Two at Deramakot. Sukau.
Buff-necked woodpecker	<i>Meiglyptes tukki</i>	Imbak Canyon.
Grey-and-buff woodpecker	<i>Hemicircus concretus</i>	One at Sukau.

Banded woodpecker	<i>Picus miniacus</i>	Sukau.
Dusky broadbill	<i>Corydon sumatranus</i>	A group of at least four noisy birds at Sukau.
Black-and-red broadbill	<i>Cymbirhynchus macrorhynchos</i>	Roosting birds at night at Sukau.
[Banded broadbill]	<i>Eurylaimus javanicus</i>	Heard at Deramakot.
[Black-and-yellow broadbill]	<i>Eurylaimus ochromalus</i>	Heard at Sepilok, Sukau and Deramakot.
Green broadbill	<i>Calyptomena viridis</i>	1 at Deramakot.
[Black-crowned pitta]	<i>Erythropitta ussherii</i>	Heard at Deramakot and Sukau.
[Hooded pitta]	<i>Pitta sordida</i>	Heard at Sukau regularly.
Pacific swallow	<i>Hirundo tahitica</i>	Widespread – seen daily.
Scarlet minivet	<i>Pericrocotus flammeus</i>	Deramakot.
Black-winged flycatcher-shrike	<i>Hemipus hirundinaceus</i>	Deramakot.
Green iora	<i>Aegithina viridissima</i>	Imbak Canyon. Deramakot.
Greater green leafbird	<i>Chloropsis sonneratii</i>	Deramakot.
Black-headed bulbul	<i>Pycnonotus atriceps</i>	Deramakot and Imbak
Yellow-vented bulbul	<i>Pycnonotus goiavier</i>	throughout
Spectacled bulbul	<i>Pycnonotus erythrophthalmus</i>	Deramakot.
Greater racket-tailed drongo	<i>Dicrurus paradiseus</i>	Sukau.
Bronzed Drongo	<i>Dicrurus aeneus</i>	Widespread.
Asian fairy bluebird	<i>Irena ouella</i>	Frequent at Deramakot.
Black magpie	<i>Platysmurus leucopterus</i>	Sukau.
Slender-billed crow	<i>Corvus enca</i>	Deramakot and Sukau.
Bornean bristlehead	<i>Pityriasis gymnocephala</i>	A nice flock of perhaps ten individuals on the first morning at Deramakot. A trip highlight on a quiet tour for birds.
White-chested babbler	<i>Trichastoma rostratum</i>	Deramakot.
Horsfield's babbler	<i>Malacocincla sepiaria</i>	One at Deramakot.
Rufous-crowned babbler	<i>Malacopteron magnum</i>	Scattered throughout.
Scaly-crowned babbler	<i>Malacopteron cinereum</i>	Deramakot.
Chestnut-winged babbler	<i>Stachyris erythroptera</i>	Deramakot.
Magpie robin	<i>Copsychus saularis</i>	Widespread.
White-crowned shama	<i>Copsychus stricklandi</i>	Throughout.
Chestnut-naped forktail	<i>Enicurus ruficapillus</i>	Two at Deramakot.
Striated grassbird	<i>Megalurus palustris</i>	Noted in transit between Sukau and Sandakan.
Dark-necked tailorbird	<i>Orthotomus atrogularis</i>	Imbak.
Ashy tailorbird	<i>Orthotomus ruficeps</i>	Sukau.
Yellow-bellied prinia	<i>Prinia flaviventris</i>	Imbak Canyon.
Dark-sided flycatcher	<i>Muscicapa sibirica</i>	Imbak Canyon.
Malaysian blue flycatcher	<i>Cyornis turcosus</i>	Deramakot. Sukau.
Spotted fantail	<i>Rhipidura perlata</i>	Deramakot
Malaysian pied fantail	<i>Rhipidura javanica</i>	Scattered.
Black-naped monarch	<i>Hypothymis azurea</i>	Imbak Canyon.
Asian paradise flycatcher	<i>Terpsiphone paradisi</i>	Imbak Canyon.
White-breasted wood-swallow	<i>Artamus leucorhynchus</i>	Sepilok.
Tiger shrike	<i>Lanius tigrinus</i>	One at Imbak Canyon.
Long-tailed shrike	<i>Lanius schach</i>	A few in transit.

Grey wagtail	<i>Motacilla cinerea</i>	One at Deramakot.
Eastern yellow wagtail	<i>Motacilla tschutschensis</i>	A grounded migrant on the lawn at Imbak Canyon one morning.
Asian glossy starling	<i>Aplonis panayensis</i>	Sukau.
Javan myna	<i>Acridotheres javanicus</i>	Habitation and wider countryside everywhere.
Hill Myna	<i>Gracula religiosa</i>	Sukau.
Orange-bellied flowerpecker	<i>Dicaeum trigonostigma</i>	Scattered.
Crimson-breasted flowerpecker	<i>Prionchilus percussus</i>	Imbak Canyon.
Tree sparrow	<i>Passer montanus</i>	Widespread.
Dusky munia	<i>Lonchura fuscans</i>	Common in grassy areas.
Chestnut munia	<i>Lonchura atricapilla</i>	A few between Deramakot and Sukau.

Systematic List 3 – REPTILES

Estuarine crocodile	<i>Crocodylus porosus</i>	Sukau, including one 4-metre whopper.
South Asian box turtle	<i>Cuora amboinensis</i>	Deramakot.
Green crested lizard	<i>Bronchocela cristatella</i>	Deramakot.
Borneo forest dragon	<i>Gonocephalus bornensis</i>	One at night at Sepilok.
Malayan crested lizard	<i>Gonocephalus grandis</i>	One at night at Deramakot.
Cat gecko	<i>Aelurosalabotes felinus</i>	Single at Deramakot whilst spotlighting. A trip highlight for one of us.
Double-spotted gecko	<i>Gekko monarchus</i>	The one by the light in the garden at Sukau lodge.
Asian house gecko	<i>Hemidactylus frenatus</i>	Abundant nocturnal hunter in lodges.
Flat-tailed house gecko	<i>Hemidactylus platyurus</i>	On the buildings at the Sukau lodge.
Borneo skink	<i>Dasia vittata</i>	Frequent throughout.
Common sun skink	<i>Eutropis multifasciata</i>	Sepilok, Deramakot and Imbak.
Rough skink	<i>Eutropis rudis</i>	Deramakot.
Banded lipinia	<i>Lipinia vittigera</i>	Sepilok.
Common water monitor	<i>Varanus salvator</i>	A few at Deramakot and Sukau.
Dog-toothed cat snake	<i>Boiga cynodon</i>	One at Deramakot at night.
Painted bronzeback	<i>Dendrelaphus pictus</i>	One at Sukau.
Red-tailed green ratsnake	<i>Gonyosoma oxycephalum</i>	Deramakot.
South Philippine temple viper	<i>Tropidolaemus subannulatus</i>	Sepilok.
Borneo pit viper	<i>Craspedocephalus borneensis</i>	One dead in the talons of a buffy fish-owl at Deramakot was an interesting observation.

Systematic List 4 – AMPHIBIANS

Paddyfield frog	<i>Fejervarya limnocharis</i>	Deramakot.
Borneo white-lipped frog	<i>Chalcorana raniceps</i>	Deramakot, Sukau.
Lowland litter frog	<i>Leptobrachium abbotti</i>	One at Sepilok.
Dark-eared tree frog	<i>Polypedates macrotis</i>	Imbak, Deramakot.
File-eared tree frog	<i>Polypedates otitophus</i>	frequent
Harlequin tree frog	<i>Rhacophorus pardalis</i>	Frequent at Deramakot.

Systematic List 5 – ODONATA

^E endemic to island of Borneo.

^E <i>Libellago phaeton</i>	Deramakot.
<i>Libellago semiopaca</i>	Imbak Canyon.
^E <i>Rhinocypha cucullata</i>	Deramakot.
<i>Rhinocypha humeralis</i>	Deramakot.
^E <i>Euphaea subcostalis</i>	Imbak Canyon.
<i>Dysphaea dimidiata</i>	Deramakot.
^E <i>Vestalis amoena</i>	Deramakot.
<i>Neurobasis longipes</i>	Deramakot.
<i>Lestes praeivus</i>	Imbak Canyon. Deramakot.
^E <i>Rhinagrion elopurae</i>	Single male at Deramakot.
<i>Elattonaura analis</i>	Sepilok. Deramakot.
^E <i>Prodasineura hyperythra</i>	Sepilok.
<i>Ceriagrion cerinorubellum</i>	Sepilok.
^E <i>Ceriagrion bellona</i>	Tandem pair on last day at Deramakot.
<i>Pseudagrion microcephalum</i>	Widespread.
<i>Pseudagrion pilidorsum</i>	Deramakot.
<i>Pseudagrion cf lalakense?</i>	An undescribed damselfly discovered by Phil in January 2023 at Danum Valley was found at Deramakot - its second known location.
<i>Archibasis incisura</i>	A surprise at Sukau on the last day.
^E <i>Teinobasis laidlawi</i>	Single male behind the lodge at Sukau.
<i>Argiocnemis rubescens</i>	Imbak Canyon.
<i>Argiocnemis</i> sp.	Deramakot. A mystery species lost in the synonymy of <i>rubescens</i> .
^E <i>Mortonagrion alcyone</i>	Sepilok. Deramakot.
<i>Argiocnemis femina</i>	Widespread.
<i>Xiphiagrion cyanomelas</i>	Sepilok.
^E <i>Coeliccia</i> sp.	Single at Deramakot. This genus is in disarray in Sabah, there are at least four undescribed species and this is probably one of them.
^E <i>Coeliccia nigrohamata</i>	A male at Deramakot.
<i>Copera vittata</i>	Deramakot.
<i>Ictinogomphus decoratus</i>	Deramakot.
^E <i>Leptogomphus coomansi</i>	Males present in good numbers in the roadside runnels at Deramakot.
<i>Tetracanthagyna</i> sp.	Single seen briefly at Deramakot, probably <i>plagiata</i> .
<i>Epophthalmia vittigera</i>	Sepilok. Deramakot.
<i>Tetrathemis hyalina</i>	Imbak Canyon (sight record). Deramakot.
<i>Lyriothemis biappendiculata</i>	Deramakot.
<i>Lyriothemis cleis</i>	Imbak Canyon.
<i>Agrionoptera insignis</i>	Sepilok. Sukau.
<i>Cratilla metallica</i>	Deramakot.
<i>Orthetrum chrysis</i>	Widespread.
<i>Orthetrum glaucum</i>	Widespread.
<i>Orthetrum schneideri</i>	Widespread.
<i>Orthetrum sabina</i>	Sukau.
<i>Orthetrum testaceum</i>	Widespread.
<i>Tyriobapta torrida</i>	Imbak Canyon. Deramakot.
<i>Brachydiplax chalybea</i>	Deramakot.
<i>Acisoma panorpoides</i>	Deramakot.
<i>Diplacodes trivialis</i>	Deramakot.
<i>Neurothemis fluctuans</i>	Widespread in lowland marshes.
<i>Neurothemis ramburii</i>	Widespread.
<i>Neurothemis terminata</i>	Sepilok. Deramakot.
<i>Rhodothemis rufa</i>	Sepilok. Deramakot.

<i>Pseudothemis jorina</i>	Deramakot (a new site for this species).
<i>Trithemis aurora</i>	Deramakot.
<i>Trithemis festiva</i>	Deramakot.
<i>Zyxomma obtusum</i>	Sepilok. Imbak Canyon.
<i>Zyxomma petiolatum</i>	Sepilok.
<i>Tholymis tillarga</i>	Sepilok.
<i>Pantala flavescens</i>	widespread.
<i>Tramea transmarina</i>	Deramakot.
<i>Hydrobasileus croceus</i>	Deramakot.
<i>Camacinia gigantea</i>	Imbak Canyon. Deramakot.
<i>Rhyothemis phyllis</i>	Sukau.
<i>Rhyothemis regia</i>	Single male at Deramakot.
<i>Rhyothemis triangularis</i>	Deramakot.
<i>Urothemis signata insignata</i>	Sepilok. Deramakot.
<i>Aethriamanta gracilis</i>	Sepilok. Deramakot.