

Diversity of Avifauna in the Wilpattu National Park

D K Weerakoon¹ and W L D P T S de A Goonatilleke²

¹Department of Zoology, University of Colombo, Colombo 3

²IUCN Sri Lanka, 53 Horton Plains, Colombo 7

Wilpattu is one of the oldest National Parks in Sri Lanka. The park derives its name from the unique presence of many natural lakes or "villus" with fresh or brackish water in the area. First declared as a sanctuary in 1905, its conservation status was elevated to that of a National Park in 1938. The area where the park is located has great historical significance. Wilpattu National Park once supported a thriving civilization as evidenced by the prehistoric burial site discovered in Pomparippu situated along the old Puttalam-Mannar road and the many ancient ruins found inside the park. Thammenawa where according to legend King Vijaya first landed in Sri Lanka, and "Kali Villu" where he got married to Kuweni in 543 BC, are both situated within the Park. The area indicated as "Hippurus" in Pliny's world map is likely the place referred to as "Kudira Male" (horse mountain) at present.

The park was closed to the public in 1985 due to the ongoing armed conflict and after ceasefire negotiations in 2002 it was reopened in May 2003. This gave us an opportunity to carry out a survey of the birds that inhabit the diverse habitats present in the park. The objective of this paper is to provide a brief synopsis of the avifaunal diversity that exists in the southern part of the Wilpattu National Park. The northern part of the park was not accessible due to security reasons even at the time of the survey. It is sadly noted that at the time of preparation of this manuscript that the park has been closed to the general public once again due to incidents that occurred subsequently, which also resulted in the loss of the life of Mr Pushpananda the park warden, who was one of the most dedicated wildlife officers we have met in recent times. We wish to dedicate this paper to Mr. Pushpananda and others who lost their lives in Wilpattu National Park.

Materials and Methods:

Wilpatu is the largest National Park in Sri Lanka, spanning an area of 131,693 hectares. It is located in the north-western coast of Sri Lanka and lies within the north-



central and north-western provinces. The park is located between Moderagam Aru in the North and the Kala Oya in the South. The park falls within the lowland dry zone and the mean annual temperature is about 27°C.

Geologically, Kala Oya area is underlain by Proterozoic metamorphic rocks of the Wannu complex and Miocene to Quaternary aged sedimentary rocks. Several mineral occurrences have been reported in and around this area, mostly from the south eastern part of the basin. The park receives relatively low rainfall with high seasonal and spatial variation. Lowest occurrence of rainfall is from June to August while the highest rainfall is received during the north east monsoon from October to December. The mean annual rainfall is about 1000 mm. The park harbors a wide variety of eco-systems which are of high environmental value. It has a large number of natural and man-made water bodies that are linked by an intricate network of rivers and streams. These are important wetlands in terms of bio-diversity conservation.

The study was conducted from August to December 2003. Initially a reconnaissance survey was carried out to identify the different habitats present in order to select a

suitable sampling strategy that would adequately sample the representative habitats. Site selection was based on existing land use maps. The extent of the different types of land use patterns identified during the initial literature and reconnaissance survey was determined using the land use map. Within each land use type, sampling sites were established. Number of sampling sites per land use type was determined based on the extent of the land use type, resource availability and time frame available for sampling. Each sampling site was geo-referenced in order to ensure repeatability of the data.

Line transect surveys were used for sampling terrestrial habitats, while the block count method was used for sampling water bodies. In addition, opportunistic observations were also recorded and used for the compilation of species inventories. A total of 83 line transects were carried out in the different habitat types identified. Each line transect was designed a priori using land use maps and located to capture the maximum environmental gradient. Each transect line was geo-referenced using a hand held GPS for the purpose of repeatability. Both direct observations as well as verifiable indirect observations such as nests, feathers and calls were recorded. The identity and number of individuals were recorded for direct observations.

The classification, nomenclature, endemic status and local names given in this report are in accordance with Kotagama *et al.*, (2006). The conservation status of the species follows IUCN (2007).

Results and Discussion:

A total of 137 bird species belonging to 49 families



were recorded during the survey. This included three endemic species and 25 winter visitors. The avifaunal assemblage also included 1 globally threatened species, *Leptoptilos javanicus* (Lesser Adjutant) which is also listed as a 'Nationally Threatened' species. A detailed list of bird species recorded within the Park is provided in Annex 1.

The species richness of the whole park for avifauna was quite high. Out of the breeding resident species found in Sri Lanka, 51% were recorded within the park. However, overall endemism in the park was relatively low (12%) compared to protected areas in the wet zone (where the endemism may range between 50 to 100%) which is generally the expected result for dry zone habitats. Only about 26% of the winter visitors were recorded during this survey. This could be attributed to the fact that most of the aquatic habitats were surveyed during the non migrant season and consequently many of the migrant species that inhabit these habitats may have been excluded for this reason.

The Wilpattu National Park represents a wide repertoire of eco-systems and habitats. The habitats that are found here can be broadly divided into terrestrial and aquatic habitats. These then can be further categorized into specific habitat types based on the vegetation features of a given habitat. During the course of the field survey six major terrestrial and five major aquatic habitats were identified. A brief description of these habitats and the bird assemblages observed in these habitats are given below.

Dry Mixed Evergreen Forest (DMEF): The DMEF is the most widespread habitat in the Wilpattu National Park. It is a structurally well defined forest habitat consisting of



clearly distinguishable strata, namely the emergent, canopy, subcanopy, shrub and herb layers. Lianas and other climbers are also an important element in the DMEF. The canopy is approximately 20-25 m in height while the emergent's rise to about 3 m or more above the canopy. The 81 species of birds recorded included three species that are endemic to Sri Lanka. It also included three migrants. The most commonly found bird species were *Streptopelia chinensis* (Spotted dove), *Dicaeum erythrorhynchos* (Small flower pecker), *Megalaima zeylanica* (Brown-headed barbet), *Nectarinia zeylonica* (Purple-rumped sunbird), *Oriolus xanthornus* (Black-headed oriole), *Gallus lafayetii* (Sri Lanka jungle fowl), *Psittacula krameri* (Rose-ringed parakeet), *Pycnonotus cafer* (Red-vented bulbul), *Pycnonotus luteolus* (White-browed bulbul), and *Copsychus malabaricus* (White-rumped Shama).

Scrub: This habitat is also known as scrubland or scrub jungle, which is essentially in a state of accelerated flux. It can occur, for instance, as a stage of succession in a highly disturbed or modified environment, such as a freshly abandoned chena, or degraded forest. The stature of the vegetation, including the height, density, profile, species composition and dominance changes gradually with time. If the site is protected from further disturbance, succession will continue with the maturity of many hardwood tree species to a climax stage of DMEF. Scrublands are characterized by having a single stratum of shrubs (2-4 m in height) forming dense thickets. Very often scattered trees are found, which are remnants of the original forest vegetation. The 54

species of birds recorded in this habitat included three species that are endemic to Sri Lanka. The most commonly found bird species were *Streptopelia chinensis* (Spotted dove), *Dicaeum erythrorhynchos* (Small flower pecker), *Nectarinia zeylonica* (Purple-rumped sunbird), *Gallus lafayetii* (Sri Lanka jungle fowl), and *Pycnonotus luteolus* (White-browed bulbul).

Thorn Scrub (TS): The TS is also known as "Lowland semi-deciduous woodlands" (Greller & Balasubramaniam, 1993). It is regarded as a climatic climax in which the nature of the vegetation is determined by seasonal and low annual rainfall (925-1330 mm) with a relatively long drought season generally lasting from February through September (Mueller-Dombois, 1968). The TS is essentially a low (4-6 m in height), open or close unstratified woodland dominated by thorny plant species, which are largely deciduous and distinctly xerophyllous. Lianas and climbers are very frequent. Few isolated trees or patches of trees emerging above the scrub canopy mark its characteristic landscape. It occurs in the coastal and near coastal zones of the lower Kala Oya Basin. This habitat supported a much higher avifaunal diversity (72 species) compared to scrub. The bird assemblage was dominated by *Streptopelia chinensis* (Spotted dove), *Nectarinia zeylonica* (Purple rumped sunbird), *Gallus lafayetii* (Sri Lanka jungle fowl), *Psittacula krameri* (Rose-ringed parakeet), *Orthotomus sutorius* (Common Tailorbird) and *Centropus sinensis* (Greater Coucal).

Scrub on Sand (SS): The SS is an edaphic variation of the DMEF influenced by sandy soils. However, having a few



thorny species among many non-thorny species also indicates some affinity with TS vegetation. SS occurs in the outer peripheries of tanks and villus in the Wilpattu NP in which the soils have high proportions of sand. Even though 55 bird species were recorded in this habitat the relative abundance of birds was low possibly due to low abundance in available food resources.

Floodplain (FP): This is a hydrologically influenced woodland habitat occurring in lowlands which are prone to regular floods caused by Kala Oya outflows during the NE monsoon. Flood plain vegetation consists of open to close low-canopy forest (3-7 m in height). It also contained some species that are specific to saline soils and marshes. This habitat was found to be fairly extensive towards the Kala Oya estuary and supported a rich fauna which comprised of both terrestrial and aquatic species. A total of 82 bird species were recorded in this habitat. However, relative abundance of individual bird species was found to be low.

Riparian Forest (RF): This was the habitat found flanking rivers and streams, the width of which can be as narrow as a few metres on steeper terrain or as wide as 50 m in flat to gently sloping areas. The RF is a special hydrological and perhaps edaphic, habitat influenced by the high water table close to rivers and streams and the mineral-rich alluvium deposited by river outflows during floods. These favorable conditions support relatively luxuriant vegetation dominated by massive ever-

green trees that reach up to about 25 m with a sub-canopy, and a shrub layer which is usually sparse. Lianas are also commonly seen in this habitat. Avifaunal diversity was found to be lowest in this habitat with 36 species recorded.

Mangroves: Mangroves occupy the land-sea interface or the inter-tidal zone which is influenced both by fresh-water in Kala oya and saline (lagoon) water brought in with tides. In the Kala oya estuary, the inter-tidal zone is quite large, and supports lush mangrove vegetation particularly around the river mouth. Mangrove habitats in Kala oya estuary represent one of the least disturbed mangrove areas in Sri Lanka at present. Mangrove areas on the left bank of Kala oya however, have been disturbed due to dumping of top soil from strip mining for limestone for cement production at the Aruwakkalu quarry that is situated adjacent to the estuary. During rains the dumped soil is washed into the estuary through mangrove areas and it has elevated the terrain, thereby reducing the inter-tidal area and consequently the width of the mangrove belt along this bank of the river. Inter-tidal areas associated with Lunu oya, one of the major distributaries of Kala oya estuary supports one of the most structurally diverse mangrove habitats. The mangroves that comprise these habitats are over 20 m in height and on average, more than 75 cm in stem girth. The avifaunal diversity in this habitat was relatively low compared to other habitats surveyed with 53 species recorded, which is generally the case for most mangrove habi-

Table 1. Bird diversity indices for the different habitats sampled in Wilpattu National Park

Habitat type	Richness	Endemicity	Simpsons 1/D	Shannon H	Shannon J
Dry Mixed Evergreen Forest	81	3	60.902	4.118	0.937
Scrub	54	2	45.525	3.731	0.935
Thorn Scrub	72	2	63.901	4.047	0.946
Scrub on Sand	55	1	75.203	3.892	0.971
Flood Plain	82	2	74.031	4.188	0.950
Riverine Forest	36	2	69.176	3.485	0.973
Mangrove	53	1	54.059	3.772	0.950
Salt marsh	56	2	78.333	3.891	0.967
Freshwater Waterhole	63	1	82.101	4.020	0.970
Brackish Water Waterhole	32	1	133.200	3.424	0.988
Small Tank	95	2	72.943	4.276	0.939

tats of Sri Lanka. Frequently seen birds in this habitat includes *Alcedo atthis* (Common Kingfisher), *Nectarinia lotenia* (Loten's Sunbird) and *Megalaima zeylanica* (Brown-headed barbet)

Salt marsh: Salt marshes occur in the upper inter-tidal areas of the Kala Oya estuary where salt water is received only during equinoxial tides. The arid climate that prevails in this area contributes to high soil salinities resulting from high evapo-transpiration rates. Relatively low annual rainfall (1000-1200 mm) received in these areas is inadequate to flush the soil and this leads to building up of soil salinity, particularly in the interior parts of the inter-tidal zones. Such areas are occupied by salt-tolerant herbaceous plant species (saltworts) that are characteristic of salt marsh vegetation. The Salt marshes did not support a rich avifaunal assemblage presumably due to low variation in vegetation and 56 species were recorded. The species assemblage was dominated by aquatic bird species such as *Egretta garzetta* (Little Egret), *Ardeola grayii* (Pond Heron), and *Vanellus indicus* (Red-wattled Lapwing).

Freshwater Waterholes: These water holes are shallow and appear to collect rainwater and spill-over water from streams connected to Kala Oya during the rainy period. They occur in the outer reaches of Kala Oya basin and are of considerable floral diversity. Thalawila is the largest among them and the others include Nelunwila and Penikewila (or Panikkavila) in the central area of Wilpattu. The habitat supported a rich avi-

faunal assemblage with 63 species being recorded. The assemblage was dominated by aquatic species such as *Alcedo atthis* (Common Kingfisher), *Casmerodius albus* (Great Egret), *Anastomus oscitans* (Asian Openbill), *Halcyon smyrnensis* (White-throated Kingfisher), *Hydrophasianus chirurgus* (Pheasant-tailed Jacana), and *Phalacrocorax niger* (Little Cormorant).

Brackish water waterholes: Some water holes such as the Kokkare villu of the WNP have a high salt content (5 parts per thousand in August) and its vegetation show marked differences to that of other freshwater wetlands (water holes) in this part of the basin. Salinity build up in these wetlands might have occurred due to high evaporation rates characteristic to this area. Compared to fresh water waterholes the diversity (32 species) and abundance of birds were much lower in this habitat. This could be due to the high salinity observed in these waterholes which will preclude predominantly freshwater loving water birds. Another factor that may have contributed to this reduced diversity may be the fact that sampling was carried out mostly during the non migrant season which may have left out many of the migrant birds who may use this habitat.

Seasonal Small Tanks: These are tanks that are mainly dependent on rain water. As they have a lower capacity these tanks become completely or partially dry during the dryer period that prevails from around April to September. As these are fairly shallow water bodies, rooted aquatic vegetation can establish easily in these

Table 2. Pair wise comparison of the avifaunal assemblages in the different habitat types present in Wilpattu National Park using the Sorensen similarity coefficient.

	DMEF	SF	TS	SOS	FP	RF	MF	SM	FW	BWW	ST
DMEF											
SF	75.5										
TS	70.5	68.3									
SOS	67.6	60.5	61.4								
FP	72.4	64.7	75.3	54.1							
RF	51.3	48.8	48.2	44.0	55.9						
MF	61.2	61.7	67.2	57.4	62.2	58.4					
SM	66.2	58.2	87.5	55.9	68.1	45.7	60.6				
FW	70.8	58.2	60.8	89.8	56.5	50.5	55.2	53.8			
BWW	51.3	46.5	48.1	64.4	43.8	38.2	44.7	50.0	59.0		
ST	69.3	57.7	69.5	58.7	70.1	40.0	55.4	62.3	62.1	42.5	

water bodies. This vegetation provides a habitat for a number of semi aquatic birds such as *Porphyrio porphyrio* (Purple Swamphen) and *Hydrophasianus chirurgus* (Pheasant-tailed Jacana).

Furthermore, as the tank dries up the exposed tank bed becomes covered with grass and functions as an important feeding ground for many grassland associated bird species such as Priniyas, Bee eaters, and Pipits and an important breeding ground for Lapwings. Since the banks are shallow and graded it allows semi aquatic birds such as Egrets, Herons, and Kingfishers to come and hunt for food, while the open waters are used by Spot-billed Pelicans, Cormorants and Ducks. The catchment area of the tanks also provide habitats for many common terrestrial bird species such as *Centropus sinensis* (Greater Coucal), *Streptopelia chinensis* (Spotted Dove), *Pavo cristatus* (Indian Peafowl), *Psittacula krameri* (Rose-ringed Parakeet), *Acridotheres tristis* (Common Myna), and *Orthotomus sutorius* (Common Tailorbird). Thus these seasonal small tanks play a vital function as important biological repositories in the region.

Of the six terrestrial vegetation types present in the park the highest species richness was recorded in the dry mixed evergreen forest and the flood plain while the lowest species richness was recorded in the riverine vegetation (Table 1). Among the aquatic habitats the highest species diversity was recorded in and around small tanks which forms a very important habitat for many of the bird species that inhabit the Wilpattu National Park. Even though the species richness and abundance was found to be low in the Mangrove and Salt marsh habitats they form important habitats especially for the water birds.

A pair wise comparison of the species assemblages recorded in the 11 different habitats indicated that there is high degree of variation between the species assemblages recorded in the different habitats. This is also supported by the abundance data which indicate that each habitat supports a unique species assemblage and very few species are shared among all 11 habitats surveyed.



Even though Wilpattu National Park is the largest and one of the oldest protected areas in Sri Lanka the avifauna of the park has not been systematically documented. In this paper we attempt to provide a simple description of the avifauna present in the southern part of the park which will serve as a baseline for future studies. The park supports large number of

unique habitats which in turn supports unique avifaunal assemblages. Even though the avifauna observed in the park is low in terms of endemism and threatened species, the park supports large populations of native bird species and therefore plays an important role in conservation of Birds in Sri Lanka.

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Abbreviations used:

WV: Winter Visitor; **ES:** Endemic Species;
NT: Near Threatened; **VU:** Vulnerable

Annex 1. The bird species recorded in Wilpattu NP (NCS: National Conservation Status, GCS: Global Conservation Status, SS: Species status)

Scientific Name	Common Name	SS	NCS	GCS	Scientific Name	Common Name	SS	NCS	GCS
<i>Accipiter badius</i>	Shikra				<i>Pluvialis fulva</i>	Pacific Golden Plover	WV		
<i>Circus aeruginosus</i>	Western Marsh Harrier	WV			<i>Vanellus indicus</i>	Red-wattled Lapwing			
<i>Circus pygargus</i>	Montagu's Harrier	WV			<i>Vanellus malabaricus</i>	Yellow-wattled Lapwing			
<i>Elanus caeruleus</i>	Black-shouldered Kite				<i>Anastomus oscitans</i>	Asian Openbill			
<i>Haliaeetus indus</i>	Brahminy Kite				<i>Ciconia episcopus</i>	Woolly-necked Stork			
<i>Haliaeetus leucogaster</i>	White-bellied Sea-eagle				<i>Ciconia nigra</i>	Black Stork	WV		
<i>Ichthyophaga ichthyaetus</i>	Grey-headed Fish-eagle			NT	<i>Leptoptilos javanicus</i>	Lesser Adjutant		VU	VU
<i>Spilornis cheela</i>	Crested Serpent Eagle				<i>Mycteria leucocephala</i>	Painted Stork			NT
<i>Spizaetus cirrhatus</i>	Changeable Hawk Eagle				<i>Cisticola juncidis</i>	Zitting Cisticola			
<i>Mirafra assamica</i>	Rufous-winged Bushlark				<i>Prinia inornata</i>	Plain Prinia			
<i>Alcedo atthis</i>	Common Kingfisher				<i>Prinia socialis</i>	Ashy Prinia			
<i>Anas querquedula</i>	Garganey	WV			<i>Prinia sylvatica</i>	Jungle Prinia			
<i>Nettapus coromandelianus</i>	Cotton Pygmy-goose				<i>Chalcophaps indica</i>	Emerald Dove			
<i>Anhinga melanogaster</i>	Darter			NT	<i>Ducula aenea</i>	Green Imperial Pigeon			
<i>Apus affinis</i>	House Swift				<i>Streptopelia chinensis</i>	Spotted Dove			
<i>Cypsiurus balasiensis</i>	Asian Palm Swift				<i>Treron bicincta</i>	Orange-breasted Green-pigeon			
<i>Ardea cinerea</i>	Grey Heron				<i>Treron pompadora</i>	Pompadour Green-pigeon			
<i>Ardea purpurea</i>	Purple Heron				<i>Coracias benghalensis</i>	Indian Roller			
<i>Ardeola grayii</i>	Pond Heron				<i>Aegithina tiphia</i>	Common Iora			
<i>Bubulcus ibis</i>	Cattle Egret				<i>Coracina melanoptera</i>	Black-headed Cuckooshrike			
<i>Butorides striatus</i>	Little Heron				<i>Corvus macrorhynchos</i>	Large-billed Crow			
<i>Casmerodius albus</i>	Great Egret				<i>Corvus splendens</i>	House Crow			
<i>Dupetor flavicollis</i>	Black Bittern				<i>Dicrurus caerulescens</i>	White-bellied Drongo			
<i>Egretta garzetta</i>	Little Egret				<i>Dicrurus macrocerus</i>	Black Drongo			
<i>Ixobrychus sinensis</i>	Yellow Bittern				<i>Oriolus xanthornus</i>	Black-hooded Oriole			
<i>Mesophoyx intermedia</i>	Intermediate Egret				<i>Pericrocotus cinnamomeus</i>	Small Minivet			
<i>Nycticorax nycticorax</i>	Black-crowned Night Heron				<i>Pericrocotus flammeus</i>	Scarlet Minivet			
<i>Anthracoceros coronatus</i>	Malabar Pied Hornbill			NT	<i>Tephrodornis pondicerianus</i>	Common Woodshrike			
<i>Ocyrceros gingalensis</i>	Sri Lanka Grey Hornbill	ES			<i>Terpsiphone paradisi</i>	Asian Paradise-flycatcher			
<i>Esacus recurvirostris</i>	Great Thick-knee				<i>Cacomantis passerinus</i>	Grey-bellied Cuckoo	WV		
<i>Caprimulgus asiaticus</i>	Common Nightjar				<i>Clamator jacobinus</i>	Pied Cuckoo			
<i>Caprimulgus atripennis</i>	Jerdon's Nightjar				<i>Cuculus micropterus</i>	Indian Cuckoo			
<i>Centropus sinensis</i>	Greater Coucal				<i>Eudynamis scolopacea</i>	Asian Koel			
<i>Ceryle rudis</i>	Pied Kingfisher				<i>Phaenicophaeus viridirostris</i>	Blue-faced Malkoha			
<i>Charadrius alexandrinus</i>	Kentish Plover				<i>Dendrocygna javanica</i>	Lesser Whistling-duck			
<i>Charadrius dubius</i>	Little Ringed Plover				<i>Halcyon capensis</i>	Stork-billed Kingfisher			
<i>Himantopus himantopus</i>	Black-winged Stilt								

Scientific Name	Common Name	SS	NCS	GCS	Scientific Name	Common Name	SS	NCS	GCS
<i>Halcyon smyrnensis</i>	White-throated Kingfisher				<i>Psittacula krameri</i>	Rose-ringed Parakeet			
<i>Hemiprocne coronata</i>	Crested Treeswift				<i>Pycnonotus cafer</i>	Red-vented Bulbul			
<i>Hirundo rustica</i>	Barn Swallow	WV			<i>Pycnonotus luteolus</i>	White-browed Bulbul			
<i>Chloropsis cochinchinensis</i>	Blue-winged Leafbird				<i>Amaurornis phoenicurus</i>	White-breasted Waterhen			
<i>Hydrophasianus chirurgus</i>	Pheasant-tailed Jacana				<i>Gallinula chloropus</i>	Common Moorhen			
<i>Lanius cristatus</i>	Brown Shrike	WV			<i>Porphyrio porphyrio</i>	Purple Swamphen			
<i>Chlidonias hybridus</i>	Whiskered Tern	WV			<i>Actitis hypoleucos</i>	Common Sandpiper	WV		
<i>Gelochelidon nilotica</i>	Gull-billed Tern	WV			<i>Limosa lapponica</i>	Bar-tailed Godwit	WV		
<i>Merops leschenaultia</i>	Chestnut-headed Bee-eater				<i>Philomachus pugnax</i>	Ruff	WV		
<i>Merops orientalis</i>	Green Bee-eater				<i>Tringa nebularia</i>	Common Greenshank	WV		
<i>Merops philippinus</i>	Blue-tailed Bee-eater	WV			<i>Tringa ochropus</i>	Green Sandpiper	WV		
<i>Copsychus malabaricus</i>	White-rumped Shama				<i>Tringa stagnatilis</i>	Marsh Sandpiper	WV		
<i>Copsychus saularis</i>	Oriental Magpie Robin				<i>Ketupa zeylonensis</i>	Brown Fish Owl			
<i>Cyornis tickelliae</i>	Tickell's Blue Flycatcher				<i>Acridotheres tristis</i>	Common Myna			
<i>Muscicapa daurica</i>	Asian Brown Flycatcher	WV			<i>Sturnus roseus</i>	Rosy Starling	WV		
<i>Saxicoloides fulvicata</i>	Indian Robin				<i>Acrocephalus dumetorum</i>	Blyth's Reed Warbler	WV		
<i>Dicaeum erythrorhynchos</i>	Pale-billed Flowerpecker				<i>Locustella certhiola</i>	Rusty-rumped Warbler	WV		
<i>Nectarina lotenia</i>	Loten's Sunbird				<i>Orthotomus sutorius</i>	Common Tailorbird			
<i>Nectarina zeylonica</i>	Purple-rumped Sunbird				<i>Pellorneum fuscocapillum</i>	Sri Lanka Brown-capped Babbler	ES		
<i>Parus major</i>	Great Tit				<i>Phylloscopus magnirostris</i>	Large-billed Leaf Warbler	WV		
<i>Anthus rufulus</i>	Paddyfield Pipit				<i>Phylloscopus nitidus</i>	Bright green warbler	WV		
<i>Lonchura malacca</i>	Black-headed Munia				<i>Rhopocichla atriceps</i>	Dark-fronted Babbler			
<i>Lonchura punctulata</i>	Scaly-breasted Munia				<i>Turdoides affinis</i>	Yellow-billed Babbler			
<i>Lonchura striata</i>	White-rumped Munia				<i>Threskiornis melanocephalus</i>	Black-headed Ibis			
<i>Motacilla cinerea</i>	Grey Wagtail	WV			<i>Turnix suscitator</i>	Barred Button-quail			
<i>Ploceus philippinus</i>	Baya Weaver				<i>Zosterops palpebrosus</i>	Oriental White-eye			
<i>Megalaima haemacephala</i>	Coppersmith Barbet								
<i>Megalaima zeylanica</i>	Brown-headed Barbet								
<i>Pelecanus philippensis</i>	Spot-billed Pelican			NT					
<i>Phalacrocorax fuscicollis</i>	Indian Cormorant								
<i>Phalacrocorax niger</i>	Little Cormorant								
<i>Francolinus pondicerianus</i>	Grey Francolin								
<i>Gallus lafayetii</i>	Sri Lanka Junglefowl	ES							
<i>Pavo cristatus</i>	Indian Peafowl								
<i>Dinopium benghalense</i>	Black-rumped Flameback								
<i>Pitta brachyura</i>	Indian Pitta	WV							
<i>Tachybaptus ruficollis</i>	Little Grebe								
<i>Psittacula eupatria</i>	Alexandrine Parakeet								



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