Report on the winter - spring survey for small carnivores and pangolins in the Ngoc Son - Ngo Luong Nature Reserve, Hoa Binh province.

An internal report on the collaborative survey between the Carnivore and Pangolin Conservation Program and the Ngoc Son Ngo Luong Project carried out between February – March 2011,

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Standard Disclaimer

This report was produced by the authors from the information gathered through surveys conducted in the Ngoc Son - Ngo Luong Nature Reserve. Ngoc Son Ngo Luong project is managed by the Forest Protection Department Hoa Binh of the Ministry of Agriculture and Rural Development and Foundation for Social Promotion of the Culture. The Ngoc Son Ngo Luong project is funded by the Spanish Agency for International Co-operation and Development (AECID). All views expressed in this document are the opinions of the authors and do not imply any expression on the part of any of these organizations.

Executive Summary

Ngoc Son – Ngo Luong Nature Reserve (NSNL NR) is 19,000ha in total area and forms part of the Pu Luong - Cuc Phuong Limestone landscape. The Nature Reserve lies between Cuc Phuong National Park and Pu Luong Nature Reserve and is the least surveyed of the three areas, despite the existence of limestone forest; a increasingly rare habitat type. To improve the baseline knowledge of small carnivore and pangolin species in this central portion, a winter-spring survey for these taxa was designed and then implemented in the NSNL NR . Four scats and two sets of prints were found in the NSNL NR, all belonging to small carnivore species, confirming the persistence of small carnivores in the nature reserve. Nocturnal spotlighting exercises failed to record any direct observations. Possible reasons for the lack of confirmed sightings, along with the threats recorded as part of the survey and recommendations for the summer survey are included as part of the discussion.

Tóm tắt

Khu bảo tồn Ngọc Sơn – Ngổ Luông (NSNL NR) có diện tích 19.000 hecta và là một phần của khu hệ núi đá vôi Pù Luông – Cúc Phương. Khu bảo tồn nằm giữa Vườn quốc gia Cúc Phương và Khu bảo tồn thiên nhiên Pù Luông và là nơi có ít các nghiên cứu nhất trong ba khu vực trên mặc dù các kiểu có rừng trên núi đá vôi giống nơi đây ngày càng hiếm. Nhằm cải thiện những thông tin cơ bản về thú ăn thịt nhỏ và tê tê ở khu vực này, một cuộc điều tra tổng thể vào mùa Đông và xuân đã được tiến hành ở Khu bảo tồn Ngọc Sơn – Ngổ Luông. Bốn mẫu phân của thú ăn thịt nhỏ và 2 mẫu dấu chân đã được ghi nhận tại Khu bảo tồn thiên nhiên Ngọc Sơn – Ngổ Luông, tất cả được xác nhận là của các loài thú ăn thịt nhỏ đang sinh sống trong Khu bảo tồn. Các buổi soi đêm đã không ghi nhận được kết quả quan sát trực tiếp nào. Nguyên nhân có thể giải thích là có ít các dấu vết được xác nhận, bên cạnh các mối đe dọa ghi nhận trong cuộc điều tra là những đóng góp cho kế hoạch điều tra mùa hè, đã được đề cập trong phần thảo luận.

Introduction

Although species of small carnivore are naturally distributed across almost all continents of the world (Macdonald 2001; Nowak 2005), relatively limited information is available on their distribution, population status and ecology in many regions (Schreiber *et al*. 1989; Ginsberg 2001). Pangolins are found in the Afrotropical and Indomalayan realms (Corbet and Hill 1992; Gaubert and Atunes 2005) and there is also scant information available on their distribution, population status and ecology.

South-east Asia is a critically important region for small carnivore conservation, containing four of the seven core areas for mustelid and viverrid conservation identified by the IUCN/SSC Action Plan, one of which was Northern Vietnam (Schreiber *et al*. 1989). Four of the eight extant species of pangolin are found in South and South-east Asia and Vietnam is significant for pangolin conservation as a source, destination and transit point in the illegal pangolin trade dynamic (Compton & Le 1998; Bell *et al.* 2004). Vietnam lies on the eastern border of mainland South-east Asia and is a global priority for biodiversity conservation (Olson & Dinerstein 1998; Stattersfield *et al*. 1998; Brooks *et al.* 2002).

There are 23 small carnivore species of four families (Mustelidae, Prionodontidae, Viverridae, and Herpestidae) currently recorded in Vietnam representing 58% of the world's small carnivore sub-families and 15% of the world's small carnivore species. Among these species, there are 9 considered globally-threatened or near-threatened (IUCN 2008). Stripe-backed Weasel *Mustela strigidorsa,* Spotted Linsang *Prionodon pardicolor*, Owston's Civet *Chrotogale owstoni*, and Large-spotted Civet *Viverra megaspila* are all found in Vietnam and are considered to be high priorities for conservation and research into their

distribution and ecological requirements (Schreiber *et al.* 1989). At a national level, 8 of these species are considered to be Critically Endangered, Endangered or Vulnerable,

Vietnam has two species of pangolin; Chinese Pangolin *Manis pentadactyla* and Sunda Pangolin *Manis javanica*. Vietnam is one of the few countries in South-east Asia that has populations of both species, the others being Laos PDR, Thailand and Myanmar. Distribution limits between the two species within these countries remain unclear, with the exception of Vietnam where some research has been done (see Newton *et al*. 2008). Both the Chinese Pangolin and the Sunda Pangolin are listed as 'Endangered' on the IUCN 'Red List', mainly due to over-exploitation for the illegal wildlife trade (Duckworth *et al*. 2008a; 2008b).

Key threats facing the country's biological diversity include the loss and degradation of natural habitats; overexploitation of wildlife and plants for sale into the illegal wildlife trade and invasive species (Sterling *et al*. 2006; Sodhi *et al*. 2004; Corlett 2007). Small carnivores and pangolins represent some of the largest proportions of the wildlife trade in Vietnam (Roberton 2007; Bell *et al.* 2004; Compton & Lee 1998). Although there are reports of small carnivores in the traditional medicine trade, pelt trade and pet trade, the primary demand for small carnivores comes from consumption in wild meat restaurants across Vietnam and in trade to China (Bell *et al.* 2004). The main driver behind the illegal trade in pangolins is the traditional medicine markets in China and Vietnam, where the scales and other body parts of pangolins are used to 'cure' a wide range of ailments from vertigo to high blood pressure, pangolin meat is also highly sought after (Duckworth *et al*. 1999; Baltzer *et al.* 2004).

There is a lack of knowledge on the distribution and status of a number of small carnivore and pangolin species due to little focused research on these two taxa, inappropriate survey methodologies and poor recording of data associated with field encounters (e.g. accurate species identification, noting of associated ecological variables). The conservation of small carnivores and pangolins has not been the specific focus of projects in the country and few universities, NGOs or other institutions are actively working on these taxa (Roberton 2007; Newton *et al.* 2008).

Northern Vietnam contains a number of threatened mammalian fauna including the 'Critically Endangered' Delacour's langur *Trachypithecus delacouri* which is endemic to the limestone forests and karsts of North Vietnam. The Cuc Phuong - Pu Luong Limestone Landscape is in North Vietnam and is made up of three protected areas; Cuc Phuong National Park (20º 14' - 20 º 24'N, 105º 29' - 105º 44'E), Ngoc Son-Ngo Luong Nature Reserve (20º 23' – 20º 36' N, 105º 07' – 105º 30' E) and Pu Luong Nature Reserve (20° 21' - 20° 34' N, 105° 02' - 105° 20' E). All three form part of a limestone range that runs Northwest from Cuc Phuong National Park to Son La Province and are part of the Northern Indochina Limestone conservation corridor. The topography of this landscape is dominated by steep limestone karsts which reach elevations as high as 1,667 m.a.s.l.

The biodiversity of Cuc Phuong National Park and Pu Luong Nature Reserve have been covered in a number of reports (e.g. Dang Ngoc Can 2004; Le Trong Trai & Do Tuoc 1998). However, the central portion, the Ngoc Son-Ngo Luong Nature Reserve, has been poorly surveyed and as such there is little available data on the biodiversity of this middle segment. A recent fauna survey exists (Le Trong Dat *et al*. 2008), but the small carnivore and pangolin records generated had very little detail or supporting notes attached and therefore have little value.

This survey was therefore designed to improve baseline knowledge of small carnivore and pangolin diversity, distribution and conservation status in the Ngoc Son-Ngo Luong Nature Reserve.

Description of Study Site

Ngoc Son-Ngo Luong Nature Reserve forms part of the Cuc Phuong – Pu Luong Limestone landscape and is approximately 19, 000 hectares in size. The nature reserve is composed of tropical (< 700 m.a.s.l) and sub-tropical seasonal evergreen forests (>700 m a.s.l) and 3 further subtypes; evergreen forest on limestone, evergreen forest on shale and basalt, and plantations (Do Anh Tuan *et al*. 2008a). There is selective logging across much of the Nature Reserve, with only the peaks and slopes of the steep karst and shale mountains still supporting relatively undisturbed primary forest.

The topography of the nature reserve is dominated by steep limestone karst hills not reaching over 1,400 m.a.s.l in elevation. Narrow valleys lie in between some of the hill ranges and these areas have been designated ecological restoration zones. Most of the local population lives within these valleys. There is little surface water, though there are seasonal streams that flow down from the hills and mountains into the valleys. Most of these streams have been modified or interfered with in order to service the agricultural lands that are in these valleys (Pham Xuan Truong *et al*. 2008).

Ngoc Son-Ngo Luong Nature Reserve (NSNL NR) experiences a tropical monsoon climate with two separate seasons: a rainy season July to October, and a dry season from November to June. The mean annual temperature in the region is 23.3 ºC and the temperature ranges from 39 ºC to 2 ºC. The maximum annual rainfall is approximately 2500mm, the majority of which falls between July and October.

The nature reserve is located in the South-west of Hoa Binh province (20º 23' – 20º 36' N, 105º 07' – 105º 30' E) and has a border with Pu Long Nature Reserve, Thanh Hoa province and Cuc Phuong National Park, Ninh Binh province, though the latter is separated by the Ho Chi Minh Highway.

In 2007, there were approximately 12,000 people living in the buffer zone of NSNL NR, and the number would have increased since, 90% of this population are Muong ethnic group, with the remainder Thai and Kinh (Do Anh Tuan *et al*. 2008b). Many of these households are responsible for the main threats to the area which include timber extraction, firewood collection, hunting and harvesting Non-timber Forest Products (Do Anh Tuan *et al*. 2008b).

Methods

To obtain field records of small carnivores and pangolins in the study area, the field team used two methods: diurnal searches for tracks and signs and nocturnal spotlighting walks. These represent two of the standard methods for surveying small carnivores and pangolins (the other being camera trapping). Nocturnal spotlighting is a proven method and is used globally in small carnivore surveys (e.g. Duckworth 1997) and for pangolin surveys. Spotlighting is particularly effective for arboreal species of small carnivore which are rarely recorded using camera-traps e.g. Small-toothed Palm Civet (Duckworth & Nettelbeck 2007; Borissenko *et al*. 2004).

In total, the survey team conducted approximately 25 hours of night-spotlighting and 45 hours of diurnal tracks and sign surveys. The field survey was conducted between 24th February – 10th March and 14th – 22nd March, 2011.

Night-spotlighting and diurnal walks

Man-made trails were followed in the forest for both diurnal and nocturnal walks. Preliminary selection of trails was based on information supplied in Le Trong Dat *et al*. 2008 and Cano & Pham Quang Thien 2010, in addition to consultation with Forest Protection Department (FPD) Rangers of NSNL NR and knowledgeable local people/'ex-hunters'. Following a five day ground-truthing session, final trails were then selected based on three main criteria 1) Previously confirmed small carnivore and pangolin records 2) Habitat type 3) Suitability for going along at night 4) Presence of animal signs.

14 diurnal walks were carried out lasting an average of 3 hrs (ranging from approximately 1½ - 6 hrs). During these walks the team looked for scats (faeces), footprints and other possible animal signs along the trails.

10 spotlighting walks were carried out lasting an average of 2½ hrs (ranging from approximately 2 – 3½ hrs), eight walks started between 19:00 and 20:00 PM, two walks started at around 2:00 AM. LED head-torches were used to detect the eye shine of mammals by scanning trees and other vegetation along the main trails, in addition to along the trail itself. When eye-shine was detected, a stronger spot-light (1,000,000 candle power) was used to help confirm the identity of the species. 14 walks were planned for but unfortunately 4 spotlighting walks had to be called off due to bad weather conditions.

Results from the Diurnal and Nocturnal Walks

During 25 hours of nocturnal walks, one mammal was seen; an Indian Giant Flying Squirrel *Petaurista philippensis*. Diurnal searches were more productive and yielded six small carnivore signs (four scats and two sets of tracks), see Table 1. Additionally 67 confirmed bird species were recorded during the survey, see Appendix 2.

Table 1: Small Carnivore signs recorded in the NSNL NR, 24th February – 22nd March 2011

No	Date (dd-mm-yy)	Lat/Long (degrees, minutes, seconds)	Transect	Elevation (m.a.s.l)	Habitat	Notes	Figure
1	24-02-11	N20 27 01.7 E105 16 23.5	T1	640	HD Primary on Shale and Basalt	On an exposed rock on a pathway	1
2	24-02-11	N20 27 10.1 E105 16 27.5	T1	687	HD Primary on Limestone	On a pathway. Scat broken apart, large number of mammal hairs and bones of a small mammal	2
3	25-02-11	N20 27 33.6 E105 18 31.2	T2	632	Secondary	On a pathway. 4 toes, no claw marks. 25 - 30mm in length	None
4	25-02-11	N20 27 27.9 E105 18 46.5	T2	632	Secondary	On a pathway. 4 toes, no claw marks. 25 - 30mm in length	None
5	5-03-11	N20 27 03.9 E105 16 28.5	T1	673	HD Primary on Shale and Basalt	On a pathway. Contained feathers and parts of a bird	3
6	5-03-11	N20 26 50.2 E105 16 31.4	T1	540	HD Primary on Shale and Basalt	1m from a pathway. Contained mammal hair and rodent parts (clearly identifiable rodent foot)	4

Transect. T1 = Transect from Coi Gao hamlet to Tram hamlet. T2 = Transect from Tram hamlet to Dong hamlet.
Elevation. Recorded using a GPS (Global Positioning System) and therefore must be treated as an approximation.
Habitat. HD = Heavily Disturbed Primary Evergreen Forest
Figures. Refers to photographs included in the appendices.

Threats to small carnivores and pangolins

A variety of threats and disturbances were recorded along all transect walks in the NSNL NR. In total, 6 illegal camps, deep within the protected area, were found. The camps appeared to serve as temporary homes for illegal loggers for when they are illegally harvesting timber and are required to spend several days in the forest. One crossbow, 3 cable-snare traps, the remains of Pheasant *Lophura* sp. (figure 5) and the plucked feathers of a bird (possibly a Drongo *Dicrurus* sp.) where found in some of these camps, indicating that the people living in these camps are also engaged in illegal hunting, at least for subsistence, whilst they are staying in the forest. Additionally, 4 log-fall traps, 1 baited rock-fall trap and 2 'clamp'/No 4. traps (figure 6) were found during the survey; all of them were set but did not contain any specimens. 6 children were also observed using slingshots to hunt birds along the road from Mu hamlet to Ri hamlet. There was also anecdotal information that local people are still hunting with gun inside the nature reserve; a villager in Coi Gao hamlet declared that he hunted civet using this method to one of the surveyors (DTH) during a trip to collect more supplies for the field camp.

Illegal logging is widespread in the Nature Reserve. There were 35 instances of illegal logging inside the nature reserve, evident through either tree stumps or timber that had been left (figure 7). Trees that had been cut down ranged from an estimated 15 to 120cm in diameter-at-breast-height. The majority of these trees were logged within the last few years, though several along the Coi Gao – Tram pathway had been cut in the last few months. The main tree species harvested were *Anogeissus tonkinensis*, *Pometia pinnata Fros*t and *Burretiodendron hsienmu.* Additionally, 3 chainsaws were heard within the protected area during the course of the survey.

The pathway leading from Coi Gao hamlet to Tram hamlet had a particularly high amount of illegal activity, most of the camps were located along this pathway, and there was also a system for lowering timber down a hill (figure 8). This was at the top of a hill and it was theorised that the contraption was being used to help lower timber down the hill using a rope. Small (D = 10cm-15cm) pieces of wood had also been placed horizontally along the pathway going down the hill, presumably to act as rollers and to facilitate the transfer of large pieces of timber down the hill.

25 people were observed going into the forest to collect firewood, bamboo and other NTFPs, though not all of their activities could not be determined.

Very heavy rain prevented the field team from recording all of the threats and disturbances in Le Ban Valley, near Khay hamlet (the site for the third transect). Had this been achieved it would be very likely that the number of threats and disturbances recorded would have been even greater. Recording this data will be one of the priorities for the summer survey.

Discussion

Four small carnivore scats (faeces) and two sets of prints were recorded during the survey, confirming the presence of small carnivores in the NSNL NR. One of these scats contained a large mass of feathers and identifiable parts of a bird. The other two contained mammal hairs, mammal bones and the foot of a rodent. No identifiable parts of fruit (e.g. hard, indigestible seeds) were found in the scats. These remains indicate a likely carnivorous diet, though the ingestion of fruits with no/small seeds cannot be ruled out. The size, shape and content of the scats would suggest a cat species but identifying scats to even a taxon is difficult and should not be treated as a confirmed record without DNA testing. Two of the scats were collected and stored in 90% ethanol for later DNA testing.

Two sets of prints were also recorded. Both were small, (25 – 30mm) in length, had four toes and no claw marks. Both were found within very disturbed secondary evergreen forest near Tram hamlet. Based on the size, absence of claw marks and the habitat it is felt that Leopard Cat *Prionailurus bengalensis*, is the most likely candidate, however animal signs are difficult to interpret by even the most experienced surveyor and should never be treated as confirmed records. These prints do however confirm that small carnivores are persisting in the area, even in much degraded habitats with large amounts of anthropogenic disturbance and this is cause for optimism.

During 25 hours of nocturnal walks, no small carnivores or pangolins were sighted. The only confirmed mammal record during nocturnal walks was an Indian Giant Flying Squirrel *Petaurista philippensis*. At this stage the reasons behind this lack of records is not clear. No survey method is 100% effective but nocturnal walks or 'spotlighting' is a proven method for small carnivore and pangolin surveys, and has been used by the CPCP in similar conditions and in similar habitats and produced confirmed records, therefore the lack of records is not due to the method. Until the summer survey is finished it is too difficult to state with any certainty that the lack of records was down solely to poor weather conditions, or whether it is the more worrying scenario, that widespread and intensive hunting has reduced populations of small carnivores and pangolins to very low numbers (and therefore difficult to detect), and that key species, such as the Chinese Pangolin are now nearing local extinction.

A key result from this survey is the illegal hunting and timber extraction documented throughout the NSNL NR. Though a variety of hunting methods were recorded including log-fall traps, crossbow, sling-shot and cable-snare trap, the intensity seemed to be low compared to other protected areas surveyed by the CPCP, where cable-snare traps numbered in the 1000's. Cable-snare traps are a very effective method for hunting wildlife, being cheap, easy to set up and non-selective. Whilst one could interpret the lack of intensive cable-snare trapping as a good sign, it would actually seem to indicate that wildlife is so depleted in the Nature Reserve, that intensive commercially driven hunting is no longer viable in terms of effort/catch and that most hunting is now done only for local subsistence or use. A well-structured trade survey that identifies specific trade routes in the Nature Reserve as well as the local 'use' of animals commonly hunted would need to be carried out to prove this theory.

Illegal logging was widespread and evident along all walks. The walk across the nature reserve from Coi Gao hamlet to Tram hamlet had a high level of illegal logging and all of the recent (within the last few months) activity was recorded along this transect. This same transect also had the most illegal camps (4 out of 6) and hunting traps (8 out of 9). This area also had the most confirmed small carnivore signs (4 out of 6). This area appears to be a priority both for law enforcement and for surveying.

A notable achievement of the survey team was the practical and theory training in small carnivore and pangolin surveying techniques, given to the FPD rangers of NSNL NR. 8 FPD rangers accompanied the CPCP field team during surveys and gained practical skills in how to collect and record animal signs correctly, and how to spotlight for nocturnal mammals. FPD rangers also received practical training in how to correctly set and place camera-traps. A presentation on survey techniques was given to roughly

half of NSNL NR's FPD rangers at the end of the survey, both to act as a recap to those whose had attended the practical training and to introduce the theory to the rangers who had not yet participated. The FPD rangers who did not receive practical training during the winter-spring survey will do so in the summer survey. Spotlighting requires minimal equipment to do; an LED head-torch, a stronger spotlight for identification and a field book. 50% of the FPD rangers of NSNL NR now have the skills to be able to monitor the Nature Reserve for small carnivore and pangolins and it is now a matter of motivation.

Despite the training in law enforcement, small carnivore and pangolin identification and the placement of confiscated wildlife given by the CPCP's experienced training team at Cuc Phuong National Park and the practical training given by field team of the CPCP, FPD Rangers of NSNL continue to be unwilling to enforce the law. On the 5th March 2011 a member of the field team accompanied a ranger into Coi Gao hamlet to get more water for the field camp. A local person was seen eating a ferret badger (*Melogale* sp.) and one additional dead ferret badger was seen waiting to be cooked. This is a clear violation of the law (Decree 29/2004/QH11) and is completely illegal, yet the FPD ranger would not take any action. This is an example of the problem facing wildlife protection in Vietnam. FPD rangers need to be held accountable and responsible for their failure to uphold the wildlife protection laws otherwise any training given out becomes meaningless.

Summer Survey Recommendations

- Transects done in the winter-spring survey to be repeated in the summer survey. Results of the summer survey will provide more information on whether the lack of records was due to poor weather conditions, or whether it is because of hunting pressures in the NSNL NR.

- An additional transect has been found near Khu hamlet. Suitability will be investigated during the summer survey. The survey team hopes to add this transect to those that were already surveyed during the winter-spring survey.

- FPD Rangers that did not participate in the winter-spring survey must do so during the summer survey. This will ensure that all FPD Rangers of the NSNL NR have received practical training in small carnivore and pangolin survey methods.

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Recommendations for the NSNL NR Forest Protection Department

- The pathway that runs from Coi Gao hamlet to Tram hamlet (Transect 1), is a priority both for surveying and for enforcement. This area produced the highest number of small carnivore signs and contained the most recent illegal activity, with some of the trees estimated to have been illegally cut within the last two months. The FPD of NSNL NR should make this area a priority for their patrols.

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Appendix 1

Photographs taken during the Ngoc Son-Ngo Luong Survey. 22nd of February to 24th March 2011

Figure 1. Small carnivore scat collected in NSNL NR.

Figure 2. Small carnivore scat collected in NSNL NR

Figure 3. Small carnivore scat collected in NSNL NR.

Figure 4. Small carnivore scat collected in NSNL NR.

Figure 5. Photograph showing two cable-snare traps found in an illegal camp in NSNL NR, as well the remains of a Lophura pheasant.

Figure 6. Example of a 'clamp' or No. 4. Trap.

Figure 7. Example of the illegal logging occurring within the core of the NSNL NR.

Figure 8.Logging mechanism found at the top of a hill along the transect from Coi Gao to Tam hamlet (T1)

Appendix 2

Confirmed Bird Records for Ngoc Son-Ngo Luong Nature Reserve.

22nd of February to 24th March 2011

No.	Common Name	Family, *Genus* and *Species*
		Phasianidae
1	Red Junglefowl	*Gallus gallus*
		Ardeidae
2	Chinese Pond-heron	*Ardeola bacchus*
3	Little Heron	*Butorides striata*
		Falconidae
4	Changeable Hawk-eagle	*Nisaetus limnaeetus*
5	Crested Serpent Eagle	*Spilornis cheela*
6	Oriental Honey Buzzard	*Pernis ptilorhynchus*
7	Crested Goshawk	*Accipiter trivirgatus*
8	Shikra	*Accipiter badius*
9	Besra	*Accipiter virgatus*
10	Black Kite	*Milvus migrans*
		Columbidae
11	Spotted Dove	*Streptopelia chinensis*
		Cuculidae
12	Greater Coucal	*Centropus sinensis*
13	Green-billed Malkoha	*Rhopodytes tristis*
		Tytonidae
14	Oriental Bay Owl	*Phodilus badius*
		Apodidae
15	Asian Palm Swift	*Cypsiurus balasiensis*
16	Fork-tailed Swift	*Apus pacificus*
17	Silver-backed Needletail	*Hirundapus cochinchinensis*
		Alcedines
18	Blue-eared Kingfisher	*Alcedo meninting*
19	White-throated Kingfisher	*Halcyon smyrnensis*
		Upupidae
20	Common Hoopoe	*Upupa epops*
		Picidae
21	Greater Flameback	*Chrysocolaptes lucidus*
22	Common Flameback	*Dinopium javanense*
23	Greater Yellownape	*Chrysophlegma flavinucha*
		Eurylaimidae
24	Long-tailed broadbill	*Psarisomus dalhousiae*
		Vireonidae
25	White-bellied Erpornis	*Erpornis zantholeuca*
		Campephagidae
26	Scarlet Minivet	*Pericrocotus speciosus*
		Aegithinidae
27	Common Iora	*Aegithina tiphia*

		Prionopidae
28	Large Woodshrike	*Tephrodornis gularis*
		Dicruridae
29	Greater racket-tailed Drongo	*Dicrurus paradiseus*
30	Lesser racket-tailed Drongo	*Dicrurus remifer*
31	Black Drongo	*Dicrurus macrocercus*
		Monarchidae
32	Black-naped Monarch	*Hypothymis azurea*
		Corvidae
33	White-winged Magpie	*Urocissa whiteheadi*
34	Racket-tailed Treepie	*Crypsirina temia*
		Laniidae
35	Grey-backed Shrike	*Lanius tephronotus*
		Nectariniidae
36	Crimson Sunbird	*Aethopyga siparaja*
37	Little Spiderhunter	*Arachnothera longirostra*
		Dicaeidae
38	Scarlet-backed Flowerpecker	*Dicaeum cruentatum*
		Motacillidae
39	Grey Wagtail	*Motacilla cinerea*
40	Olive-backed Pipit	*Anthus hodgsoni*
		Sturnidae
41	Hill myna	*Gracula religiosa*
		Muscicapidae
42	Oriental Magpie-robin	*Copsychus saularis*
43	Hill-blue Flycatcher	*Cyornis banyumas*
44	Blue-and-white Flycatcher	*Cyanoptila cyanomelana*
45	Eastern Stonechat	*Saxicola maurus*
		Paridae
46	Sultan Tit	*Melanochlora sultanea*
		Stenostiridae
47	Grey-headed canary-flycatcher	*Culicicapa ceylonensis*
		Pycnonotidae
48	Puff-throated Bulbul	*Alophoixus pallidus*
49	Red-whiskered Bulbul	*Pycnonotus jocosus*
50	Ashy Bulbul	*Hemixos flavala*
51	Black Bulbul	*Hypsipetes leucocephalus*
52	Black-crested Bulbul	*Pycnonotus flaviventris*
		Hirundinidae
53	Nepal House-martin	*Delichon nipalense*
54	Barn Swallow	*Hirundo rustica*
55	Red-rumped Swallow	*Cecropis daurica*
		Cettiidae
56	Asian Stubtail	*Ursophena squameiceps*
		Phylloscopidae
57	Limestone Warbler	*Phylloscopus sp.*
58	Yellow-browed Warbler	*Phylloscopus inornatus*

59	Dusky Warbler	*Phylloscopus fuscatus*
		Timaliidae
60	Pin striped tit-babbler	*Macronus gularis*
61	Limestone Wren-babbler	*Gypsophila crispifrons*
62	Spot-necked Babbler	*Stachyris strialata*
63	Black-browed Fulvetta	*Alcippe grotei*
64	Japanese White-eye	*Zosterops japonicus*
65	Long-tailed Sibia	*Heterophasia picaoides*
		Cisticolidae
66	Dark-necked Tailorbird	*Orthotomus atrogularis*
67	Yellow-bellied Prinia	*Prinia flaviventris*