









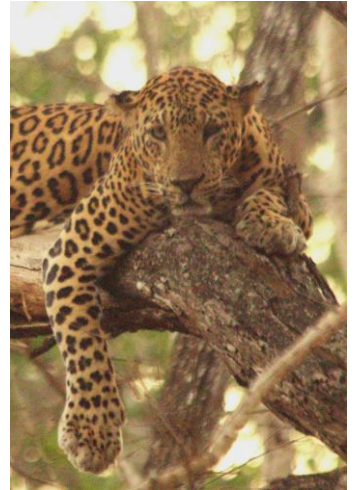
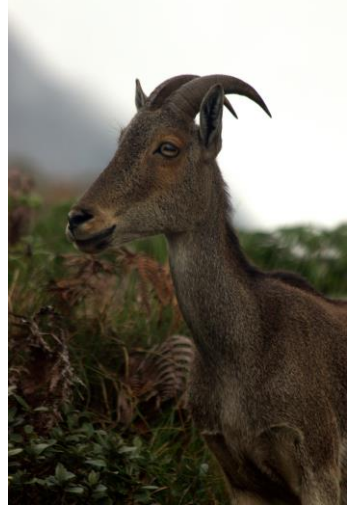
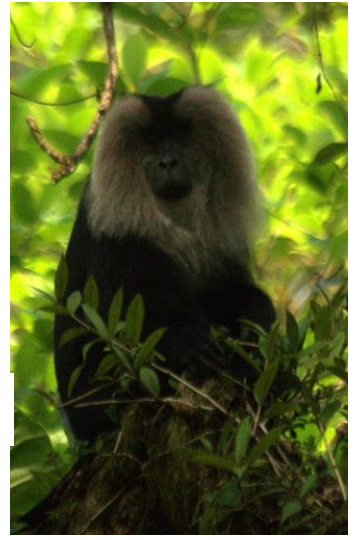


South India's Forests & Tadoba's Tigers Extension

Destination: Western Ghats & Tadoba, India **Duration:** 21 Days **Dates:** 23rd Apr - 15th May

-  Having a total of 17 Tiger sightings of at least 8 different Tigers
-  Spotlighting 3 Grey Slender Loris and having great close up views of one.
-  Over 180 species of birds such as rare Nilgiri Pipit & Black and Orange Flycatcher.
-  Seeing most of India's major predators Leopards, Tigers, Sloth Bears and Dhole
-  Seeing a Tigress and her four 15 month old cubs close and over several days.
-  Spotting 8 species of Primate including Lion-tailed Macaques & Nilgiri Langurs
-  Having incredible close views of a huge male Leopard in Nagarhole up a tree.
-  Seeing a total of 57 species of mammals, a Royle Safaris record for an Indian trip.
-  Having great views of Indian Giant & Travancore Flying Squirrels in Vaplarai
-  Hiking the plantations and forests with Lion-tailed Macaques, Nilgiri Tahr & others.



Tour Leader / Guides

Martin Royle (Royle Safaris Tour Leader)
 Pavan, Prakash & Gopal (Drivers)
 Sanjay (Birding Guide in Sultanpur NP)
 Baiju (Naturalist Guide & Cook Western Ghats)
 Supramanien (Slender Loris Guide)
 Gunis (Munnar Naturalist Guide)
 Prakash, Hari & Kumour (Bandipur & Nagarhole NP Naturalist Guides)
 Durbindhar (Tadoba Naturalist Guide)

Participants

Mr. Joe Boyer
 Mrs. Rhoda Boyer-Perkins

Overview

Day 1:	Delhi
Day 2:	Sultanpur NP
Days 3-4:	Periyar NP
Day 5:	Dindigul
Days 6-7:	Munnar Area
Days 8-9:	Valpari Area
Day 10:	Bandipur NP
Days 11-12:	Nagarhole NP
Days 13-17:	Tadoba NP
Day 18:	Nagpur
Day 19:	Delhi / Home



Day by Day Breakdown

Overview

India is the 8th most biodiverse country in the world and with a great network of national parks throughout the nation there is wildlife to thrill any wildlife enthusiast. India may be most famous for its tiger reserves which dominate the central plateau of the country and the state of Madhya Pradesh. Here the mosaic of sal forest, bamboo groves and meadows make for great tiger habitat. But there are many other incredible and diverse habitats in India to explore, many of which are only found in here. From the dense tropical rainforests and the lush subtropical grasslands of the North East to the bitterly cold and high altitude mountains of the Himalayas through the dry and hot deserts of Gujarat and the forested mountains of the Western Ghats, the country has a wealth of wildlife and ecosystems that rivals anywhere on the planet.

This tour will focus on two particular ecosystems, the first is a combination of many small habitats which encompass the larger biome of the Western Ghats. These forested mountains are one of the world's biodiversity hotspots with dozens of species confined to these forests in the far south west of the peninsula. The other location is one particular national park, Tadoba Tiger Reserve. This park is very similar to the more famous tiger reserves in Madhya Pradesh such as Bandhavgarh and Kanha, with a mixture of sal forest, meadows (maidens) and bamboo, and a high density of tigers.

But before we head to Tadoba and where we hope and expect to have great tiger sightings we will be entering various reserves and national parks which host the largest continuous population of tigers in India and one of the most significant in the world. However seeing tigers in the dense tropical forests here is very hard and instead we will focus on some of the more commonly seen species here, as well as some of the elusive endemic species. The Western Ghats has one of the highest amounts of endemism in the world (being a top 10 location for endemic species), whilst many of these endemic species are plants, invertebrates and amphibians there is also a good diversity of endemic bird life and mammals. We will be focusing on the mammals with species such as Nilgiri thar, Nilgiri langur, lion-tailed macaque, bonnet macaque, black-footed langur, grey slender loris, Nilgiri marten and Travancore flying squirrel all high targets. But alongside these endemic species we hope for Asia's biggest animal the Asiatic elephant as well as dozens of other species. We will explore this region via boats, jeeps and walking heading out pre-dawn and after sunset with spotlights to try and maximise our chances of seeing as much as possible. With so many locations to visit and so many species to see we will be travelling a lot over the first 12 days but then we have a good amount of time to thoroughly explore one park when we visit Tadoba.

Tadoba is our destination to get the tiger (among other species), the tiger is such an iconic species that it doesn't feel right to visit India for wildlife and not try and see this incredible animal.

It is hard to imagine a world without wild tigers, a world without the largest species of cat, a world without the majestic beauty of the orange and black predator. Unfortunately it is just as hard to imagine a world where tigers roamed from Turkey to Korea, Iran to Indonesia; a world where there were around 40,000 tigers in India alone! But this was the world only 100 years ago. For the vast majority of people alive today the tiger has always been a rare and endangered species. To try and think of the tiger as common or widespread is to think of a time at the turn of the 20th Century when a hunter could easily shoot and kill 20 in a day!

As a global community we missed the boat with tiger conservation, no country took any steps to ensure their continued survival until Russia when they conducted the first survey in the 1940's and then India did the same in the 1970's. Both these surveys brought back worrying findings with very low numbers reported. With a population in India of only around 1,500 and extermination from 50% of their historic range the fate of the tiger was firmly hanging in the balance. India started the conservation work by initiating Project Tiger and by creating numerous Tiger Reserves around the country, fully guarding the parks and ploughing millions of dollars into the project the numbers increased. In fact the numbers peaked in 1989 to 4,334 in India. The project was working and tigers were coming back strong. This was of little surprise to scientists who predicted that with protection and an adequate prey base the tigers fast breeding, relatively large litters and high survival rate would mean they would repopulate quickly.

However the project and for the most part the conservation world took their eye off the ball and the flow of money to the parks and guards began to waiver and the same people who were once employed to protect the tiger were now having their heads turned by Chinese smugglers offering them massive paydays for dead tigers. A survey in 2006 found that the number of tigers had fallen to 1,411 a 60% decline since 2002, this data coupled with the fact that several 'Tiger Reserves' had no tigers left inside them and an independent study finding that the tiger's habitat globally had continued to decrease and was only 7% of its former range; left Project Tiger with no choice. The project began to plough money into the project again and in effect had to start from scratch. This time international agencies like WWF and TOFT were more heavily involved and the most recent survey suggests a 12% increase and tiger numbers of 1,706 in India as of 2011.

The news for tigers is also good elsewhere with the Russian Far East increasing its population from 40 to over 400 since the 1940's, with tiger conservation in Burma, Thailand and Indonesia taking centre stage with large tiger preserves opening up as well increasing numbers in Nepal and the ambitious Terai Arc Landscape project (Tiger Corridor) in the Himalayan foothills taking form quickly. There are also newly discovered breeding populations in Thailand, Malaysia and even northern China, so it appears that tigers are fighting back and the world could have



this incredible predator for a long time to come. However there is still a long way to go and much work needed, including the continued work on the Global Tiger Initiative. This project was set up in 2010 when all 13 countries where tigers live met at the first multi-national conservation meeting for one species ever, decided to try and double tiger numbers to around 7,500 by the next Chinese year of the tiger in 2020.

This trip report documents on a day by day account the highlights of the tour as well as including a sightings log of all the species seen and identified.



Day 1 **Delhi**

Arrival

Despite the flight being on time and Joe and Rhoda quickly getting through immigration (which can be time consuming in Delhi) it was still gone 11:00pm when we eventually left the airport and headed to the hotel. By the time we checked in and got sorted in the rooms we just headed to bed and arranged our driver to pick us up at around 9:30am tomorrow.

Day 2 **Sultanpur National Park**

Bird Watching

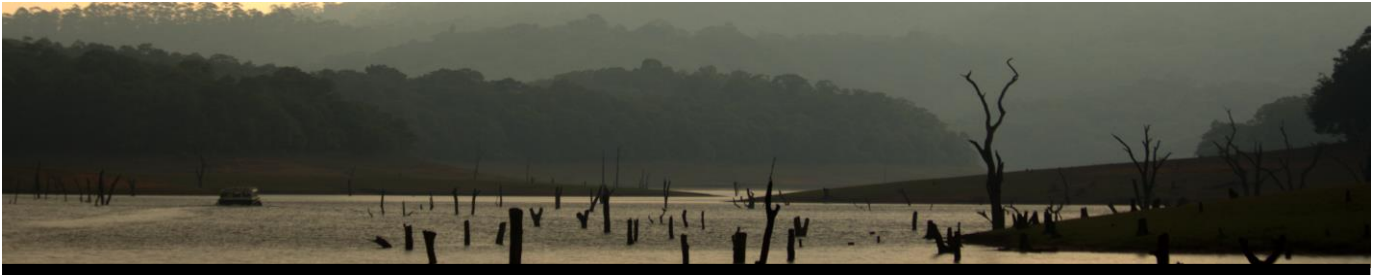
This morning we breakfasted on the rooftop restaurant and as the sun was already warming the air we headed out of the city towards Sultanpur National Park, due to our late arrival last night and want to get some rest to combat fatigue we knew we had missed the best birding time (of the early morning) but we headed there to get some fresh air and have a walk around and see what we could see. As it happened the traffic was particularly bad all day and it took us a long time to get there. However once we arrived we met our birding guide Sanjay and went for a walk around the park. Despite the high temperatures at this time of day we saw a large number of species including some of the more common Indian birds such as house crows, red-vented bulbuls, jungle babblers, black drongos, spotted doves, intermediate, little and great egrets, grey herons, Indian pond herons and red-collared doves. We also had some interested sightings including a breeding couple of sarus cranes and their immature chick from last year, a good number of Eurasian spoonbills, pheasant-tailed jacanas, painted storks and a smaller number of black-necked storks. Whilst the water levels were very low (as we were at the height of the dry season) there were many waterfowl around including Indian spot-billed ducks, little grebes, comb ducks, Eurasian coots and common moorhens. Along with the multitude of birds we saw a good number of nilgai, including some impressive male individuals and many northern palm squirrels running around and foraging along the ground and trees. Our birding highlights were great views of a pair of spotted owlets and a nesting Indian scops owl and their chick in a nest box near the interpretation centre.

From here we travelled back into Delhi for lunch and then Martin went to Nehru Place (the main electrical market in Delhi) to try and find a replacement battery charger for his camera as his had stopped working for some unknown reason. We failed in this mission, but news came from Anil later that day that he had managed to get one in Cochin and we would be able to pick it up tomorrow.

Day 3 **Periyar National Park**

Travelling & Wildlife Watching

This morning we left the hotel very early at 3:30am and headed to the domestic airport, we were a little delayed on take off, but the flight was uneventful other than that and we arrived in Cochin and met Anil and Baiju and immediately set off towards Thekkady, the nearest town to Periyar National Park and our accommodation for the next two nights. The drive was largely uneventful as we drove through the winding roads that led inland from the Arabian Sea up into the Western Ghats. Travelling through small towns and villages dotting the dense forested hillsides and then the myriad of spice plantations, this is the home of Indian spices and so many are grown for the local and international markets here. We stopped for lunch along the way at a cardamom plantation before arriving at Thekkady and the gate to the park as the rain started to fall. It was a short and sharp thunderstorm (typical for this time of year) and it lasted around 30 minutes. Along the short drive from the gate to our accommodation, which is perfectly located inside the park and within quick walking distance from the boat launches, we spotted a few bonnet macaques and a large family of Eurasian wild pigs feeding next to the road. Joe saw the resident troop of bonnet macaques around the pool area after we checked in as well, making the warnings about not to open the windows in the rooms during the day, as the macaques will get in. After such an early start, long day traveling and energy sapping heat and humidity we all had an early dinner and headed to bed for the night.



Day 4 **Periyar National Park**

Wildlife Watching

The best way to explore Periyar and hope to see the elephants (which are getting harder and harder to see nowadays by all accounts) is by the boat safaris. We were booked on the first one and after a quick tea and coffee we headed off and boarded the boat. The air was pretty cool and we had great views of several herds of sambar and gaur, including some numbering over 40 individuals of each species. We also watched a huge old bull gaur grazing, his horns the largest we had ever seen on a gaur before. Along with a smaller number of Eurasian wild pigs, the large resident troop of bonnet macaques and smaller band of endemic Nilgiri langurs near the lodge we didn't see any other mammals. However the bird life was good with many white-throated and pied kingfishers as well as little & large cormorants, basking oriental darters, ashy woodswallows, various egrets and herons.

We came back from this cruise, negotiated the frisky macaques that line the street and visitor centre looking for scraps from all of the tourists, and arrived back at the lodge for breakfast. After breakfast we had a tour around some of the various spice plantations here, being shown how cardamom, cinnamon, black pepper, basil, coriander, tamarind, nutmeg, various chillies, turmeric and a whole host of other spices and herbs are grown here before coming back for lunch and then out on the boats for two back to back cruises hoping that the heat of the day would entice the elephants out of the forest. The afternoon was pretty quiet with the same species seen again, we had better views of sambar as they came closer to the water to graze, drink and wallow and also the gaur. But there was nothing new as the rain poured down again in another short, sharp thunderstorm. As we were waiting for the third boat safari to commence we heard elephant's trumpeting in the forest, but this didn't materialise into sightings as they stayed hidden in the dense forest. As we were having dinner we heard some sambar deer alarm calling and then one came running passed the restaurant windows. When Baiju joined us for dinner (and birthday cake as it was Rhoda's birthday) he told us that nearby here at the small temple he prayed at a pack of dhole came out of the forest and started chasing some sambar. It was clearly this commotion we have heard and seen a little of at dinner. With nothing else going on outside we had our dinner, celebrated Rhoda's birthday and then got some rest. Tomorrow we would leave here and head a little way away to focus on one of the most elusive species in India, the grey slender loris.

Day 5 **Dindigul**

Travelling & Wildlife Watching

After breakfast we departed Periyar National Park and started the short journey (only around 25km) as the crow flies but we would take around 3 hours to reach there as we would wind our way around the hills. As we were getting ready to leave and loading the vehicle we had great views of a Malabar giant squirrel feeding on fruits in the hotel courtyard and some birds including red-whiskered bulbuls and purple sunbirds. On leaving we found a very large sounder of Eurasian wild pigs and watched as they snuffled around next to the road with an escort of common mynahs picking off ticks and other parasites from their backs as well as grabbing insects that fly up from their snuffling. On the drive up and through the mountains we stopped at the Pinkeytex Kumily waterfall and enjoyed the antics of the resident troop of bonnet macaques who occupy the area around the falls as tourists stop there and where there are tourists there is food. From here we proceeded directly to Athoor, nearby Dindigul and our accommodation. We left the mountainous roads and travelled through the flatlands surrounded by banana and then coconut plantations as far as the eye can see. Getting into Dindigul we were met with a small delay as the beansprout harvest festival was in full swing and the procession and drums were marching down the street. The colourful and loud display was a welcome break from the normal Indian countryside.

When we arrived at Cardamom house we met the owner Christopher and had lunch and a little rest before heading out to some nearby forest reserves and local villages in search of one of the most elusive Indian mammals, the grey slender loris. We picked up Supramanien our local forestry guide and headed up the rocky slopes to the sparse dry scrub forest at around dusk. We were not waiting very long when we found our first slender loris, in fact it was still mostly light, and when we found it, it was low in the tree and we had nice eye level views of this tiny and incredible little primate. We stayed with this one individual for around 30 minutes as it climbed around the tree, it climbed high into the tree and was trying to keep distance from us, at this point we left and headed to the car. We had heard on the phone that a local village had three more in some trees nearby the village. So we headed there, when we arrived at Pallaupusarau village we were guided (by the throng of villagers) to a stand of trees on the back side of the village, we didn't find the three they claimed, but did see one in a distant part of a large tree and then our third of the night quite close to us in a tree which allowed good views. However it was just out of range of our camera flashes so we didn't get great pictures, but the sightings through the binoculars showed the whole detail the animal



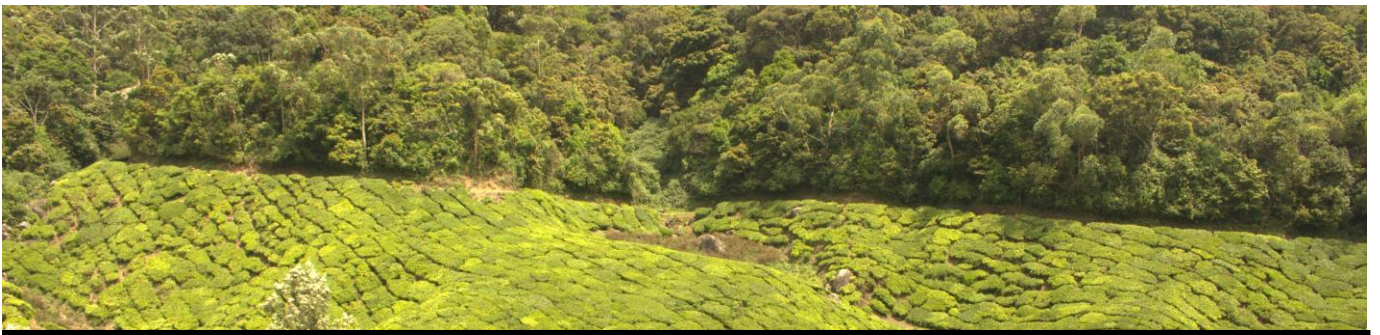
and we watched this one for around 10 minutes before bidding farewell to the villagers and thanking them for finding them for us and headed back to the vehicle. On the way we spotted a spotted bow-fingered gecko on the path, this was the last sighting of the day before we had our last dinner back at the accommodation and hit the sack after a very successful evening.



Day 6 Eravikulam National Park

Travelling & Wildlife Watching

At breakfast we had great views of several species of butterfly and birds fluttering around the garden including olive sunbirds, purple sunbirds, red-whiskered bulbuls, jungle babblers, jungle crows and we also observed a small number of jungle palm squirrels running around and foraging in the cool morning air. On leaving we headed back up the mountains with great views over the plantations and then down the other side of the mountains into tea growing region. As we descended we started driving through the tea plantations and finally arrived at Olive Brook just through the town of Munnar. We checked in and had lunch here before heading out to meet our naturalist guide Gunis for the next couple of days and headed to Eravikulam National Park, once we arrived there we took the bus up to the top of the peaks and walked around the trail looking for some of the 1,000 strong population of Nilgiri tahr here. Along the way we saw the second highest peak in Southern India, Arnee Muni which means Elephant Head Hill and reaches 2,695m tall. Walking around the park we spotted a couple of Nilgiri tahr in the distance and were talked through some of the endemic plants including the kurinjii which only flowers once every 12 years and when the majority of blooming at once the whole park turns blue with the small flowers. Walking around brought us to a female and her 3 week old kid very close to the pathway. We watched as they fed on the many different plant species and climbed nimbly along the rocks. We also had some great views of mating Kerala laughingthrushes and watched as some red-whiskered bulbuls collected twigs for nest building. With this time of year being the breeding season for many birds around here. The pied bushchats were also very active and calling back and forth between the males and females as they start to form pair bonds to get them through the next few weeks of incubation and then raising chicks. We spotted several other tahr around the grasslands and rocky slopes as we walked to the top of the trail, we did see a small troop of Nilgiri langurs moving quickly through a vein of forest. On the way back down we had some tahr on the road, they are completely unfussed by the present of people as we were walking around them they carried on feeding on the vegetation on the side of the road and licking the salts and minerals off the rocks that lined the road. We then spotted two more of the Western Ghats endemic birds with distant views of a Nilgiri flycatcher and then great views of a pair of endangered Nilgiri pipits just walking though the grasses and shrubs dotting the rocks. As light dots of rain started to land and the thunder rang through the hills louder and louder we headed back to the entrance point, got the bus back down and then headed back through Munnar to the accommodation. We had dinner and then Martin, Baiju and Gopal headed out for a little spotlighting around the guesthouse's plantation, it was very quiet with just one black rat spotted.



Day 7 Shola Forest National Parks

Wildlife Watching

This morning we met our guide Gunis again in Munnar and drove around the various dams (with very low levels of water after the long drought that Southern India is suffering currently) to get to the Shola National Park. Our main target today is the elusive and hard to see Nilgiri marten, another endemic mammal that prefers the shola tree forests that dot the tea plantations here. On the drive up we spotted a large male Nilgiri langur running from the road and up the steep side and into the forest, angrily chattering his teeth at us as we stopped to look before we disappeared. On arrival at park we walked around some of the trails and along the road scanning the trees and



hoping for one to cross the road, we did have a brief view of a Malabar giant squirrel, annoying about the same size, shape and colour as the martens and so confusing to tell apart until you get them in the binoculars. As we watched the squirrel we heard a red muntjac barking loudly for around 5 minutes. It was too far into the impenetrable undergrowth for us to follow and see what it was alarm calling for. We carried on walking around the scrub and shola forests and spotted several Nilgiri flycatchers but no martens. So we got back into the vehicle and drove through the park slowly, we spotted 4 Malabar giant squirrels resting spread out on the tree branches in the heat of the midday sun. But no Nilgiri marten again, from here we went to a nearby restaurant and had some lunch before heading to another known area for the marten. We walked for around 3.5 hours through the mosaic of shola forest and tea plantation. The scale of the tea plantations we had been driving through really hit home once we were inside one and the slopes on all sides were flush with bright green and neatly plucked tea bushes. Our first sighting of the walk was another Malabar giant squirrel very close to the pathway, running through the bushes and small trees at around eye level before disappearing into the forest. As we walked through sections of forest fringing the tea plantation we saw various different species of birds including some of the Nilgiri endemics such as Nilgiri wood pigeon, black-and-orange flycatcher and white-bellied blue robin as well as great views of a crested serpent eagle soaring above us and a changeable hawk-eagle that we spooked from his perch and he took off along and through the narrow forest pathway and out above the tea plantation and nice views of a stripe-necked woodpecker. Alongside the birds we had brief views of a few Nilgiri langurs and found marten and civet scat on the path, however this would be the closest we would get to seeing the marten today. As we started our walk back we saw many Nilgiri langurs in the trees, resting in the canopy and picking the freshest and newest leaves to feed on. Walking out of the forest we found two young (~15cm long) shield-tailed snakes. Growing to around 40cm long these are likely to have recently hatched from the same clutch.

We then arrived at a tea plantation village and walked through, meeting various people as we went and seeing their small scale farming before meeting our vehicle at the main road and heading back to the town. We dropped Gunis off and headed back to our accommodation for dinner and a good night's rest.

Day 8 **Valparai & Surrounds**

Travelling & Wildlife Watching

This morning Martin went with Baiju to explore a cave just off the main road around 3km back down the road to Munnar, in the hope of finding bats, however the cave was very wet and virtually impossible to get far into, however the only wildlife we saw was a large colony of white-rumped needletails and their nests built onto the sides of the walls. We arrived back in time for breakfast and were joined by a pair of Malabar whistling thrushes in the small garden. After breakfast we packed up and left for Valparai, we would drive through Chinnar National Park as well as Anamalai National Parks today and we made a small tea stop in Chinnar. Here we found a troop of tufted langurs nearby the tea stall, moving through the trees and grooming each other. Also here we spotted a couple of three-lined palm squirrels foraging in the presence of a large flock of jungle babblers; we also had great views of a grizzled giant squirrel moving skilfully through the tree tops looking for figs and other fruiting trees nearby. All in all not a bad 20 minutes break to the journey. Carrying on we arrived a huge dam and reservoir bordering Anamalai National Park, to get through this large dry forested park we would climb up the mountain with the help of no less than 40 hairpin turns. All along the way were bonnet macaques, lining the road as so many different species of macaques do throughout Asia and even in Gibraltar, hoping for food from passing by people and picking through the litter thrown by ignorant travelling. Martin also spotted a lone black-footed langur here, however it was impossible to stop on the narrow twisting and turning roads to get a closer look.

Once we descended the other side we travelled through a mixture of tea plantation and village until we arrived at Valparai, close to our accommodation we were greeted by the resident troop of lion-tailed macaques. We would spend some proper time with these over the next day and a half, for now we would head to the accommodation to freshen up and have lunch after the 6.5 hour journey. After lunch we went out for a short drive around and visited the lion-tailed macaques again, this troop tends to live around the main road as there is good forest here with many fruiting trees. So they have their own traffic wardens who follow their movements and put up signs to alert drivers to be careful as there are endangered primates around. So we watched the troop (some 40 strong) moving and jumping through the trees, feeding on figs and trying to get into jackfruit as well as just socialising. This endangered species is one of the 25 most endangered primates in the world and was refreshing to see the level of protection and affection this troop were getting from the local people. As it was getting later in the evening the troop moved deeper into the forest and to their roosting trees for the night and we went out into the plantations to search for mongooses or other wildlife. There was a local festival tonight and the fireworks, massive lit effigies of gods, goddesses and elephants as well as the signing and music meant that we were unlikely to see much wildlife around here, so we headed back for dinner and then would head out after dinner to see if it had quietened down. As we arrived back at the accommodation we had a text message from the local forestry department saying to be careful as the local herd of elephants had been seen moving towards our plantation, however we didn't see them where we could safely look. It is too dangerous to go looking for elephants in the tea plantations after dark unfortunately.

After dinner we were getting ready for leaving for our night drive and Baiju heard the calls of a Indian flying squirrel nearby, we quickly found the individual just outside our cottage and had great views of it in the tree, having just come out of its hole from a day of sleeping it was calling to mark its territory and also alert other individuals to its presence before starting a night of feeding. Very soon after leaving the plantation we spotted an Indian crested



porcupine on the side of the road, we had great views as it climbed up the bank of the road and crossed right in front of us and waddled away into the forest on the other side of the road. So far a great start to the drive, but outside of the plantation we would not see any more large mammals tonight, the sounds of the festival were still ringing out into the night. However when investigating a long stand of fruiting trees alongside a road we did find a couple of Salim Ali's fruit bats feeding. Whilst here we also saw a couple of unmistakable painted bats, this colourful species is easy to identify even when in flight (as the area was well lit with streetlights) as the patterned wings and orange fur was clearly visible. Back at the accommodation we spotted some sambar moving through the coffee plants growing nearby the main building and then had fantastic and close views of a feeding Indian flying squirrel (possibly the same one we saw earlier as it was only around 100m away from where we first it), as we were watching the squirrel we noticed an Oriental scops owl land on an exposed branch nearby. We had great views of the scops owl and then a slightly larger but much more darker coloured owl came and landed next to it carrying a large Kerala cricket in its mouth. Obviously a parent to this fledging the adult owl gave the chick the cricket and we watched this fantastic intimate behaviour as the chick eat the cricket and the adult flew off to find some more food either for itself or its hungry chick.

We then left the owls and squirrel in peace and headed back to our cottage, set the electric fence around the building to on (for protection against the elephants) and then got some sleep.

Day 9 Valparai & Surrounds

Wildlife Watching

This morning we were woken by the chirping of birds and the knock at the door by a member of staff to remind us to turn off the electric fence before trying to head out. We had already remembered so his commando-esque manoeuvre to get through and to our door was not needed. Walking up to the main house for breakfast we spotted various birds including Indian grey hornbills, colourful hill mynahs, Malabar whistling thrushes, jungle crows, lesser racket-tailed drongos, Nilgiri wood pigeons and a pair of very territorial and noisy common flamebacks. There were some mammals around too including a pair of jungle striped palm squirrels and one dusky palm squirrel, but as Martin was scanning the forest he had a brief view of an dark animal moving through a distant tree. It was not a squirrel, it was carrying itself too high off the branch, its movement was too fluid, the tail shorter and much less bushy but he couldn't see the head and by the time he got closer he couldn't find it again. Was this the elusive Nilgiri marten, they are known from here and after seeing many Malabar giant squirrels on this trip so far, he was pretty convinced it was not one of those and so most likely an annoying brief view of this beautiful and rare carnivore.

After breakfast we left for a drive around and quickly found a young male Indian muntjac in the forest next to the road, with the muntjac was a quite angry wild boar that didn't allow Baiju to get very close. We then found the lion-tailed macaques again and had spent an hour or so with them as they fed on jackfruits and figs above us. Being careful not to stand underneath the jackfruits (wouldn't want one of those landing on your head); we had great views once again. The dominant male giving us nice views as he sat and observed his domain overlooking the road. We watched as he and a couple of the younger males chased an indignant Malabar giant squirrel away and through the macaques chosen fruiting trees. Despite there being dozens of trees in fruit here there was not enough to share and the squirrel disappeared.

From the lion-tailed macaques we left and searched for the largest Asian mongoose the stripe-necked mongoose, we headed into the tea plantations and drove around for around 1 hour until Baiju shouted to stop and around 60m into the plantation and next to a small pool and large rock was the large stocky mongoose. We watched for a few minutes as it dug down into the ground and buried its nose down into the earth, presumably having found something tasty. The mongoose moved into the tea plants and we lost him, and so we headed back to the accommodation for lunch. On the drive into the plantation we found the lion-tailed macaques once again, they were mostly on the ground now foraging, with only a few youngsters playing in the trees. We watched as some of them did their best to break into the massive jackfruits, one individual was gorging himself on the jackfruit before the alpha male arrived. He walked very close to the vehicle and was a little too close for our lenses before he called to the troop and moved off and away from us. The others followed and we made it back to the big house for lunch. After lunch the heavens opened and a torrential downpour ensued. Maybe the long drought in Southern India was over! We waited for the rain to stop and then headed for a walk into the plantation at around 15:20. Our main focus now was a large herd of guar that was thinly distributed through the plantation. We were able to get very close to them, within 15-20m from the largest species of wild cattle in the world and had great views. They were separated into small groups each with a male, some adult females and their young of various ages. They also came along with their entourage of common mynahs picking off parasites and feeding off insects disturbed into the air by the guar's movement. As we walked around there was further rain but not as heavy or for as long, we then came back to the accommodation for a short break before dinner and another night drive to see what we could find after dark with the brown palm civet being our major miss so far as far as the commonly seen Western Ghat endemic species of mammals go.

The night drive started after dinner and the rain had cleared up so we hoped for activity now that the rain had finally stopped. We didn't get the brown palm civet, but it was successful in other respects. Firstly we had great sightings of a large male sambar inside the lodge grounds and then exploring the plantation roads fringed with forest we found an endemic Sahyadris forest rat running around a tree next to the road, before an Indian hare crossed the road and ran quickly into the tea fields. But it was back at the lodge were we had more great views of Indian giant flying squirrels (two of them) and great views of a Travancore flying squirrel also in trees nearby our cottage. Once we got



back to the cottage we bid our farewells to Baiju as he would be leaving very early in the morning tomorrow to catch his bus back home and we would be leaving to Bandipur National Park. So we thanked him for all of his help and expertise and got into bed before heading north tomorrow and a long drive.



Day 10 **Bandipur National Park**

Travelling

At breakfast we had the alpha male from the resident troop of lion-tailed macaques come onto the veranda and steal food that another group had stupidly left unguarded. At 08:30am we left the relative cool of the Valparai hills and started our journey to Bandipur, first we descended the 40 hairpin bends of Anamalia National Park, fortunately at this time the traffic was significantly reduced and we made good time, there were only a few bonnet macaques around today, basking in the morning sun to warm up and get ready for a day of begging and stealing food from the passing vehicles. The drive was largely uneventful and we arrived in Bandipur in the mid afternoon, there were good numbers of black-footed langurs and chital around the main road that cuts through a section of the park and nearby the park headquarters a huge troop of bonnet macaques and several sounders of Eurasian wild pigs we feeding and 'cleaning up' after all of the messy tourists and forestry workers.

After checking in we had a short guided nature walk around the property in which many of the common Indian garden birds were spotted, such as Indian pond heron, spotted doves, little bee-eaters, purple-rumped sunbirds, red-vented & red-whiskered bulbuls, Brahminy starlings and black drongos were spotted as well as a couple of chital. It is not uncommon for the dhole to come through the property and not that long ago they ran through the grounds chasing a chital! Before dinner we watched a documentary filmed around the park and focusing on the dhole and then dined with the husband and wife owners of the beautiful guest house.

Day 11 **Bandipur & Nagarhole NP's**

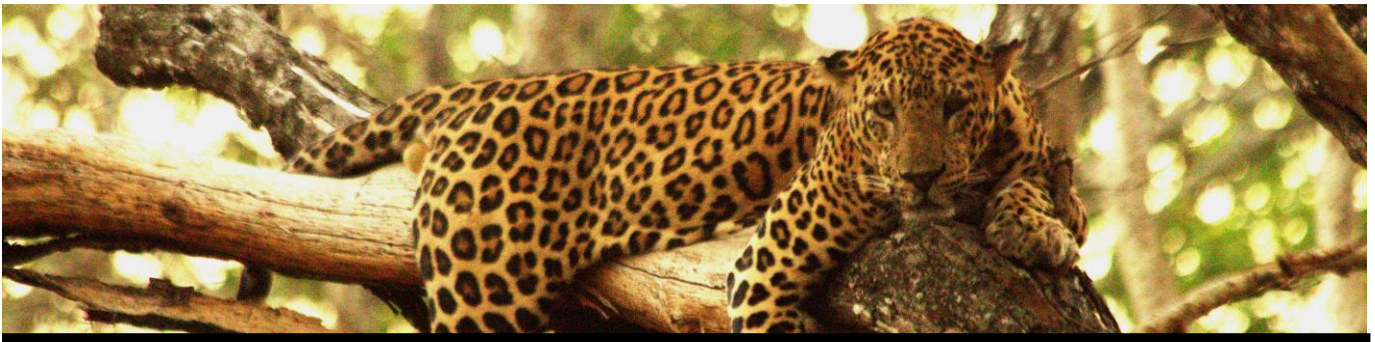
Travelling & Wildlife Watching

This morning we left at 06:30am and headed into Bandipur National Park, the first thing we noticed was the very large number of chital around and the high density of Indian peafowl, it is the breeding season and many of the males we saw were in full plumage and stood waiting to entice females to mate with their beautiful shimmering dance. As the sun rapidly rose and heated the air we spotted an Indian hare crouched in some thin vegetation, clearly thinking he was invisible and then once he realised he had been seen, he ran off into thicker bush. We then had a hugely impressive male gaur feeding at a salt lick and as we were watching him we heard a distant sambar alarm call, but it was very far away and so we didn't head to investigate. So carrying on we focused on some of the many birds we were seeing this morning including Eurasian hoopoes, great changeable hawk-eagle perched right over the road from us, many colourful grey junglefowl and well camouflaged little bee-eaters as they landed in green bushes whose leaves were a perfect match for their plumage. We then saw more chital and black-footed langurs, feeding together in their very well understood symbiotic partnership. The langurs feed on leaves and fruit in the trees but often drop many edible leaves and fruit to the ground and the chital then eat these and gain access to food that would otherwise be out of reach to them, in return for this free meal the langurs get the early warning system from the incredible senses of so many highly alert chital. This extra security allows the langurs to spend more time of the ground as well as they are confident against predators with the vigilant chital around. We also had a brief view of a female Indian muntjac and then close ruddy mongoose, the mongoose moving quickly and was soon out of sight in the thick bush. We then had really nice views of a breeding pair of oriental honey buzzards perched in the open and just below them a very stressed out red-wattled lapwing parent and its young chick, the chick seems completely oblivious to the potential danger the two raptors posed and explored its little world with vigour and no regard for safety. However its parent was on hand and would have diverted the attention of the honey buzzards should they have felt like trying the chick out for a snack. Our last sightings of note were a feeding Malabar giant squirrel and some very young chital fawns, maybe just 2 weeks old before we left and headed back to the headquarters and then onwards to the lodge for breakfast. After breakfast we packed up our belongings, loaded them into the vehicle and left to drive the relatively short distance the bordering park of Nagarhole National Park. We arrived in lots of time and had dinner followed by our first jeep safari here.

We were given zone A first and this is a great zone for leopards and actually currently has a black leopard residing within it. We didn't have much hope for being lucky enough to see the black leopard but maybe a normal coloured leopard would be more cooperative. The numbers of chital and their friends the black-footed langurs were very high (the highest so far on the trip) in this zone and we were seeing them by the dozen at every opportunity. The langurs were split between two behaviours, the younger ones were playing and the older ones feeding, but then we heard the unmistakable sound of langur alarm calls. We waited and watched the bushes and found the langurs in a tree



around 30m back into the forest making the calls. We waited and after around 15 minutes were rewarded with a large male leopard coming out of the thick bush and to the edge of the forest. However (in typical leopard style) he stayed close to the forest edge and almost out of view as it slunk behind the branches and walked parallel to the road for around 50m before completely disappearing. Not the greatest sighting, but a good enough one to be the highlight of the safari and our first cat of this trip. We drove a little further up the road in the direction the leopard was travelling and staked out a small waterhole for a while, but with no luck. So we left and carried on and found three female sambar, but then Prakash heard of a tiger sighting nearby, so we left the sambar and drove to the tiger's location, however the tiger had been at a waterhole next to the highway that runs through the park and around 5 minutes before we arrived an ice cream van had passed and blazed its music loudly and spooked the tiger into retreating into the forest. So we went in search of other wildlife instead, we did find a young male sambar before a storm struck at around 17:45, the rain poured down and with thunder deafening us to alarm calls and the lightning forking across the sky we didn't hold much hope of seeing much for the remaining 45 minutes of the safari. And that prediction bore out until we were leaving and the rain stopped, next to the main road we spotted two young female elephants (around 15 – 20 years old) they seemed to be on their own and were feeding on the lush vegetation and were not at all bothered that they had chosen to do so right next to a highway. After a few minutes of viewing these two the light was getting so low that photography was impossible and we headed back to the lodge for dinner.



Day 12 **Nagarhole National Park**

Wildlife Watching

This morning we entered the park in zone B at 6:30am, the morning mist clinging to the ground and adding a chill to the air still. There were once again many chital and black-footed langurs feeding around the grassy verges to the roads and in the trees. We quickly came to fresh tiger tracks on the sandy road near a waterhole, they were made by an adult male this morning, we staked out the area for a while but it was in vain as the tracks were not immediately fresh and he had moved on before the park had opened. We had some nice bird sightings this morning including a male and female stripe-necked woodpecker as well as a changeable hawk eagle drinking from a puddle next to the road and then we watched as he took a perch and then immediately swooped down towards a common mynah, missed the bird and flew right at us, giving us great views. The rest of the drive was quiet from a large mammal stand point but we had views of an Indian hare running across the road as well as several feeding and playing Malabar giant squirrels and then were treated to great views of a dancing male peafowl. However his tail feathers were not in the greatest condition and the show not as spectacular as it can be.

On the Kabini River floodplain where 3 states (Karnataka, Kerala and Tamil Nadu) and 4 national parks (Nagarhole, Bandipur, Anamalia and Wayand) all meet we found a large number of chital, a small group of sambar and gaur and many different species of birds including red-wattled lapwings, cattle & little egrets, red-whiskered bulbuls and Indian pond herons. We then started our joueny back to the entrance gate and onto the lodge, our last sightings included close ups of a Malabar giant squirrel at eye level climbing up a tree and stopping to stare intently at us as well as a family group of guar including 2 young, one of which was only around 3 months of age and was still all legs. But the best sighting of the morning was a stripe-necked mongoose travelling and foraging along the border of the forest and the road parallel with the vehicle for a couple of minutes. It was a smaller individual than the one we had seen in Valparai but still great to see one of Asia's largest mongooses.

This afternoon's safari set off around zone B in the glorious sunshine, early on we had views of a crested serpent eagle perched in great light over the road. We then watched several common mynah having a bath in the shallows of Tiger Tank and then watched as a male and female Indian roller rotated in bringing food back to a hungry chick or two hidden from view in the hole of a tree. As the day got hotter and hotter we travelled around various waterholes in the hope that we would find one of the striped gentlemen (or ladies) coming down for a drink. We did find a small sounder of Eurasian wild pigs at a wallow and appearing to be as happy as...well...pigs in the preverbal. We then came across an adult female elephant feeding on the side of the road, we stopped for some pictures but our driver had heard of a tiger at a waterhole nearby so we headed there to see if we could see it. We arrived and found the large male tiger lying down resting (not sleeping as his eyes were fixed on the gathering jeeps around 50m away on the other side of the waterhole). We watched as he struggled to get a comfortable position, rolling over (staring at us whilst lying on his back, maybe we look more interesting upside down) and back again and repositioning his legs until he found the perfect position and settled for a more prolonged rest or slumber. We



then left as it became apparent he was unlikely to get up anytime soon. Heading back to Tiger Tank we watched two peacocks competing with their wonderful dances and then found a mixed flock of green imperial pigeons and the much smaller yellow-footed green-pigeons eating the salt at the edge of the tank. On the opposite bank were some Indian black turtles basking in the sunshine. The great bird sightings continued with a breeding pair of lesser flamebacks and then we watched an Indian roller caught and proceeded to kill a baby common krait. For at least the 15 minutes we watched the roller batter the well dead and pulverised snake against the tree branch without trying to eat it, we never did know if the roller finally ate his well-earned snack as Martin heard some langur alarm calls around 50-100m off, we headed to investigate. After driving past him at least twice (goes to show how easily they are missed) we found a huge male leopard up a tree. Only around 20m from the road and around 5m up the tree, we had incredible unobstructed views of him lying there looking around. We watched as he surveyed his domain before getting up changing position with head facing us, rear legs and tail dangling and front paws gripping the tree. We stayed with him until he got up, slowly walked down the trunk of a half fallen tree to the ground, snarled at us as he walked away and across the road right behind us and away into the forest on the other side of the road. What incredible views and the best leopard view you can hope for in India. What a great way to end the safari and our time in Southern India, tomorrow we would head north to the dry forests 'jungles' made famous in Rudyard Kipling's *'Jungle Books'*.

Day 13 Tadoba National Park

Travelling

This morning was an early one as we checked out at 5am and began the 5 hour journey to Bengaluru (formerly Bangalore) to catch our flight north to the city of Nagpur. The predicted bad traffic never materialised and we arrived at the airport in record time and so had some time to relax and get some food in the airport before our flight. As do most Indigo flights it was on time, provided good service and arrived a little ahead of schedule. We then met our driver Prakash and in the sweltering 45°C heat set off on the 2.5 hour journey from the city of Nagpur to the rural countryside of the Hindu belt or the Rice belt and then to the buffer zone of Tadoba Andhari Tiger Reserve. We arrived in the evening, met Dev the manager, had a briefing, checked in and had dinner ahead of the first of our 14 game drives tomorrow morning.

Day 14 Tadoba National Park

Wildlife Watching

Bright and early we left the lodge with our guide Dhurbindar and drove to the Moharli gate (around 5km away), along the way we saw some painted storks, Asian openbill storks as well as a guar, large Indian mongoose and chital crossing the road. We headed straight to the site of a recent kill, the tigress that made it (of an adult guar) has two cubs and we hoped she would return to feed on the carcass this morning. It was 3 days old and had some meat still around, if not mostly putrefied by now. The smell was truly bad, luckily we found a place upwind and on the shore of Tadoba Lake. As we waited for the tigress and came back periodically, also checking the roads nearby for tracks to try and pin point where she and the cubs were, we had some great birding. The lake was full of Asian openbill storks, pheasant-tailed & bronze-winged jacanas, red-wattled lapwings, lesser whistling ducks, Indian & little cormorants, oriental anhingas, grey-headed swamphens, Indian pond herons, cattle, little & intermediate egrets, common squacco herons and we also had nice views of a grey-headed fish eagle, Indian rollers, a long yellow-footed green-pigeon, a flock of Alexandrine parakeets and a spotted redshank as well as others. Among the wading and water birds was a 3m mugger crocodile basking half pulled out to a small muddy island near the shore. As we were checking out the various roads for pugmarks we did find some of the tigress heading from the kill to a waterhole (she was not there when we checked) and heard that the cubs had been spotted by someone from the main road. So we headed towards where the cubs had last been seen and staked out the area, but didn't see or hear anything. The grass and bamboo here was thick and perfect for little cubs to remain hidden from sight if they wished to be. We then went back towards the kill and found out from another jeep that they had seen fresh tracks heading back from the waterhole to the kill site, so we headed there again and waited. We waited for around 1 hour but still nothing and with the air getting very hot and the jungle crows picking at and jumping around on the carcass (a sure sign that the tiger was not near the kill) we left for the gate and camp for breakfast. On the way we spotted a Bengal monitor lizard moving through the bamboo near the road and then the sighting of the morning, a female sloth bear walking in the open to a small muddy waterhole. We watched as she walked right into it and washed, covering herself with the cooling water, splashing herself with her front paws and scratching her belly and rear legs, making sure she was fully cooled off. She then walked out of the pool and all of sudden noticed we were there and in typical sloth bear fashion bolted in the opposite direction, up the slope and out of the dam, turning to stare at us as she walked off into the forest. We drove on a bit and caught up with her as she walked out of the forest and towards the road, again she was oblivious to us until all of a sudden she caught scent or heard us and stared at us and ran off into the forest again, turned and ran across the road further away than originally planned and away into the dense forest. She was the last sighting of the morning and we returned to the camp for breakfast and to wait out the heat of midday and prepare for our afternoon safari a little later on.

This afternoon we once again headed out in search of wildlife in the Moharli gate, we would be concentrating on this gate and zone for the first few days as this is by far the best for tiger sightings currently in Tadoba, particularly because of Mardui and her little of four 15 month old cubs. This afternoon was actually one of the quieted Royle



Safaris had experienced in Tadoba with no sightings of the major targets tiger, leopard, dhole or sloth bear. We did investigate the kill site again and explored the forest and bamboo grove roads and found wet footprints from a tiger heading from the water into the forest, we then heard some langur alarm calls and headed to them and staked out the area. But all we had around here were plenty of birds, including great views of a male Asian paradise flycatcher in full breeding plumage. We divided our time between the kill and where the cubs had been seen this morning, but to no avail. We did see another large mugger crocodile (around 3m long) basking on the shore of a muddy pool. We were alerted to a grey junglefowl alarm call and waited to see what had been responsible until we see spotted a changeable hawk-eagle perched nearby. As the day began to cool down and the sun sink lower and lower into the sky we found a large sounder of Eurasian wild pigs moving through the bamboo, it contained an enormous boar, which had to close to the maximum size the species attains in India. Then around the shoreline to the lake we started to see many gaur coming out of the forests to start their evening and night of grazing on the lush grasses of the lakeside. We stopped for photography of the various gaur and heard a large male alarm call, the low pitched roar / bellow not dissimilar from a tiger. However a large male gaur will only alarm call for a tiger or maybe a pack of dhole, but being so close to the kill site we thought he had to be reacting to the smell of the mother tiger. We waited but once again were in vain today. So we headed back against the backdrop of a beautiful sunset and had a flyover from some Indian flying foxes as they left their roosts to go in search of fruiting trees. We had dinner and relaxed after we failed in our tiger quest today, tomorrow would be full of new possibilities though.



Day 15 Tadoba National Park

Wildlife Watching

This morning there was a strong wind and this cooled the air significantly as we headed back into the park. Very quickly we found the prints of the mother and she was a good distance away from the kill, which probably meant she had abandoned it now. We waited a while around where we found her tracks but to no avail and so carried on to see if we could see evidence of the cubs following her. We were investigating fresh pugmarks from the cubs when we heard a lone chital alarm call behind us. Turning around to look we saw one of the cubs crossing the road and walking down it, it was one of the 2 female cubs and we turned around and followed her. She padded along the road ahead of us and then sniffed and scratched a tree trunk before entering the bamboo forest. We predicted her movements and went ahead and waited on a side road and she came out and crossed in front of us and walked into the long grass. We headed to where the cubs had been seen yesterday morning and which was also the best waterhole close to here and once we got into position on the bank we saw her approach. We watched as she climbed down the steep bank and started to drink from the water. She then walked up the bank and along it a short distance before climbing back down and entering the stream and crossing to a large growth of dense vegetation and papyrus. She disappeared but we waited to see if any of her brothers or her sister would join her and it was only around 5 minutes later when one of her brothers came down to the same spot on the bank and stared at us. Whilst she has been incredibly relaxed around us and had barely noticed our presence, he was very angry and snarled aggressively at us numerous times before entering the water and swimming across too. What a great first tiger sighting in Tadoba. We still waited for the other cubs or maybe the mother to make an appearance; but this morning this was the only tiger sighting we had. This litter was the 4th Mardui has had of 4 cubs and with the previous 12 cubs all making it to maturity (dispersal age) these cubs were in safe hands for achieving the same, being 15 months old they are beyond the age they are most vulnerable. The only other sighting of note this morning was a pair of Eurasian wild pigs that came down to a waterhole we were staking out. We returned to the camp for breakfast and were buoyed by these sightings and hoped for more of the same this afternoon.

This morning started with some nice bird sightings, we watched a brightly coloured Indian roller hunting grasshoppers in the grass near the lake shore; but as the temperature was hotter today than previous days here there was not too much activity at the moment. Driving around and visiting various waterholes we passed the heat of the afternoon and spotted a huge number of Asian openbill storks in the shallows looking for the large and plump apple snails, whose empty shells litter the banks from past feeding bouts. Also around here and taking advantage of the breeze that blew across the lake where many gaur and chital grazing. We then explored some dense bamboo looking for a female who mated with a male back in February and is expected to have a litter of very young cubs in a den around here, but no one had confirmed that yet. We didn't find any evidence of her, but did have good views of a pair of young male sambar on the road. Driving along we found a prominent scent marking tree with huge and deep claw marks from the resident male tiger in the area as he was advertising his presence in the area. Clouds came in as the afternoon wore on and the temperature cooled dramatically, probably down to around 32°C now, the distant sound of thunder filled the skies and we would likely have some rain overnight, which would hopefully make things a little cooler for us tomorrow. We then had good views of a pair of oriental honey buzzards and a small group of female sambar and a troop of langurs at a waterhole, before returning to the lake shores.



There were many more guar and chital here feeding on the lush grasses, as we watched the herbivores here we scanned the other shore line and spotted the mother tiger. She has in the water, up to her shoulders cooling off in the lake. The view was fairly distant but through binoculars we had some views of her resting there. She was still near the kill site, so maybe she had not abandoned it. However the last 24 hours she had covered a distance of around 40km as she was seen near one of the gates at 12:30am last night, her tracks crisscrossed the two sides of the Modhurli gate and she had ended up back at the same location. Presumably by spending a few days in this one area she felt she needed to go and patrol her territory and scent mark, to keep other tigers from coming in and taking it over or challenging her or possibly threatening her cubs survival. After a long day of patrolling she was entitled to a good cool bath in the lake. We watched her for a while and then as the thunderheads gathered around us we headed back to the camp for the evening. The skies around us gave us a great light show with fork lightning lighting up the skies all night long.

Day 16 Tadoba National Park

Wildlife Watching

There had been a tremendous amount of rain overnight, although everywhere was nearly bone dry by 5am the small fountain in the camp which was empty before last night had collected over 3ft of water, not all of it directly as some drained into from the garden but still, the storm had produced a lot of water last night and this morning the air was significantly cooler, much to our pleasure. Driving around and looking for tracks we found many tiger tracks, including those of a female and a male as well as sloth bear tracks. We pinpointed the male tiger to be in a particular patch of bamboo forest, as his tracks went in but none emerged as we drove around it. We kept watch here but he never showed himself. We watched the beautiful sunrise over the lake in the presence of huge numbers of grey-headed swampheens, Asian openbill storks, black-headed ibis, cattle & intermediate egrets, red-wattled lapwings, Indian & little cormorants, lesser whistling ducks, pygmy cotton geese and a breeding pair of lesser adjutant storks and their fledged chick. This massive and globally endangered bird is so low in numbers here that there are only around 5-6 recorded breeding pairs in the whole of the Tadoba reserve and it was good to see these two with a chick in tow. Driving around the bamboo rods again for a while we found some gaur, chital, sambar, langurs, various birding including many orange-headed thrushes and grey junglefowl as well as a brief view of an Indian treeshrew as it ran and jumped into a hole in a small termite mound and away from us. We then went back to the lake and in the exact same place as last night the tigress was there again bathing and this time around 100m to the west of her were two of her cubs, we couldn't tell if they were the same two or not that we had seen yesterday. One of them was copying its mother and was reclining in the water whilst the other was behind and still in the vegetation. We watched them for a while, until the mother got up and walked into the dense bush and then the cub in the water got up, walked out of the water, onto the bank and then away into the forest too, shortly followed by the other cub. We then left and headed back to the gate and camp for breakfast, the last sighting we had this morning was a close view of a nearly invisible red-wattled lapwing nest next to the road and on the banks of a small waterhole.

This afternoon was very quiet with nice langur, gaur and sambar sightings pretty much the only mammal activity for the first couple of hours. We did have some nice raptors with great views of a white-eyed buzzard flying low over the road and then a shikra with a small lizard in its talons and then an excellently posed crested serpent eagle watching over a small waterhole. We staked out a couple of natural waterholes for a while but no fresh pugmarks, no alarm calls and ultimately no tigers. Driving around the bamboo zone we found lots of orange-headed thrushes, spotted doves and had some nice sightings of the dazzlingly coloured Indian pita. But the only mammals we saw for the rest of the safari were some female sambar and their fawns of various ages including quite young and many guar feeding on the banks of the lake as the sunset in the distance. We did see another rare bird in the bamboo zone as we were leaving, a tiny jungle bush quail came running out of the bamboo and along the road in front of us for a while before entering the forest again disappearing thanks to its incredible camouflaged plumage. We left as the Asian openbills headed for the many large dead trees around the lake for their roosts and returned back to the camp for dinner.



Day 17 Tadoba National Park

Wildlife Watching

This morning we hoped for better luck than yesterday afternoon and the day started more promisingly with very fresh (minutes old) tiger tracks on the road, it was the mother of the cubs and she was heading to the area of the lake we had seen her bathing in. So we headed there straight away to see if she was there. We were in luck as the mother was there in the water and just on the bank was one of her cubs, another was in the water next to her and a



third was just sat in the long grass closer to the forest. We had good views of the cub on the bank but at first the others were only seen from the tops of their heads and black ears with white spot. Then the one nearest the forest got up and walked away into the forest and we didn't see this cub again, we sat and watched for around 20 minutes more. Then the cub in the water got up and walked to the its sibling on the shore, they greeted each other with the typical cat cheek and neck rubbing and then the cub carried on walking to the grass, quickly urinated and went into the long grass and out of sight. A little while later the cub (a female) came back out of the grass and lay down next to its sibling (male) on the bank. Around 10 minutes later the mother got up and climbed out of the lake and walked around the thickest bush and straight to us, showing all of the confidence of being the biggest and toughest animal in the forest she headed towards the small gathering of jeeps and the noisy camera shutters without a flinch. She walked around 5m past us and into the thickest forest and towards the (now skeletal) remains of the gaur kill. The cubs were looking on intently but there were obviously more nervous of us smelly humans and our noisy jeeps so they followed her but further back and largely covered by the long grass. We then went around the corner of the shore and waited at the kill to see if they would emerge, but they didn't and so we headed back to the jungle roads to see if they went back into the forest and that way.

We were rewarded shortly after as one of the cubs (a male); but we couldn't tell if it was one of the ones we had just seen or the 4th one that was not seen at the lake earlier; came out of the bamboo and crossed the road and then followed the same pathway as the first cub we had seen a few days ago and so we predicted his movement and got him again as he crossed another road and headed to the thick vegetation near the small stream. It appeared that this routine was one that the cubs liked, spending the early morning in the lake cooling off and then walking to the stream and thick vegetation to spend the heat of the day. We this was an incredible start to the day and what a morning, we then spent the rest of the this morning's safari exploring the various forest roads and checking out water holes, we saw a nice crested serpent eagle and a couple of Indian pitas and of course spotted chital, sambar, gaur (and their following of cattle egrets and common mynahs) and also langurs. We then returned to the camp for breakfast and a rest before another trip into the forest this afternoon.

This afternoon we headed straight toward the haunt of a huge old male called Scarface or Badu. He is the largest and oldest tiger in the park and quite possibly the largest tiger in wild in Asia. He had been missing for a couple of weeks and was presumed dead of old age, but news was that this morning he had been seen and so we headed to his favourite waterhole to see if we could see him. Low and behold he was there, a little way back from the manmade waterhole (tank) lying half in and half out of a smaller natural wallow cooling off. He was fast asleep and we watched and waited as the various birds came and bathed and drank from the tank. Spotted doves, red-vented bulbuls, greater racket-tailed drongo, jungle babblers, rufous treepies, Tickell's blue flycatchers, black-naped monarchs and orange-headed thrushes among others all came down and drank or bathed in the water. Then a troop of langurs came along, jumping from tree to tree and feeding as they went, they were oblivious to the tiger as they never looked in his direction or alarm called. We watched as the youngsters played around the alpha male climbed to the ground and walked confidently across the road, stopping every now and again to feed on seeds picked from the floor. The females followed him but quicker and climbing the trees on the other side of the road straight away. It was interesting how much more nervous the females with babies were and they sped across and climbed trees deep into the forest, whilst the male sat in the open and watched over the movement of his troop.

Badu was getting a little restless, he would lift his head up, roll over, flick his tail, lick his front paws. These are all indications that he would be moving soon but as it turned out he just repositioned himself and went back to sleep. He did get up a little and drink some water from the small pool he was half in, this was a good sign that he was not going to get up and come to the tank. He was already cooling off and had drinking water available. So we decided to check some other areas for other tigers, on leaving we noticed a small sounder of wild pigs moving close but no close enough to make Badu take interest. We kept checking some nearby waterholes with no luck and coming back to Badu but he didn't move a muscle for the rest of the afternoon.

We left having seen the largest tiger here, but not seeing him very well, maybe tomorrow he would be there again.

Day 18 Tadoba National Park

Wildlife Watching

This morning the air was cooler than usual and on the way to the park gate this morning we spotted a large Indian mongoose, Indian muntjac and some gaur all on the main road. Quickly after entering the park we found fresh sloth bear and female tiger tracks. We followed the tiger tracks around and hoped to come across her, but they seemed to crisscross and cut back on herself and so it became very hard to pinpoint where she was. We did see a peacock in full dance, which was a nice and bright way to start the morning. We continued to the waterhole where Badu was yesterday, he was not around today, instead the same troop of langurs were around and some were drinking, as where two female Eurasian wild pigs. The pigs were very nervous drinking and it was funny seeing them jump out of their skin when a langur jumped into the tree next to them and shake the branches. They only just regained their composure and drank a few minutes later. The langurs were interesting to watch, there were 3 females with youngsters of different ages, between 1 and 3 months old and they had different attitudes to their infants playing. One of the parents wouldn't let the baby go away from her at all, and kept grabbing its tail and pulling it back, a second would allow the infant to play on its own, but only close to her and the third was a lot more relaxed and this infant did its best to get the other two to play along.



We then left the waterhole and found more pugmarks from a female tiger, whether they were the same or different from the tiger who was moving around earlier we didn't know, but they indicated that she was moving towards this waterhole and so we headed back and staked it out for a while. We didn't have the tigress show up, but we did see a pair of chowsingha (or four-horned antelope) come nearby the waterhole. They didn't come into the open and remained very well camouflaged but we could see them in between the leaves and bamboo as they skirted the tank. We then tried some other waterholes and whilst not finding a tiger we did have great views of an Oriental honey buzzard flying along the road ahead of us and perching in an overhanging branch, before we spooked it again and he flew onto another branch. He did this 3-4 times before flying off into the forest and away from us. At a large and exposed waterhole we had some more nice birds including a flock of yellow-footed green pigeons, rufous treepies, black drongos, jungle babblers, a white-throated kingfisher, Alexandrine parakeets and spotted doves. On the way back out of the park we had a great sighting of a young male Indian muntjac, and despite seeing lots of tiger activity in the sandy and dusty roads we couldn't find one this morning.

This afternoon an annual census of all wildlife across all of India's national parks was underway and would last until tomorrow morning, every machan and tower dotted around the park (every waterhole has one) is to be manned by at least 3 people from now until tomorrow morning and every animal logged. However these people are trained very little and have a habit of smoking, talking, playing music etc which all affects the animals movements and we didn't hold much hope of seeing much at the waterholes this afternoon unfortunately. Driving around the lake shore we found lots of great birds as normal, the huge numbers of Asian openbill storks, grey-headed swampheens and lesser whistling ducks in between cattle egrets, black-headed ibis, purple herons and little cormorants all present. They were sharing the lake shore with groups of guar, chital, wild boar and sambar grazing and browsing. We decided to head away from some of the most tiger core areas to see if we could find a pack of dhole or a leopard and so explored some of the deep interior of the park where few jeeps go. As we headed deeper the clouds darkened and lightning and thunder closed in. Then at around 5pm it started to rain, for around 30 minutes the rain fell heavily and we were thoroughly soaked, but the warm air afterwards quickly dried us off. We then got stuck, our driver taking us up a slope and bottoming out, so with some pushing and digging we got out and carried on. Without any of the top predators today we had had some excitement with the rain storm and then getting stuck. Further sightings along the way included a female sambar and her three young from three previous years crossing the road, a spotted owl perched overhead and a huge herd of gaur around the lake and we watched as two males fought for mating rites, the males lowering their heads, shaking them from side to side and the locking them together as they used their massive neck and shoulder muscles to push and try and unbalance the other. One male was clearly the victor as the other ran and spooked a few females who fled in reaction, the loser was then chased by the victorious male who didn't let him get away scot free. We could hear the rumbling of the hooves on the ground from where we were (a good distance away) as the 2 one tonne males ran around. We then returned to the camp for dinner, on the way back the rain had increased insect activity and the number of bats flying around the fields was much higher than usual today.

Day 19 Tadoba National Park

Wildlife Watching

This morning the census staff were still in the machans and towers and we were unsure if we would have to wait for this afternoon to have any real chance of seeing tigers. We were right to think this way as the census staff were not just around but walking through the forest, using motorcycles to get around and collecting (illegally) firewood and other products from the forest. One has to think that the forest would be better off without this census, well particularly as it is carried out in this manner. It doesn't take a lot out of the ordinary in a park for the wildlife to become suspicious and go into hiding and all of this human activity (outside of jeeps and during the night) will certainly be new for many of the animals is one of the reasons for the lack of sightings yesterday and this morning. We had no advanced warning of the census and so couldn't have planned accordingly either, so it was a growing frustration. We headed to the buffer zone to (ironically) get away from people and were told by a local villager that the large male Scarface (or Badu) has made a kill not far away. We tried to find it, however the kill was near the road and we could pinpoint it. Further around the bufferzone we found tracks from a jungle cat, tiger cubs and a leopard, but again couldn't pinpoint any of them with a sighting. At the lake we found the myriad of birds as usual but also a black bittern which is a very rare sighting in central India, this adding to the cinnamon bittern we saw the other day here meaning we have seen two of the rarest herons in this part of India during the last few days.

We then drove to Scarface's favourite waterhole and staked it out, but to no avail, he will almost certainly be staying close to his kill site in the coming days. Being an old male he will be worried about losing his kill to other tigers or dhole and so will stay close and guard it continuously, but with everywhere else being so quiet it was worth a try. Well the last two trips into the forest had been hindered by a rain storm and increased human activity, so we really hoped that this afternoon would be different and returned to the camp for breakfast and a midday siesta.

This afternoon's jeep safari started amid darkening skies and distant rumbles of thunder. On our drive to the park the rain poured down and we took shelter in a village shop along the way, with lightning striking the fields nearby us we had to wait for around 15 minutes until the rain cleared and we carried on to the gate. Once into the park we quickly found a sambar kill with a sleeping tiger nearby. We couldn't see the tiger very well, but knew it was either the tigress we had been seeing recently or one of her cubs. We decided to stake out the small inlet and patch of forest where the tiger was for a while. We waited here and then left and explored various forest roads as we waited



for the temperature to drop as and for the likely time when the tiger would move out into the open. Driving around we had sightings of a large male sambar in the bamboo and nice sightings of a pair of black-shouldered kites. Back at the inlet we waited and watched a pair of pied kingfishers hunting and speeding back and forth along the water, many white-breasted waterhens foraging and courtship behaviour between a pair of Asian openbill storks. Over at the kill site there were some pairs of jungle crows in the bamboo, as the tiger was still around the kill it was highly unlikely that they would go to the ground or on the carcass and happily feed. However we watched as they slowly and methodically moved down from branch to branch towards the carcass and when they were feeling brave enough they would dive down, grab a chunk of meat and fly off to feed in peace. The tiger didn't end up coming out until very close to sunset (and the official time all jeeps have to be out of the park), so we only had a small time (maybe 15 minutes) with the male cub as he came out and walked to the water and drank and then bathed a while before we had to leave.

On our way out the wind started to pick up again and the threat of rain loomed large again, these pre-monsoon rains were longer and more intense than usual and that night we had some more rainfall and could hear more distant thunder, but this time we avoided the heart of the storm.



Day 20 Tadoba National Park / Nagpur *Wildlife Watching & Travelling*

This morning was cool and overcast as we headed to the park for the first of our two safaris on our last day in Tadoba. Almost immediately we found a pack of dhole, the Indian (or Asiatic) hunting dogs which wander far and wide throughout India and large parts of Asia. They are becoming harder and harder to see in the wild as the feral dog population grows the diseases they spread are having their affect on this canid and we were lucky to see this pack of 6 animals for an hour this morning. The pack was made up of one adult male and 2 adult females and 3 pups (2 male and one female). We watched and followed the pack as they came out of the bamboo and walked along the road in front of us. The adults in the lead and going back and forth, smelling everything and scent marking along the way, the pups disappearing into the forest on either side of the road for several minutes as they would chase each other and play. When the adults stopped at a T-junction the pups were playing around as the adults stopped and diligently scent marked the ground, rubbing their anal glands on the ground, rolling their necks and faces onto the ground too. We watched the interaction between the individuals and followed them on their patrol for a few more minutes before they entered the forest and moved in a direction we couldn't follow any more. From here we left this part of the forest for where the sambar kill and tiger were from yesterday afternoon. Waiting for the tiger we didn't have to wait very long, however the tiger was only seen briefly as he came out of the forest, crossed the water and entered the forest on the other side of the inlet and out of sight. So we moved around to the other side and found a good place to stake out further in hope that the increasing temperature would result in another one of the cubs coming out for a drink. Waiting patiently and first spotted a large Indian mongoose crossing the road and then we were rewarded when one of the cubs (a male) came out of the forest and entered the water near to where we were parked. The tiger sat and cooled down in the water for a little while, he even bit off a section of reed and played with it, grabbing it with his paws and biting it and breaking it before leaving the water and walking further away and into the grass. He investigated a few different thickets and apparently he found one he would be happy to spend the heat of the day resting inside as he disappeared. Also around here as we waited for any of the tigers coming out we spotted two rare black bitterns in the open and even had a view of a pygmy white-toothed shrew foraging around the base of a tree in the undergrowth. As the morning wore on we left and returned back to the lodge for lunch, what a morning! The rains had increased the rodent activity around the lodge grounds and this afternoon we had sightings of a couple of black rats and also a white-tailed wood rat around the lodge grounds. As we waited for the afternoon jeep safari we had more unusually heavy pre-monsoon rain and afterwards headed into the park and back towards the sambar kill site. We quickly found one of the cubs (maybe the same as one of the ones we had seen this morning), lying down in the bamboo and staying out of the heat. We watched for a while as the cub lay with her paws in the air, rolling around from time to time and panting heavily to cool down. We would be leaving early this afternoon as we were travelling back to Nagpur this evening and so we hoped she would move earlier than most of the tigers seem to at this time of year. It wasn't this tiger that gave us our last good sighting, but another cub. We went back around to the other side of the inlet and had great views of one of the male cubs coming out of the bamboo and to the water. The cub was sat upright in the water looking over at us and just relaxed in the cooling water. It was then time for us to leave and on the way out we had sightings of a nice mugger crocodile and several guar before leaving the park for the last time and heading back to the lodge.



We packed up, said out goodbyes to the lodge staff, picked up our packed dinner and began the drive back to Nagpur. The drive ok and we arrived at around 9pm, we checked into the hotel for our last night in India.

Day 21 Delhi

Travelling & Departure

This morning we left the hotel and travelled to the airport and caught our flight back to Delhi, both Martin's and Joe & Rhoda's international flights were leaving in the night and so we arrived in Delhi, moved from the domestic to the international terminal, checked in and waited for our flights.

33	Leopard	<i>Panthera pardus</i>
34	Tiger	<i>Panthera tigirs</i>
35	Indian giant flying squirrel	<i>Petaurista philippensis</i>
36	Travancore flying squirrel	<i>Petinomys fuscocapillus</i>
37	Kelaart's pipistrelle	<i>Pipistrellus ceylonicus</i>
38	Indian pipistrelle†	<i>Pipistrellus coromandra</i>
39	Javan pipistrelle†	<i>Pipistrellus javanicus</i>
40	Indian pygmy bat†	<i>Pipistrellus tenuis</i>
41	Indian flying fox	<i>Pteropus giganteus</i>
42	Black rat	<i>Rattus rattus</i>
43	Sahyadris forest rat	<i>Rattus satarae</i>
44	Malabar giant squirrel	<i>Ratufa indica</i>
45	Grizzled giant squirrel	<i>Ratufa macroura</i>
46	Rufous horseshoe bat†	<i>Rhinolophus rouxii</i>
47	Greater Asiatic yellow bat†	<i>Scotophilus heathii</i>
48	Southern plains langur	<i>Semnopithecus dussumieri</i>
49	Black-footed langur	<i>Semnopithecus hypoleucos</i>
50	Tufted langur	<i>Semnopithecus priam</i>
51	Pygmy white-toothed shrew	<i>Suncus etruscus</i>
52	Eurasian wild pig	<i>Sus scofra</i>
53	Chowsingha	<i>Tetracerus quadricornis</i>
54	Nilgiri langur	<i>Trachypithecus johnii</i>
55	Small Indian civet	<i>Viverricula indica</i>
56	Civet species	<i>Viverridae Species</i>

							*					1	1					*				
													1		*	3	3	6	*	1	3	
									2	2												
		*									1											
						1																
												2		6						2		
															2	12	19	11	43	10	2	
																		1				
															~10			9	1	15		
						1															2	
											1											
						1		6	1	1		2	5									
											1											
											3	3										
																2	1		1	1		
															11	~25	29	~30	41	38	9	
											1		3	~157	~50							
											12											
																					1	
							13	27	16			2	1	3	26	11		7	8	2	2	19
																					2	
							14		6	23												
											1											
										*												

† Bat species recorded from Tadoba were mostly found when exploring caves, abandoned buildings, drainage pipes, bridges etc in between safaris

Birds (* = heard or signs only)

	Common Name	Binominal Name
1	Shikra	<i>Accipiter badius</i>
2	Jungle mynah	<i>Acridotheres fuscus</i>
3	Bank mynah	<i>Acridotheres ginginianus</i>
4	Blythe's reed warbler	<i>Acrocephalus dumetorum</i>
5	Common mynah	<i>Acrodotheres tristis</i>
6	Common sandpiper	<i>Actitis hypoleucos</i>
7	Common sandpiper	<i>Actitis hypoleucos</i>
8	Spotted sandpiper	<i>Actitis macularius</i>

April										May										
23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13
															1		1			
			2			21	23			78	56									
	2	2																		1
					1															
	31	~50	46	2	17		22	19	38	~158	~163	100's	~113	~81	44	33	23	29	46	~10
	6												7							
										1									1	
														1						

9	Indian swiftlet	<i>Aerodramus unicolor</i>
10	Eurasian kingfisher	<i>Alcedo atthis</i>
11	White-breasted waterhen	<i>Amurornis phoenicurus</i>
12	Rufous-tailed lark	<i>Ammomanes phoenicura</i>
13	Northern shoveler	<i>Anas clypeata</i>
14	Indian spot-billed duck	<i>Anas poecilorhyncha</i>
15	Garganey	<i>Anas querquedula</i>
16	Asian openbill	<i>Anastomus oscitans</i>
17	Oriental darter	<i>Anhinga melanogaster</i>
18	Tawny pipit	<i>Anthus campestris</i>
19	Nilgiri pipit	<i>Anthus nilghiriensis</i>
20	Richard's pipit	<i>Anthus richardi</i>
21	Paddyfield pipit	<i>Anthus rufulus</i>
22	White-rumped swift	<i>Apus caffer</i>
23	Bonelli's eagle	<i>Aquila fasciata</i>
24	Great egret	<i>Ardea alba</i>
25	Grey heron	<i>Ardea cinerea</i>
26	Intermediate egret	<i>Ardea intermedia</i>
27	Purple heron	<i>Ardea purpurea</i>
28	Indian pond heron	<i>Ardeola grayii</i>
29	Ashy woodswallow	<i>Artamus fuscus</i>
30	Spotted owlet	<i>Athene brama</i>
31	Cattle egret	<i>Bubuculus ibis</i>
32	White-eyed buzzard	<i>Butastur teesa</i>
33	Indian nightjar	<i>Caprimulgus asiaticus</i>
34	Red-rumped swallow	<i>Cecropis daurica</i>
35	Lesser coucal	<i>Centropus bengalensis</i>
36	Greater coucal	<i>Centropus sinensis</i>
37	Pied kingfisher	<i>Ceryle rudis</i>
38	Common emerald dove	<i>Chalcophaps indica</i>
39	Greater flameback	<i>Chrysocolaptes guttacristatus</i>
40	Woolly-necked stork	<i>Ciconia episcopus</i>
41	Purple sunbird	<i>Cinnyris asiaticus</i>
42	Loten's sunbird	<i>Cinnyris lotenius</i>
43	Lesser spotted eagle	<i>Clanga pomarina</i>
44	Nilgiri wood pigeon	<i>Columba elphinstonii</i>
45	Feral pigeon	<i>Columba livia</i>
46	Indian robin	<i>Copsychus fulicatus</i>
47	Oriental magpie robin	<i>Copsychus saularis</i>

										1										
											2	1				1	1			
										1	*	~20	3	10	3	7	3	10	6	
												~10	1	~10	1	4		1		
	1																			
	~110																			
	1																			
	4													~129	~300	~390	~174	~173	~270	~120
			2										6	3	4	1				
																			1	
					2															
													4	1						
										1			3	9		2			1	
			2	7		1	~50													
										1										
	14				6										3	2				
	12		6										2							
	~80	~10	12										2	7		5		4	5	
	1												2	2	4	1		2	1	
	11	14	6	2	3	1		12		2	8	26	39	22	26	15	8			
			5																	
	2												1	1				1		
		~50		3	~50			16	22	~41	~250	~249	3	~110	~174	~193	~185			
													1	1	3		1			
													1			4	1	1	2	
											1									
													1	3						1
									3				3	3	1				1	
			3										1	2	1				3	
									1				1	1						
									3						2			3	1	
			3																	
	2												3		2					
														2						
									2		1									
		1,000's	1,000's		~25	~70						100's				3	6			100's
		2			4			2		1	1			1	4	2	2			
	1							1		1	15	13			5	8	8	22	9	6

48	Indian roller	<i>Coracias benghalensis</i>
49	Indian jungle crow	<i>Corvus culminatus</i>
50	House crow	<i>Corvus spendens</i>
51	Common quail	<i>Coturnix coturnix</i>
52	Grey-headed canary flycatcher	<i>Culicicapa ceylonensis</i>
53	Tickell's blue flycatcher	<i>Cyornis tickelliae</i>
54	Asian palm swift	<i>Cypsiurus balasiensis</i>
55	Rufous treepie	<i>Dendrocitta vagabunda</i>
56	Stripe-necked woodpecker	<i>Dendrocopos atratus</i>
57	Brown-capped pygmy woodpecker	<i>Dendrocopos nanus</i>
58	Lesser whistling duck	<i>Dendrocygna javanica</i>
59	Forest wagtail	<i>Dendronanthus indicus</i>
60	Nilgiri flowerpecker	<i>Dicaeum concolor</i>
61	White-bellied drongo	<i>Dicrurus caerulescens</i>
62	Black drongo	<i>Dicrurus macrocercus</i>
63	Greater racket-tailed drongo	<i>Dicrurus paradiseus</i>
64	Lesser flameback	<i>Dinopium benghalense</i>
65	Common flameback	<i>Dinopium javanense</i>
66	White-bellied woodpecker	<i>Dryocopus javensis</i>
67	Imperial green pigeon	<i>Ducula aenea</i>
68	Little egret	<i>Egretta garzetta</i>
69	Black-winged kite	<i>Elanus caeruleus</i>
70	Black-necked stork	<i>Ephippiorhynchus asiaticus</i>
71	Nilgiri flycatcher	<i>Eumyias albicaudatus</i>
72	Indian silvrbill	<i>Euodice malabarica</i>
73	Black-and-orange flycatcher	<i>Ficedula nigrorufa</i>
74	Asian paradise flycatcher	<i>Ficedula westermanni</i>
75	Painted francolin	<i>Francolinus pictus</i>
76	Grey francolin	<i>Francolinus pondicerianus</i>
77	Eurasian coot	<i>Fulica atra</i>
78	Grey junglefowl	<i>Gallas sonneratti</i>
79	Common moorhen	<i>Gallinula chloropus</i>
80	Red spurfowl	<i>Galloperdix spadicea</i>
81	Orange-headed thrush	<i>Geokichla citrina</i>
82	Jungle owlet	<i>Glaucidium radiatum</i>
83	Hill mynah	<i>Gracula religiosa</i>
84	Asian pied starling	<i>Gracupica contra</i>
85	Sarus crane	<i>Grus antigone</i>
86	White-throated kingfisher	<i>Halcyon smyrnensis</i>
87	Grey-headed fish eagle	<i>Haliaeetus ichhyaetus</i>

									1	6	9		7	15	4	4	1	7	4	
	2	~15		16	18	48	2	2	38	~45	9	~75	64	61	6	17	2	15	8	
	~117	~150		~139	~120	13	36	~50	54	28	8	100's	6	3	4	14	8	17	24	~50
																		1		
						*			1											
													1	5	1	4	2			
																				7
													8	4	8	9	14	7	4	
						1					3									
											1		1							
						7						~120	57	~212	~104	67	~70	~10		
													1	1						
					1															
											1						2	4		
	2	18		5						1	2	4	8	5	13	15	12		6	4
								1		1	3		1	2	2	2			2	
										4	8					2				
								2							3					
									1											
											5					2		3	1	
	6		9								1					8	3	4		
				1	1								1	1				3		
	4									2										
					1	3														
																				3
						3														
													4	6	7	2	2	3	2	
											2									
	*			3				2	2											
													6							
									12	4		8	12	17	5	17	12	8		
	2												3							
														2	2					
													4	17	14	11	6	1		
															1					
								10												
	1		1										19	7		7		3	2	
	3																			
	2	6	6	1		1		1		1	1	2	3	1		1	3	2		
													1	1						

