

CONSERVATION STATUS OF FOREST BIRDS IN ISOLATED FOREST PATCHES IN MASBATE, PHILIPPINES

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ABSTRACT

Bird surveys were conducted on the island of Masbate in July 2001 and on March 20-25, 2002. The study mainly focused on identifying the remaining lowland forests and determining their condition, as well as ascertaining the conservation status of the endemic and threatened birds of Masbate. Using deliberate search, mist-netting, and informal interviews, a total of 55 species (58%) of the birds previously known from the island were observed. Four new species for Masbate were recorded during the survey. Nine (56%) of the 16 Western Visayas endemic subspecies of birds known from Masbate were not seen and most are now possibly extinct on the island. The most significant result of the study was the finding of a remnant population of the Visayan Tarictic Hornbill *Penelopides panini panini* among sightings of the seven Masbate endemic subspecies. Despite claims by locals that cockatoos ("white parrots") have been seen near the mangrove areas, the birds were not observed during the survey. Further study on other forest patches of Masbate Island may yet result in the discovery of significant populations of threatened and endemic species of birds.

Introduction

The Philippines is remarkably rich in terms of its high percentage of endemic wildlife. The complexity and diversity of its fauna is enhanced by the archipelagic nature of the islands where species are limited to only one island or group of islands. The West Visayas group of islands, composed of Negros, Panay,

Masbate, Cebu, Guimaras, and Ticao, is one of the most important regions in the country both in terms of number of bird species under threatened conditions and the level of threats (Stattersfield *et al.*, 1998).

The Island of Masbate lies in the center of the Philippine archipelago, between Panay on the west and Burias and Ticao islands on the north and eastern portion, latitudes 11° 43' North and 21° 36' North, 123° 36' East and 124° 15' East. It has a land area of 404 km². The province of Masbate has three main islands: Burias, Ticao, and Masbate. The remaining forest resources of the province are found mainly on the rugged slopes of northeastern Masbate, particularly Mobo. Some forest is also found along the steep and rugged slopes and summits of the ranges of Manamoc.

Masbate holds a number of Philippine and West Visayan endemic species. This study aimed to identify the remaining lowland forest of the islands and determine the conservation status of the West Visayan endemic subspecies and its forest.

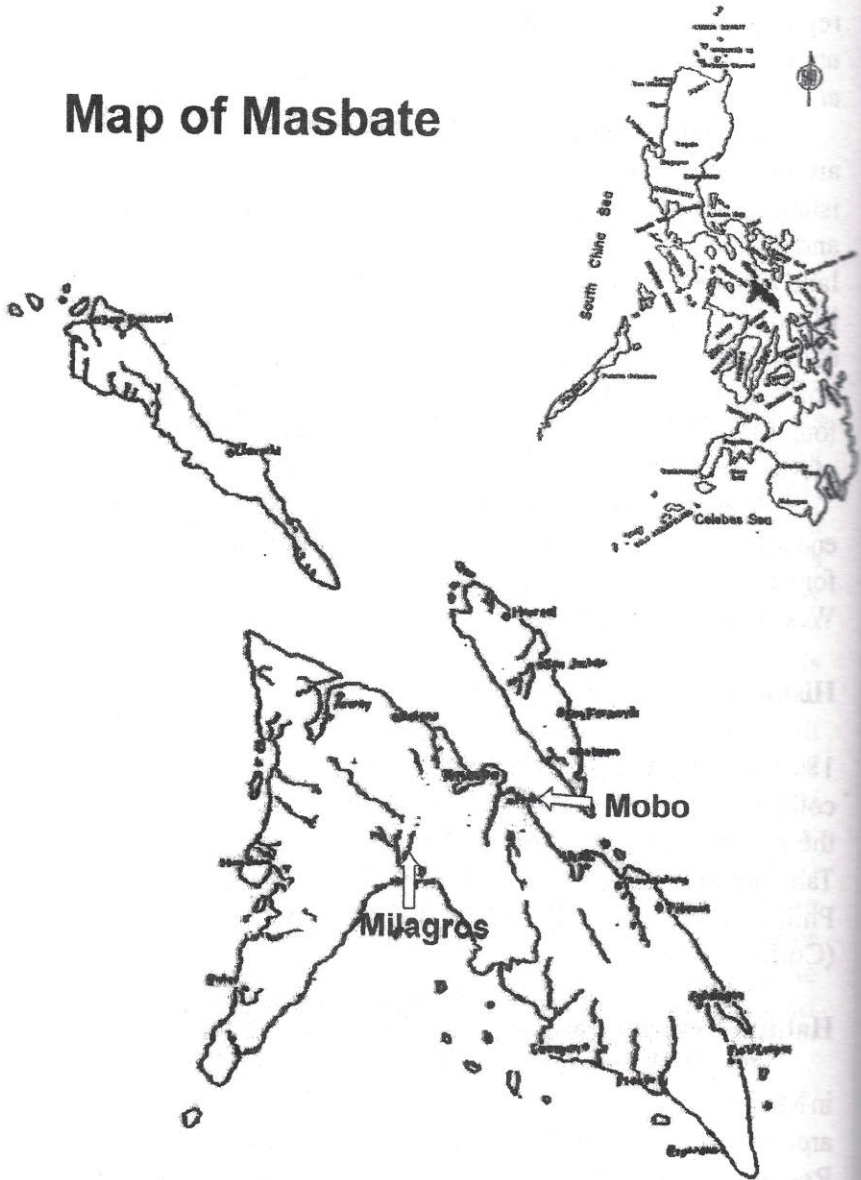
History of Ornithological Exploration

Steere conducted early collections in Masbate in 1888. In 1892 the Menage Expedition surveyed the island. McGregor collected in 1902 and Bartsch in 1908. Information provided by the collections was summarized in Dickinson *et al.* (1991). Tabaranza (1992) visited the island with particular interest in the Philippine Cockatoo. The island was revisited by Curio in 1992 (Curio, 1994).

Habitat Description

The plantation forest of Tugbo Watershed Forest Reserve in Masbate was visited on 15-19 July 2001. The site is a protected area managed by the Department of Environment and Natural Resources (DENR), and covers an area of 246.95 has. It is characterized by second growth and abandoned clearings replanted with Narra (*Pterocarpus indicus*), Raintree, *Gmelina arborea*, Mahogany (*Sweitenia macrophylla*), and *Acacia auriculiformis*

Map of Masbate



(PPDO-Masbate, 2000). The average tree height is 10 m (n=20; range= 6 – 15 m) with average diameter at breast height of 90 cm (n=20; range=40-160 cm). Vines are rare and epiphytes are limited to a few fern species. A thin layer of leaf litter covered the substrate. Coconuts have been planted in almost all of the portions of the watershed.

The forest in Milagros is located in the interior part of the town. The lowland secondary growth forest covers around 60 ha and is mostly dominated by *Ficus* spp. A number of *Ficus* species were fruiting at the time of the visit. Surrounding the forest are grassland and agricultural areas planted with mango and other agro-forestry products.

METHODS

The islands harbor patches of forest of less than 100 hectares. Point counts and deliberate search were conducted in both areas. All birds seen and heard were identified and recorded using *A Guide to the Birds of the Philippines* (Kennedy *et al.*, 2001).

Mist nets measuring 6m long by 4m wide were also used to capture birds. Nets were distributed along ridge tops, near fruiting trees, and in the forest understory to maximize the number and variety of birds caught. Nets were regularly checked (every 1-2 hrs) for captured birds. Biometrical data were obtained for each bird species captured before release.

Informal interviews were also conducted to ascertain the presence of significant patches of forest and to gather information on species readily obtained by direct observation. Information on land use, threats, and presence of key species was also collected.

RESULTS

A total of 55 resident species were recorded during the survey, including four species new to the island, which produce a combined Masbate total of 95 species along with the previous list provided by Dickinson *et al.* (1991). The most significant result was finding the Visayan Tarictic Hornbill *Penelopides panini panini* in an isolated forest patch in Milagros. A total of three

individuals, two males and one female, were sighted on different occasions. The Philippine Hawk Owl form unique to Masbate (*Ninox philippensis proxima*) was also recorded (Table 1). Vocalizations were obtained and currently being compared with other subspecies of Philippine Hawk Owls.

Four new species for Masbate were recorded during the visit. These include the Spotted Dove (*Streptopelia chinensis*), Zebra Dove (*Geopelia striata*), Lovely Sunbird (*Nectarinia sperata*), and Chestnut Mannikin (*Lonchura leucogastra*). Both the Spotted Dove and Zebra Dove were introduced to the Philippines but have established residence in open country and cultivated areas. The range of these species is expanding and the record for Masbate Island adds up to its new distribution record.

Several species of doves were observed feeding on fruiting trees in Milagros. These included the Pompadour Pigeon, Pink-necked Fruit Dove, White-eared Brown Dove, Emerald Dove, and the Spotted Dove. The Pompadour Pigeon was the most abundant in the area. Although commonly encountered, the pigeons were heavily hunted for food and the pet trade.

Subspecies endemic to the island

Nine of the 16 endemic subspecies of birds in Masbate were confirmed during the survey. The Philippine Bulbul form (*Hypsipetes philippinus guimarensis*) was the most frequently encountered bird, followed by the Blue-headed Fantail (*Rhipidura cyaniceps albiventris*), White-browed Shama (*Copsychus luzoniensis superciliaris*), and Coppersmith Barbet (*Megalaima haemacephala homochroa*). The other species were represented by either one or two records. Majority of the larger species of forest birds (White-bellied Woodpecker, Philippine Oriole, Bar-bellied Cuckooshrike, and Greater Flameback) were not encountered during the survey. With very little forest left in Masbate and the absence of large, tall species of trees, it is unlikely that these species still survive in the 60 ha forest patch in Milagros and in the Tugbo watershed.

Table 1. Endemic subspecies of birds in West Visayas occurring in Masbate. Numbers in parenthesis represent individuals mist-netted; numbers outside parenthesis refer to individuals observed during sampling. Not sighted is indicated by —.

Endemic Subspecies	Common Name	Tugbo	Milagros
<i>Ninox philippensis proxima</i>	Philippine Hawk Owl	2	1
<i>Penelopides panini panini</i>	Visayan Tarictic Hornbill	—	3
<i>Dryocopus jaecensis philippinensis</i>	White-bellied Woodpecker	—	—
<i>Picoides maculatus maculatus</i>	Pygmy Woodpecker	—	—
<i>Chrysocolaptes lucidus xanthocephalus</i>	Greater Flameback	—	—
<i>Megalaima haemacephala homochroa</i>	Coppersmith Barbet	—	4
<i>Coracina striata panayensis</i>	Bar-bellied Cuckooshrike	—	—
<i>Hypsietes philippinus guimarasensis</i>	Philippine Bulbul	36 (3)	65
<i>Oriolus steerii nigrostriatus</i>	Philippine Oriole	—	—
<i>Parus elegans albescens</i>	Elegant Tit	—	—
<i>Dicrurus balicassius mirabilis</i>	Balicassiao	—	—
<i>Copsychus luzoniensis superciliosus</i>	White-browed Shama	9 (2)	4
<i>Rhipidura cyaniceps albiventris</i>	Blue-headed Fantail	22 (8)	30
<i>Pachycephala homeyeri winchelli</i>	White-vented Whistler	3 (1)	2
<i>Dicaeum trigonostigma dorsale</i>	Orange-bellied Flowerpecker	5 (1)	2
<i>Zosterops nigrorum nigrorum</i>	Golden-yellow White-eye	—	—
Total number of subspecies		6	8

Threatened Species

The Philippine Duck (*Anas luzonica*) was historically abundant in Milagros, Masbate (MacGregor, 1909) while Dickinson *et al.* (1991) reported the species to be still fairly common. Locals have reported the presence of ducks in several localities in Masbate (Milagros, Matipuron, and Aroroy). However, surveys are still needed to confirm the status of the Philippine Duck and ascertain whether the reported duck belongs to this particular species and not to the Wandering Duck. The Philippine Duck was not observed during the survey.

The Philippine Cockatoo (*Cacatua haematuropygia*) was found on Masbate (Dickinson *et al.*, 1991) and about 50-70 individuals were reported in 1992 by Tabaranza (Collar *et al.*, 1998). Several individuals were also reported at Matipuron at the 7-R ranch in 1992 by Curio (Collar *et al.*, 1998). The Cockatoo was not recorded in the watershed area during fieldwork. Although local officials have expressed awareness of the presence of "white parrots" on Matipuron, this information still needs further verification.

The Visayan Tarictic Hornbill was once very common in Masbate in 1880 and 1909 (F.S. Bourns and D.C. Worchester, 1894; MacGregor, 1909). The most recent record was made in 1992 (Curio, 1994). During the survey, a pair of Visayan Tarictic Hornbill was observed perched on a branch and moving from one forest patch to the nearest forest patch. On another separate occasion, a lone male was observed silently perching on a branch. Twice the hornbills were heard calling in mid-morning.

Two of the threatened species recorded on the island, Rufous-lore Kingfisher and Blue-naped parrot, were not encountered during the survey. With very little available habitat, it is very likely that these two species are now extinct on the island.

DISCUSSIONS

The watershed areas of Tugbo and Milagros still hold several species of birds unique to the West Visayas and may stand as the last refuge for these birds. Table 1 shows the current status of the 16 endemic subspecies of birds recorded on Masbate. A total of 9 species, most of which are dependent on deep forest were no longer observed and may now possibly be extinct on the island. This represents 50% of the total endemic taxa recorded on the island.

The deforestation of Masbate has therefore caused extinction of birds on the island. Those that remain are also under severe pressure of becoming extinct. With only three individuals of Visayan Tarctic Hornbill left in a very small patch, the chance of the species surviving in the next few years is remote. The remaining native forest patch is slowly being converted into an agricultural land and the rest of the surrounding areas have been converted into pastureland. There are very few tall trees left within the forest and even these are slowly being cut for timber.

Areas formerly classified as forests in Masbate are now almost devoid of forest cover. Trees in watershed areas are largely composed of replanted exotic species of trees. In most areas visited, either grassland/pastureland, or coconut plantation surrounds the forest. Where native vegetation can still be found, agricultural encroachment is slowly reducing the forest size. In Tugbo Watershed, forest guards have been assigned to maintain and protect the watershed from contamination through human activities, logging, and hunting of wildlife. Yet, despite such active protection, hunting activities targeting larger species of birds and bats have been observed in the area. Frogs were also reportedly captured for food.

In the lower portions of the watershed, small-scale mining and quarrying activities have been observed. These activities pose as a possible threat to the remaining habitat within the watershed. Attempts to mine and quarry inside the watershed

have created pressure on local public officials as well as on the people living within the immediate boundaries.

CONCLUSIONS

Habitat loss caused by human intervention is the primary reason why endemic species of Masbate have become endangered and extinct. Only 44% of the endemic subspecies were observed (Philippine Hawk Owl, Philippine Bulbul, White-browed Shama, Blue-headed Fantail, White vented Whistler and the Orange-bellied Flowerpecker) surviving on remnant forest patches. The Visayan Tarictic Hornbill is very well near extinction, surviving only on a 60 hectare, isolated forest patch.

Although only very small isolated patches of degraded forest remain, these are still under severe pressure of being burned and cut down in favor of pastureland. Even in this state, hunting which targets larger species of vertebrates still continues.

RECOMMENDATIONS

1. Species Protection and Habitat Rehabilitation

There is very little forest left in Masbate and yet within these tiny patches of forest, the endemic species of birds in Masbate survive. It is only in these areas where one can hear the call of the Masbate form of Philippine Hawk Owl (*Ninox philippensis proxima*). Even to this date, little is known of the taxonomy and status of Hawk owls and with the fast disappearance of the forest, it may be too late before we have the chance to study this.

Replanting of trees, particularly in watershed areas in Mobo, should encourage endemic and native species of trees. Private land owners with significant forest patches should be mobilized to protect remaining forest patches and to replant native trees. On the other hand, the DENR should inventory the trees, monitor tree-planting projects, and initiate measures that ensure their protection. Rehabilitation through reforestation activities should continue using endemic species. Hunting should also be prohibited specially on larger species of birds.

2. Research

There is a need to survey other remnant second growth forest in Masbate. The limited record on the endemic subspecies of owl in Masbate and Ticao necessitates further survey on the local distribution of the species. With the current updating of the taxonomic status of Philippine Hawk Owl, an ecological study on the species is very much needed.

3. Conservation Awareness

There is a need to increase the level of awareness of the general public as well as the local and provincial policy makers in Masbate. The importance of the watershed area and the intricate relationship of its wildlife inhabitants should be instilled among the local stakeholders.

Conservation education may be carried out through the Dalaw-Turo program of DENR in collaboration with other related institutions. One way in which long-term conservation education action may be achieved is by incorporating conservation and environmental issues in the curricula and providing schoolteachers (preferably elementary and high school) the necessary skills and teaching strategies to enable them to introduce these issues into their classrooms.

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References

- Bourns F.S. and Worchester, D.C.. 1894. Preliminary notes on the birds and mammals collected by the Menage Scientific Expedition to the Philippine Islands. Occas. Pap. Minn. Acad. Sci. 1:64 pp.
- Collar, N.J., Tabaranza, B., and Mallari, A. (1999) Threatened birds of the Philippines. Manila: Bookmark.
- Curio, E. (1994). Ornithological observations during a (preliminary) Philippines conservation expedition in 1993. *Okol. Vogel* 16: 613-623.
- Dickinson, E.C., Kennedy, R.S., and Parkes, K.C. (1991). The birds of the Philippines: An annotated check list. Tring. U.K. British Ornithologists' Union (Checklist no. 12).
- Kennedy, R.S., Gonzales, P.C., Miranda, H.C., Jr., and Fisher, T.H. (2000). A guide to the birds of the Philippines. Oxford University Press.
- MacGregor, R.C. (1909-1910). A manual of Philippine birds. Manila. Bureau of Printing.
- Mallari, N.A., Tabaranza, B., and Crosby, M. (2001). Key conservation sites in the Philippines. Bookmark, Philippines.
- Mauro L.B. (1998) Preliminary report on birds recorded from the Philippines. Privately published.
- PPDO-Masbate (2000). Provincial socio-economic profile 2001. 1-105 pp.
- Rabor, D.S. (1977a) Philippine birds and mammals. Quezon City. U.P. Science Education Center.
- Stattersfield, A.J., Crosby, M.J., Long, M.J., and Wege, D.C. (1998). Endemic bird areas of the world: Priorities for biodiversity conservation. Cambridge, U.K. BirdLife International. Conservation Series 7.

Appendix A. Bird species list of Masbate compiled from Dickinson *et al.* (1991) and compared with the data generated from the survey in July 2001 and March 2002. Species in bold are Philippine endemics. R means the species was reported in the area but was not observed in the sampling site. Numbers in parenthesis refer to number of individuals caught. C means common, UC means uncommon, and FC means fairly common.

SPECIES NAME	COMMON NAME	DKP	2001	2002
<i>Dendrocygna arcuata</i>	Whistling Duck	X	--	--
<i>Anas luzonica</i>	Philippine Mallard	X	R	R
<i>Haliastur indus</i>	Brahminy Kite	X	R	5
<i>Haliaeetus leucogaster</i>	White-bellied Sea Eagle	X	R	--
<i>Pernis celebensis</i>	Barred Honeybuzzard	X	--	--
<i>Spilornis cheela holospilus</i>	Crested Serpent Eagle	X	--	--
<i>Butastur Indus</i>	Grey-faced Buzzard	X	--	--
<i>Circus melanoleucos</i>	Pied Harrier	X	UC	8
<i>Megapodius cumingii</i>	Tabon Scrubfowl	X	--	--
<i>Coturnix chinensis</i>	Blue-breasted Quail	X	UC	1
<i>Gallus gallus</i>	Red Junglefowl	X	R	--
<i>Gallirallus torquatus</i>	Barred Rail	X	R	1
<i>Anaouornis phoenicurus</i>	White-breasted Waterhen	X	--	--
<i>Gallinix cinerea</i>	Watercock	X	--	--
<i>Treron vernans</i>	Pink-necked Pigeon	X	--	7
<i>Treron pompadora</i>	Pompadour Pigeon	X	--	17
<i>Phapitreron leucotis</i>	White-eared Brown Dove	X	FC	11
<i>Ducula aenea</i>	Green Imperial Pigeon	X	--	--
<i>Ducula bicolor</i>	Pied Imperial Pigeon	X	--	--
<i>Macropygia phasianella</i>	Reddish Cuckoo-dove	X	--	--
<i>Chalcophaps indica</i>	Emerald Dove	X	(3)FC	7

SPECIES NAME	COMMON NAME	DKP	2001	2002
<i>Streptopelia chinensis</i>	Spotted Dove	--	--	12
<i>Geopelia striata</i>	Zebra Dove	--	--	6
<i>Cacatua haematurropygia</i>	Philippine Cockatoo	X	R	R
<i>Prioniturus discurus</i>	Blue-crowned Racquet-tail	X	--	--
<i>Tanygnathus lucionensis</i>	Blue-naped Parrot	X	--	--
<i>Loriculus philippensis regulus</i>	Philippine Hanging Parakeet	X	--	1
<i>Ninox philippensis proxima</i>	Philippine Hawk Owl	X	UC	--
<i>Cacomantis merulinus</i>	Plaintive Cuckoo	X	--	11
<i>Eudynamis scolopacea</i>	Koel	X	UC	10
<i>Centropus viridis</i>	Philippine Coucal	X	UC	1
<i>Caprimulgus manillensis</i>	Philippine Nightjar	X	UC	--
<i>Hemiprocne comata</i>	Lesser Treeswift	X	--	20
<i>Collocalia esculenta</i>	Glossy Swiftlet	X	C	--
<i>Collocalia troglodytes</i>	Pygmy Swiftlet	X	C	--
<i>Alcedo atthis</i>	Common Kingfisher	X	--	--
<i>Alcedo cyanopectus</i>	Indigo-banded Kingfisher	X	--	--
<i>Halcyon capensis</i>	Stork-billed Kingfisher	X	--	1
<i>Halcyon smyrnenis</i>	White-throated Kingfisher	X	--	1
<i>Halcyon chloris</i>	White-collared Kingfisher	X	(7)C	1
<i>Merops viridis</i>	Blue-throated Bee-eater	X	--	--
<i>Merops philippinus</i>	Blue-tailed Bee-eater	X	--	--
<i>Eurystomus orientalis</i>	Dollarbird	X	--	3
<i>Penelopides panini</i>	Visayan Tarictic Hornbill	X	--	4
<i>Megalaima haemacephala homochiroa</i>	Crimson Barbet	X	--	--
<i>Dryocopus javanicus</i>	White-bellied Woodpecker	X	(1)FC	1
<i>Ptilinopus</i>	Black Hooded Pitta	X	--	--

SPECIES NAME	COMMON NAME	DKP	2001	2002
<i>Pitta erythrogastrer</i>	Red-bellied Pitta	X	(1)UC	1
<i>Hirundo rustica</i>	Barn Swallow	X	--	1
<i>Hirundo tahitica</i>	Pacific Swallow	X	X	1
<i>Hirundo daurica</i>	Red-rumped Swallow	X	--	--
<i>Coracina striata</i>	Bar-bellied Cuckoo-shrike	X	--	--
<i>Pycnonotus goiavier</i>	Yellow-vented Bulbul	X	C	23
<i>Hypsipetes philippinus</i>	Philippine Bulbul	X	(3)C	65
<i>Oriolus chinensis</i>	Black-naped Oriole	X	UC	29
<i>Oriolus steerii nigrostriatus</i>	Philippine Oriole	X	--	--
<i>Corvus macrorhynchus</i>	Large-billed Crow	X	--	4
<i>Parus elegans</i>	Elegant Tit	X	--	--
<i>Rhabdornis mystacalis</i>	Striped-headed Rhabdornis	X	--	--
<i>Lalage nigra</i>	Pied Triller	X	--	8
<i>Luscinia calliope</i>	Siberian Rubythroat	X	--	--
<i>Copsychus saularis</i>	Oriental Magpie-Robin	X	UC	2
<i>Copsychus luzoniensis</i>	White-browed Shama	X	(2)FC	4
<i>Monticola solitaria</i>	Blue Rock-thrush	X	--	--
<i>Saxicola caprata</i>	Pied Bushchat	X	UC	--
<i>Megalurus timoriensis</i>	Tawny Grassbird	X	UC	7
<i>Megalurus palustris</i>	Striated Grassbird	X	UC	2
<i>Orthotomus castaneiceps</i>	Philippine Tailorbird	X	C	8
<i>Phylloscopus borealis</i>	Arctic Warbler	X	--	2
<i>Cisticola exilis</i>	Bright-capped Cisticola	X	UC	--
<i>Cyornis rufigastera</i>	Mangrove Blue Flycatcher	X	(1)FC	4
<i>Muscicapa griseisticta</i>	Grey-streaked Flycatcher	X	--	--
<i>Rhipidura javanica</i>	Pied Fantail	X	UC	4

SPECIES NAME	COMMON NAME	DKP	2001	2002
<i>Rhipidura cyaniceps albiventris</i>	Blue-headed Fantail	X	(8)C	30
<i>Pachycephala homeyeri</i>	White-vented Whistler	X	(1)UC	2
<i>Hypothymis azurea</i>	Black-naped Monarch	X	FC	4
<i>Motacilla cinerea</i>	Grey Wagtail	X	--	--
<i>Motacilla flava</i>	Yellow Wagtail	X	--	2
<i>Anthus gustavi</i>	Pechora Pipit	X	--	2
<i>Anthus novaeseelandiae</i>	Richard's Pipit	X	--	--
<i>Artamus leucorhynchus</i>	White-breasted Wood Swallow	X	FC	6
<i>Lanius cristatus</i>	Brown Shrike	X	--	6
<i>Lanius schach</i>	Long-tailed Shrike	X	--	--
<i>Aplonis panayensis</i>	Asian Glossy Starling	X	C	7
<i>Sarcops calvus</i>	Coledo	X	UC	3
<i>Nectarinia jugularis</i>	Olive-backed Sunbird	X	FC	14
<i>Aethopyga shelleyi</i>	Lovely Sunbird	X	--	--
<i>Nectarinia sperata</i>	Purple-throated Sunbird	--	--	1
<i>Anthreptes malaccensis</i>	Plain-throated Sunbird	X	UC	3
<i>Dicaeum trigonostigma dorsale</i>	Orange-bellied Flowerpecker	X	(1)UC	2
<i>Dicaeum pygmaeum</i>	Pygmy Flowerpecker	X	UC	2
<i>Dicaeum australe</i>	Red-keeled Flowerpecker	X	UC	3
<i>Zosterops nigrorum</i>	Golden-yellow White-eye	--	--	--
<i>Lonchura leucogastra</i>	White-bellied Munia	--	(1)UC	--
<i>Lonchura malacca</i>	Chestnut Munia	X	UC	17
Total species		95	45	55