

**2005 SPRING SURVEY OF GALLIFORMES IN THE PIPAR RESERVE AND OF SANTEL, ANNAPURNA  
CONSERVATION AREA, CENTRAL NEPAL**

**A WORLD PHEASANT ASSOCIATION REPORT**

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## **0. Summary**

The Galliformes of Pipar which now lies in the Annapurna Conservation Area in central Nepal have been surveyed seven times since 1979 and most recently in 1998. The nearby area of Santel was surveyed using identical methods in 2001. In continuance of this long-term monitoring at Pipar and to provide a second count at Santel, dawn call counts were conducted at both sites between 29<sup>th</sup> April and 9<sup>th</sup> May 2005. The aim of the surveys was to obtain information on the pheasants and partridges that could be used to infer the status of these populations and especially whether or not they had changed since the last surveys. A secondary aim was to gather information on the presence of birds and mammals of both areas. More satyr tragopan *Tragopan satyra* were recorded by dawn call counts at both Pipar and Santel, and numbers of koklass pheasant *Pucrasia macrolopha* and common hill partridge *Arborophlia torqueola* recorded in both areas were also higher than the last surveys. Both areas have exceptional bird species richness, with 227 species recorded in Pipar and 236 in Santel. More research is required in Santel as our knowledge of its biodiversity remains much poorer than for Pipar. This would also benefit consideration of its inclusion in the Pipar Reserve. Consideration might also be given to surveying other areas in the upper Seti watershed. Although the birds of Pipar's forests are better known than in many other areas of the Annapurna Conservation Area, much of the 'reserve' and other habitats remain little explored. Therefore, it would be very useful to survey these areas to gather information on the distribution and abundance of pheasants and partridges (and presence of other species).

## **1. Acknowledgements**

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## **2. Participants**

### **a) Pipar survey team**

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 Kanchha Gurung (Local assistant)  
 Sul Bahadur Tamang (Local assistant)  
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### 3. Itinerary

#### a) Pipar

Dates	Activities
26 April	Departure from Kathmandu and team arrange at Pokhara
27 April	ACAP office visit to obtain ACAP permission; arrangement of camping equipments and camp support group.
28 April	Departed from Pokhara via Bhurjung Khola (by bus) and then a trek to Thulokhobang; vantage points were located in the evening for recording call count the subsequent mornings; all the team members were oriented.
29 April	Three stations located the previous day were covered to conduct dawn call count at Tholokhobang; ascended to Pipar after breakfast; bird species observed in the way were recorded; it was clear in the morning though the afternoon was rainy.
30 April	The stations surveyed by the teams in the previous years were located and visited by all the team members; again the morning was clear with cloudy afternoon.
1-3 May	Three stations around the Pipar Bowl (stations 1, 2 and 3) were covered to conduct call count; care was taken to avoid the double counts between adjacent stations, the records were tallied and double records were eliminated; the mornings on first and second day were clear though the third morning was cloudy.
4 -6 May	Another three stations (stations 4, 5 and 6) were covered; camp shifted to Thulokhobang after breakfast on the 6 <sup>th</sup> May; birds were recorded along the trails and on the way to camp shift; the mornings were cloudy except on 5 <sup>th</sup> May but the afternoon were generally foggy or raining.
7 May	Three stations at Thulokhobang were again covered one morning; returned to Pokhara after call count; birds observed on the way were recorded; the morning was clear.
8 May	Settlement of team and camp support group in Pokhara.
9 May	Return to Kathmandu

#### b) Santel

Date	Activities
29 April	Travel from Kathmandu to Pokhara
30 April	Pokhara based field gears and logistics arrangements
1 May	Set up from Pokhara; took a bus up to Bhurjung Khola, from where trek began; night stop at Karuwa
2 May	Trek to Dhije Kharka (first camp and call count location); located the survey stations in the afternoon and method was briefed to all the team members
3 - 5 May	3 stations at Dhije were covered and call counts were carried out in the morning; rain hampered call count on the second morning (i.e. 4 <sup>th</sup> May); after morning count of calls on 5 <sup>th</sup> May, camp shift to Khuine (second camp and call count location), ascended through very pristine and moist forests for more than

	five and half hours
6 – 8 May	5 stations were covered for call count on the first morning (station 4-8); another station (station 9) was also covered the second and third morning; weather allowed us to conduct call count as there were no rainfall at least in the morning though it was foggy and drizzling; 8 <sup>th</sup> May morning was the most clear morning during the expedition though it heavily rained in the afternoon; after morning count of 8th May, camp shift to Namsung (third camp and call count location), ascended through <i>Rhododendron</i> forest for about an hour
9 May	Call count was hampered in the morning due to heavy rainfall that was continually occurring since afternoon of last day
10 May	Steep descent from Namsung (the highest placed camp site); the group dispersed at Bhurjung Khola from where we took the last bus to Pokhara
11 May	Travel from Pokhara to Kathmandu

#### 4. Introduction

Pipar is a flagship area for Himalayan pheasant conservation and lies in west-central Nepal where it provides habitat for four Himalayan pheasant species in an area of 43 km<sup>2</sup> (WPA 2004). A fifth, the cheer pheasant, occurs relatively nearby. This area was discovered as an exceptionally rich area for pheasants in 1976, and has been the site of a long-term project by the World Pheasant Association (WPA), which refers to the area as the Pipar Pheasant Reserve. Ecological studies on pheasants began in the seventies and these were followed by other fieldworks (see Lelliott and Yonzon 1980, Tamarkar and Lelliott 1981, Yonzon 1982, Picozzi 1987, Howman and Garson 1993, Kaul and Shakya 1998). Findings from such long term population monitoring, which is probably the longest wildlife monitoring to have occurred in Nepal, suggests a stable pheasant population of satyr tragopan *Tragopan satyra*, Himalayan monal *Lophophorus impejanus* and koklass pheasant *Pucrasia maculophya* in the area. Although there are few data on blood pheasant *Ithaginis cruentus* within the reserve, its population is assumed to have remained stable as well.

Across the Seti Khola valley from Pipar lies the forests of Santel. A survey in 1998 stated that serious consideration should be given to the inclusion of Santel within the area covered by the Pipar Reserve. Therefore WPA in association with Annapurna Conservation Area Project (ACAP) and Bird Conservation Nepal (WPA's affiliate in Nepal) conducted a survey of the Santel area in 2001 (Baral *et al.* 2001). This used methods similar to those used previously in Pipar and provided information on the Galliformes present and a list of bird species. This survey revealed the forests to be as good to be as rich as those in Pipar in species, and potentially richer.

As the last survey of Pipar was conducted in 1998, a resurvey was carried out in 2005 to count numbers of calling pheasants at Pipar. At the same time, the forests of Santel were also revisited so that both sites were surveyed during the same time of year. The aim was to assess the conservation status of both areas by:

- a. Counting Galliformes during call counts and walking along trails;
- b. Compiling a bird species list; and
- c. Documenting any signs of disturbance or habitat damage.

#### 5. Study area and methods

The Pipar Reserve (28°25'N 83°57'E) and Santel area (28°24'N 84°00'E) are located west and east of the river Seti in the Annapurna Himalaya, west central Nepal. Both sites are situated within the Annapurna Conservation Area and administratively fall under two Village Development Committees (VDCs), namely Machhapuchhere VDC and Sardi Khola VDC in the Kaski District.

The study area within the Pipar Reserve was situated on the east facing slope of Pipar, a depression known as the 'Pipar bowl' (Fig 1) at 3,300m on a spur running southwards from the Machapuchare peak (Kaul and Shakya 2001). Santel lies adjacent to the Pipar Reserve on the west facing slopes. Situated in the northeastern part of the Seti River. Santel forest area extends from 1500m to 4000m. Survey efforts were concentrated between altitudes of 2100m and 3250m. Both areas are characterized by a mosaic of habitats from primary and secondary sub-tropical (lower altitudes) and temperate forest to small clearings and alpine grasslands. Information on the vegetation of the Pipar area is well described by Picozzi (1984), Lelliott (1981) and Paudyal (2005) and for the Nepal Himalayas in general, see Dobremez and Jeest (1971) and Stainton (1972).

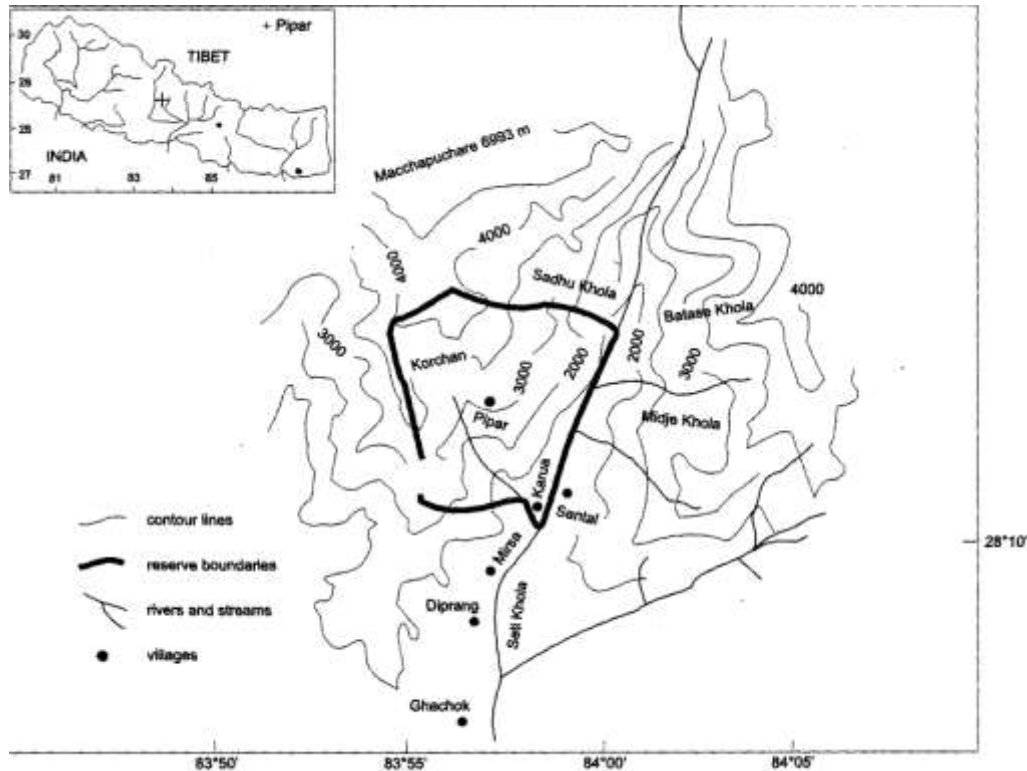


Figure 1: The Pipar study area (Pipar bowl) and its location in Nepal (Inset). (From Kaul and Shakya 2001).

Call counts were conducted on two mornings in Tholokhobang in the lower part of the Pipar Pheasant Reserve (29<sup>th</sup> April and 7<sup>th</sup> May 2005) and for six mornings in the Pipar Bowl (1<sup>st</sup> – 6<sup>th</sup> May 2005). They were conducted for seven mornings in Santel, at Dhije (3<sup>rd</sup> – 5<sup>th</sup> May), Khuine (6<sup>th</sup> – 8<sup>th</sup> May) and Namsung (9<sup>th</sup> May).

The protocol for data collection was the same as that used in many studies on Himalayan pheasant species (e.g Gaston and Singh 1980, Yonzon 1987, Garson 1983, Picozzi 1984, Duke 1990, Howman and Garson 1993, Khaling *et al.* 1998) and followed Gaston (1980). This was counts of calling birds at dawn from which a minimum number of calling birds can be calculated.

The field protocol involves positioning observers at pre-determined points (point count stations or listening stations) where the apparent position of a calling individual can be plotted on a data recording sheet. Calls of the Galliformes species present in the study area are distinctive. Duplicate counts between adjacent observation points were eliminated by comparison of these recording sheets and noting time and direction of calling individuals.

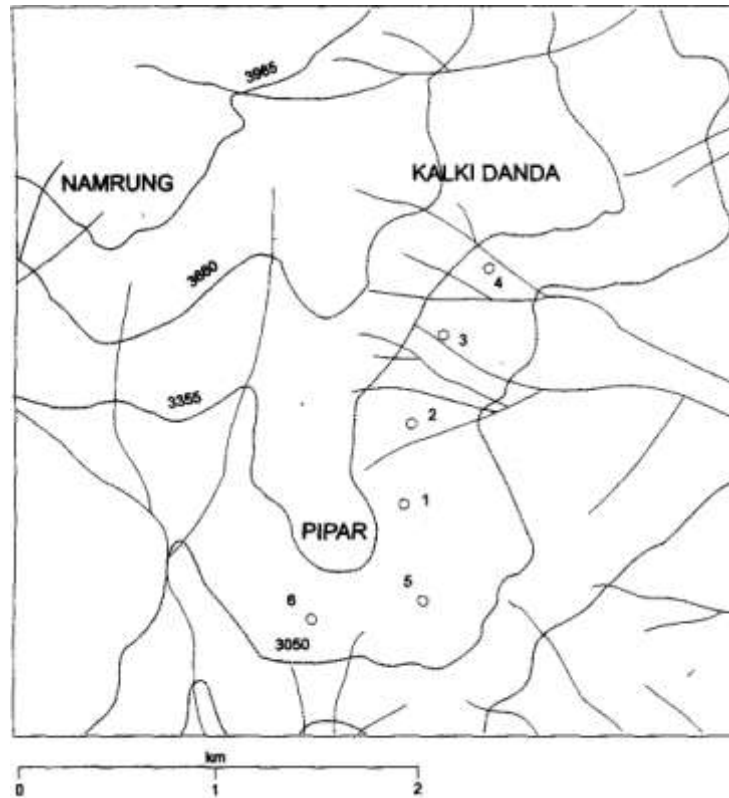


Figure 2: Location of call count stations in Pipar (from Kaul and Shakya 2001).

The six previously established survey stations in Pipar were used to ensure that data gathered were comparable with previous surveys (Figure 2) and a further three stations were established in the Thulokhobang area. In Santel survey stations were located at increasing altitudes, three in Dhije (2000m), six in Khuine (3000m) and one in Namsung (3300m) (Figure 3).

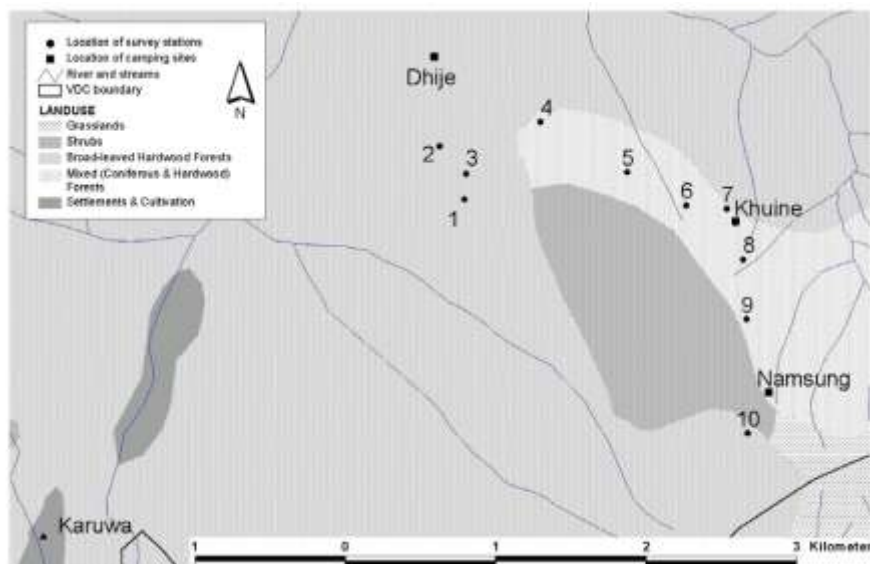


Figure 3: Location of call count stations in Santel

Observers occupied these stations at least 20 minutes before recording took place between 04h30 – 05h30 for dawn call counts.

In Pipar existing trails were walked twice daily to record encounters with Galliformes and also all other bird species. All encounters with mammals were also noted, including indirect signs of species presence, such as droppings, feathers or foot prints. Also encounters of birds and mammals whilst walking between campsite and survey stations as well as during call counts were recorded. In Santel however, no systematic walks could be conducted as there were no existing trails and so efforts were made to walk through the forest wherever possible.

### Data analysis

The minimum number of calling birds of each Galliformes species was determined by comparing daily call count totals for all stations that were manned after any double-counting had been eliminated. The maximum total number heard on any one morning was taken to be the minimum number of calling birds present in the area covered by those calling stations. The maximum totals obtained from different areas were then summed up to estimate total minimum population of the birds in that site.

Calling bird density was obtained by dividing the maximum number of birds heard calling in the area by the area covered by all stations. For Pipar it was estimated that an area of approximately two square kilometres was covered by call counts. For Santel it was estimated that the audible range was 300m from each station and thus each station covered 0.283 square kilometres.

## 6. Results

Three species of Galliformes were heard regularly from calling stations. Poor weather in Santel did however appear to result in a reduced frequency of calls on the morning of heavy rainfall.

### Satyr tragopan *Tragopan satyra*

The highest number of individuals calling on any one morning in Santel was thirty one recorded from six stations (Table 1) compared with twenty nine in Pipar (Table 2) from an equal number of observation points. Calling bird density for satyr tragopan was calculated to be 18.3 individuals/km<sup>2</sup> (Santel) and 14.5 individuals/km<sup>2</sup> (Pipar).

Table 1: No. of calling satyr tragopan heard at different stations and dates in Santel.

Station no.	3 May	4 May	5 May	6 May	7 May	8 May	9 May
1	0	--	0				
2	0	--	0				
3	0	--	0				
4				4	6	1	
5				5	6	8	
6				6	3	3	
7				5	7	5	
8				5	5	4	
9					4	6	--
10							--

Table 2: No. of calling satyr tragopan heard at different stations and dates in Pipar. \* = 1-6 are stations around Pipar Bowl and TK1-3 are at Thulokhobang.



Station no *	29 Apr	30 Apr	1 May	2 May	3 May	4 May	5 May	6 May	7 May
1			4	4	2				
2			3	6	6				
3			8	7	9				
4			3	4	3				
5						1	2	0	
6						4	6	6	
TK1	1								1
TK2	1								1
TK3	0								0

### Koklass pheasant *Pucrasia macrolopha*

The highest number of individuals calling on any one morning in Santel was eight from just three stations 7, 8 and 9 (Table 3), compared with a minimum of twenty koklass from six stations in Pipar (Table 4). The density of calling koklass pheasant was estimated to be 4.7 individuals/km<sup>2</sup> in Santel and 10 individuals/km<sup>2</sup> in Pipar.

Table 3: No of calling koklass pheasant heard at different stations and dates in Santel.

Station no.	3 May	4 May	5 May	6 May	7 May	8 May	9 May
1	0	--	0				
2	0	--	0				
3	0	--	0				
4				0	0	0	
5				0	0	0	
6				0	0	0	
7				1	0	1	
8				1	0	3	
9					1	4	--
10							--

Table 4: No of calling koklass pheasant heard at different stations and dates in Pipar. \* = 1-6 are stations around Pipar Bowl and TK1-3 are at Thulokhobang.

Station no.*	29 Apr	30 Apr	1 May	2 May	3 May	4 May	5 May	6 May	7 May
1			4	3	3				
2			8	5	5				
3			6	5	5				
4			0	0	0				
5						1	0	0	
6						1	1	1	
TK1	0								0
TK2	0								0
TK3	0								0

### Hill partridge *Arborophila torqueola*

Of the Galliformes recorded in Santel and Pipar the hill partridge was the only species recorded from all stations. The highest number of individuals calling on any one morning in Santel was thirty five (Table 5), compared with a minimum of twenty nine at Pipar and eleven at Thulokhobang (Table 6). The density of calling hill partridge was estimated to be 13.74 individuals/km<sup>2</sup> at Santel and 14.5 individuals/km<sup>2</sup> at Pipar.

Table 5: No. of calling hill partridge heard at different stations and dates in Santel.

Station no.	3 May	4 May	5 May	6 May	7 May	8 May	9 May
1	0	--	1				
2	1	--	2				
3	4	--	2				
4				2	5	0	
5				6	7	7	
6				4	2	8	
7				3	2	5	
8				6	1	4	
9					5	6	--
10							--

Table 6: No. of calling hill partridge heard at different stations and dates in Pipar. \* = 1-6 are stations around Pipar Bowl and TK1-3 are at Thulokhobang.

Station no.*	29 Apr	30 Apr	1 May	2 May	3 May	4 May	5 May	6 May	7 May
1			5	5	5				
2			5	4	5				
3			6	3	6				
4			3	3	4				
5						1	1	2	
6						8	5	7	
TK1	5								3
TK2	4								4
TK3	2								4

### Galliformes encounters whilst walking trails

A brief account of Galliformes seen in Pipar and Santel is given below.

**Satyr tragopan:** This species is known to be shy and is not easily seen in its forested habitat, yet the satyr tragopan was seen on three occasions in the Pipar Bowl, once in the early morning feeding in a small patch of pasture within the forest below station three. Two more were sighted within Rhododendron forest at station one between 3200m and 3500m. In Santel only one satyr tragopan was observed at Khuine (3100m).

**Koklass pheasant:** Although the most vocal of all Galliformes species encountered it was also the most elusive. Throughout the survey it was only encountered twice in Pipar, one male below the Pipar cave and one female near station one (3200m – 3500m). In Santel no koklass pheasant was sighted.

**Himalayan monal:** This pheasant was encountered four times (nine individuals in total) in Pipar, mostly sighted in grassy open areas between 3200m – 3600m. In Santel four (two males and two females) were sighted near station nine and a further group of six encountered in the Namsung area.

**Blood pheasant:** Blood pheasant was not recorded in Santel during this survey, but it was encountered twice in Pipar. These were a pair at 3600m near Pipar cave and a pair near station three (3200 – 3600m).

**Kalij pheasant:** Kalij pheasant, which is known to occur at low altitudes, close to villages (Picozzi 1987), was encountered in the Thulokhobang area near Thulokhobang

cave (2200 – 2500m). Four individuals were seen altogether. In Santel only one kalij pheasant was sighted at Khuine (3100m).

No other Galliformes species was recorded.

### Mammal encounters

Most records of mammal presence were the result of encountering indirect signs rather than direct sightings. Only orange-bellied squirrel *Dremomys lokriah*, Pika *Ochotona roylei* and yellow-throated martin *Martes flavigula* were seen in Santel, where walking through the forest on steep slopes was difficult. However in Pipar the presence of trails meant that more mammal species were actually seen. In addition encounters and signs recorded in past survey have been tabulated to support the data collected.

Table 7: Mammal species recorded at Pipar and Santel

Species	Recorded	
	Pipar	Santel
Barking deer <i>Muntiacus muntjak</i>	*	* #
Common langur <i>Presbytis entellus</i>	#	#
Rhesus monkey <i>Macaca mulatta</i>		#
Common leopard <i>Panthera pardus</i>	*	* #
Goral <i>Nemorhedus goral</i>	*	* #
Himalayan Black Bear <i>Ursus thibetanus</i>	#	#
Himalayan mouse-hare (Pika) <i>Ochotona roylei</i>	#	* #
Himalayan tahr <i>Himatragus jemlahicus</i>	#	
Hoary bellied Himalayan squirrel <i>Callosciurus pygerythrus</i>	#	
Indian porcupine <i>Hystrix indica</i>	*	*
Jungle cat <i>Felis chaus</i>		*
Mouse <i>Apodemus gorkha</i>	#	
Musk deer <i>Moschus chrysogaster</i>	#	#
Orange-bellied squirrel <i>Dremomys lokriah</i>		* #
Serow <i>Nemorhedus sumatraensis</i>	*	* #
Yellow-throated marten <i>Martes flavigula</i>	#	* #
Asiatic golden jackal <i>Canis aureus</i>		#

\* Encounter or sign in this survey.

# Secondary data sources (Picozzi 1984, Forester and Lelliott 1981, Kaul and Shakya 1998, Kaul and Shakya 2001, WPA 2004, Paudyal 2005, Baral et al 2001).

### Bird species richness

A total of 227 bird species have been recorded from Pipar so far. This includes 168 species recorded during the last survey among which 77 species were not recorded in the past. This represents nine avian orders and 33 families (Figure 4). A total of 238 species have been recorded so far representing 10 avian orders and 37 families in Santel (Figure 4). Only during this survey a total of 192 species representing 9 orders and 32 families, among which 47 new species not recorded in the past were recorded.

### Signs of disturbance and habitat damage

Three gun shots were heard and two snares, found within the area of Pipar, which suggest that some poaching activities are still taking place in and around Pipar. The local people informed the Pipar team that the hunters mostly came from Dhading district of Central Nepal. However, no sign of poaching was observed in Santel.

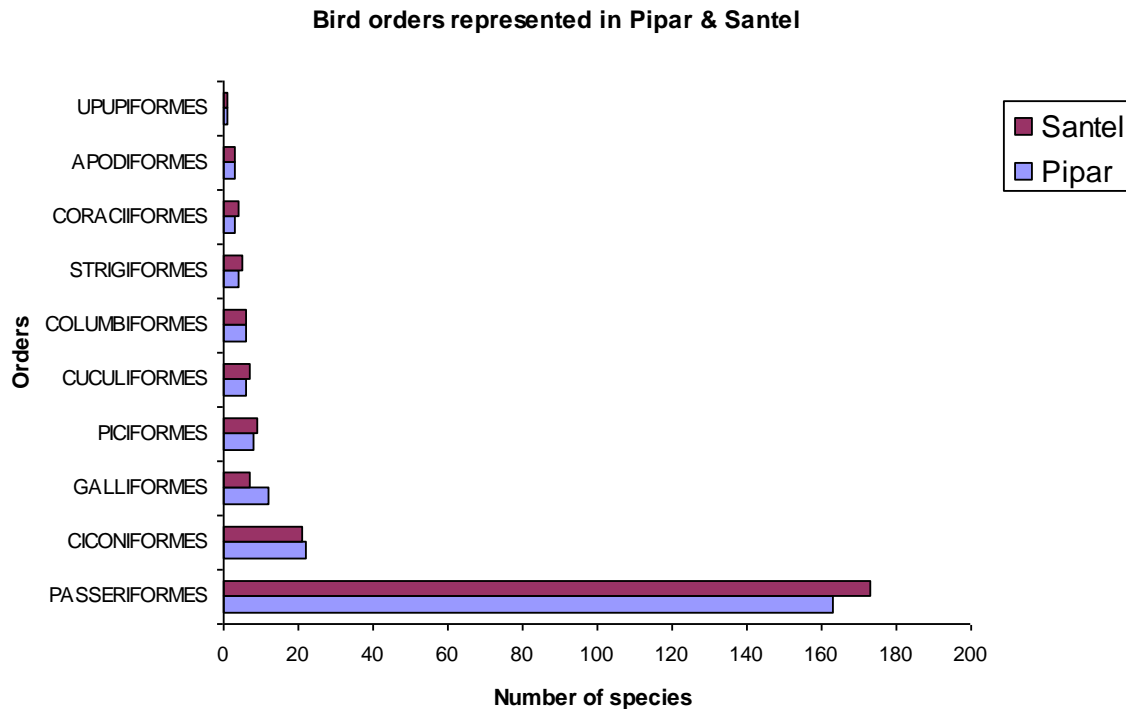


Figure 4: Bird orders in Pipar and Santel

## 7. Discussion

### Galliformes population and bird diversity

In both Pipar and Santel the number of calling satyr tragopan recorded was found to be higher than the previous study. In Pipar there were a minimum of 18 calling birds in 1998 and a minimum of 29 calling birds in 2005. In Santel there were a minimum of 28 calling birds in Santel 2001 and a minimum of 31 calling birds in 2005. During this survey and previous surveys in Pipar highest number of calls were heard from stations two and three, which is thought to be because of their surrounding mosaic of mixed and rhododendron forest and scrub with dense understorey as well as the presence of streams. In Santel the number of calling satyr tragopan in 2005 was 10.7% higher in 2001.

Numbers of calling koklass pheasant were also higher in both sites during 2005 than in the previous survey. In Pipar 12 calling individuals were recorded in 1998 and 20 in 2005, whereas seven were recorded in Santel in 2001 and eight in 2005. In Pipar, the number recorded in 2005 from stations 1-4 were 50% higher than in 1998. Highest numbers of Koklass pheasant have been recorded consistently at station number two during most surveys (see also Picozzi 1987, Howman and Garson 1993 and Kaul and Shakya 1998).

The other commonly encountered Galliformes species, the hill partridge was also recorded in higher numbers in both Santel and Pipar in 2005 than during the last survey at each site. In Pipar a minimum of 15 calling individuals were recorded in 1998 compared with a minimum of 29 in 2005 and in Santel minimum of 24 pairs was recorded in 2001 whereas a minimum of 35 pairs was recorded in 2005.

Previous surveys have reported chukar partridge *Alectoris chukar* (Kaul and Shakya 1998) and Himalayan snowcock *Tetraogallus himalayensis* and snow partridge *Lerwa lerwa* (Picozzi 1987). Our guide reported that Tibetan partridge *Perdix hodgsoniae* was also present.

Surveys in Santel were impeded continually by bad weather and steep terrain, it is therefore assumed that due to these physical factors impeding movement and visibility results for Galliformes encounter rate were lower than they would otherwise have been. Despite this call count indices of the health of the Galliformes population were at least as encouraging when compared with previous surveys. However, there were simply too few observations to draw meaningful conclusions about any changes in the population.

Both Pipar and Santel are equally important for other bird species as well. In Santel a total of 238 species of birds recorded represents 10 orders and 37 families compared to 227 bird species, 9 orders and 33 families within Pipar. Most species present belong to the Passeriformes and Ciconiformes.

Santel's undisturbed and pristine habitats provide shelter to many bird species that are of conservation importance and host a bird assemblage that is exceptionally rich compared with other places in Nepal (Baral and Inskipp 2005). It is likely that more species will be added to this list in conjunction with future surveys.

### **Signs of disturbance and habitat damage**

In Nepal, hunting and snaring of game species has been practiced traditionally for meat, medicines and jewellery. The presence of gunshots and snares is of concern for the wildlife in general. Although the target species are large mammals, Galliformes are killed for subsistence food (Om Bahadur Poudel and Suk Bahadur Tamang, personal communication). Because they are large, tasty, ground-dwelling (including ground-nesting) and call loudly they are potentially very susceptible to hunting. Paudyal (2005) and Gyawali (2004) suggest a potential threat to pheasants of Pipar due to domestic livestock grazers and NTFP (Non-Timber Forest Products) collecting villagers who are involved in unplanned fires, felling trees, harvesting NTFPs haphazardly and poaching. However, direct evidence that these are serious problems is lacking and the health of the pheasant and partridge populations suggests that these threats are minimal at present.

The insurgency in the country has reduced the extent to which people visit wild areas and has almost completely stopped the possession and use of guns by local people, which in turn seems likely to have reduced poaching activities. The change in social structure (outward migration of young people from the village to urban areas) has also helped reduce the intensity of grazing in these areas, which could benefit Galliformes populations.

Though the area lies within the largest protected area of Nepal, regular patrolling and wildlife monitoring from the authority was not seen during the survey because of the difficult political situation. WPA's role will be important in this situation because people appreciate WPA's support for teachers and the infrastructure provided to different schools. A package of teaching materials concerned with bird and forest conservation would be helpful in generating awareness among students living in adjoining villages. These students will play a vital role for pheasant and forest conservation in the future.

### **Conservation**

Comparing call count figures from all surveys conducted in Pipar and the two in Santel, it would appear that numbers detected are reasonably stable and that there is no long-term decline. Whilst translating this into an assessment of the population status of the species surveyed is difficult, we can be confident that the populations are in good shape. This would imply that both areas provide a healthy habitat for Galliformes and that disturbance is not a serious issue. There was very little direct evidence of human activity having an adverse impact on habitat or Galliformes during our survey and the relatively large number of birds detected suggested that this is true at other times of year as well. This is encouraging given that there are human activities in Pipar (at least) during some of the year when animals are grazed and non-timber forest products are gathered (see unpublished reports by Gyawali [2004] and Paudyal [2005]).

Both Pipar and Santel are very rich in bird species and also host a range of rare mammal species such as the Himalayan tahr *Hematragus jemlahicus* and the serow *Nemorhedus sumatraensis*. Because of this biodiversity there is concern that it may be only a matter of time before special interest tourists become attracted to this area and in particular to Pipar. As Pipar is a small reserve of only 43km<sup>2</sup>, it seems reasonable to assume that it would be susceptible to ecological damage under considerable tourist pressure. Efforts should, therefore, be directed towards managing impacts on wildlife that may arise from the plan to open this area as a tourist destination (Kaul and Shakya 2001).

An additional concern is the potential for the area to be opened up for the commercial extraction of medicinal and culinary plants. This was being seriously considered by ACAP in 2002 and 2003, but there has been little discussion of it since then. Whilst increasing the livelihoods of people in the villages below Pipar and Santel is a real concern, over-harvesting would lead to both a reduction in the biodiversity value of the upper Seti Khola valley in which these two forests lie and also potentially a collapse in the availability of the plants being harvested. Therefore, careful planning is key to any enhanced extraction of these forest products.

### **Recommendations**

The area referred to as the Pipar Pheasant Reserve should be extended to include the uninhabited area of Santel, within the Annapurna Conservation Area.

Since call counts conducted in 2005 and in 2001 in Santel provided limited information on all pheasant species, including virtually none on Himalayan monal, kalij pheasant and blood pheasant, a more detailed study in this area should be considered. A vegetation study similar to that conducted in Pipar following methodologies of Picozzi (1984) and Paudyal (2005) would be valuable for the Santel area.

Biological monitoring should not be restricted to the Pipar Bowl, as at present, and should be encouraged in other areas of the reserve including Khumai and Korchen. It may be valuable to consider expanding this to other areas in the upper Seti watershed.

Besides these studies that focus on the ecology of Pipar and Santel, it would also be very helpful now to assess the reliability of survey methodologies. In particular a better understanding of the distance that different Galliformes species can be heard from would greatly help improve the usefulness of call count surveys and the conclusions that could be drawn from them.

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**Appendix 1: Call count data available for pheasant surveys in Pipar 1979-2005 (pre-2005 data take from Kaul and Shakya 2001)**

Species/ Date	Source	No. of callers heard from points					
		1	2	3	4	5	6
<b>Satyr tragopan</b>							
21.5.79	Lelliott 1981	3	4	7	5		
23.5.79		3	5	6	6		
1.5.80	Lelliott 1981	-	-	7	4		
29.4.81	Tamarkar and Lelliott 1981	?	?	?	?		
19.5.82	Yonzon 1982	?	?	?	?		
28.4.83	J. Roberts <i>in litt</i>	?	?	?	?		
12.5.85	WPA Party	5	4	6	-		
13.5.85	--ditto--	6	3	6	-		
14.5.85	--ditto--	-	-	9	8		
16.5.85	--ditto--	4	4	8	10		
19.4.87	Picozzi 1987	5	3	13	5		
20.4.87	--ditto--	5	4	14	3		
21.4.87	--ditto--	3	5	14	-		
23.4.87	--ditto--	5	6	15	5		
20.4.91	Howman & Garson 1993	3	3	1			
21.4.91	--ditto--	10	6	5	5		
22.4.91	--ditto--	7	6	7	10		
23.4.91	--ditto--	0	4	7	5		
30.4.98	Kaul & Shakya 1998	4	5	-	-		
1.5.98	--ditto--	6	6	-	6		
2.5.98	--ditto--	-	8	-	6		
3.5.98	--ditto--	-	6	-	7		
1.5.05	Poudyal & Singh 2005	4	3	8	3	-	-
2.5.05	--ditto--	4	6	7	4	-	-
3.5.05	--ditto--	2	6	9	3	-	-
4.5.05	--ditto--	-	-	-	-	1	4
5.5.05	--ditto--	-	-	-	-	2	6
6.5.05	--ditto--	-	-	-	-	-	6
<b>Koklass Pheasant</b>							
21.5.79	Lelliott 1981	5	6	7	5		
23.5.79		-	6	7	4		
1.5.80	Lelliott 1981	?	?	?	?		
29.4.81	Tamarkar and Lelliott 1981	?	?	?	?		
19.5.82	Yonzon 1982	?	?	?	?		
28.4.83	J. Roberts <i>in litt</i>	?	?	?	?		
12.5.85	WPA Party	7	7	6	-		
13.5.85	--ditto--	6	5	8	-0		
14.5.85	--ditto--	-	-	9	0		
16.5.85	--ditto--	4	6	8	0		
19.4.87	Picozzi 1987	4	3	6	0		
20.4.87	--ditto--	5	6	6	0		
21.4.87	--ditto--	6	5	9	0		
23.4.87	--ditto--	6	12	11	1		
20.4.91	Howman & Garson 1993	7	3	4	-		
21.4.91	--ditto--	5	7	4	2		
22.4.91	--ditto--	-	-	-	-		

23.4.91	--ditto--	-	-	-	-		
30.4.98	Kaul & Shakya 1998	3	7	-	-		
1.5.98	--ditto--	5	6	-	1		
2.5.98	--ditto--	-	6	-	2		
3.5.98	--ditto--	-	6	-	2		
1.5.05	Poudyal & Singh 2005	4	8	6	0	-	-
2.5.05	--ditto--	3	5	5	0	-	-
3.5.05	--ditto--	3	5	5	0	-	-
4.5.05	--ditto--	-	-	-	-	1	1
5.5.05	--ditto--	-	-	-	-	-	1
6.5.05	--ditto--	-	-	-	-	-	1

**Hill Partridge**

1.5.05	Poudyal & Singh 2005	5	5	6	3	-	-
2.5.05	--ditto--	5	4	3	3	-	-
3.5.05	--ditto--	5	5	6	4	-	-
4.5.05	--ditto--	-	-	-	-	1	8
5.5.05	--ditto--	-	-	-	-	1	5
6.5.05	--ditto--	-	-	-	-	2	7

**Appendix 2: Call count data available for pheasant surveys in Santel 2001 and 2005**

Species/ date	Source	No. of calls & locations									
		1	2	3	4	5	6	7	8	9	10
<b>Satyr tragopan</b>											
01.05.2001	Baral et al 2001	0	0	2	-	-	-	-	-	-	-
05.05.2001	- do -	-	-	-	-	-	6	10	8	2	-
06.05.2001	- do -	-	-	-	2	4	7	9	2	1	-
07.05.2001	- do -	-	-	-	3	5	4	4	4	2	-
08.05.2001	- do -	-	-	-	1	5	-	-	-	-	2
09.05.2001	- do -	-	-	-	-	-	-	-	-	-	0
03.05.2005	Mahato & Subedi 2005	0	0	0	-	-	-	-	-	-	-
05.05.2005	- do -	0	0	0	-	-	-	-	-	-	-
06.05.2005	- do -	-	-	-	4	5	6	5	5	-	-
07.05.2005	- do -	-	-	-	6	6	3	7	5	4	-
08.05.2005	- do -	-	-	-	1	8	3	5	4	6	-
<b>Koklass pheasant</b>											
01.05.2001	Baral et al 2001	0	0	0	-	-	-	-	-	-	-
05.05.2001	- do -	-	-	-	-	-	0	0	1	6	-
06.05.2001	- do -	-	-	-	0	0	0	0	4	2	-
07.05.2001	- do -	-	-	-	0	1	0	0	2	2	-
08.05.2001	- do -	-	-	-	0	0	-	-	-	-	2
09.05.2001	- do -	-	-	-	-	-	-	-	-	-	2
03.05.2005	Mahato & Subedi 2005	0	0	0	-	-	-	-	-	-	-
05.05.2005	- do -	0	0	0	-	-	-	-	-	-	-
06.05.2005	- do -	-	-	-	0	0	0	1	1	-	-
07.05.2005	- do -	-	-	-	0	0	0	0	0	1	-
08.05.2005	- do -	-	-	-	0	0	0	1	3	4	-
<b>Hill partridge</b>											
01.05.2001	Baral et al 2001	1	3	0	-	-	-	-	-	-	-
05.05.2001	- do -	-	-	-	-	-	0	7	9	4	-
06.05.2001	- do -	-	-	-	3	1	7	4	2	3	-
07.05.2001	- do -	-	-	-	3	1	2	2	2	4	-
08.05.2001	- do -	-	-	-	1	1	-	-	-	-	1
09.05.2001	- do -	-	-	-	-	-	-	-	-	-	0
03.05.2005	Mahato & Subedi 2005	0	1	4	-	-	-	-	-	-	-
05.05.2005	- do -	1	2	2	-	-	-	-	-	-	-
06.05.2005	- do -	-	-	-	2	6	4	3	6	-	-
07.05.2005	- do -	-	-	-	5	7	2	2	1	5	-
08.05.2005	- do -	-	-	-	0	7	8	5	4	6	-

**Appendix 3: A checklist of birds recorded in Pipar and Santel**

(Bird names follow Bird Conservation Nepal 2006. Birds of Nepal: an official checklist. DNPWC & BCN, Kathmandu)

Source: a = present surveys  
b = past surveys

SN	Common Name	Scientific name	Pipar		Santel	
			a	b	a	b
<b>GALLIFORMES</b>						
<b>Phasianidae</b>						
1	Chukar	<i>Alectoris chukar</i>		+		
2	Rufous-throated partridge	<i>Arborophila rufogularis</i>		+		
3	Hill partridge	<i>Arborophila torqueola</i>	+	+	+	+
4	Black francolin	<i>Francolinus francolinus</i>		+	+	+
5	Blood pheasant	<i>Ithaginis cruentus</i>	+	+		+
6	Snow partridge	<i>Lerwa lerwa</i>		+		
7	Himalayan monal	<i>Lophophorus impejanus</i>	+	+	+	+
8	Kalij pheasant	<i>Lophura leucomelanos</i>	+	+	+	+
9	Tibetan partridge	<i>Perdix hodgsoniae</i>		+		
10	Koklass pheasant	<i>Pucrasia macrolopha</i>	+	+	+	+
11	Himalayan snowcock	<i>Tetraogallus himalayensis</i>		+		
12	Satyr tragopan	<i>Tragopan satyra</i>	+	+	+	+
<b>PICIFORMES</b>						
<b>Indicatoridae</b>						
13	Yellow-rumped honeyguide	<i>Indicator xanthonotus</i>				+
<b>Picidae</b>						
14	Crimson-breasted woodpecker	<i>Dendrocopos cathpharius</i>			+	+
15	Darjeeling woodpecker	<i>Dendrocopos darjellensis</i>				+
16	Grey-headed woodpecker	<i>Picus canus</i>		+	+	+
17	Lesser yellownape	<i>Picus chlorolophus</i>				+
18	Greater yellownape	<i>Picus flavinucha</i>	+			
19	Scaly-bellied woodpecker	<i>Picus squamatus</i>		+		
<b>Megalamiidae</b>						
20	Blue-throated barbet	<i>Megalaima asiatica</i>		+	+	+
21	Golden-throated barbet	<i>Megalaima franklinii</i>		+	+	+
22	Great barbet	<i>Megalaima virens</i>	+	+	+	+
23	Coppersmith barbet	<i>Megalaima haemacephala</i>				+
<b>UPUPIFORMES</b>						
<b>Upupidae</b>						
24	Common hoopoe	<i>Upupa epops</i>		+		+

SN	Common Name	Scientific name	Pipar		Santel	
			a	b	a	b
<b>CORACIIFORMES</b>						
<b>Alcedinidae</b>						
25	Common kingfisher	<i>Alcedo atthis</i>		+		+
<b>Cerylidae</b>						
26	Pied kingfisher	<i>Ceryle rudis</i>				+
27	Crested kingfisher	<i>Megaceryle lugubris</i>	+			
<b>Coraciidae</b>						
28	Indian roller	<i>Coracias benghalensis</i>				+
<b>Dacelonidae</b>						
29	White-throated kingfisher	<i>Halcyon smyrnensis</i>		+	+	+
<b>CUCULIFORMES</b>						
<b>Cuculidae</b>						
30	Asian Emerald cuckoo	<i>Chrysococcyx maculatus</i>			+	+
31	Eurasian cuckoo	<i>Cuculus canorus</i>	+		+	+
32	Indian cuckoo	<i>Cuculus micropterus</i>		+	+	+
33	Lesser cuckoo	<i>Cuculus poliocephalus</i>			+	+
34	Oriental cuckoo	<i>Cuculus saturatus</i>	+		+	+
35	Large hawk cuckoo	<i>Hierococcyx sparverioides</i>	+	+	+	+
36	Common hawk cuckoo	<i>Hierococcyx varius</i>		+		
37	Green-billed malkoha	<i>Phaenicophaeus tristis</i>	+			
38	Drongo cuckoo	<i>Surniculus lugubris</i>			+	+
<b>APODIFORMES</b>						
<b>Apodidae</b>						
39	House swift	<i>Apus affinis</i>	+	+	+	
40	Fork-tailed swift	<i>Apus pacificus</i>				+
41	Himalayan swiftlet	<i>Collocalia brevirostris</i>	+		+	
42	Alpine swift	<i>Tachymarptis melba</i>	+			
<b>STRIGIFORMES</b>						
<b>Strigidae</b>						
43	Eurasian eagle owl	<i>Bubo bubo</i>				+
44	Collared owlet	<i>Glaucidium brodiei</i>		+	+	+
45	Asian barred owlet	<i>Glaucidium cuculoides</i>				+
46	Mountain scops owl	<i>Otus spilocephalus</i>				+
47	Tawny owl	<i>Strix aluco</i>		+		
<b>Caprimulgidae</b>						

SN	Common Name	Scientific name	Pipar		Santel	
			a	b	a	b
48	Grey nightjar	<i>Caprimulgus indicus</i>		+		+
49	Indian nightjar	<i>Caprimulgus asiaticus</i>		+		
<b>COLUMBIFORMES</b>						
<b>Columbidae</b>						
50	Emerald dove	<i>Chalcophaps indica</i>		+		
51	Speckled wood pigeon	<i>Columba hodgsonii</i>	+			
52	Rock pigeon	<i>Columba livia</i>				+
53	Common wood pigeon	<i>Columba palumbus</i>	+			
54	Ashy wood pigeon	<i>Columba pulchricollis</i>			+	+
55	Spotted dove	<i>Streptopelia chinensis</i>		+	+	+
56	Eurasian collared dove	<i>Streptopelia decaocto</i>				+
57	Oriental turtle dove	<i>Streptopelia orientalis</i>	+	+	+	+
58	Wedge-tailed green pigeon	<i>Treron sphenura</i>		+	+	+
<b>CICONIIFORMES</b>						
<b>Chardiidae</b>						
59	River lapwing	<i>Vanellus duvaucelii</i>		+	+	
<b>Scolopacidae</b>						
60	Eurasian woodcock	<i>Scolopax rusticola</i>	+			+
<b>Accipitridae</b>						
61	Shikra	<i>Accipiter badius</i>	+	+		
62	Northern goshawk	<i>Accipiter gentilis</i>	+	+		+
63	Eurasian sparrowhawk	<i>Accipiter nisus</i>		+		+
64	Crested goshawk	<i>Accipiter trivirgatus</i>	+			
65	Besra	<i>Accipiter virgatus</i>				+
66	Cinereous vulture	<i>Aegypius monachus</i>		+		
67	Steppe eagle	<i>Aquila nipalensis</i>				+
68	Short-toed snake eagle	<i>Circaetus gallicus</i>	+			
69	Hen Harrier	<i>Circus cyaneus</i>				+
70	Lammergeier	<i>Gypaetus barbatus</i>	+			
71	White-rumped vulture	<i>Gyps bengalensis</i>		+	+	+
72	Himalayan griffon	<i>Gyps himalayensis</i>		+		+
73	Black eagle	<i>Ictinaetus malayensis</i>	+	+	+	+
74	Black Kite	<i>Milvus migrans</i>	+	+	+	+
75	Egyptian vulture	<i>Neophron percnopterus</i>	+	+	+	+
76	Red-headed vulture	<i>Sarcogyps calvus</i>	+		+	
77	Crested serpent eagle	<i>Spilornis cheela</i>	+	+	+	+
78	Changeable hawk eagle	<i>Spizaetus cirrhatous</i>		+		
79	Mountain hawk eagle	<i>Spizaetus nipalensis</i>	+	+		+

SN	Common Name	Scientific name	Pipar		Santel	
			a	b	a	b
<b>Falconidae</b>						
80	Peregrine falcon	<i>Falco peregrinus</i>			+	+
81	Common kestrel	<i>Falco tinnunculus</i>	+		+	+
82	Lesser kestrel	<i>Falco naumanni</i>	+			+
<b>Ardeidae</b>						
83	Indian pond heron	<i>Ardeola grayii</i>			+	+
84	Cattle egret	<i>Bubulcus ibis</i>	+	+	+	+
85	Little egret	<i>Egretta garzetta</i>		+	+	+
<b>PASSERIFORMES</b>						
<b>Irenidae</b>						
86	Orange-bellied leafbird	<i>Chloropsis hardwickii</i>	+		+	
<b>Laniidae</b>						
87	Long-tailed shrike	<i>Lanius schach</i>	+	+	+	+
88	Grey-backed shrike	<i>Lanius tephronotus</i>			+	+
89	Brown shrike	<i>Lanius cristatus</i>	+			
<b>Corvidae</b>						
90	Common green magpie	<i>Cissa chinensis</i>	+			+
91	Large cuckooshrike	<i>Coracina macei</i>				+
92	Black-winged cuckooshrike	<i>Coracina melaschistos</i>	+			+
93	Large-billed crow	<i>Corvus macrorhynchos</i>	+	+	+	+
94	House crow	<i>Corvus splendens</i>			+	+
95	Grey treepie	<i>Dendrocitta formosae</i>	+	+	+	+
96	Rufous treepie	<i>Dendrocitta vagabunda</i>		+	+	+
97	Bronzed drongo	<i>Dicrurus aeneus</i>	+	+	+	+
98	Crow-billed drongo	<i>Dicrurus annectans</i>			+	
99	Ashy drongo	<i>Dicrurus leucophaeus</i>	+	+	+	+
100	Black drongo	<i>Dicrurus macrocercus</i>	+	+	+	+
101	Lesser racket-tailed drongo	<i>Dicrurus remifer</i>				+
102	Spotted nutcracker	<i>Nucifraga caryocatactes</i>		+		
103	Eurasian golden oriole	<i>Oriolus oriolus</i>		+		+
104	Maroon oriole	<i>Oriolus traillii</i>	+	+	+	+
105	Short-billed minivet	<i>Pericrocotus brevirostris</i>			+	+
106	Long-tailed minivet	<i>Pericrocotus ethologus</i>	+	+	+	+
107	Scarlet minivet	<i>Pericrocotus flammeus</i>	+	+	+	+
108	White-throated fantail	<i>Rhipidura albicollis</i>	+		+	+
109	Yellow-bellied fantail	<i>Rhipidura hypoxantha</i>	+	+	+	
110	Large woodshrike	<i>Tephrodornis gularis</i>		+		

SN	Common Name	Scientific name	Pipar		Santel	
			a	b	a	b
111	Red-billed blue magpie	<i>Urocissa erythrorhyncha</i>			+	+
112	Yellow-billed blue magpie	<i>Urocissa flavirostris</i>	+			+
<b>Cinclidae</b>						
113	Brown dipper	<i>Cinclus pallasii</i>			+	+
<b>Muscicapidae</b>						
114	White-browed shortwing	<i>Brachypteryx montana</i>			+	
115	White-capped water redstart	<i>Chaimarrornis leucocephalus</i>	+	+	+	+
116	Oriental magpie robin	<i>Copsychus saularis</i>	+	+	+	+
117	Grey-headed canary flycatcher	<i>Culicicapa ceylonensis</i>	+		+	+
118	Pale blue flycatcher	<i>Cyornis unicolor</i>			+	
119	Spotted forktail	<i>Enicurus maculatus</i>			+	+
120	Little forktail	<i>Enicurus scouleri</i>			+	
121	Verditer flycatcher	<i>Eumyias thalassina</i>	+	+	+	+
122	Red-throated flycatcher	<i>Ficedula parva</i>	+			
123	Rufous-gorgeted flycatcher	<i>Ficedula strophiatea</i>			+	+
124	Ultramarine flycatcher	<i>Ficedula supercilialis</i>	+	+	+	+
125	Slaty-blue flycatcher	<i>Ficedula tricolor</i>			+	
126	Little pied flycatcher	<i>Ficedula westermanni</i>	+	+	+	
127	Indian blue robin	<i>Luscinia brunnea</i>			+	+
128	Blue-capped rock thrush	<i>Monticola cinclorhynchus</i>	+		+	
129	Chestnut-bellied rock thrush	<i>Monticola rufiventris</i>	+	+	+	+
130	Blue rock thrush	<i>Monticola solitarius</i>		+		
131	Asian brown flycatcher	<i>Muscicapa dauurica</i>			+	
132	Dark-sided flycatcher	<i>Muscicapa sibirica</i>	+		+	+
133	Blue whistling thrush	<i>Myophonus caeruleus</i>	+	+	+	+
134	Large niltava	<i>Niltava grandis</i>	+		+	+
135	Small niltava	<i>Niltava macgrigoriae</i>	+		+	+
136	Rufous-bellied niltava	<i>Niltava sundara</i>	+	+	+	+
137	Blue-capped redstart	<i>Phoenicurus coeruleocephalus</i>	+			
138	Rufous-backed redstart	<i>Phoenicurus erythronota</i>	+			
139	Blue-fronted redstart	<i>Phoenicurus frontalis</i>	+	+	+	+
140	Black redstart	<i>Phoenicurus ochruros</i>	+	+	+	
141	Plumbeous water redstart	<i>Rhyacornis fuliginosus</i>	+	+	+	+
142	Pied bushchat	<i>Saxicola caprata</i>			+	+
143	Grey bushchat	<i>Saxicola ferrea</i>	+	+	+	+
144	Common stonechat	<i>Saxicola torquata</i>	+		+	+
145	Golden bush robin	<i>Tarsiger chrysaeus</i>			+	+
146	Orange-flanked bush robin	<i>Tarsiger cyanurus</i>		+	+	+
147	White-browed bush robin	<i>Tarsiger indicus</i>	+			+
148	White-collared blackbird	<i>Turdus albocinctus</i>	+	+	+	+



149	Grey-winged blackbird	<i>Turdus boulboul</i>			+	+
150	Eurasian blackbird	<i>Turdus merula</i>			+	
151	Dark-throated thrush	<i>Turdus ruficollis</i>			+	
152	Mistle thrush	<i>Turdus viscivorus</i>			+	
153	Orange-headed thrush	<i>Zoothera citrina</i>			+	
154	Scaly thrush	<i>Zoothera dauma</i>			+	+
<b>Sturnidae</b>						
155	Jungle myna	<i>Acridotheres fuscus</i>			+	+
156	Common myna	<i>Acridotheres tristis</i>			+	+
157	Chestnut-tailed starling	<i>Sturnus malabaricus</i>			+	
<b>Sittidae</b>						
158	Chestnut-bellied nuthatch	<i>Sitta castanea</i>			+	+
159	White-tailed nuthatch	<i>Sitta himalayensis</i>			+	+
<b>Certhiidae</b>						
160	Brown-throated treecreeper	<i>Certhia discolor</i>				+
161	Rusty-flanked treecreeper	<i>Certhia nipalensis</i>				+
<b>Paridae</b>						
162	Coal tit	<i>Parus ater</i>			+	+
163	Grey-crested tit	<i>Parus dichrous</i>			+	+
164	Great tit	<i>Parus major</i>			+	+
165	Green-backed tit	<i>Parus monticolus</i>			+	+
166	Rufous-vented tit	<i>Parus rubidiventris</i>			+	+
167	Black-lored tit	<i>Parus xanthogenys</i>			+	+
168	Yellow-browed tit	<i>Sylviparus modestus</i>			+	
<b>Aegithalidae</b>						
169	Black-throated tit	<i>Aegithalos concinnus</i>			+	+
<b>Hirundinidae</b>						
170	Asian house martin	<i>Delichon dasypus</i>				+
171	Nepal house martin	<i>Delichon nipalensis</i>				+
172	Northern house martin	<i>Delichon urbica</i>				+
173	Red-rumped swallow	<i>Hirundo daurica</i>			+	+
174	Barn swallow	<i>Hirundo rustica</i>			+	+
175	Plain martin	<i>Riparia paludicola</i>			+	+
176	Sand martin	<i>Riparia riparia</i>				+
<b>Pycnonotidae</b>						
177	Black bulbul	<i>Hypsipetes leucocephalus</i>			+	+
178	Mountain bulbul	<i>Hypsipetes mcclllandii</i>			+	+

SN	Common Name	Scientific name	Pipar		Santel	
			a	b	a	b
179	Red-vented bulbul	<i>Pycnonotus cafer</i>	+	+	+	+
180	Himalayan bulbul	<i>Pycnonotus leucogenys</i>	+	+	+	+
181	Striated bulbul	<i>Pycnonotus striatus</i>	+	+	+	+
<b>Cisticolidae</b>						
182	Striated prinia	<i>Prinia criniger</i>	+	+	+	+
183	Grey-breasted prinia	<i>Prinia hodgsonii</i>			+	+
<b>Zosteropidae</b>						
184	Oriental white-eye	<i>Zosterops palpebrosus</i>	+		+	+
<b>Sylviidae</b>						
185	Black-faced warbler	<i>Abroscopus schisticeps</i>	+	+	+	
186	Yellow-bellied warbler	<i>Abroscopus superciliaris</i>	+	+		
187	Rufous-fronted barwing	<i>Actinodura egertoni</i>			+	
188	Hoary-throated barwing	<i>Actinodura nipalensis</i>	+		+	+
189	Rufous-winged fulvetta	<i>Alcippe castaneiceps</i>	+		+	+
190	Golden-breasted fulvetta	<i>Alcippe chrysotis</i>	+	+	+	+
191	Nepal fulvetta	<i>Alcippe nipalensis</i>	+			+
192	White-browed fulvetta	<i>Alcippe vinipectus</i>	+	+	+	+
193	Spotted bush warbler	<i>Bradypterus thoracicus</i>	+			
194	Grey-sided bush warbler	<i>Cettia brunnifrons</i>	+	+	+	+
195	Aberrant bush warbler	<i>Cettia flavolivacea</i>	+			+
196	Chestnut-crowned bush warbler	<i>Cettia major</i>				+
197	Great parrotbill	<i>Conostoma oemodium</i>	+		+	+
198	Cutia	<i>Cutia nipalensis</i>		+		+
199	Black-faced laughingthrush	<i>Garrulax affinis</i>	+	+	+	+
200	White-throated laughingthrush	<i>Garrulax albogularis</i>	+		+	+
201	Grey-sided laughingthrush	<i>Garrulax caerulatus</i>		+		
202	Chestnut crowned laughingthrush	<i>Garrulax erythrocephalus</i>			+	
203	White-crested laughingthrush	<i>Garrulax leucolophus</i>			+	+
204	Streaked laughingthrush	<i>Garrulax lineatus</i>	+	+	+	+
205	Spotted laughingthrush	<i>Garrulax ocellatus</i>	+	+		+
206	Rufous-chinned laughingthrush	<i>Garrulax rufogularis</i>	+			
207	Blue-winged laughingthrush	<i>Garrulax squamatus</i>	+			+
208	Striated laughingthrush	<i>Garrulax striatus</i>	+	+	+	+
209	Variiegated laughingthrush	<i>Garrulax variegatus</i>	+			
210	Rufous sibia	<i>Heterophasia capistrata</i>	+	+	+	+
211	Red-billed leiothrix	<i>Leiothrix lutea</i>				+
212	Blue-winged minla	<i>Minla cyanouroptera</i>				+
213	Red-tailed minla	<i>Minla ignotincta</i>	+			
214	Chestnut-tailed minla	<i>Minla strigula</i>		+	+	+

SN	Common Name	Scientific name	Pipar		Santel	
			a	b	a	b
215	Common tailorbird	<i>Orthotomus sutorius</i>	+	+	+	+
216	Black-throated parrotbill	<i>Paradoxornis nipalensis</i>		+		+
217	Brown parrotbill	<i>Paradoxornis unicolor</i>	+	+	+	
218	Puff-throated babbler	<i>Pellorneum ruficeps</i>			+	
219	Tickell's leaf warbler	<i>Phylloscopus affinis</i>	+	+	+	+
220	Lemmon-rumped warbler	<i>Phylloscopus chloronotus</i>	+	+	+	+
221	Hume's warbler	<i>Phylloscopus humei</i>	+		+	+
222	Yellow browed warbler	<i>Phylloscopus inornatus</i>	+		+	
223	Ashy-throated warbler	<i>Phylloscopus maculipennis</i>	+	+	+	+
224	Large-billed leaf warbler	<i>Phylloscopus magnirostris</i>		+	+	
225	Western-crowned warbler	<i>Phylloscopus occipitalis</i>		+	+	
226	Buff-barred warbler	<i>Phylloscopus pulcher</i>	+		+	+
227	Blyth's leaf warbler	<i>Phylloscopus reguloides</i>	+		+	+
228	Greenish warbler	<i>Phylloscopus trochiloides</i>	+	+	+	+
229	Scaly-breasted wren babbler	<i>Pnoepyga albiventer</i>			+	+
230	Nepal wren babbler	<i>Pnoepyga immaculata</i>				+
231	Rusty-cheeked scimitar babbler	<i>Pomatorhinus erythrogenys</i>			+	+
232	White-browed shrike babbler	<i>Pteruthius flaviscapis</i>		+	+	+
233	Black-eared shrike babbler	<i>Pteruthius melanotis</i>	+			+
234	Black-headed shrike babbler	<i>Pteruthius rufiventer</i>			+	
235	Green shrike babbler	<i>Pteruthius xanthochlorus</i>	+	+		+
236	Golden-spectacled warbler	<i>Seicercus burkii</i>	+		+	+
237	Chestnut-crowned warbler	<i>Seicercus castaniceps</i>	+	+		+
238	Grey-cheeked warbler	<i>Seicercus poliogenys</i>	+	+		
239	Whistler's warbler	<i>Seicercus whistleri</i>	+		+	+
240	Grey-hooded warbler	<i>Seicercus xanthoschistos</i>	+	+	+	+
241	Golden Babbler	<i>Stachyris chrysaea</i>		+	+	
242	Black-chinned babbler	<i>Stachyris pyrrhops</i>	+			
243	Grey-throated babbler	<i>Stachyris nigriceps</i>	+			
244	Chestnut-headed tesia	<i>Tesia castaneocoronata</i>	+	+	+	+
245	Grey-bellied tesia	<i>Tesia cyaniventer</i>			+	
246	Whiskered yuhina	<i>Yuhina flavicollis</i>	+	+	+	+
247	Stripe-throated yuhina	<i>Yuhina gularis</i>	+	+	+	+
248	Rufous-vented yuhina	<i>Yuhina occipitalis</i>	+	+	+	+
249	White-bellied yuhina	<i>Yuhina zantholeuca</i>	+	+	+	
<b>Nectariniidae</b>						
250	Mrs Gould's sunbird	<i>Aethopyga gouldiae</i>	+			
251	Fire-tailed sunbird	<i>Aethopyga ingnicauda</i>	+	+	+	+
252	Green-tailed sunbird	<i>Aethopyga nipalensis</i>		+	+	+
253	Black-throated sunbird	<i>Aethopyga saturata</i>	+	+		+
254	Crimson sunbird	<i>Aethopyga siparaja</i>			+	+

SN	Common Name	Scientific name	Pipar		Santel	
			a	b	a	b
255	Fire-breasted flowerpecker	<i>Dicaeum ignipectus</i>	+	+	+	+
256	Purple sunbird	<i>Nectarinia asiatica</i>	+			
<b>Passeridae</b>						
257	Blyth's pipit	<i>Anthus godlewskii</i>		+		
258	Olive-backed pipit	<i>Anthus hodgsoni</i>		+	+	+
259	Rosy pipit	<i>Anthus roseatus</i>	+	+	+	+
260	Paddy-field pipit	<i>Anthus rufulus</i>			+	+
261	Upland pipit	<i>Anthus sylvanus</i>		+	+	
262	White-rumped munia	<i>Lonchura striata</i>			+	+
263	Grey wagtail	<i>Motacilla cinerea</i>	+		+	+
264	Yellow wagtail	<i>Motacilla flava</i>	+			
265	House sparrow	<i>Passer domesticus</i>	+		+	+
266	Eurasian tree sparrow	<i>Passer montanus</i>		+	+	+
267	Russet sparrow	<i>Passer rutilans</i>	+			
268	Brown accentor	<i>Prunella fulvescens</i>	+			
269	Rufous-breasted accentor	<i>Prunella strophiatea</i>		+		+
<b>Fringillidae</b>						
270	Common rosefinch	<i>Carpodacus erythrinus</i>	+	+		+
271	Yellow-breasted greenfinch	<i>Carduelis spinoides</i>	+			+
272	Dark-rumped rosefinch	<i>Carpodacus edwardsii</i>			+	
273	Dark-breasted rosefinch	<i>Carpodacus nipalensis</i>	+	+	+	+
274	Beautiful rosefinch	<i>Carpodacus pulcherrimus</i>	+		+	
275	Pink-browed rosefinch	<i>Carpodacus rodochrous</i>	+	+	+	+
276	Spot-winged rosefinch	<i>Carpodacus rodopeplus</i>	+		+	+
277	White-browed rosefinch	<i>Carpodacus thura</i>	+	+	+	+
278	Chestnut-eared bunting	<i>Emberiza fucata</i>	+			
279	Pine bunting	<i>Emberiza leucocephalos</i>	+			
280	Chaffinch	<i>Fringilla coelebs</i>	+			
281	Scarlet finch	<i>Haematospiza sipahi</i>	+	+	+	+
282	Plain mountain finch	<i>Leucosticte nemoricola</i>		+		
283	Creasted bunting	<i>Melophus lathamii</i>	+	+	+	+
284	Collared grosbeak	<i>Mycerobas affinis</i>		+		+
285	White-winged grosbeak	<i>Mycerobas carnipes</i>	+		+	+
286	Spot-winged grosbeak	<i>Mycerobas melanozanthos</i>			+	+
287	Crimson-browed finch	<i>Propryrrhula subhimachalus</i>	+			
288	Goldnaped finch	<i>Pyrrhoptes epauletta</i>	+	+		+
289	Redheaded bullfinch	<i>Pyrrhula erythrocephala</i>	+	+	+	+
290	Brown bullfinch	<i>Pyrrhula nipalensis</i>	+		+	