Bird fauna of two protected forests in northern Vietnam

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The bird faunas of two protected areas in northern Vietnam (Tonkin) were studied in 1994 and 1996, and compared with those of other sites in northern Vietnam. Each of the study sites is dominated by evergreen tropical forest on limestone, although the extent and altitudinal range of forest vegetation differ between the reserves. A total of 289 species was recorded, including one species new to Vietnam: Lesser Rufous-headed Parrotbill *Paradoxornis atrosuperciliaris*, and several other species outside of their previously recorded ranges. At both locations, species normally found at high altitudes were observed at altitudes significantly below their expected range, especially in the winter months, probably due to seasonally reduced food supplies. This phenomenon has also been noted at other sites in northern Vietnam, such as Cuc Phuong National Park.

INTRODUCTION

Vietnam has a total of 87 protected areas, although many of these lack management plans and basic biodiversity research (Government of Vietnam 1994). Most of the reserve areas are forests (the original vegetation cover of much of the country). The total area of forested land in Vietnam has declined dramatically, particularly in the north, such that, by 1983, forest land made up less than 20% of northern Vietnam (MacKinnon 1990). The remaining forest area is continuing to decline in both extent and quality as a result of selective logging and clearance for agriculture (Government of Vietnam 1994), and forest reserves are thus increasingly important for the conservation of biodiversity. This study of Ba Be and Na Hang was part of a wide-ranging biodiversity survey carried out in protected areas of northern Vietnam, to assess the value of sites in protecting biodiversity.

STUDY SITES; PHYSICAL DESCRIPTION

The location of two areas studied, Ba Be National Park and Na Hang nature reserve, is shown in Figure 1. In the biogeographical classifications of the Indo-Malayan realm proposed by MacKinnon and MacKinnon (1986), and MacKinnon (1990), both of these sites fall within unit 6a ('south China'), which includes all of northeast Vietnam, and part of China. Some characteristics of the reserves are shown in Table 1.

1) Ba Be National Park (22°23'N, 105°37'E) The Ba Be National Park contains Ba Be lake, Vietnam's only natural mountain lake, which is 8 km long and up to 0.8 km wide (Scott 1989). The Nang river flows through the reserve to the north of the lake. Limestone cliffs and hills surround the lake. There are some areas of flat land beside the lake and on the River Nang; these areas have all been cleared of their forest cover for agriculture. The hills immediately surrounding the lake rise to 893m (Scott 1989), and several peaks of over 1,000 m surround the National Park (Cao Van Sung 1995). Freshwater habitats are common at Ba Be; in addition to the lake itself, there are numerous small ponds, areas of marshland and the River Nang.

2) Na Hang Nature Reserve (22°16′-22°31′N, 105°22′-105°29′E)

The Na Hang Nature Reserve, located 30 km from Ba Be (Government of Vietnam 1994), was established in order to protect the largest remaining populations of the Tonkin snub-nosed monkey *Pygathrix* (*Rhinopithecus*) avunculus, one of Asia's rarest primates (Eudey 1987). The reserve consists of two separate "wilderness zones", the Tat Ke (northern) sector, and Ban Bung (southern) sector. Between and around the two wilderness zones are areas designated as buffer and "intensive use" zones in the original feasibility study for the reserve (Cox 1994). Land use in these peripheral zones is apparently unregulated, and they are dominated by rice cultivation and housing.

The area's topography is dominated by steep limestone hills, which reach a height of over 1,000 m in both the Tat Ke and Ban Bung sectors. The area is drained by many small rivers and streams, which show a highly seasonal pattern of flow, many becoming completely dry outside the summer wet season (from May to September, during which time there is, on average, 1,380 mm of rainfall; Cox 1994). From November to April, the climate of the reserve is relatively

Table 1. Study sites

Site	Province	Area (ha)	Altitude (m)	Established
Ba Be National Park	Bac Can	<i>c</i> .7,611 27,520	170-1098	1986
Na Hang Nature Reserve	Tuyen Quang		100-1082	1995

Table 2. Periods of fieldwork in the study sites

	Study period	Reference
Ba Be	12 July 94 - 13 Sept. 94 10 Nov. 96 - 15 Dec. 96	Kemp, Le Mong Chan and Dilger 1994 Hill, Hallam and Bradley 1997
Na Hang: Ban Bung Sector Na Hang: Tat Ke Sector	16 Jan. 96 - 18 Mar. 96 5 July 96 - 9 Sept. 96	Hill and Kemp 1996 Hill and Hallam 1997

cool and dry. There is only one permanent body of standing water within the reserve, a small reservoir at Pac Ban, near the northern boundary of the Ban Bung Sector.

STUDY SITES; VEGETATION

The terrestrial vegetation of both study sites is dominated by lowland tropical forest on limestone (Whitmore 1984). Dominant tree species include *Teonongia tonkinensis* Stapf. (Moraceae), an important element of the lower canopy, especially on disturbed rocky slopes and where intensive felling has occurred (Hill and Hallam 1997). *Burretoidendron hsienmu* Ching & Hu (Tiliaceae) is a common upper-canopy tree.

At altitudes of approximately 700 m and above, in Na Hang (and, to a lesser extent, Ba Be), lower montane forest formations occur. These differ from lowland forest formations in their relatively simple canopy structure (compared to the complex, multilayered canopies of lower altitudes), lower canopy height, and the scarcity of climbers (Whitmore 1984). The tree species represented in these higher altitude forests differ physiologically from those of lowland tropical rain forest (buttresses are absent, cauliflory rare, and leaves tend to be simple and small), and plant families which are uncommon, or completely absent, at lower altitudes form an important component of the canopy (including the Lauraceae, Fagaceae, and Podocarpaceae; Collins et al. 1991).

Natural ecosystems at each of the protected areas have been influenced by human activities. Commercial timber extraction has occurred in Na Hang, although it has now ceased, but small-scale felling continues in both sites. Agriculture also occurs in both Ba Be and Na Hang, with extensive clearance for the cultivation of maize, rice and cassava in some areas. There are also areas in various stages of successional regrowth, from low scrub to secondary vegetation dominated by pioneer tree species such as *Mallotus*, *Macaranga* and *Sapium* spp. (Euphorbiaceae).



Figure 1. Study sites and sites mentioned in the text

PERIODS OF STUDY

Two ten-week surveys were carried out in both Ba Be National Park and the Na Hang nature reserve, covering one summer (rainy season) and one winter (dry season) in each site; see Table 2. In each of the sites, the work on birds formed part of a research project on vegetation, insect and vertebrate diversity.

METHODS

Bird observations were made in all habitats, and at all altitudes represented in the protected area. An effort was made to standardize time spent in each habitat, in order to ensure that the time spent reflected the abundance of that habitat. Surveys were mainly carried out along paths in the forest, although in Na Hang (Tat Ke), a period of 10 days was also spent watching from a hide in primary montane forest (at around 1,000 m, with views over the canopy of lowland and intermediatemontane forests in the valley below). Observer groups varied between sites and survey periods, although one (the author) was present over three of the surveys and made many of the observations. Other observers included several people with extensive experience of bird surveys in southern China and Vietnam.

Survey work was carried out predominantly between 06h00 - 11h00 and 15h00 - 17h30 when activity was at its highest. In total, over 1,600 man-hours were spent in observation in Na Hang, and at least 700 in Ba Be.

RESULTS

Overall, 289 species were observed (see Appendix). In total, 222 species were recorded for Ba Be, and 221 for Na Hang. Although both sites showed a similar bird diversity (in terms of number of species) the composition of the avifauna differed between sites; groups of largely aquatic species such as the kingfishers, waders and herons showed greater diversity at Ba Be than at Na Hang. Notable records are discussed below.

a) Rare species

Two of the recorded species are globally endangered (status 'Vulnerable': Collar *et al.* 1994), and a further 20 are 'near-threatened' globally (see Appendix).

Of the endangered species, the Chestnut-necklaced Partridge Arborophila charltonii is widespread in Indochina, although threatened by forest clearance throughout its range (Collar et al. 1994). The Redcollared Woodpecker Picus rabieri is confined to Vietnam and Laos, with one historical record for southern China. It is known to occur in at least five localities in Vietnam (Collar et al. 1994), in Tonkin, north Annam, and Central Annam (Robson et al. 1989; Eames et al. 1994). Both of these species were observed at Na Hang only, although they are likely to be present (or to have been present in the past) at Ba Be.

Of the 'near-threatened' species, 12 species were recorded at Ba Be and 15 at Na Hang (7 common to both sites).

b) Range extensions

One of the species recorded was previously unknown in Vietnam, the Lesser Rufous-headed Parrotbill Paradoxornis atrosuperciliaris. The range of this species is given by King et al. (1975) as north and south Burma, north-west Thailand, and northern Laos. It was not recorded in Vietnam by Delacour and Jabouille (1931), or Vo Quy and Nguyen Cu (1995). However, several individuals were observed at Na Hang in 1996, in a mixed flock together with Greater Rufous-headed Parrotbill P. ruficeps, White-hooded Babbler Gampsorhynchus rufulus and Red-billed Scimitar Babbler Pomatorhinus ochraceiceps.

At Ba Be, 21 of the species recorded were outside their known range, as described in Vo Quy and Nguyen Cu (1995). At Na Hang, there were 15 range extensions. Many of these species are migratory, or have been recorded in adjacent regions of Vietnam. A total of seven species (four at each site) were recorded significantly outside their known range in Vietnam.

Species showing significant range extensions include the Yellow-vented Green Pigeon *Treron seimundi*, previously only known from southern and central Vietnam (north to Central Annam; King *et al.* 1975). The bird was recorded at Cuc Phuong National Park (Ninh Binh Province) in 1995 (J. C. Eames *in litt.*), and a dead specimen was found at Na Hang Nature Reserve in 1996 (Hill and Kemp 1996), considerably extending the range of this species to include most of Vietnam.

The Orange-headed Thrush Zoothera citrina was observed at both Na Hang and Ba Be, an extension from its previously known range in Annam and Cochinchina (central and south Vietnam) (Vo Quy and Nguyen Cu 1995). Adults with juveniles were observed at Na Hang in summer 1996, and flocks of several thrush species (including Orange-headed, Siberian, Black-breasted and Eyebrowed Thrushes) were seen feeding on fruiting trees at Ba Be in winter (November 1996), suggesting that both resident and migrant populations may occur.

The Black-and-buffWoodpecker Meiglyptes jugularis, observed at Ba Be, was thought to be resident in southernmost Vietnam (Vo Quy and Nguyen Cu 1995), or 'Indochina (except Tonkin)' (King et al. 1975). Other species that were believed to be confined to central or southern Vietnam include the Silver-backed Needletail Hirundapus cochinchinensis, Black-hooded Oriole Oriolus xanthornus, Swinhoe's Minivet Pericrocotus cantonensis and Purple-throated Sunbird Nectarinia sperata.

c) Altitudinal Reductions

In both sites, a number of montane species were observed significantly outside their normal altitudinal range, as recorded by King *et al.* (1975). The opposite situation, of lowland species recorded at higher altitudes than expected, was extremely rare. Those significantly below their expected altitudinal range are shown in Table 3.

In total, 24 species were observed at lower than expected altitudes. The largest numbers of altitudinal reductions were recorded in the autumn and winter seasons.

Table 3. Species outside of their normal altitudinal range (as recorded in King et al. 1975)

Species	Historical	Lowest recorded altitude (m)			
	altitudinal range (m)	BB1	mmer' NH2	BB2	ıter' NH1
Dendrocopos atratus	> 1,067	230	-	-	-
Pitta oatesi	914–1,829	-	-	-	380
Oriolus traillii	610-2,133	200	-	350	380
Pericrocotus brevirostris	914-2,133	-	-	750	-
Brachypteryx leucophrys	914–2,438	-	-	-	380
Ficedula hyperythra	> 914	-	-	-	500
Ficedula westermanni	> 1,220	600	-	-	-
Niltava macgrigoriae	> 914 W	-	700	620	460
Niltava davidi	> 914	-	-	180	380
Cyornis concretus	> 914	600	550	700	400
Myiomela leucura	1,067-2,133	-	-	750	-
Cochoa viridis	> 1,219	-	900	-	-
Tesia cyaniventer	> 1,219 W	-	-	-	450
Phylloscopus affinis	> 1,220	230	-	-	-
Phylloscopus proregulus	> 1,524	-	-	180	-
Seicercus poliogenys	> 1,220	-	-	750	-
Garrulax maesi	610–1,524	-	-	-	380
Pomatorhinus ochraceiceps	> 914	-	600	-	600
Xiphirhynchus superciliaris	> 914	-	-	-	460
Pnoepyga pusilla	>1,067	_	-	180	_
Stachyris chrysaea	> 914	-	-	750	-
Leiothrix argentauris	> 914	-	-	175	360
Yuhina castaniceps	610–1,830	-	-	180	-
Arachnothera magna	> 914	600	500	750	-
Total no. of species outside e	expected altitudinal ra	ange 6	5	13	12

Key

BB1 = Ba Be July–September 1994 BB2 = Ba Be October–December 1996

NH1 = Na Hang (Ban Bung) January–March 1996 NH2 = Na Hang (Tat Ke) July–September 1996

W = sometimes lower in winter

DISCUSSION

The bird species lists for Na Hang and Ba Be, although extensive, are not necessarily complete; difficult taxa such as the *Phylloscopus* warblers are probably under represented. One of the most complete lists for a protected area in Vietnam is that for Cuc Phuong National Park, Ninh Binh province, which is regularly visited by experienced birdwatchers. Cuc Phuong's bird fauna of 324 species (Tilo Nadler in litt.) includes 10 Phylloscopus species (compared to 9 at Ba Be and 5 at Na Hang). However, as Cuc Phuong is 230 km south of Na Hang and Ba Be, in a different biogeographic region (north Annam), it contains a number of species with southern distributions, unlikely to be present at Na Hang and Ba Be (including the Coral-billed Ground Cuckoo Carpococcyx renauldi, Scaly-crowned Babbler Malacopteron cinereum and Grey-faced Tit Babbler Macronous kelleyi).

Overall, 9.4% of the bird species at Ba Be and 13% of bird species at Na Hang are montane species, occurring predominantly at altitudes of over 900 m (according to King *et al.* 1975, Sibley and Monroe 1990). The overall importance of montane birds at both sites reflects the availability of suitable high-altitude habitats,

with Na Hang having a higher proportion of montane species than Ba Be. At Cuc Phuong, the proportion of species in this class is lower (7% of recorded species), although still high given the complete absence of montane habitat here. Montane species recorded at Cuc Phuong may be vagrants or migrants from the Annamite mountains to the west.

At both Ba Be and Na Hang, a large number of birds were observed significantly outside their expected altitudinal range. Since the number of such observations was greater in the winter period, they are likely to reflect seasonal movement of birds caused by variation in food availability in different seasons. Many of the species listed in Table 3 are obligate insectivores (including five species of flycatcher). In northern Vietnam, and particularly at higher altitudes, the winter months are relatively cold and insect populations and activity are thus likely to be depressed. In mountainous regions such as Na Hang and Ba Be, high-altitude habitats exist only a short distance from warmer lowland areas, facilitating seasonal movements to lower altitudes where the supply of invertebrate food is likely to be higher in winter. Certain species may make longer seasonal migrations, accounting for the records of montane species at Cuc Phuong National Park.

The reserves of Ba Be and Na Hang are only around 30 km apart, but they are separated by a landscape which has largely been cleared, and in which only fragments of degraded forest habitat remain. Fragmentation, habitat loss and hunting are the major threats to forest bird communities in northern Vietnam today. At both Ba Be and Na Hang there are long-established villages of several ethnic groups within and around the protected areas, and the human population continues to cultivate and (in some cases) extend their fields, as well as collecting timber and non-timber forest products.

Hunting is likely to have greatest impact on larger birds such as pheasants and hornbills, and may cause local extinctions. The largest Vietnamese hornbill species, the Great Hornbill *Buceros bicornis*, was only recorded at Ba Be. The smaller Brown Hornbill *Anorrhinus tickelli* was rarely observed at Na Hang, and was apparently confined to areas remote from human habitation.

Although relatively few of the bird species recorded are in imminent danger of extinction (Collar et al. 1994), a large number are close to inclusion in one of the IUCN's categories of threat (they are listed as 'Nearthreatened' in Collar et al. 1994). Both of the globally threatened species recorded, and many of the nearthreatened species, are dependent on forest habitats for their survival. In recent years, extensive forest loss has occurred in Vietnam, and particularly in the northern part of the country, where forest cover has declined from almost 50% in 1943 to less than 20% in 1990. The quality of the remaining forests is declining more rapidly than the quantity (Government of Vietnam 1994). Even some of the protected areas of north Vietnam have lost the majority of their forest cover (for example, Muong Nhe Nature Reserve in the north-west of the country, now around 20% forested; Cox et al. 1992; Hill et al. 1997). In the light of this forest loss, forests in protected areas have become increasingly important as reservoirs of biodiversity.

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APPENDIX Bird species recorded in two protected areas in northern Vietnam

	Threat	Na Hang	Ba Be
CHESTNUT-NECKLACED PARTRIDGE Arborophila charltonii	Vu	*	_
Red Junglefowl Gallus gallus		*	*
Silver Pheasant Lophura nycthemera		*	*
Grey Peacock Pheasant Polyplectron bicalcaratum		*	*
WHITE-BROWED PICULET Sasia ochracea		*	*
Grey-Capped Pygmy Woodpecker Dendrocopos canicapillus		*	*
STRIPE-BREASTED WOODPECKER Dendrocopos atratus		-	*
Rufous-bellied Woodpecker Dendrocopos hyperythrus		-	*
Rufous Woodpecker Celeus brachyurus		*	*
Lesser Yellownape Picus chlorolophus		*	*
Greater Yellownape Picus flavinucha		*	*
Red-collared Woodpecker Picus rabieri	$ m V_U$	*	-
Grey-headed Woodpecker Picus canus		*	*
Common Flameback Dinopium javanense		-	*
Greater Flameback Chrysocolaptes lucidus		*	*
Bay Woodpecker Blythipicus pyrrhotis		*	*
Black-and-buff Woodpecker Meiglyptes jugularis			*
Great Barbet Megalaima virens		*	*
Red-vented Barbet Megalaima lagrandieri		*	*
Green-eared Barbet Megalaima faiostricta		*	*
Golden-throated Barbet Megalaima franklinii		*	-
Blue-throated Barbet Megalaima asiatica		*	*
ORIENTAL PIED HORNBILL Anthracoceros albirostris		*	*
Great Hornbill Buceros bicornis		=	*
Brown Hornbill Anorrhinus tickelli	NT	*	-
Common Hoopoe Upupa epops		*	*
Red-headed Trogon Harpactes erythrocephalus		*	*
Indian Roller Coracias benghalensis		=	*
Dollarbird Eurystomus orientalis		*	*
Common Kingfisher Alcedo atthis		*	*
Oriental Dwarf Kingfisher Ceyx erithacus		-	*
Ruddy Kingfisher Halcyon coromanda		-	*
WHITE-THROATED KINGFISHER Halcyon smyrnensis		*	*
Black-Capped Kingfisher Halcyon pileata		*	-
Crested Kingfisher Megaceryle lugubris		=	*
Pied Kingfisher Ceryle rudis		-	*
Blue-bearded Bee-eater Nyctyornis athertoni		*	-
CHESTNUT-WINGED CUCKOO Clamator coromandus		-	*
LARGE HAWK CUCKOO Hierococcyx sparverioides		*	*
Indian Cuckoo Cuculus micropterus		*	*
Eurasian Cuckoo Cuculus canorus		*	-
Plaintive Cuckoo Cacomantis merulinus		*	*
Drongo Cuckoo Surniculus lugubris		-	*
Asian Koel Eudynamys scolopacea		*	*
Green-billed Malkoha Phaenicophaeus tristis		*	*
GREATER COUCAL Centropus sinensis		*	*
Lesser Coucal Centropus bengalensis		*	-
Red-breasted Parakeet Psittacula alexandri		*	*
Himalayan Swiftlet Collocalia brevirostris		*	*
SILVER-BACKED NEEDLETAIL Hirundapus cochinchinensis		*	*
Brown-backed Needletail Hirundapus giganteus		*	*
Asian Palm Swift Cypsiurus balasiensis		*	*
Fork-tailed Swift Apus pacificus		*	*
House Swift Apus affinis		*	*

	Threat	Na Hang	Ba Be
MOUNTAIN SCOPS OWL Otus spilocephalus		*	*
Collared Scops Owl Otus bakkamoena		*	*
Brown Fish Owl Ketupa zeylonensis		-	*
TAWNY FISH OWL Ketupa flavipes	NT	-	*
COLLARED OWLET Glaucidium brodiei		*	*
ASIAN BARRED OWLET Glaucidium cuculoides Brown Hawk Owl Ninox scutulata		*	*
GREY NIGHTJAR Caprimulgus indicus		*	
Large-tailed Nightjar Caprimulgus macrurus			*
ROCK PIGEON Columba livia			*
Spotted Dove Streptopelia chinensis		*	*
RED COLLARED DOVE Streptopelia tranquebarica		*	*
EMERALD DOVE Chalcophaps indica		*	*
THICK-BILLED GREEN PIGEON Treron curvirostra		*	*
YELLOW-VENTED GREEN PIGEON Treron seimundi	NT	*	-
Green Imperial Pigeon Ducula aenea		*	*
Mountain Imperial Pigeon Ducula badia		*	-
WHITE-BREASTED WATERHEN Amaurornis phoenicurus		*	*
Common Moorhen Gallinula chloropus		-	*
Common Coot Fulica atra		-	*
Eurasian Woodcock Scolopax rusticola		*	-
Green Sandpiper Tringa ochropus		-	*
COMMON SANDPIPER Actitis hypoleucos		*	*
BLACK-WINGED STILT Himantopus himantopus		-	*
?Long-billed Plover Charadrius placidus	Nт	-	*
LITTLE RINGED PLOVER Charadrius dubius		-	*
Kentish Plover Charadrius alexandrinus		-	*
River Lapwing Vanellus duvaucelii		*	*
Grey-headed Lapwing Vanellus cinereus	NT	-	*
?Yellow-legged Gull Larus cachinnans		-	*
BLACK KITE Milvus migrans		*	-
Grey-headed Fish Eagle Ichthyophaga ichthyaetus	NT	-	*
Crested Serpent eagle Spilornis cheela		*	*
Crested Goshawk Accipiter trivirgatus		*	*
Shikra Accipiter badius		*	*
Besra Accipiter virgatus		*	*
Eurasian Sparrowhawk Accipiter nisus		*	-
Northern Goshawk Accipiter gentilis			*
GREY-FACED BUZZARD Butastur indicus		×	-
BLACK EAGLE Ictinaetus malayensis		^	*
MOUNTAIN HAWK EAGLE Spizaetus nipalensis			*
PIED FALCONET Microhierax melanoleucos EURASIAN HOBBY Falco subbuteo	NT	*	^
Oriental Hobby Falco severus			*
Peregrine Falcon Falco peregrinus			*
LITTLE GREBE Tachybaptus ruficollis			*
LITTLE GREBE Tachyvaptus rajuous LITTLE EGRET Egretta garzetta			*
GREAT EGRET Casmerodius albus			*
CHINESE POND HERON Ardeola bacchus		*	*
LITTLE HERON Butorides striatus		*	*
BLACK-CROWNED NIGHT HERON Nycticorax nycticorax			*
CINNAMON BITTERN Ixobrychus cinnamomeus		_	*
EARED PITTA Pitta phayrei		*	*
Blue-rumped Pitta Pitta soror	NT	*	*
RUSTY-NAPED PITTA Pitta oatesi		*	-
Bar-bellied Pitta Pitta elliotii	NT	*	*
Silver-breasted Broadbill Serilophus lunatus		*	*
Long-tailed Broadbill Psarisomus dalhousiae		*	*
Asian Fairy Bluebird Irena puella		*	*
Blue-winged Leafbird Chloropsis cochinchinensis		*	*
Orange-bellied Leafbird Chloropsis hardwickii		*	*
TIGER SHRIKE Lanius tigrinus		*	*
Brown Shrike Lanius cristatus			*

Threat Na Hang Ba Be GREY-BACKED SHRIKE Lanius tephronotus RED-BILLED BLUE MAGPIE Urocissa erythrorhyncha Nт WHITE-WINGED MAGPIE Urocissa whiteheadi COMMON GREEN MAGPIE Cissa chinensis Grey Treepie Dendrocitta formosae RACKET-TAILED TREEPIE Crypsirina temia RATCHET-TAILED TREEPIE Temnurus temnurus BLACK-BILLED MAGPIE Pica pica LARGE-BILLED CROW Corvus macrorhynchos ASHY WOODSWALLOW Artamus fuscus * BLACK-NAPED ORIOLE Oriolus chinensis BLACK-HOODED ORIOLE Oriolus xanthornus MAROON ORIOLE Oriolus traillii LARGE CUCKOOSHRIKE Coracina macei BLACK-WINGED CUCKOO-SHRIKE Coracina melaschistos SMALL MINIVET Pericrocotus cinnamomeus SHORT-BILLED MINIVET Pericrocotus brevirostris Scarlet Minivet Pericrocotus flammeus BAR-WINGED FLYCATCHER-SHRIKE Hemipus picatus WHITE-THROATED FANTAIL Rhipidura albicollis Black Drongo Dicrurus macrocercus ASHY DRONGO Dicrurus leucophaeus CROW-BILLED DRONGO Dicrurus annectans Bronzed Drongo Dicrurus aeneus LESSER RACKET-TAILED DRONGO Dicrurus remifer SPANGLED DRONGO Dicrurus hottentottus Νт GREATER RACKET-TAILED DRONGO Dicrurus paradiseus BLACK-NAPED MONARCH Hypothymis azurea Asian Paradise-flycatcher Terpsiphone paradisi Common Iora Aegithina tiphia Great Iora Aegithina lafresnayei * LARGE WOODSHRIKE Tephrodornis gularis BLUE ROCK THRUSH Monticola solitarius * Blue Whistling Thrush Myophonus caeruleus Orange-headed Thrush Zoothera citrina SIBERIAN THRUSH Zoothera sibirica Scaly Thrush Zoothera dauma Black-breasted Thrush Turdus dissimilis JAPANESE THRUSH Turdus cardis GREY-WINGED BLACKBIRD Turdus boulboul Eurasian Blackbird Turdus merula Eyebrowed Thrush Turdus obscurus Lesser Shortwing Brachypteryx leucophrys DARK-SIDED FLYCATCHER Muscicapa sibirica ASIAN BROWN FLYCATCHER Muscicapa dauurica Ferruginous Flycatcher Muscicapa ferruginea YELLOW-RUMPED FLYCATCHER Ficedula zanthopygia Mugimaki Flycatcher Ficedula mugimaki RED-THROATED FLYCATCHER Ficedula parva SNOWY-BROWED FLYCATCHER Ficedula hyperythra LITTLE PIED FLYCATCHER Ficedula westermanni SLATY-BLUE FLYCATCHER Ficedula tricolor Verditer Flycatcher Eumyias thalassina Large Niltava Niltava grandis SMALL NILTAVA Niltava macgrigoriae * Fujian Niltava Niltava davidi WHITE-TAILED FLYCATCHER Cyornis concretus HAINAN BLUE FLYCATCHER Cyornis hainanus GREY-HEADED CANARY FLYCATCHER Culicicapa ceylonensis Orange-flanked Bush Robin Tarsiger cyanurus ORIENTAL MAGPIE ROBIN Copsychus saularis WHITE-RUMPED SHAMA Copsychus malabaricus PLUMBEOUS WATER REDSTART Rhyacornis fuliginosus White-tailed Robin Myiomela leucura

SLATY-BACKED FORKTAIL Enicurus schistaceus

	Threat	Na Hang	Ba Be
WHITE-CROWNED FORKTAIL Enicurus leschenaulti		*	*
Green Cochoa Cochoa viridis	Nт	*	*
Common Stonechat Saxicola torquata		*	*
Grey Bushchat Saxicola ferrea Chestnut-tailed Starling Sturnus malabaricus		*	^
BLACK-COLLARED STARLING Sturnus maiaoaricus BLACK-COLLARED STARLING Sturnus nigricollis		*	*
WHITE-VENTED MYNA Acridotheres cinereus		*	
CRESTED MYNA Acridotheres cristatellus		*	*
GOLDEN-CRESTED MYNA Ampeliceps coronatus		*	
HILL MYNA Gracula religiosa		*	*
CHESTNUT-BELLIED NUTHATCH Sitta castanea		*	_
VELVET-FRONTED NUTHATCH Sitta frontalis		*	*
GREAT TIT Parus major		*	*
Sultan Tit Melanochlora sultanea		*	*
Barn Swallow Hirundo rustica		*	-
Black-headed Bulbul Pycnonotus atriceps		_	*
Black-crested Bulbul Pycnonotus melanicterus		*	*
Red-whiskered Bulbul Pycnonotus jocosus		*	*
LIGHT-VENTED BULBUL Pycnonotus sinensis		*	-
Sooty-headed Bulbul Pycnonotus aurigaster		*	*
Stripe-throated Bulbul Pycnonotus finlaysoni		-	*
FLAVESCENT BULBUL Pycnonotus flavescens		-	*
Puff-throated Bulbul Alophoixus pallidus		*	*
Grey-eyed Bulbul Iole propinqua		*	-
CHESTNUT BULBUL Hemixos castanonotus		*	-
BLACK BULBUL Hypsipetes leucocephalus		*	*
HILL PRINIA Prinia atrogularis		*	-
Rufescent Prinia Prinia rufescens		*	*
Grey-breasted Prinia Prinia hodgsonii		*	-
Plain Prinia Prinia inornata		-	*
Oriental White-eye Zosterops palpebrosus		*	-
JAPANESE WHITE-EYE Zosterops japonicus		*	-
Grey-Bellied Tesia cyaniventer		*	-
ASIAN STUBTAIL Urosphena squameiceps		-	*
SPOTTED BUSH WARBLER Bradypterus thoracicus		-	*
Mountain Tailorbird Orthotomus cuculatus		*	-
Common Tailorbird Orthotomus sutorius		*	*
Dark-necked Tailorbird Orthotomus atrogularis		*	*
Dusky Warbler Phylloscopus fuscatus		-	-
Tickell's Leaf Warbler Phylloscopus affinis		-	*
Yellow-streaked Warbler Phylloscopus armandii		-	*
Pallas's Leaf Warbler Phylloscopus proregulus		*	*
Yellow-browed Warbler Phylloscopus inornatus		*	*
Arctic Warbler Phylloscopus borealis		*	*
Greenish Warbler Phylloscopus trochiloides		-	*
Pale-legged Leaf Warbler Phylloscopus tenellipes		-	*
Eastern Crowned Warbler Phylloscopus coronatus			*
BLYTH'S/WHITE-TAILED LEAF WARBLER Phylloscopus reguloides/davisoni		*	-
Sulphur-breasted Warbler Phylloscopus ricketti		*	*
Grey-crowned Warbler/Bianchi's Warbler Seicercus tephrocephalus/valentini		*	*
Grey-cheeked Warbler Seicercus poliogenys		-	*
CHESTNUT-CROWNED WARBLER Seicercus castaniceps		*	*
Yellow-bellied Warbler Abroscopus superciliaris		*	*
Masked Laughingthrush Garrulax perspicillatus		*	-
White-crested Laughingthrush Garrulax leucolophus		*	-
Lesser Necklaced Laughingthrush Garrulax monileger		*	-
Grey Laughingthrush Garrulax maesi	Nт	*	_
Black-throated Laughingthrush Garrulax chinensis		*	*
Hwamei Garrulax canorus		*	*
Red-tailed Laughingthrush Garrulax milnei	Nт	*	
D D II		*	*
Buff-breasted Babbler Pellorneum tickelli		*	*
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BUFF-BREASTED BABBLER Pellorneum tickelli PUFF-THROATED BABBLER Pellorneum ruficeps Large Scimitar Babbler Pomatorhinus hypoleucos		-	*

	Threat	Na Hang	Ba Be
SLENDER-BILLED SCIMITAR BABBLER Xiphirhynchus superciliaris	NT	*	-
Limestone Wren Babbler Napothera crispifrons		-	*
Streaked Wren Babbler Napothera brevicaudata		*	*
Eyebrowed Wren Babbler Napothera epilepidota		*	=
Pygmy Wren Babbler Pnoepyga pusilla		-	*
Golden Babbler Stachyris chrysaea		*	*
GREY-THROATED BABBLER Stachyris nigriceps		*	*
Spot-necked Babbler Stachyris striolata		*	*
STRIPED TIT BABBLER Macronous gularis		*	*
Silver-eared Mesia Leiothrix argentauris		*	*
White-browed Shrike babbler Pteruthius flaviscapis		*	*
White-hooded Babbler Gampsorhynchus rufulus		*	-
Rufous-throated Fulvetta Alcippe rufogularis	NT	*	*
Brown-Cheeked Fulvetta Alcippe poioicephala		-	*
Grey-cheeked Fulvetta Alcippe morrisonia		*	*
Long-tailed Sibia Heterophasia picaoides		*	-
Striated Yuhina Yuhina castaniceps		*	*
Black-chinned Yuhina Yuhina nigrimenta		*	-
White-bellied Yuhina Yuhina zantholeuca		*	*
Lesser Rufous-headed Parrotbill Paradoxornis atrosuperciliaris	NT	*	-
Greater Rufous-headed Parrotbill Paradoxornis ruficeps	NT	*	-
Plain Flowerpecker Dicaeum concolor		*	*
Fire-breasted Flowerpecker Dicaeum ignipectus		*	*
Purple-throated Sunbird Nectarinia sperata		-	*
OLIVE-BACKED SUNBIRD Nectarinia jugularis		*	*
Fork-tailed Sunbird Aethopyga christinae		*	*
Black-throated Sunbird Aethopyga saturata		*	*
Crimson Sunbird Aethopyga siparaja		*	*
Little Spiderhunter Arachnothera longirostra		*	*
Streaked Spiderhunter Arachnothera magna		*	*
Eurasian Tree Sparrow Passer montanus		-	*
Forest Wagtail Dendronanthus indicus		*	*
White Wagtail Motacilla alba		-	*
Grey Wagtail Motacilla cinerea		*	*
OLIVE-BACKED PIPIT Anthus hodgsoni		*	*
RED-THROATED PIPIT Anthus cervinus		*	-
WHITE-RUMPED MUNIA Lonchura striata		*	*
Chestnut-eared Bunting Emberiza fucata		*	-
LITTLE BUNTING Emberiza pusilla		-	*
BLACK-FACED BUNTING Emberiza spodocephala			

Nomenclature as in Inskipp *et al.* (1996), except Grey-crowned/Bianchi's Warbler *Seicercus tephrocephalus/valentini* (see Alström and Olsson 1999)

Threat category: from Collar et al. (1994):

 $V_U = Vulnerable$

 $N_T = Near-threatened$

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