



WWF Nepal Program

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Report on the Flora and Fauna of the Kanchenjunga Region

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PREFACE

The World Wildlife Fund Nepal Program is pleased to present this series of research reports. Though WWF has been active in Nepal since 1967, there has been a gap in the public's knowledge of WWF's works. These reports help bridge that gap by offering the conservation community access to works funded and/or executed by WWF.

The report series attests to the diversity and complexity of the conservation challenges facing Nepal. Some reports feature scientific research that will enable ecologically sound conservation management of protected areas and endangered species. Other reports represent research in areas that are relatively less known or studied (e.g. the proposed Kanchenjunga Conservation Area or the impact of pesticides in Nepal).

The Wildlands Studies Program, San Francisco State University, has conducted ecological surveys of vegetation and wildlife in eastern Nepal for the past 5 years. These reports detail the community structure of forests and alpine zones in the Kanchenjunga area. Tree, wildlife, and bird species observed are given with altitudinal and habitat distribution. The report augments WWF's feasibility study of the proposed Kanchenjunga Conservation Area by providing up-to-date data on this unique and under-studied ecosystem.

WWF thanks the Wildlands Studies Program, Dr. Chris Carpenter and his students for their contributions. WWF welcomes feedback from peers and organizations on this report series.

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Report on the Flora and Fauna of the Kanchenjunga Region:

Wildlands Studies, Autumn 1994

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I. Forests of the Kanchenjunga Region

The Wildlands Studies Team investigated forests along the Tamur River and Ghunsa Khola from <1000 masl to altitudinal treeline near Kembachen (4000 masl). Methods included general observations and data collections made from (20m)² forest quadrats established near Gyepla, Ghunsa and the lower Yamtori Khola.

Here we submit the results of our general observations. We plan to submit results from the forest plots in a supplement to this report when we have completed the analysis.

A. Community Structure of Forests in the Kanchenjunga Region

Throughout Eastern Nepal, forests consist of an evergreen broadleaf formation at subtropical to lower temperate elevations (1000 to 2500 masl), gradually replaced by deciduous broadleaf taxa at upper temperate elevations (2500 to 3000 masl). With increasing elevation, the deciduous broadleaf forest is in turn partially replaced by a conifer forest consisting predominantly of evergreen species, although a significant deciduous element remains as high as altitudinal timberline, which usually occurs at about 4000 masl in these regions. In the Kanchenjunga Region, this broad description of forest change with elevation is generally accurate, although the specific forest composition within this region is in many ways unique.

At the lowest elevations in the Tamur River Valley, forests of *Alnus nepalensis* and *Engelhardtia spicata* dominate stands on either side of the Tamur River together with a rich assemblage of other subtropical tree species. In East Nepal Alder is regarded as an indicator species for cardamom farming and, indeed, cardamom is widely cultivated here. Steep slopes support stands of *Castanopsis tribuloides* in shaded locations and *Pinus roxburgii* on sunny exposures.

An interesting feature of slopes at the lower temperate elevations in the lower Ghunsa and Simbuwa River valleys is the drastic disparity in vegetation that occurs on opposite sides of these steep valleys. Slopes of S to SE aspect (the right bank of each stream) support grasslands with oak (*Quercus semecarpifolia*) woodland in places where the slope is not more than 45-50°. These grassy slopes are heavily grazed, but evidence suggests that this ecological community is not anthropogenic. Hooker's explorations in 1845 refer to extensive grasslands on slopes above the confluence of

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the rivers which drain Olangchang and Ghunsa. A possible ecological explanation for lack of forest cover here is high evapo-transpiration and pre-monsoon drought stress on the sunny slope. This effect would be exacerbated by the high winds and lack of precipitation that is characteristic of the lower elevations of deep Himalayan Valleys. During our visit, strong catabatic (drying, downslope) winds blew much of the time.

Slopes of northerly aspect, also steep, support a dense forest cover of broadleaf tree species, evergreen at the lower elevations, deciduous above. In a Himalayan "dry valley" (which the Tamur and lower Ghunsa Khola seem to represent), lack of direct solar radiation during the pre-monsoon may be necessary for the establishment of closed canopy forest, especially on steep slopes.

Between Amjilassa and Gyepla, at about 2300 masl, the character of the vegetation changes with dense, late-successional forest on both canyon slopes except where recent fires have converted the plant cover to an earlier successional stage consisting of dense "malingo" bamboo (*Arundinaria* sp). Between 2300 and 2700 masl, the forest consists primarily of broadleaf evergreen species such as *Quercus semecarpifolia*, *Q. glauca*, *Rhododendron arboreum*, *Alnus nepalensis*, *Lyonia ovalifolia* as well as some broadleaf deciduous species (*Acer campbellii*, *Lyonia ovalifolia*) and conifers such as *Tsuga dumosa*.

At slightly higher elevations, slopes above Gyepla and across the Tamur River have burned repeatedly during the past 30 years, according to local villagers. Here, at elevations ranging from 2800 to 3300 masl and above, most slopes consist of dense stands of *Arundinaria* bamboo with charred conifer snags protruding forth. These probably represent the remains of late-successional *Abies spectabilis* and *Tsuga dumosa* stands. There is little evidence that regeneration of these stands is in progress at this time, although when the *Arundinaria* (a semelparous taxa) flowers and dies it will be interesting to observe the effect on successional status.

Closed-canopy forests with late-successional attributes still occur above Gyepla, at 2800 to 2900 masl in the river valleys that drain from the north and west. Here stands include a rich mixture of conifers (*Tsuga dumosa*, *Abies spectabilis*, *Taxus baccata*, *Juniperus indica* and/or *J. recurva*), broadleaf deciduous species (*Acer campbellii*, *A. pectinatum*, {*Julia*}, *Prunus* sp) and broadleaf evergreen species (*Rhododendron arboreum*, *Quercus semecarpifolia*, *Q. glauca*). Common early to middle successional species also grow in these stands (e.g. *Mussaenda frondosa* and *Lyonia ovalifolia*). However, even here in sheltered ravines evidence of fire exists as burn scars on most of the large conifers.

Late-successional forests on slopes near Gyepla are distinctive for two reasons. (1) Compared to other areas of Eastern Nepal which we have surveyed evergreen broadleaf species grow to a higher elevation in the valley of the Ghunsa Khola, with *Acer campbellii* the only abundant deciduous broadleaf tree. In the Ghunsa area, evergreen broadleaf trees and conifers dominate. This pattern stands in contrast to similar elevations in the Makalu - Barun Conservation Project Area where forests have a higher proportion of deciduous species. (2) The species richness of conifers is especially high in this area with 4 to 5 species growing together in the same stand, far more than we have encountered in the species rich Arun Basin to the west. Perhaps a

more trans-Himalayan climate with snowier winters and drier summers is responsible for this pattern.

At higher elevations near Ghunsa Village (3300 to 3400 masl), *Abies spectabilis* replaces *Tsuga dumosa* on stable slopes and old moraines to form a subalpine forest formation, while *Larix griffithiana* forms pure stands on depositional terraces, loose slopes and other places prone to a higher rate of disturbance. *Larix* forests of the Kangchenjunga Region are ecologically significant because they represent the westernmost extreme for this unique, deciduous conifer of the Eastern Himalaya. *Larix* is fairly common from Sikkim to SW China and rare in the Langtang Region, but Kangchenjunga supports the only extensive, pure stands found in Nepal.

Above 3000 masl, late-successional forests are dominated by *Abies spectabilis* with *Betula utilis* and *Sorbus microphylla* as important associate species. Generally these forests grow through a dense understory of sub-arboreal rhododendron (*R. hodgsonii*, *R. campylocarpum*, *R. thomsonii*). Along the Yamtori Glacier trail above Ghunsa, there is evidence of selective logging activity. It might be appropriate to further study the way residents of this area use the forest resource.

Places near Ghunsa which have been cleared for pasture usually have moist subalpine scrub vegetation at their margins. Here there is a bias toward species unpalatable to domestic stock such as *Juniperus recurva* in shrub form and *Rhododendron* species. Disturbed forests on the Pleistocene(?) terminal moraine of the Yamtori Glacier, immediately SW of Ghunsa Village, consist of an early successional forest where large trees either do not grow or have been removed. Here most trees are smaller than 10 cm dbh and include *Juniperus recurva* and/or *J. indica*, *Betula utilis*, *Sorbus microphylla* and *Viburnum nervosum* intermingled with several species of sub-arboreal and shrub rhododendron, *Rosa* and *Berberis* in a scrub formation to 4 m height.

In the valley of the Ghunsa Khola above Ghunsa Village, forest cover continues as far as Kembachen (4000 masl). Near Ghunsa, late successional stands of *Abies spectabilis* and *Betula utilis* grow near single species stands of *Larix griffithiana*, usually closer to the river. Large Juniper trees are also common here and the gymnosperm, *Ephedra* forms an increasingly frequent groundcover.

Near 4000 masl, forest cover is restricted to East-facing hillsides and sheltered valley-bottom locations that support mixed stands of *Juniperus recurva*, *Betula utilis* and *Sorbus microphylla*. Above Kembachen, a few individuals of juniper grow extra-azonally, but habitat is essentially alpine.

B. Community Structure of the Alpine Zone

Above Kambochen, the himal forms a rain shadow and the Ghunsa River Valley is much more dry than it is below. As a result, the alpine zone in the Kanchenjunga region's floristic species are adapted to withstand the extremes of cold and desiccation.

The alpine zone in the Kanchenjunga region shows a remarkable change in floristic composition with altitude and aspect. Above tree-line in some wetter parts of the lower alpine zone (for example on north-east facing slopes at Kambochen, 13300ft)

the flora is represented by moist alpine scrub such as *Rhododendron compamulatum*, *R. fulgens*, *R. anthopogon*, *R. lepidotum*, *Salix sikkimensis*, *Sorbus microphylla* (?), *Rosa sp.*, etc. Other important associates of this region include *Bistorta affinis*, *Aconogonum sp.* and junipers (*J. indica* and *J. recurva*) are the other important associates of this region. These species are replaced by *R. setosum*, *R. nivale*, *Hippophae tibetana*, *Berberis erythroclada*, *Salix sp.* and *Juniper recurva* on open dry rocky slopes and on rocky ground at slightly higher elevations. The slopes of the lower alpine belt are also covered by herbaceous perennials such as *Saxifraga parnassifolia*, *Gentiana depressa*, *Epilobium sp.*, *Potentilla sp.*, and by tufted woody shrublets like *Gaultheria trichophylla* and *Diapensia himalaica*.

In the dry trans-Himalayan valleys above Kambochen the vegetation is characterized by dry alpine shrubs. This area is marked by the occurrence of *Hippophae tibetana*, *Ephedra gerardiana*, *Myricaria rosea*, *Rhododendron nivale*, *Caragana sp.* and some junipers. *Hippophae tibetana* and *R. nival* form patches of dense carpet in the moraines and stony ground between Kambochen and Lonak (13300 to 15600 ft). In addition *R. setosum*, *R. pendulum* (?), *Berberis erythroclada* etc. are present. These woody species except *R. nival* and *E. gerardiana* extend only up to Lonak. *Ephedra gerardiana* grows only to Pangpema (16450 ft.), while *R. nivale* extends beyond Pengpema- some specimens of *R. nivale* were collected at about 17,000 ft. on a granite talus slope facing 270 degrees.

The alpine meadows in this region are under tremendous grazing pressure. Most of the ground is bare, but in some places they are covered by *Cortia depressa*, *Carex sp.* and by other grasses. The other associated herbaceous species include the members of *Geranium*, *Potentilla*, and *Primula* genera. North-facing slopes of this upper alpine belt support a ground cover of *Cassiope fastigiata*, *Gentiana algida*, *Swertia hookeri*, *Saxifraga hemisphaerica*, *S. punctulata* etc.

Species such as *Thermopsis inflata*, *Mesonopsis horridula*, *Leontopodium monocephallum*, *Saussuria simpsoniana* (?), *S. obvallata*, *Cremanthodium sp.*, *Arenaria sp.* are found in the extremely xeric environment on the rocky slopes near Pangpema (16,300 ft.).

In summary, as in other parts of the Eastern Himalaya, the alpine zone of the upper Ghunsa Khola consists of a lower belt of woody vegetation that forms a scrub to 2 m in favorable locations. Above is an upper alpine belt in which plants are mostly procumbant and often possess woody renewal structures in the form of an underground caudex. From this preliminary survey, it is evident that the distribution pattern of some species is different in the Kanchenjunga area than in other parts of Nepal and that many species here exceed their altitudinal limit.

**Tree Species recorded by Wildlands Studies survey of Kangchenjunga Region,
19 October to 5 November, 1994.**

Tamur River Valley above 1200 masl and Gunsu Khola to altitudinal treeline, ~4000 masl. From data collected in (20m)-square quadrats.

<u>Species</u>	<u>English Name</u>	<u>Elevation range</u>	
		(min)	(max)
<i>Quercus semecarpifolia</i>	oak	2750	2896
<i>Rhododendron arboreum</i>		2750	2939
<i>Rhododendron campylocarpum</i>		2750	3506
<i>Lyonia ovalifolia</i>		2750	3506
<i>Tsuga dumosa</i>	hemlock	2750	2915
<i>Mahonia nepalensis</i>		2750	
<i>Pieris formosa</i>		2750	2774
Aralliaceae sp		2774	
<i>Acer campbelli</i>	maple	2774	3445
<i>Acer ?acuminatum</i>	maple	2832	
<i>Quercus glauca</i>	oak	2896	
<i>Mussaenda frondosa</i>		2896	2939
<i>Juniperus ?recurva</i>	juniper	2896	3506
<i>Juniperus ?indica</i>	juniper	2896	3506
<i>Abies spectabilis</i>	silver fir	2915	3551
<i>Acer pectinatum</i>	maple	2939	
<i>Prunus ?cornuta</i>		2939	
<i>Betula utilis</i>	birch	3335	3552
<i>Sorbus microphylla</i>	mountain ash	3335	3552
<i>Rhododendron fulgens</i>		3335	
<i>Larix griffithiana</i>	larch	3335	

II. Fauna

Information about the fauna of the Kanchenjunga region was gathered using direct observation. In the case of birds, zonally specific non-repetitive lists of ten were recorded throughout the trip and will be analyzed and presented to WWF at a later date.

A. Mammals

Himalayan Yellow Throated Martin (*Martes flavigula*)

A group of three Himalayan Yellow Throated Martins were observed about 1/2 mile above Amjilassa (8,000 ft.). These individuals were seen bounding across the trail and through open *bari* lands towards the Tamur River. All three individuals appeared to be roughly the same age and size. Since these creatures tend to stick to forest and are usually solitary hunters, this siting appears to be a bit unusual.

Jungle Cat (*Felis chaus*)

A solitary jungle cat was at noontime near Pholey (10,000 ft.). The animal appeared to be on a hunting foray when interrupted by our passing. However, the fact that this cat was seen so near to habitation is not unusual, as these animals are both bold and opportunistic.

Himalayan Mouse-Hare (Pika, *Ochotona roylei*)

Several pikas were seen or heard at elevations above Ghunsa. Though primarily a tundra loving animal, in the Eastern part of its range pikas are found in both forest and open terrain. The Kanchenjunga area is no exception and one individual was seen in the midst of a larch/ fir (*Larix griffithiana* and *Abies spectabilis*) forest along the trail above Ghunsa at 11,400 ft. Further on, at elevations of up to 15,000 ft., the shrill whistle that typifies this animal was heard on several occasions.

Bharal (Blue Sheep, *Pseudois nayaur*)

We observed two groups of bharal near Kambochen in the upper Ghunsa Khola. On the morning of October 28th, one group of 5 animals spent several hours browsing on southwest-facing, turf-covered slopes at approximately 4600 masl. The distance was too great for us to determine the sex or count the number of adults and juveniles in the group. Later in the same day at 1:30 p.m., we observed a group of 7 individuals on southeast-facing slopes at 4300 masl, approximately 1 km up the Ghunsa Khola from Kambochen. The second group appeared to include at least one ram and two juveniles. We observed the animals for about 10 minutes before they grew restless and climbed out of sight behind a ridge. It is possible that both of these groups might have contained some of the same individuals.

During the seven days spent in the upper Ghunsa Valley, (above Ghunsa village), we also saw evidence that bharal are hunted. This evidence consisted of a number of bharal skulls lying in places where people camp, fragments of skin with fur, and one partially skinned carcass.

These observations are summarized as follows:

At Kambachen, two skulls at the upper campsite in the meadow approximately 300 m up Kambachen Khola from the settlement.

At Lonak, two skull and numerous small pieces of hide identical to that seen on the partially-skinned carcass described below.

Approximately halfway between Lhonak and Pangpenma, one bharal carcass lying near a campfire site. The carcass had only been partially stripped of flesh and the hide had been discarded along with the bones. Three legs were skinned and stripped of meat, the remaining leg was untouched.

At a campsite about 1 hour below Pangpengma, one bharal horn.

At the Pangpengma campsite, two bharal skulls.

The number, condition and location of these remains provide strong evidence of hunting activity. However, the way in which the carcass we observed had been treated suggest that the meat and hide of these animals is not highly valued. It would be useful to determine the identity of the bharal "user's group", and to learn more about the group's rationale for hunting. It would also be very useful to investigate the effect of this hunting on the bharal populations that occur in this area, and the secondary effects hunting exert on bharal-predators such as the snow leopard.

B. Birds

Notes on some infrequent or interesting bird sightings in the Kangchenjunga Region, 12 October to 13 November, 1994.

Names from Fleming et al. 1984. Birds of Nepal, 3rd Edition.

1. Allied Warbler (*Seicercus affinis*). According to Inskipp, this species has not been described from Nepal except for a single specimen included in Hodgson's 18th Century Collection. It is reported from dense evergreen forests from Nepal east to Arunachal Pradesh. However, I have observed a *Seicercus* warbler on several occasions which matches the description given in Fleming: solid, bright yellow underparts, olive green above with black crown and distinct white eye ring. This species seems to be occasional in the Tamur Basin at elevations from 1000 to 2400 masl during the fall. One individual was also seen on the Arun River - Sankuwa Khola Divide (~2440 masl) in April 1993.

2. Blood Pheasant (*Ithaginis cruentus*). A group of at least 10 birds was active in the understory of a patch of juniper scrub (*Juniperus recurva*) along the Yangtore Khola above Ghunsa (3400 masl).

3. Crossbill (*Loxia curvirostra*). A pair were seen in scrub (*J. recurva*, *Rosa* sp., *Berberis* sp.) along the trail below Phole. Bold.

4. Golden-breasted Tit Babbler (*Alcippe chrysotis*): Pair observed at close range in dense "malingo" bamboo along trail below Gyepla (2439 masl).

5. Kalij Pheasant (*Lophura leucomelana*): Pair observed along trail near a stream in heavily shaded Alder (*Alnus nepalensis*) forest on Tamur, 0.3 km below Simbua Khola confluence (1555 masl).

6. Maroon-backed Accentor (*Prunella immaculata*): Several individuals seen along trail in "malingo" bamboo near stream (2652 masl).

7. Plumbeous Redstart (*Rhyacornis fuliginosus*) and White-capped River Chat (*Chaimarrornis leucocephalus*): These two species are abundant on boulders in and alongside rapidly moving streams at elevations ranging from tropical to alpine. The guild includes several other species less frequently observed, including Little Forktail (*Enicurus scouleri*) and Brown Dipper (*Cinclus pallasii*). All of these species engage in distinctive flagging behavior with tail feathers of contrasting color, perhaps because of the high ambient noise levels of their habitat.

8. Snow Pigeon (*Columba leuconata*): Flocks of these birds (>30 _ individuals) were abundant at subalpine elevations.

9. Tibetan Snowcock (*Tetraogallus tibetanus*): Often heard in the North Kangchenjunga valley above Kembachen (4000 masl), but seen only once at 5000 masl (Pangpema Base Camp). Tracks and scat are very abundant throughout the region above 4000 masl.

10. White-spotted Laughing Thrush (*Garrulax ocellatus*): One seen at Yamtori Khola above Ghunsa (3415 masl) together with a flock of Black-faced Laughing Thrush (*G. affinis*) which are common in the Ghunsa area.

11. Steppe Eagle (*Aquila nipalensis*): Individual seen on a day hike above Pangpema (North Kangchenjunga Basecamp) at 5762 masl. The eagle was gliding at more than 6000 masl.

12. Eurasian Kestrel (*Falco tinnunculus*): By far the most abundant raptor in the Kangchenjunga area, common from 1000 to 5000 masl, often in pairs this season, characteristic hovering on wind currents.

13. Golden Eagle (*Aquila chrysaetos*): Two seen above Ghunsa.

14. Bearded Vulture, Lammergeier (*Gypaetus barbatus*): One seen near Gyepla, second individual seen between Ghunsa and Kembachen.

15. Velvet-fronted Nuthatch (*Sitta frontalis*): In fruiting tree with warblers and bulbuls near Dhoban in lower Tamur Valey (700 masl).

Bird Species recorded by Wildlands Studies survey of Kangchenjunga Region, 19 October to 5 November, 1994.

Birds of Proposed Conservation Area, including Tamur River Valley above 1200 masl and Gunsa Khola to Kangchenjunga North Base Camp (elevations supplied only for

sightings within proposed Conservation Area).

Common Name	Genus	Species	Elevation Range	
Allied Warbler	<i>Seicercus</i>	<i>affinis</i>	2393	
Bearded Vulture	<i>Gypaetus</i>	<i>barbatus</i>	2744	3659
Beautiful Niltava	<i>Muscicapa</i>	<i>sundara</i>	1223	
Black Redstart	<i>Phoenicurus</i>	<i>ochruros</i>	1311	
Black-faced Laughing Thrush	<i>Garrulax</i>	<i>affinis</i>	2744	3293
Blood Pheasant	<i>Ithaginis</i>	<i>cruentus</i>	3415	
Blossom-headed Parakeet	<i>Psittacula</i>	<i>himalayana</i>	1372	
Blue Whistling Thrush	<i>Myiophonus</i>	<i>caeruleus</i>	1220	2774
Chestnut-bellied Nuthatch	<i>Sitta</i>	<i>castanea</i>	1226	
Chestnut-crowned Warbler	<i>Seicercus</i>	<i>castaniceps</i>	2348	
Coal Tit	<i>Parus</i>	<i>ater</i>	2857	3506
Collard Bush Chat	<i>Saxicola</i>	<i>torquata</i>	1216	1311
Crossbill	<i>Loxia</i>	<i>curvirostra</i>	2982	
Crowned Leaf Warbler	<i>Phylloscopus</i>	<i>reguloides</i>	1338	3354
Eurasian Kestrel	<i>Falco</i>	<i>tinnunculus</i>	1677	4573
Eurasian Nuthatch	<i>Sitta</i>	<i>europaea</i>	2433	
Fire-breasted Flowerpecker	<i>Dicaeum</i>	<i>ingipectus</i>	1543	
Golden Eagle	<i>Aquila</i>	<i>chrysaetos</i>	3268	4573
Golden-breasted Tit Babbler	<i>Alcippe</i>	<i>chrysotis</i>	2439	
Goshawk	<i>Accipiter</i>	<i>gentilis</i>	2409	
Gray Bulbul	<i>Hypsipetes</i>	<i>madagascariensis</i>	1311	1585
Gray-faced Leaf Warbler	<i>Phylloscopus</i>	<i>maculipennis</i>	1311	1543
Gray-headed Flycatcher	<i>Culicicapa</i>	<i>ceylonensis</i>	1543	
Gray-headed Warbler	<i>Seicercus</i>	<i>xanthoschistos</i>	1311	
Green-backed Tit	<i>Parus</i>	<i>monticolus</i>	1311	
Himalayan Goldfinch	<i>Carduelis</i>	<i>spinoides</i>	2524	
Himalayan Griffon	<i>Gyps</i>	<i>himalayensis</i>	3034	
Himalayan Tree Pie	<i>Dendrocitta</i>	<i>formosae</i>	1311	
Hodgson's Redstart	<i>Phoenicurus</i>	<i>frontalis</i>	1311	3034
Jungle Crow	<i>Corvus</i>	<i>macrorhynchos</i>	1616	3293
Kalij Pheasant	<i>Lophura</i>	<i>leucomelana</i>	1555	
Maroon-backed Accentor	<i>Prunella</i>	<i>immaculata</i>	2652	
Nepal House Martin	<i>Delichon</i>	<i>nipalensis</i>	1220	2521
Orange-gorgetted Flycatcher	<i>Muscicapa</i>	<i>strophitata</i>	1311	2393
Paddy-field Pipit	<i>Anthus</i>	<i>novaeeseelandiae</i>	1232	
Plain Leaf Warbler	<i>Phylloscopus</i>	<i>inornatus</i>	2393	
Plumbeous Redstart	<i>Rhyacornis</i>	<i>fuliginosus</i>	1189	2668
Raven	<i>Corvus</i>	<i>corax</i>	4573	5030
Red-billed Chough	<i>Pyrhocorax</i>	<i>pyrrhocorax</i>	3720	5030
Robin Accentor	<i>Prunella</i>	<i>rubeculoides</i>	4573	4756
Rufous-fronted Tit	<i>Aegithalos</i>	<i>iouschistos</i>	2774	
Scaly-breasted Wren Babbler	<i>Pnoepyga</i>	<i>albiventer</i>	1189	2982
Scarlet Minivet	<i>Pericrocotus</i>	<i>flammeus</i>	1220	1341
Sikkim Black Tit	<i>Parus</i>	<i>rubidiventris</i>	3293	3354
Snow Pigeon	<i>Columba</i>	<i>leuconota</i>	2378	3293
Spotted Piculet	<i>Picumnus</i>	<i>innominatus</i>	1543	
Steppe Eagle	<i>Aquila</i>	<i>nipalensis</i>	5762	
Stripe-throated Yuhina	<i>Yuhina</i>	<i>gularis</i>	2774	3110
Tibetan Snowcock	<i>Tetraogallus</i>	<i>tibetanus</i>	5000	
Tickell's Leaf Warbler	<i>Phylloscopus</i>	<i>affinis</i>	3506	
White-browed Blue Flycatcher	<i>Muscicapa</i>	<i>superciliaris</i>	2393	
White-browed Tit Babbler	<i>Alcippe</i>	<i>vinipectus</i>	2744	2835