

ELEVEN PRIORITY AREAS FOR CONSERVATION: IMPORTANT BIRD AREAS OF SIKKIM

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ABSTRACT

All of 7096 sq km of the tiny state of Sikkim, barring some river valley areas, has been divided into eleven Important Bird Areas or IBAs, right from the cold desert in the north to the lowland forests to the south. Government of Sikkim recognized these eleven IBAs in November 2003. Sikkim harbours around 600 odd species of birds including 50+ migrating through flyways along the various mountain passes and river valleys. Each of these eleven areas is briefly described along with their important birds. Khangchendzonga National Park and Biosphere Reserve (KBR) being the biggest IBA, lists of IBA species are mentioned only for this area. Sikkim was also the first state in the country to ban vide government notification the veterinary use of Diclofenac Sodium, a non-steroidal anti-inflammatory drug in December 2005. The paper also gives information on the numerous protected areas (national park and biosphere reserve, sanctuaries and a conservation reserve), as well as the *ex-situ* areas. All this matter along with key conservation issues and other fauna is compiled in a field-guide sized book published in 2007 by the Department, a first in the country.

KEYWORDS: *IBAs, threatened species, restricted range, biome species, endemic bird area*



Bearded Vulture or Lammergeier *Gypaetus barbatus*: The only vulture known to feed on bone marrow by dropping bones from a height onto a rock, it also scavenges. Photo courtesy: S. Tambe



Blue throated Barbet *Megalaima asiatica*, locally called 'Kuturka' because of its call, loves open forests areas around villages. Photo courtesy: Ganesh Mani Pradhan

INTRODUCTION

The state of Sikkim with its unique position in the mighty Himalayas and status as a hotspot of the variety of life is like a beautiful emerald in India's crowning glory. Our local population, their cultures and traditions have long protected this variety and made us popular world-wide. So far the most authoritative and recent book on the bird diversity of Sikkim is 'The Birds of Sikkim' by independent India's leading ornithologist Dr. Salim Ali of the Bombay Natural History Society or BNHS who followed in the steps of India's first pioneer ornithologist T. C. Jerdon (who wrote the first book in 1864), as well as A. O. Hume, Stuart Baker, and Hugh Whistler.. In this book he states eloquently and vividly '...This abrupt telescoping of the terrain – from the hot steamy foothill valleys to the arctic cold of the snow capped peaks – which has produced the marked altitudinal zonation in the rainfall, humidity, climate and vegetation is also responsible for the great variety and numerical abundance of the resident bird life, making Sikkim perhaps the richest area of its size anywhere in the world....' having over 30% of the birds of the entire subcontinent comprising India, Pakistan, Nepal, Bhutan, Myanmar, Bangladesh and Sri Lanka. This comprehensive book though out of print now was the copyright of the Sikkim Forest Department in 1962.

Dr. Ali was commissioned by the then Durbar to do the study. In addition to his personal field work, he also referred some of the best bird collections and references from this region in collections abroad. No such serious work on birds of Sikkim has been undertaken since his pioneering work other than systematic collection trips of the Zoological Survey of India.

Since last two decades, the Sikkim Forest Department has been compiling information on the various migratory birds, especially waterfowl over-flying Sikkim and using the various high altitude wetlands as stop-over sites. We have been able to add many more species to Dr. Ali's list of about 550 birds. We were able to record the presence of the globally threatened Black-necked Crane *Grus nigricollis* in Lhonak Valley and on the cold desert of the Tso Lhamo Plateau in North Sikkim, we recorded the breeding of Ruddy Shelduck *Tadorna ferruginea* in almost all the high altitude wetlands in North and East Sikkim. Endemic bird area (EBA) species like Rusty-bellied Shortwing *Brachypteryx hyperythra* and



Ruddy Shelduck *Tadorna ferruginea*: 'Golden Ducks', seen usually in pairs on our high altitude lakes and marshes where they come to breed, the male identified by its black collar. Photo courtesy: Bijoy Gurung

Hoary-throated Barwing *Actinodura nipalensis* are not difficult to sight in our forests. We have many important birds in Sikkim. Information gathered over these years through the research wing of the department was incorporated in the national book 'Important Bird Areas in India: Priority Sites for Conservation' published by BNHS, BirdLife International and Royal Society for the Protection of Birds.

Appreciating the importance of the State for globally threatened and other important birds found in this region of the Eastern Himalayas, the Government of Sikkim recognized eleven Important Bird Areas or IBAs across the entire state in November 2003. We were able to announce the same to the Bombay Natural History Society on the occasion of Dr. Salim Ali's birthday and the Centenary Journal Seminar on 12th November 2003.

Sikkim has the proud privilege to be the first Indian state to have officially banned by government notification the non-steroidal anti-inflammatory drug Diclofenac used by veterinarians which has caused the almost complete annihilation of our vultures. Government notification No. 04/AHLF&VS dated 22.12.2005 declares a complete ban on use of drug Diclofenac Sodium with immediate effect throughout the State of Sikkim. At present Sikkim has the best wildlife protected area coverage in the country. Our only national park is the highest in India, with Mt. Khangchendzonga the guardian deity of Sikkim at 8598m, also being the third highest mountain peak in the world. We have seven wildlife sanctuaries including a newly declared Kitam Bird Sanctuary in lowland South Sikkim. In addition, the declaration of the Sling Dong Tinkitam Conservation Reserve to protect the threatened Lady's Slipper Orchid *Paphiopedilum fairrieanum* has increased our Wildlife Protected Area tally to eight.

Our *ex-situ* conservation area, the Himalayan Zoological Park is another important birding destination in the state capital Gangtok. We are also designing a Walk-in Aviary at Sidkeong Tulku Bird Park in Rabdentse Reserve Forest in West Sikkim along international lines in keeping with our claim to fame as an ecotourism destination. The Sikkim Ornithological Society launched in Gangtok our capital on Dr. Salim Ali's birthday in 2004 is a local NGO which has already established two bird clubs at Pelling and Yambong Valley in West Sikkim aimed at initiating local youth into new employment ventures as nature guides and bird guides.

The Sikkim chapter of the national IBA book saw the light of day as a separate book thanks to the persistence of Dr. Rahmani, the Director of BNHS. Over two decades of field experiences by the first author made it easy to segregate Sikkim into eleven important bird areas or IBAs based on their unique features, natural flyways and altitudinal niches or eco-regions. It also helped that most of the state is under the wildlife protected area network. The Sikkim IBA book was officially released by the Hon'ble Chief Minister of Sikkim Dr. Pawan Chamling and Hon'ble Minister Forests Mr. S. B. Subedi on the occasion of World Environment Day on 5th June 2007 at the Saramsa Garden in East Sikkim.

IBAs and IBA criteria

Eleven IBAs have been selected in the State. All of them fulfill A1, A2 and A3 criteria. Although some high altitude wetlands are found, none of them fulfill A4 criteria. (A1= Threatened species; A2= Restricted Range species; A3= Biome

IBA codes	site	IBA site names
IN-SK-01		Barsey Rhododendron Sanctuary
IN-SK-02		Dombang Valley – Lachung – Lema – Tsungthang
IN-SK-03		Fambong Lho Wildlife Sanctuary – Himalayan Zoological Park – Ratey Chu Reserve Forest
IN-SK-04		Khangchendzonga National Park and Biosphere Reserve
IN-SK-05		Kyongnosla Alpine Sanctuary - Tsomgo - Tamze - Chola Complex
IN-SK-06		Lhonak Valley
IN-SK-07		Lowland Forests of South Sikkim
IN-SK-08		Maenam Wildlife Sanctuary – Tendong Reserve Forest
IN-SK-09		Pangolakha Wildlife Sanctuary - Zuluk - Bedang Tso - Natula Complex
IN-SK-10		Tso Lhamo Plateau - Lashar - Sebu La - Yumesamdong Complex
IN-SK-11		Yumthang - Shingba Rhododendron Wildlife Sanctuary

species; A4= Congregatory species). In the Sikkim State IBA book, for each IBA species have been listed as Critically Endangered, Vulnerable, Near Threatened, and as birds belonging to Endemic Bird Area 130: Eastern Himalayas, Endemic Bird Area 133: Tibetan Plateau, Biome-5: Eurasian High Montane (Alpine and Tibetan), Biome-7: Sino-Himalayan Temperate Forest, Biome-8: Sino-Himalayan Subtropical Forest, and Biome-9: Indo-Chinese Tropical Moist Forest.



Sikkim IBA Map along with the protected areas

AVIFAUNA

“This abrupt telescoping of the terrain – from the hot steamy foothill valleys to the arctic cold of the snow capped peaks – which has produced the marked altitudinal zonation in the rainfall, humidity, climate and vegetation, is also responsible for the great variety and numerical abundance of the resident bird life, making Sikkim perhaps the richest area of its size anywhere in the world” (Ali 1962). In an area of 0.2% of India, the old tally of around 550 bird species represents around 30% of the aggregate bird species and subspecies found in the entire Indian subcontinent. This region of the Central Himalayas lies within the Eastern Himalayas Endemic Bird Area (EBA) and for several bird species such as Chestnut-breasted Hill Partridge *Arborophila mandelli*, Rusty-bellied Shortwing *Brachypteryx hyperythra* and White-naped Yuhina *Yuhina bakeri* this EBA is very important. It also has globally threatened species such as the Black-necked Crane *Grus nigricollis* and Lesser Kestrel *Falco naumanni*.

LIST OF THREATENED BIRDS

Critically Endangered

Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

Vulnerable

Baer’s Pochard	<i>Aythya baeri</i>
Pallas’s Fish-Eagle	<i>Haliaeetus leucoryphus</i>
Greater Spotted Eagle	<i>Aquila clanga</i>
Lesser Kestrel	<i>Falco naumanni</i>
Red-breasted Hill-Partridge	<i>Arborophila mandellii</i>
Black -necked Crane	<i>Grus nigricollis</i>
Wood Snipe	<i>Gallinago nemoricola</i>
Rufous-necked Hornbill	<i>Aceros nipalensis</i>
Rusty-bellied Shortwing	<i>Brachypteryx hyperythra</i>
Slender-billed Babbler	<i>Turdoides longirostris</i>
Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>
Hodgson’s Prinia	<i>Prinia cinereocapilla</i>
Beautiful Nuthatch	<i>Sitta formosa</i>

Near Threatened

Satyr Tragopan	<i>Tragopan satyra</i>
Giant Babax	<i>Babax waddelli</i>

Endemic Bird Area 130: Eastern Himalayas

Rusty-bellied Shortwing	<i>Brachypteryx hyperythra</i>
Hoary-throated Barwing	<i>Actinodura nipalensis</i>
White-naped Yuhina	<i>Yuhina bakeri</i>
Red-breasted Hill-Partridge	<i>Arborophila mandellii</i>
Black-browed Leaf-Warbler	<i>Phylloscopus cantator</i>
Ward’s Trogon	<i>Harpactes wardii</i>
Rufous-throated Wren-Babbler	<i>Spelaeornis caudatus</i>
Wedge-billed Wren-Babbler	<i>Sphenocichla humei</i>
Broad-billed Flycatcher-Warbler	<i>Tickellia hodgsoni</i>
Giant Babax	<i>Babax waddelli</i>

Endemic Bird Area 133: Tibetan Plateau

Hoary-throated Barwing	<i>Actinodura nipalensis</i>
Broad-billed Flycatcher-Warbler	<i>Tickellia hodgsoni</i>

ELEVEN IMPORTANT BIRD AREAS OF SIKKIM

1. BARSEY RHODODENDRON SANCTUARY

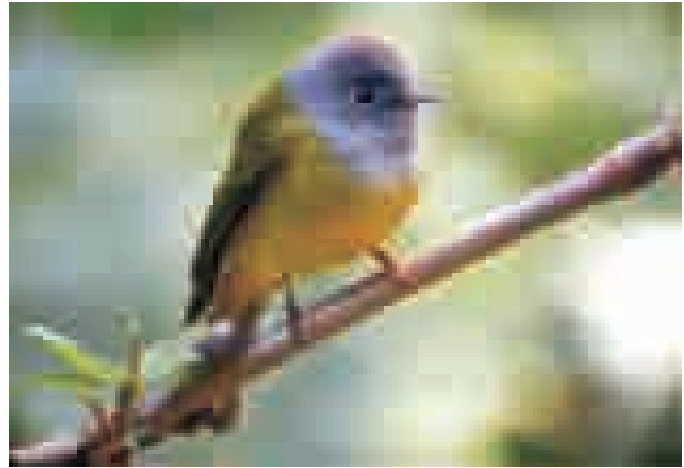
This is an important IBA on the southeast corner of Sikkim with Nepal as its western border and contiguity with KBR and Singalila, stretching from alpine meadows down to subtropical forests. Birds from biomes 5, 7, 8 and 9 have

been recorded here including at least three globally threatened species, two restricted range species, five out of 48 Biome-5 species, 38 out of 112 Biome-7 species, 21 out of 96 Biome-8 species and three out of 19 Biome-9 species. However, much more research input is needed. During a brief survey in September 1996, Biome-7 birds such as White-browed Tit-Babbler *Alcippe vinipectus*, Rufous Sibia *Heterophasia capistrata*, Grey-faced Leaf-Warbler *Phylloscopus maculipennis*, Orange-gorgeted Flycatcher *Ficedula strophciata*, Rufous-bellied Niltava *Niltava sundara*, Rufous-bellied Crested Tit *Parus rubidiventris* and Red-headed Bullfinch *Pyrrhula erythrocephala* were ringed with BNHS rings (Ganguli-Lachungpa 1996).



Blue-throated Flycatcher *Cyornis rubeculoides*; Males are easily visible during breeding season catching insects out of the air and returning to the same perch.

Photo courtesy: Ganesh Mani Pradhan



Grey-headed Canary Flycatcher *Culicicapa ceylonensis*: An attractive little insectivore, it has a distinct song, and as its name says, is even found in Sri Lanka.

Photo courtesy: Chewang Bonpo

2. DOMBANG VALLEY-LACHUNG-LEMA-TSUNGTHANG

A full checklist of this site is not available but the bird records maintained by U. Lachungpa show that this area could have significant populations of Vulnerable Beautiful Nuthatch *Sitta formosa* and Wood Snipe *Gallinago nemoricola*.

The site lies in Eastern Himalayas Endemic Bird Area (EBA 130) where Stattersfield et al. (1998) have identified 21 restricted range species. Only one such species, White-naped Yuhina *Yuhina bakeri* has been noticed till now but looking at the extent of pristine habitat still available in this site and paucity of recent field surveys, more restricted range species are likely to be found here.

This complex, with wide altitudinal variation, basically lies in Biome-7 (Sino-Himalayan Temperate Forest), but avian elements of Biome-5 (Eurasian High Montane - Alpine and Tibetan) and Biome-8 (Sino-Himalayan Subtropical Forest) are also found as these biomes merge with Biome-7, and secondly, many birds show seasonal altitudinal movement. Seventeen out of the 48 species listed in Biome-5 (BirdLife International, undated) are found in this site. Similarly, 47 out of 112 species listed in Biome-7 are found here. As this site also has Montane Mixed Broadleaf-Coniferous Forest, Broadleaf Evergreen Forest and Deciduous Forest, many species of Biome-8 are also found here. Thus, this site perhaps has the most numerous biome restricted species among all the sites of Sikkim.

The important birds of the valley are Himalayan Griffon *Gyps himalayensis*, Wood Snipe *Gallinago nemoricola*, Snow Pigeon *Columba leuconota*, Grandala *Grandala coelicolor*, Plain Mountain-Finch *Leucosticte nemoricola* and Hill Partridge *Arborophila torqueola*. A specimen of Tibetan Horned Owl (Eurasian Eagle-Owl) *Bubo bubo* from Lema was collected from a local of Lachung village and deposited with BNHS (Ganguli-Lachungpa 2002). An old unconfirmed record of Oriental Stork *Ciconia boyciana* from Lachung (Nyisha Lachungpa pers. comm. 1988), winter sightings of male Mallard *Anas platyrhynchos* at Chuba, Dombang, Common Merganser *Mergus merganser* at a fish pond near Sharchok, Lachung and Gadwall caught from Lachung a few years ago suggest that the valley could be a regular flyway for migratory water birds (Chezung Lachungpa pers. comm. 2003).

3. FAMBONG LHO WLS – HIMALAYAN ZOOLOGICAL PARK – RATEY CHU RESERVE FOREST COMPLEX

Over 281 species of birds have been reported from this area, opposite the bustling township of Gangtok (Anon. 2002). Of these, the Oriental White-backed Vulture *Gyps bengalensis* not seen since the slaughterhouse at Gangtok was shifted to south to Rangpo almost a decade ago. The Rufous-necked Hornbill *Aceros nipalensis* reported by Ali (1962) from Gangtok has not been sighted lately. The Beautiful Nuthatch *Sitta formosa* a globally threatened species is still found, while the Rusty-bellied Shortwing *Brachypteryx hyperythra* was remarkably easily netted and ringed both in Fambong Lho and Himalayan Zoological Park in the 2001 BNHS Bird-Banding Programme. The Red-breasted Hill-Partridge *Arborophila mandellii* was reported by Ali (1962) from Gangtok but not heard or sighted recently unlike the commoner Hill Partridge *Arborophila torqueola* and Satyr Tragopan *Tragopan satyra*. The Hoary-throated Barwing *Actinodura nipalensis* (not uncommon) and the White-naped Yuhina *Yuhina bakeri* are restricted range species reported from this IBA (Anon 2002).



Blue Whistling Thrush *Myophonus caeruleus*: Perhaps Sikkim's best songster, it nests fearlessly near man, and preys on small snakes, even birds like Tree Sparrows. Photo courtesy: Usha Lachungpa

In this Eastern Himalayas Endemic Bird Area, four out of 21 restricted range species, at least five out of 48 Biome-5 species, 49 out of 112 Biome-7 species, 38 out of 96 Biome-8 species and three out of 19 Biome-9 species are found.

Other bird species include the biome-restricted Mountain Imperial Pigeon *Ducula badia*, Slaty-headed Parakeet *Psittacula himalayana*, Red-winged crested Cuckoo *Calamator coromandus*, Large Green-billed Malkoha *Phaenicophaeus tristis*, Blue-naped Pitta *Pitta nipalensis*, Orange-bellied Chloropsis *Chloropsis hardwickii*, Brown Dipper *Cinclus pallasii*, and Spotted Forktail *Enicurus maculatus*. The Nepal House Martin *Delichon nipalensis* nests under school roofs while the Common Swallow annually returns to nest in four shops in the heart of the traffic-riddled Gangtok town.



Oriental White-eye *Zosterpos palpebrosus*, commonly seen in small hunting parties with other bird species looking for insects while calling softly to each other. Photo courtesy: Ganesh Mani Pradhan

4. KHANGCHENDZONGA NATIONAL PARK AND BIOSPHERE RESERVE

Some important birding habitats here are Dentam-Uttarey-Chitrey-Chewabhanjyang, the Rathong Chu Valley along the Yoksum-Dzongri-Goecha La trekking trail, Yambong-Singalila trail, Tashiding, Rabdentse, Dubdi, Khecheopalri all in West Sikkim; Tholung Valley-Kishong La in Dzongu, Tsungthang-Menshithang-Lachen-Thangu, the Muguthang-Green Lake route including the Zemu Glacier-Zemu Chu Valley, all in North Sikkim. Also included are the new eco-tourism trekking trails designated by the government of Sikkim.

Due to the size and altitude elevations in this IBA, birds recorded are from at least four biomes. Thus this IBA has at least 127 bird species of conservation concern including seven globally threatened and restricted range species, 24 species of Biome-5, 67 of Biome-7, 26 of Biome-8 and three listed in Biome-9.

Birds like Lesser Kestrel *Falco naumanni* and Black-necked Crane *Grus nigricollis* have been recorded from northern Trans-Himalayan part of the IBA while Baer's Pochard *Aythya baeri* has been sighted in Lake Khecheopalri along with wintering Mergansers *Mergus merganser* and Little Grebe *Tachybaptus ruficollis* (Ganguli-Lachungpa 1991), Mallard *Anas platyrhynchos*, Common Teal *Anas crecca* and Tufted Pochard *Aythya fuligula*.

The Osprey *Pandion haliaetus*, protected under Schedule-I of the Indian Wildlife (Protection) Act 1972, was killed at Yoksum while fishing in the State Forest Department's fishpond (Ganguli-Lachungpa 1990). Black-necked Crane *Grus nigricollis* has been recorded from the Muguthang area of Lhonak Valley IBA contiguous to the north (Ganguli-Lachungpa 1998). A large loose flock of dark eagles (unidentified) was videographed, during a trek to Dzongri in December 1999, flying southwards along with Himalayan Griffon *Gyps himalayensis* and Lammergeier or Bearded Vulture *Gypaetus barbatus*.

Local Lepcha people at Tholung report a unique phenomenon of congregations of either Ashy Wood-Pigeon *Columba pulchricollis* or Common Wood-Pigeon *Columba palumbus* near the Tholung hot-springs (a day's trek from jeepable road) in summer (Chumden Nangpa pers. comm. 2000), an annual event that has got disrupted due to development of the area for tourism.

High altitude lakes at Kishong La are important stopover sites not only for migratory waterfowl but also for resident breeding birds like Brahminy Shelduck *Tadorna ferruginea* {ducklings collected from here in 1986 survived for around five years at Gangtok's Deer Park enclosure at Tashiling Secretariat (C. B. Bhujel pers comm. 2000)}.



The Green Magpie (*Cissa chinensis*) - a member of the crow family, is common in sub-tropical broad-leaved forests. Photo courtesy: Ganesh Mani Pradhan



Spectacled Finch *Callacanthus burtoni*: This colourful male finch was photographed in March at Yuksom in KBR, also seen in higher altitude forests above Khecheopalri and Gangtok. Photo courtesy: Dipankar Ghose

Vulnerable

Baer's Pochard	<i>Aythya baeri</i>
Pallas's Fish-Eagle	<i>Haliaeetus leucoryphus</i>
Black-necked Crane	<i>Grus nigricollis</i>
Lesser Kestrel	<i>Falco naumanni</i>
Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>

Endemic Bird Area-130: Eastern Himalayas

Hoary-throated Barwing	<i>Actinodura nipalensis</i>
White-naped Yuhina	<i>Yuhina bakeri</i>
Black-browed Leaf-Warbler	<i>Phylloscopus cantator</i>

Biome-5: Eurasian High Montane (Alpine and Tibetan)

Himalayan Griffon	<i>Gyps himalayensis</i>
Snow Partridge	<i>Lerwa lerwa</i>
Tibetan Snowcock	<i>Tetraogallus tibetanus</i>
Tibetan Partridge	<i>Perdix hodgsoniae</i>
Solitary Snipe	<i>Gallinago solitaria</i>
Snow Pigeon	<i>Columba leuconota</i>
Long-billed Calandra-Lark	<i>Melanocorypha maxima</i>
Rosy Pipit	<i>Anthus roseatus</i>
Grey-backed Shrike	<i>Lanius tephronotus</i>
Alpine Accentor	<i>Prunella collaris</i>
Altai Accentor	<i>Prunella himalayana</i>
Robin Accentor	<i>Prunella rubeculoides</i>
Plain-backed Thrush	<i>Zoothera mollissima</i>
Hodgson's Redstart	<i>Phoenicurus hodgsoni</i>
Grandala	<i>Grandala coelicolor</i>
Smoky Warbler	<i>Phylloscopus fuligiventer</i>
Tickell's Warbler	<i>Phylloscopus affinis</i>
Wallcreeper	<i>Tichodroma muraria</i>
Hodgson's Mountain-Finch	<i>Leucosticte nemoricola</i>
Black-headed Mountain-Finch	<i>Leucosticte brandti</i>
Streaked Great Rosefinch	<i>Carpodacus rubicilloides</i>
Common Great Rosefinch	<i>Carpodacus rubicilla</i>
Red-fronted Rosefinch	<i>Carpodacus puniceus</i>
Yellow-billed Chough	<i>Pyrrhocorax graculus</i>

Biome-7: Sino-Himalayan Temperate Forest

Common Hill-Partridge	<i>Arborophila torqueola</i>
Blood Pheasant	<i>Ithaginis cruentus</i>
Satyr Tragopan	<i>Tragopan satyra</i>
Himalayan Monal	<i>Lophophorus impejanus</i>
Speckled Wood-Pigeon	<i>Columba hodgsonii</i>
Yellow-rumped Honeyguide	<i>Indicator xanthonotus</i>
Darjeeling Pied Woodpecker	<i>Dendrocopos darjellensis</i>
Nepal House-Martin	<i>Delichon nipalensis</i>
Rufous-breasted Accentor	<i>Prunella strophiatea</i>
Maroon-backed Accentor	<i>Prunella immaculata</i>
Long-tailed Thrush	<i>Zoothera dixonii</i>
Greater Long-billed Thrush	<i>Zoothera monticola</i>
White-collared Blackbird	<i>Turdus albocinctus</i>
Gould's Shortwing	<i>Brachypteryx stellata</i>
Indian Blue Robin	<i>Luscinia brunnea</i>
Golden Bush-Robin	<i>Tarsiger chrysaeus</i>
White-browed Bush-Robin	<i>Tarsiger indicus</i>
Rufous-breasted Bush-Robin	<i>Tarsiger hyperythrus</i>
White-throated Redstart	<i>Phoenicurus schisticeps</i>

White-throated Laughingthrush	<i>Garrulax albogularis</i>
Striated Laughingthrush	<i>Garrulax striatus</i>
Scaly Laughingthrush	<i>Garrulax subunicolor</i>
Black-faced Laughingthrush	<i>Garrulax affinis</i>
Slender-billed Scimitar-Babbler	<i>Xiphirhynchus superciliaris</i>
Greater Scaly-breasted Wren-Babbler	<i>Pnoepyga albiventer</i>
Green Shrike-Babbler	<i>Pteruthius xanthochlorus</i>
Bar-throated Minla	<i>Minla strigula</i>
Red-tailed Minla	<i>Minla ignotincta</i>
Gold-breasted Tit-Babbler	<i>Alcippe chrysotis</i>
White-browed Tit-Babbler	<i>Alcippe vinipectus</i>
Rufous Sibia	<i>Heterophasia capistrata</i>
Stripe-throated Yuhina	<i>Yuhina gularis</i>
Rufous-vented Yuhina	<i>Yuhina occipitalis</i>
Myzornis	<i>Myzornis pyrrhoura</i>
Brown Parrotbill	<i>Paradoxornis unicolor</i>
Chestnut-headed Tesia	<i>Tesia castaneocoronata</i>
Chestnut-crowned Bush-Warbler	<i>Cettia major</i>
Aberrant Bush-Warbler	<i>Cettia flavolivacea</i>
Grey-sided Bush-Warbler	<i>Cettia brunnifrons</i>
Orange-barred Leaf-Warbler	<i>Phylloscopus pulcher</i>
Grey-faced Leaf-Warbler	<i>Phylloscopus maculipennis</i>
Large-billed Leaf-Warbler	<i>Phylloscopus magnirostris</i>
Grey-cheeked Flycatcher-Warbler	<i>Seicercus poliogenys</i>
Slaty-backed Flycatcher	<i>Ficedula hodgsonii</i>
Orange-gorgeted Flycatcher	<i>Ficedula strophciata</i>
Slaty-blue Flycatcher	<i>Ficedula tricolor</i>
Rufous-bellied Niltava	<i>Niltava sundara</i>
Rufous-fronted Tit	<i>Aegithalos iouschistos</i>
Rufous-bellied Crested Tit	<i>Parus rubidiventris</i>
Brown Crested Tit	<i>Parus dichrous</i>
Green-backed Tit	<i>Parus monticolus</i>
White-tailed Nuthatch	<i>Sitta himalayensis</i>
Rusty-flanked Tree-Creeper	<i>Certhia nipalensis</i>
Yellow-bellied Flower-pecker	<i>Dicaeum melanoxanthum</i>
Fire-tailed Sunbird	<i>Aethopyga ignicauda</i>
Yellow-breasted Greenfinch	<i>Carduelis spinoides</i>
Tibetan Siskin	<i>Serinus thibetanus</i>
Dark-breasted Rosefinch	<i>Carpodacus nipalensis</i>
Dark-rumped Rosefinch	<i>Carpodacus edwardsii</i>
White-browed Rosefinch	<i>Carpodacus thura</i>
Scarlet Finch	<i>Haematospiza sipahi</i>
Brown Bullfinch	<i>Pyrrhula nipalensis</i>
Red-headed Bullfinch	<i>Pyrrhula erythrocephala</i>
Collared Grosbeak	<i>Mycerobas affinis</i>
White-winged Grosbeak	<i>Mycerobas carnipes</i>
Gold-naped Black Finch	<i>Pyrrhoptectes epauletta</i>
Yellow-billed Blue Magpie	<i>Urocissa flavirostris</i>
Slaty-headed Parakeet	<i>Psittacula himalayana</i>
Golden-throated Barbet	<i>Megalaima franklinii</i>
Black-winged Cuckoo-Shrike	<i>Coracina melaschistos</i>
Short-billed Minivet	<i>Pericrocotus brevirostris</i>
Black Bulbul	<i>Hypsipetes leucocephalus</i>
Grey-winged Blackbird	<i>Turdus boulboul</i>
White-tailed Robin	<i>Myiomela leucurum</i>

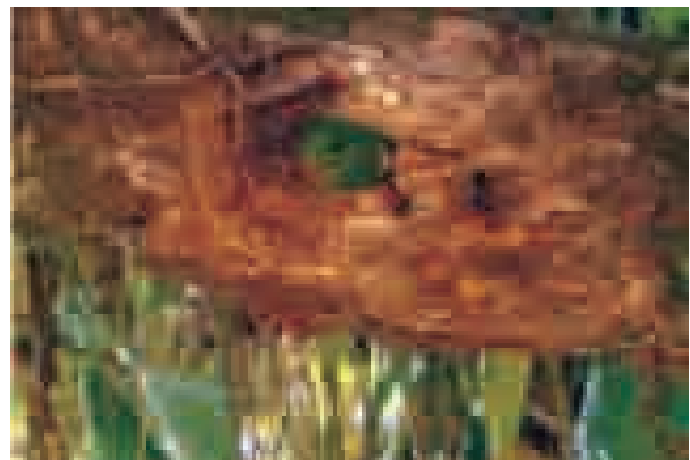
Green Cochoa	<i>Cochoa viridis</i>
Grey-sided Laughingthrush	<i>Garrulax caerulatus</i>
Rusty-cheeked Scimitar-Babbler	<i>Pomatorhinus erythrogeus</i>
Red-billed Leiothrix	<i>Leiothrix lutea</i>
Cutia	<i>Cutia nipalensis</i>
Rufous-bellied Shrike-Babbler	<i>Pteruthius rufiventer</i>
Rusty-fronted Barwing	<i>Actinodura egertoni</i>
Blue-winged Minla	<i>Minla cyanouroptera</i>
Yellow -throated Tit-Babbler	<i>Alcippe cinerea</i>
Nepal Tit-Babbler	<i>Alcippe nipalensis</i>
Black-chinned Yuhina	<i>Yuhina nigrimenta</i>
Grey-headed Flycatcher-Warbler	<i>Seicercus xanthoschistos</i>
Black-faced Flycatcher-Warbler	<i>Abroscopus schisticeps</i>
Small Niltava	<i>Niltava macgrigoriae</i>
Red-headed Tit	<i>Aegithalos concinnus</i>
Black-spotted Yellow Tit	<i>Parus spilonotus</i>
Black-throated Sunbird	<i>Aethopyga saturata</i>
Maroon Oriole	<i>Oriolus trailii</i>
Grey Treepie	<i>Dendrocitta formosae</i>
Lesser Necklaced Laughingthrush	<i>Garrulax monileger</i>
Greater Necklaced Laughingthrush	<i>Garrulax pectoralis</i>
Sultan Tit	<i>Melanochlora sultanea</i>



Scaly Thrush *Zoothera dauma*, normally a very shy secretive bird, it has a powerful song during breeding season. Photo courtesy: Ganesh Mani Pradhan



Fire-breasted Flowerpecker *Dicaeum ignipectus*: The tiny metallic coloured males along with their duller females love to sip nectar from *Erythrina*, *Bombax*, *Prunus* and other flowering trees. Photo courtesy: Karma Zimpa



Fire-tailed Myzornis *Myzornis pyrrhoura*: A rather shy and rare bird with emerald green plumage, it inhabits sub-alpine mossy forests. Photo courtesy: Chewang Bonpo

5. KYONGNOSLA ALPINE SANCTUARY – TSOMGO – TAMZE-CHO LA COMPLEX

More than 230 species of birds have been identified. Outside Khangchendzonga National Park, this is the site where the State Bird of Sikkim, the Blood Pheasant *Ithaginis cruentus*, is found, and is not difficult to sight.

Among the globally threatened species of this site, the most prominent one would be the Wood Snipe *Gallinago nemoricola*, as it possibly breeds here. Satyr Tragopan *Tragopan satyra* at the upper limit of its range, and Himalayan Monal *Lophophorus impejanus*, the former considered as Near Threatened (BirdLife International 2001), are also residents.

The Snow Pigeon *Columba leuconota* come down here in winter. Other species of interest are the Fire-tailed Sunbird *Aethopyga ignicauda* and Gold-naped Black Finch *Pyrrhoplectes epauletta*, birds of temperate forest. Golden Eagle *Aquila chrysaetos* and Greater Spotted Eagle *Aquila clanga*, Brown-headed Gull *Larus brunnicephalus* with Tufted Pochard *Aythya fuligula* were seen occasionally in Tsomgo Lake during the winter Asian Waterfowl Census (AWC). Pallas's Fish-Eagle *Haliaeetus leucoryphus* was seen in the forest patch below Tamzey during a survey for Red Panda in 1998. An exhausted Coot *Fulica atra* was rescued from Kyongnosla in March 2000 and later released (Ganguli-Lachungpa and B. Sharma 2003).

The site is located in the Eastern Himalayas Endemic Bird Area (EBA-130) where 21 species have been listed of which only one species, the Hoary-throated Barwing *Actinodura nipalensis*, has been found till now but more are likely to occur.

Perhaps the most important reason for selection of this site as an IBA is the presence of large number of biome restricted species of three biome types. Although, this site lies chiefly in Biome-7 (Sino-Himalayan Temperate Forest), birds of Biome-5 (Eurasian High Montane-Alpine and Tibetan) and Biome-8 (Sino-Himalayan Subtropical Forest) are also seen, mainly due to their altitudinal movement. In winter, birds of Biome-5 move down, so we see species such as Rosy Pipit *Anthus roseus*, Snow Pigeon *Columba leuconota*, Alpine Accentor *Prunella collaris* and others in this site. Thirteen out of 48 species of this biome have been seen in this IBA. Expectedly, the largest number of biome restricted species is from Biome-7 with 35 out of 112 species but more are likely to be present. As the boundary between Biome-7 and Biome-8 is very diffuse (like all other biomes), some species are likely to be present in both the biomes. Till now, due to limited surveys only two biome restricted species, Grey-winged Blackbird *Turdus bouboul* and Black-spotted



Black-shouldered Kite *Elanus caeruleus*: A small raptor with characteristic hovering buoyant flight, it was recorded on way to Tsomgo Lake in East Sikkim. Photo courtesy: Dipankar Ghose



Little Owl *Athene noctua*: Night-flying raptors, they prey on little voles, larks, finches and insects in Sikkim's trans-Himalayas and cold desert. Photo courtesy: Karma Zimpa

Yellow-Tit *Parus spilonotus*, of Biome-8 in this IBA could be located. However, considering the long list of Biome-8 birds (95 species) and the extent of good habitat available, more species are likely to be found here.

6. LHONAK VALLEY

Lhonak Valley is the famed flyway of migratory waterfowl (Ali 1962). Many Vulnerable and Biome-5 restricted species breed here such as Tibetan Snowcock *Tetraogallus tibetanus*, Black-necked Crane (unsuccessful nesting attempt at Tebleh Tso, Muguthang), Tibetan Sandgrouse *Syrrhaptes tibetanus*, Gldenstdt's Redstart *Phoenicurus erythrogaster*, Hume's Groundpecker *Pseudopodoces humilis*. Lesser Kestrel *Falco naumanni* has been infrequently recorded from this valley during the course of the Alpine Grassland Ecology Project of BNHS from 2000-2003.

7. LOWLAND FORESTS OF SOUTH SIKKIM (MELLI-BAGUWA-KITAM-JORETHANG-NAMCHI-SOMBAREY)

Despite being the lowest altitude IBA in Sikkim, this site has records of birds restricted to biomes 9, 8, 7 as well as 5, perhaps due to seasonal altitudinal migration as well as the telescoping effect of the Sikkim Himalaya, where in a distance of c. 100 km, habitats ranging from lowland, subtropical forests to high cold desert can be seen (Ali 1962). Hence, as many as 14 globally threatened and restricted range species and at least four Biome-5 species, 15 Biome-7 species, 33 Biome-8 species and seven Biome-9 species have been recorded from this IBA.

The lowland forests of Sikkim are home to several species identified as Near Threatened by BirdLife International (2001): Great Pied Hornbill *Buceros bicornis* now restricted to few sightings over tea estates, Red-breasted Partridge *Arborophila mandelli* (not recorded recently) and Ward's Trogon *Harpactes wardi*. The Nepal Wren-Babbler *Pnoepyga immaculata* could also occur here. During a survey conducted here in 1996, no potential habitat was found for the Rufous-necked Hornbill *Aceros nipalensis* in this area.

Biome-5 species like Ibisbill *Ibidorhyncha struthersii* are regularly recorded in winter on the banks of the Great Rangit river; Wallcreeper *Tichodroma muraria* recorded from Trans-Himalayan Lhonak Valley (at Green Lake) and other high altitude sites is also recorded from this IBA. The Collared Falconet *Microhierax caerulescens* was found breeding in 1996 very close to human habitation, hawking dragonflies around the Fisheries Department pond at Baguwa but cleverly avoiding the mist-nets set around it. Ward's Trogon was sighted at Baguwa and Jorethang in October 1996 as

was Little Green Heron *Butorides striatus* and a juvenile falconet caught in mid-flight by a Peregrine falcon *Falco peregrinus* (Ganguli-Lachungpa 1996). All these records make this IBA a very interesting bird watching and conservation area.



Great Indian Hornbill *Buceros bicornis*: Locally called 'Hongraio', 'Dhanesh'; loves figs; sighted in Sikkim's lowland forests; protected under Schedule-1 of Indian Wildlife (Protection) Act. Photo courtesy: Prabin Khaling

8. MAENAM WLS – TENDONG RF

There are several villages fringing this IBA due to which the habitat is open in several places. This open habitat coupled with patches of dense forest provides ideal bird habitats in the IBA. The Hodgson's Frogmouth *Batrachostomus hodgsoni* was observed in Pabong area (Ganguli-Lachungpa and Lucksom 1998).

The site lies in the Eastern Himalayas Endemic Bird Area (EBA-130), in which Stattersfield et al. (1998) have listed 21 restricted range species. At least five of these have been recorded here.



White-crested Laughingthrush *Garrulax leucolophus*: Amongst the showiest of Laughingthrushes, it is a noisy flocking bird of middle hill forest undergrowth; locally called 'Kolkoley'. Photo courtesy: Dipankar Ghose

This mid-altitude IBA falls mainly in Sino-Himalayan Temperate Forest (Biome-7). BirdLife International (undated) has listed 112 species in this biome, of which 53 are found here. The higher reaches of this IBA, above 3000 m show some birds of Biome-5 (Eurasian High Montane - Alpine and Tibetan) where 48 species are listed and seven are seen in this site. At lower reaches, Biome-7 merges with Biome-8 (Sino-Himalayan Subtropical Forest) where 95 species are listed. Almost half of them (42 species) have been found here. Some areas of this IBA, especially in the valleys also show some faunal elements of Biome-9 (Indo-Chinese Tropical Moist Forest). Four species of this biome are also found here. They are Grey Peacock Pheasant *Polyplectron bicalcaratum* (unconfirmed), Pale-headed Woodpecker *Gecinulus grantia*, Greater Necklaced Laughingthrush *Garrulax pectoralis* and Sultan Tit *Melanochlora sultanea*. The list of other biome species is too long to be mentioned here.

This IBA has habitat contiguity with the Khangchendzonga Biosphere Reserve; therefore, both these IBAs together form a large habitat for the bird life of this small state. The site fulfils three IBA criteria: A1 (Threatened Species), A2 (EBA-130: Eastern Himalayas) and A3 (Biome-restricted species).

9. PANGOLAKHA WLS – ZULUK – BEDANG TSO – NATU LA COMPLEX

The mountain passes of Natu La and Jelep La (La = Pass) form the routes for migratory waterbirds many of which stop over at the various wetlands in the area, especially Bedang Tso Lake. The Himalayan Monal *Lophophorus impejanus* (locally called as Feydong) used to be found here (Chezung Lachungpa pers. comm. 1996), hence the name Bedang Tso. Sometimes there is mass migration of birds of prey such as Red Kites *Milvus milvus* and unidentified eagles. The Sherathang marshes are one area where the Brahminy Shelduck *Tadorna ferruginea* used to breed.

Some birds of this complex are Eurasian Woodcock *Scolopax rusticola* and Wood Snipe *Gallinago nemoricola*, a globally threatened species (BirdLife International 2001) occasionally seen on the banks of the Bedang Tso. Hill Pigeons *Columba rupestris* roost on smoking chimneys of local houses in snowy winters at Kupup and Gnathang. The Snow Pigeon *Columba leuconota*, Snow Partridge *Lerwa lerwa*, Himalayan Monal and Gold-naped Black Finch



Yellow-billed Blue Magpie *Urocissa flavirostris*: Commonly seen in sub-temperate, temperate forests even as a scavenger along trekking trails. Photo courtesy: Ganden Lachungpa

Pyrrhoptes epauletta are common on the alpine slopes. The Pallas's Fish-Eagle *Haliaeetus leucoryphus* was once seen in the forest patch over the Pangolakha range in 1994. Large Cormorant *Phalacrocorax carbo* and Bar-headed Geese *Anser indicus* were sighted at Bedang Tso in 1992 and 2003.

The Tibetan Eared Pheasant *Crossoptilon harmani*, a Near Threatened species, has been reported from Kupup (near Bedang Tso) below the Jelep La. This area falls under Pangolakha Wildlife Sanctuary and is adjacent to the Chumbi Valley of Tibet. This pheasant is one of the two endemic birds in Southern Tibet (EBA-133). It is reported from the edge of mixed Broadleaf Coniferous forest; Rhododendron, Juniper and deciduous scrub and grassland (Stattersfield et al. 1998). Another Near Threatened species found in this IBA is the Giant Babax *Babax waddelli*.

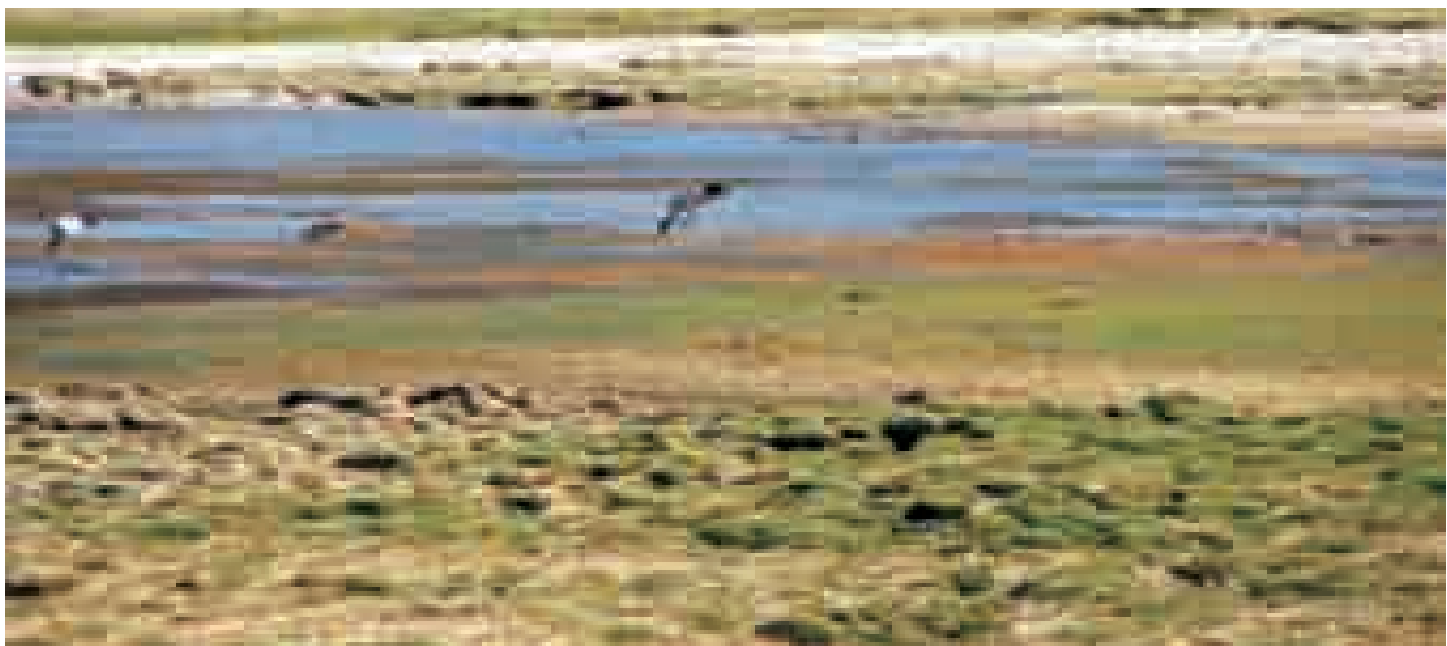
Due to great altitudinal variation from 1300 m to above 4,000 m, three biomes occur in this IBA: Biome-5: Eurasian High Montane (Alpine and Tibetan), from above 3,600 m; Biome-7: Sino-Himalayan Temperate Forest, between 1,800 m and 3,600 m; and, Biome-8: Sino-Himalayan Subtropical Forest, occurring between c. 1,000 m to 2,000 m (BirdLife International, undated). In Biome-5, 48 species are found, out of which 11 are found at this site. Similarly, 112 species are representative of Biome-7 and in this site are found 14 species. At lower altitude, in Biome-8, only two species out of 95 are reported from this IBA. It is likely that with more detailed surveys, more biome restricted species would be found.

10. TSO LHAMO PLATEAU – LASHAR – SEBU LA – YUMESAMDONG COMPLEX

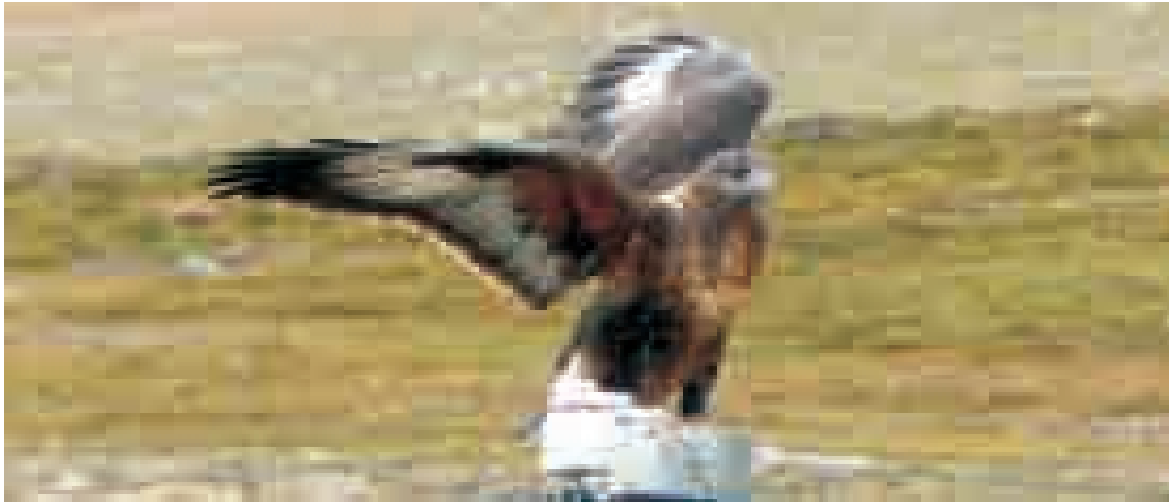
This IBA seeks to link the Tso Lhamo Plateau with the Lashar, Sebu La Yumesamdong section, reaching southwards to touch the Sino-Himalayan Temperate Forests below Yumesamdong and around Thangu in North Sikkim.

A total of around 227 birds have been recorded from this c. 500 sq km area, including four globally threatened species, three Restricted Range species and 93 Biome-restricted species (Ganguli-Lachungpa and Rahmani 2003). One of these, *Babax waddelli*, is reported only from extreme northeast Sikkim from 2,700-4,400 m in the Tibetan Plateau facies (EBA-133) in *Hippophae* thickets. It is reported in dense deciduous scrub above tree-line and edge of coniferous forest (Stattersfield et al. 1998) as 'locally common' (Ali and Ripley 1987).

This site in the Eastern Himalayas Endemic Bird Area is the highest altitude eco-region in Sikkim spanning two biomes, Sino-Himalayan Temperate Forest (Biome-7) and Eurasian High Montane (Alpine and Tibetan) (Biome-5) as described by BirdLife International (undated). Of the 48 Biome-5 (Eurasian High Montane - Alpine and Tibetan) species, 35 occur here and of the 112 Biome-7 (Sino-Himalayan Temperate Forest) species, at least 12 are from here. More are likely to be found after detailed investigations.



Black-necked Crane *Grus nigricollis*: Globally threatened with extinction, it faces threats from feral dogs roaming its home range in Sikkim's cold desert. Photo courtesy: WWF-India



Golden Eagle *Aquila chrysaetos*: Locally called 'Lah' by nomadic Dokpas, it is known to take small lambs during season. Photo courtesy: Karma Zimpa

The important breeding bird species recorded here are Tibetan Snowcock *Tetraogallus tibetanus*, Black-necked Crane *Grus nigricollis*, Brahminy Shelduck *Tadorna ferruginea*, Common Redshank *Tringa totanus*, Tibetan Sandgrouse *Syrrhaptes tibetanus*, Snow Pigeon *Columba leuconota*, Robin Accentor *Prunella rubeculoides*, Guldenstadt's Redstart *Phoenicurus erythrogaster*, Plain Mountain Finch *Leucosticte nemoricola*, Black-headed Mountain Finch *Leucosticte brandti*, Mandelli's Snowfinch *Pyrgilauda taczanowskii*, Tibetan Snowfinch *Montifringilla adamsi*, Plain-backed Snowfinch *Pyrgilauda blanfordi*, Rufous-necked Snowfinch *Pyrgilauda ruficollis*, Hume's Groundpecker *Pseudopodoces humilis*, Yellow-billed Chough *Pyrrhocorax graculus*, Lesser Sand Plover *Charadrius mongolus*, Golden Eagle *Aquila chrysaetos* and Little Owl *Athene noctua*.

Some of the non-breeding birds are Lesser Kestrel *Falco naumanni*, Bar-headed Goose *Anser indicus* and Common Hoopoe *Upupa epops*. A pair of Brown-headed Gull *Larus brunnicephalus* was sighted on Lake Tso Lhamo in May 2003.

11. YUMTHANG – SHINGBA RHODODENDRON WLS

Not much information is available on the general bird life of this site, except for opportunistic observations. The globally threatened Wood Snipe *Gallinago nemoricola* is occasionally seen in the Rhododendron-Fir forest of Shingba, and Ibisbill *Ibidorhyncha struthersii* breed on the shingle beds of the Yumthang Chu in small numbers, usually not more than two pairs in this disturbed area. Grandala *Grandala coelicolor*, a local altitudinal migrant, is seen sometimes in apparently all-female flocks. Blood Pheasant *Ithaginis cruentus* and Himalayan Monal *Lophophorus impejanus* breed in the higher reaches of the Sanctuary while the Himalayan Griffon *Gyps himalayensis* is a resident of the cold desert to the north. Gould's Shortwing *Brachypteryx stellata*, Rufous-bellied Crested Tit *Parus rubidiventris* and the restricted range Hoary-throated Barwing *Actinodura nipalensis* are common in forest patches. The Fire-tailed Sunbird *Aethopyga ignicauda* is conspicuous when Rhododendrons are in bloom. Rufous-bellied Eagle *Hieraetus kienerii* was sighted in Yumthang in June 1984. Jungle Crows are now resident at this altitude of c. 4,000 m with increasing tourist pressure.

This IBA lies at the interface of Biome-5 (Eurasian High Montane: Alpine and Tibetan) and Biome-7 (Sino-Himalayan Temperate Forest). Therefore, species of both biomes are represented. It has alpine meadows and scrubs, so we get Tibetan Partridge *Perdix hodgsoniae*, Tibetan Snowcock *Tetraogallus tibetanus* and Hume's Short-toed Lark *Calandrella acutirostris*, while at slightly lower altitude where Montane Broadleaf Evergreen and Mixed Broadleaf-Coniferous Forest are found, species representing Biome-7 predominate.

BirdLife International (undated) has listed 48 species in Biome-5, out of which 19 have been seen in this IBA. The Biome-7 has a long list of 112 species, of which 19 are found here. Looking at the intact habitat and the fact that no one has conducted detailed study on the avifauna of this site, more species of this biome are likely to be found here. Interestingly, two species of Biome-8 (Sino-Himalayan Subtropical Forest) have also been reported from this site: Short-billed Minivet *Pericrocotus brevirostris* and Rufous-chinned Laughingthrush *Garrulax rufogularis*. This is not unusual as there is a very

diffuse borderline between biomes, and secondly, birds of the Himalayas, like any mountain region in the world, show seasonal altitudinal movements.



Grandala grandala coelicolor: The electric blue male is complemented by a dull brown female which sports a white bar in each wing, as do the immature males. Photo courtesy: Karma Zimpa

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