

Birds of Natural Wetlands of North-west Punjab, India

R. Bal* and A. Dua

Aquatic Biology Lab., Department of Zoology, Guru Nanak Dev University, Amritsar-143001, Punjab, India
*E-mail: rupalibal@gmail.com

Received: 06.03.2010, Accepted: 19.08.2010

Abstract

Bird community of four natural wetlands around Gurdaspur, Punjab, India has been studied from April 2006-March 2010. Though various conservation strategies are implemented in protected areas still network of unrecognized natural wetlands are ignored. The network of such natural sites is important biodiversity corridor that facilitates the movement of migratory birds. The present study is step towards the protection of these valuable habitats, namely Keshopur Miani Community Reserve, Magarmudian chamm, Shalla Pattan wetland and Kahnuwan Wetland.

Key words: wetlands, birds, Punjab

Introduction

The recent studies assess freshwater biodiversity as the most threatened of all types of biodiversity and wetlands are found to be the richest sites by holding major share of the existing figure (Anon, 2000). It is estimated that freshwater wetlands alone support 20% of the known range of biodiversity in India (Deepa and Ramachandra, 1999).

Wetlands in India cover an area of 58.2 million hectares (Prasad *et al.*, 2002). In Wildlife Institute of India's survey reveals that wetlands are disappearing at a rate of 2% to 3% every year. Freshwater ecosystems are key component in food web and play an important role in nutrient recycling. Many communities depend on the freshwater ecosystems for food and livelihood source. Wetlands are extremely essential to the continued existence of India's diverse populations of wildlife and plant species; a large number of endemic species are wetland dependent. The fate of important birds like Sarus crane (VN) and

Common crane in India is dependent on the small natural wetlands. Natural wetlands of Gurdaspur now came into limelight as the most threatened crane population is coming regularly in winters. Bird diversity at Keshopur community reserve and Magarmudian is enormous. These four small wetlands host about 50 species of migratory birds and about 50000 migratory birds that flock the area during winter migratory season. These rich natural wetlands are extremely threatened because these valuable sites are still unprotected and waiting for action before being vanished in above mentioned sites in district Gurdaspur, Punjab, India. Wakefulness about the significance of wetlands is now very well known to all and was globally recognized.

Study area

Study sites are situated around Gurdaspur from north-west to south-east in clock wise direction i.e., Magarmudian Chhamb in north-west (32°05'30"N and 75°22'35"E),

Keshopur Miani Community Reserve in north (32°05'47"N and 75°24'34"E), Shalla Pattan Wetland in east (32°00'1.6"N and 75°29'42"E) and Kahnuwan Chhamb in south-east (31°57'12"N and 75°27'24"E) (Figure 1). The above-mentioned wetlands are flood plain areas of the river Beas (Tributary of Indus river system). These wetlands are neither Ramsar sites nor do they find a place in National wetland map in India though qualifies and deserve it. They are at the verge of extinction and disintegration due to public apathy. Although these sites are dramatically altered by human activity still continues to provide habitat for many bird and animal species.

Methodology

Observations were made regularly at 15 days interval from April, 2006 to March, 2010 during most active period for birds. Co-ordinates of study sites were recorded with Garmin Global Positioning System. Direct count method was followed to take field data. 10-15 minutes were spent at each point to avoid repeated counting of same bird individual. Observations were carried out with the aid of 10-12×50 Nikon binoculars and photography was done with EOS 1000 D Canon with 75-300 mm telescopic lens. Identification of birds was done using field guides (Ali and Ripely, 1987; Grimmet *et al.*, 1999). Abundance and status of recorded birds was established on frequency of occurrence during field visits. Status of species was classified into resident (R) and winter migrant (WM).

Results and discussion

A total of 233 species of birds belonging to 50 families were recorded from four small natural wetlands around Gurdaspur within

10 km range Table 1. Out of 233 recorded species, 72 are resident, 158 are migratory and 3 having sporadic occurrence. Highest number of birds was recorded in the month of January and lowest number was recorded in the month of June. Among four selected study sites two namely Keshopur Miani Community Reserve and Magarmudian chhamb are holding major share as open water and other two namely Shalla Pattan and Kahnuwan are typically marshy lands along river Beas. Habitat preference has been observed in different bird species as common coot (*Fulica atra*), common pochard (*Aythya ferina*), pintail (*Anas acuta*), gadwall (*Anas strepera*), mallard (*Anas platyrhynchos*) dominates open water wetlands whereas common cranes (*Grus grus*), Sarus crane (*Grus antigone*), Whooly necked stork (*Ciconia episcopus*), Bar headed geese (*Anser indicus*) and huge variety of raptor dominates marshy lands. Our four year study establishes the richness of these wetlands in respect of bird fauna which are excellent indicators of ecological health. These wetlands are not Ramsar sites nor did they find any place in National wetland map though they qualifies and deserve it.

References

- Ali, S. and S.D. Ripley 1987. *Compact handbook of the birds of India and Pakistan together with those of Bangladesh, Nepal, Bhutan and Sri Lanka*. Oxford University Press, Delhi.
- Anonymous 2000. *Wetland values and functions. The Ramsar Bureau*. Gland, Switzerland. pp. 20-25.
- Deepa, R.S. and T.V. Ramachandra 1999. *Impact of urbanization in the interconnectivity of wetlands*. Paper presented at the National Symposium on Remote Sensing Applications for Natural Resources: Retrospective and

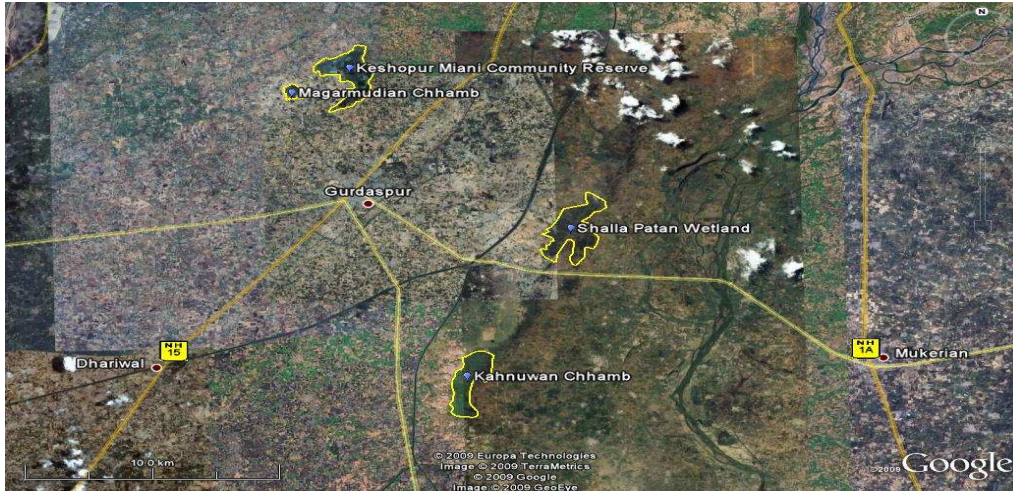


Figure 1. Map of the study area

Table 1. Total bird species recorded

Common name	Scientific name	Status / occurrence
Family: Accipitridae		
Black Eagle	<i>Ictinaetus malayensis</i>	IB/R
Black Kite	<i>Milvus migrans migrans</i>	RB/UC
Black Winged Kite	<i>Elanus caeruleus</i>	RB/C
Bonellis Eagle	<i>Hieraaetus fasciatus</i>	RB/UC
Booted Hawk Eagle	<i>Hieraaetus pennatus</i>	RB/UC
Brahminy Kite	<i>Haliastur indus</i>	IB/UC
Changeable Hawk Eagle	<i>Spizaetus cirrhatus limnaeetus</i>	RB/UC
Crested Hawk-Eagle	<i>Spizaetus cirrhatus cirrhatus</i>	RB/C
Crested Serpent Eagle	<i>Spilornis cheela</i>	RB/C
Great Spotted Eagle	<i>Aquila clanga</i>	WM/R
Hen Harrier	<i>Circus cyaneus</i>	WM/R
Honey Buzzard	<i>Pernis ptilorhyncus</i>	IB/UC
Indian White Backed Vulture	<i>Gyps bengalensis</i>	RB/C
Lesser Spotted Eagle	<i>Aquila pomarina</i>	WM/R
Marsh Harrier	<i>Circus aeruginosus</i>	WM/C
Osprey	<i>Pandion Haliaeetus</i>	RB/UC
Pallass Fishing Eagle	<i>Haliaeetus leucoryphus</i>	RB/UC
Pallid Harrier	<i>Circus macrourus</i>	WM/R
Pariah Kite	<i>Milvus migrans govinda</i>	IB/UC
Scavenger Vulture	<i>Neophron percnopterus</i>	RB/C
Shikra	<i>Accipiter badius</i>	RB/UC

Short Toed Eagle	<i>Circaetus gallicus</i>	RB/UC
Tawny Eagle	<i>Aquila rapax vindhiana</i>	WM/R
White Eyed Buzzard	<i>Butastur teesa</i>	RB/R
Family: Alaudidae		
Ashy Crowned Sparrow Lark	<i>Eremopterix grisea</i>	RB/UC
Bush Lark	<i>Mirafra assamica</i>	RB/UC
Crested Lark	<i>Galerida cristata</i>	RB/C
Eastern Sky Lark	<i>Alauda gulgula</i>	RB/UC
Indian Bush Lark	<i>Mirafra erythroptera</i>	RB/UC
Sky Lark	<i>Alauda arvensis</i>	RB/UC
Family: Alcedinidae		
Common Kingfisher	<i>Alcedo atthis</i>	RB/C
Himalayan Pied Kingfisher	<i>Ceryle rudis</i>	WM/C
Lesser Pied Kingfisher	<i>Megaceryle lugubris</i>	WM/R
Stork Billed Kingfisher	<i>Pelargopsis capensis</i>	RB/UC
White-Breasted Kingfisher	<i>Halcyon smyrnensis</i>	RB/C
Family: Anatidae		
Common Merganser	<i>Mergus merganser</i>	WM/R
Common Pochard	<i>Aythya ferina</i>	WM/C
Common Teal	<i>Anas crecca</i>	WM/C
Eurasian Wigeon	<i>Anas penelope</i>	WM/C
Gadwall	<i>Anas strepera</i>	WM/C
Garganey	<i>Anas quer queedula</i>	WM/UC
Lesser Whistling Duck	<i>Dendrocygna javanica</i>	RB/C
Mallard	<i>Anas platyrhynchos</i>	WM/UC
Pintail	<i>Anas acuta</i>	WM/C
Redcrested Pochard	<i>Netta rufinna</i>	WM/C
Ruddy Shelduck(Brahminy Duck)	<i>Tadorna ferruginea</i>	WM/C
Shoveler	<i>Anas clypeata</i>	WM/C
Greylag Geese	<i>Anser anser</i>	WM/C
Barheaded Geese(Nanjai)	<i>Anser indicus</i>	WM/C
Family: Apodidae		
House Swift	<i>Apus affinis</i>	RB/C
Palm Swift	<i>Cypsiurus balasiensis</i>	RB/UC
Family: Ardeidae		
Black Bittern	<i>Ixobrychus flavicollis</i>	RB/UC
Cattle Egret	<i>Bubulcus ibis</i>	RB/C
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>	RB/UC
Grey Heron	<i>Ardea cinerea</i>	RB/UC
Large Egret	<i>Ardea alba</i>	RB/C
Little Egret	<i>Egretta garzetta</i>	RB/C
Night Heron	<i>Nycticorax nycticorax</i>	RB/UC

Pond Heron Or Paddy Bird	<i>Ardeola grayii</i>	RB/C
Purple Heron	<i>Ardea purpurea</i>	RB/C
Smaller Egret	<i>Egretta intermedia</i>	RB/C
Yellow Bittern	<i>Ixobrychus sinensis</i>	RB/UC
Family: Bucerotidae		
Common Grey Hornbill	<i>Ocyrceros birostris</i>	RB/C
Indian Pied Hornbill	<i>Anthracoceros albirostris</i>	RB/C
Family: Campephagidae		
Bay Backed Shrike	<i>Lanius viltatus</i>	RB/C
Long Tailed Shrike	<i>Lanius schach</i>	RB/C
Scarlet Minivet	<i>Pericrocotus flammeus</i>	WM/UC
Small Minivet	<i>Pericrocotus cinnamomeus</i>	RB/C
Family: Capitonidae		
Blue Throated Barbet	<i>Megalaima asiatica</i>	RB/UC
Coppersmith Barbet	<i>Megalaima haemacephala</i>	IB/UC
Large Green Barbet	<i>Megalaima zeylanica</i>	RB/C
Family: Caprimulgidae		
Franklin,S Nightjar	<i>Caprimulgus affinis</i>	RB/C
Little Nightjar	<i>Caprimulgus asiaticus</i>	RB/UC
Family: Caruidae		
Common Crane	<i>Grus grus</i>	WM/C
Demoiselle Crane	<i>Grus virgo</i>	WM/R
Sarus Crane	<i>Grus antigone</i>	RB/C
Family: Charadriidae		
Bartailed Godwit	<i>Limo'sa lapponica</i>	WM/R
Black-Tailed Godwit	<i>Limosa limosa</i>	WM/R
Common Redshank	<i>Tringa totanus</i>	WM/C
Common Sandpiper	<i>Tringa hypoleucos</i>	WM/C
Curlew (Eurasian)	<i>Numenius arquata</i>	WM/R
Fantail Snip (Common)	<i>Gallinago allinago</i>	WM/UC
Green Sandpiper	<i>Tringa ochropus</i>	WM/C
Green Shank	<i>Tringa nebularia</i>	WM/C
Jack Snipe	<i>Gallinago minima</i>	WM/UC
Kentish Plover	<i>Charadrius alexandrinus</i>	WM/UC
Little Ringed Plover	<i>Charadrius dubius</i>	BR/C
Little Stint	<i>Calidris minuta</i>	WM/C
Long-Toed Stint	<i>Calidris subminuta</i>	WM/C
Marsh Sandpiper	<i>Tringa stagnatilis</i>	WM/C
Northern Lapwing	<i>Vanellus vanellus</i>	WM/UC
Red-Wattled Lapwing	<i>Vanallus indicus</i>	RB/C
Ruff And Reave	<i>Philomachus pugnax</i>	WM/C
Sppoted Or Dusky Redshank	<i>Tringa erythropus</i>	WM/R

White Tailed Lapwing	<i>Vanellus leucurus</i>	WM/UC
Wood Sandpiper	<i>Tringa glareola</i>	WM/UC
Yellow-Wattled Lapwing	<i>Vanellus malabaricus</i>	IB/R
Family: Ciconiidae		
Painted Stork,	<i>Mycteria leucocephala</i>	RB/UC
Woolly Necked Stork	<i>Ciconia episcopus</i>	WM/C
Family: Columbidae		
Blue Rock Pigeon	<i>Columba livia</i>	RB/C
Indian Ring Dove	<i>Streptopelia decaocto</i>	RB/C
Little Brown Dove	<i>Streptopelia senegalensis</i>	RB/C
Red Turtle Dove	<i>Streptopelia tranquebarica</i>	RB/C
Rufous Turtle Dove	<i>Streptopelia orientalis</i>	RB/UC
Spotted Dove	<i>Streptopelia chinensis</i>	RB/C
Family: Coraciidae		
Indian Roller	<i>Coracias benghalensis</i>	RB/C
Family: Corvidae		
House Crow	<i>Corvus splendens</i>	RB/C
Indian Tree Pie (Rufous)	<i>Dendrocitta vagabunda</i>	RB/C
Jungle Crow	<i>Corvus macrorhynchos</i>	RB/C
Family: Cuculidae		
Common Hawk Cuckoo	<i>Cuculus varius</i>	SM/C
Indian Cuckoo	<i>Cuculus micropterus</i>	SM/C
Koel-Cuckoo	<i>Eudynamis scolopacea</i>	RB/C
Large Couca (Crow Pheasant)	<i>Centropus sinensis</i>	RB/C
Lesser Coucal	<i>Centropus toulou</i>	RB/C
The Cuckoo	<i>Cuculus canorus</i>	SM/UC
Family: Dicruridae		
Ashy Drongo	<i>Dicrurus leucophaeus</i>	RB/C
Black Drongo	<i>Dicrurus adsimilis</i>	RB/C
White-Bellied Drongo	<i>Dicrurus caerulescens</i>	RB/C
Family: Falconidae		
Laggar Falcon	<i>Falco biarmicus jugger</i>	WM/R
Peregrine Falcon	<i>Falco peregrinus japonensis</i>	WM/R
Family: Hirundinidae		
Plain Sand Martin	<i>Riparia paludicola</i>	RB/UC
Swallow	<i>Hirundo rustica</i>	WM/UC
Wire-Tailed Swallow	<i>Hirundo smithii</i>	RB/UC
Family: Irenidae		
Iora (Indian Iora)	<i>Aegithina tiphia</i>	RB/UC
Family: Jacanidae		
Bronzewinged Jacana	<i>Metopidius indicus</i>	RB/C
Pheasant Tailed Jacana	<i>Hydrophasianus chirurgus</i>	RB/C

Family: Laniidae		
Bay Backed Shrike	<i>Lanius vittatus</i>	RB/UC
Blacked Shrike Or Rufous (Longtailed)	<i>Lanius schach</i>	IB/R
Southern Grey Shrike	<i>Lanius meridionalis</i>	RB/UC
Family: Laridae		
Black Bellied Tern	<i>Sterna acuticauda</i>	IB/R
Black Headed Gull	<i>Larus ridibundus</i>	WM/R
Brown Headed Gull	<i>Larus brunnicephalus</i>	WM/R
Common Tern	<i>Sterna hirundo</i>	RB/C
Great Black Headed Gull	<i>Larus ichthyaetus</i>	WM/R
Indian River Tern	<i>Sterna aurantia</i>	RB/C
Family: Meropidae		
Blue-Tailed Bee-Eater	<i>Merops philippinus</i>	RB/C
Green Bee-Eater	<i>Merops orientalis</i>	RB/C
Family: Motacillidae		
Grey-Wagtail	<i>Motacilla cinerea</i>	WM/C
Pied Wagtail (White Wagtail)	<i>Motacilla alba</i>	WM/C
Yellow Headed Wagtail/ Citrine Wagtail	<i>Motacilla citreola</i>	WM/C
Yellow Wagtail	<i>Motacilla flava</i>	WM/C
Family: Muscicapinae		
Blue-Throated Fly Catcher	<i>Muscicapa rubeculoides</i>	IB/UC
Darksided Flycatcher	<i>Muscicapa sibirica</i>	WM/UC
Rufous Gorgeted Flycatcher	<i>Ficedula strophhiata</i>	RB/UC
Slaty Blue Fly Catcher	<i>Ficedula tricolor</i>	WM/UC
Tickell'S Blue Fly Catcher	<i>Muscicapa tickelliae</i>	RB/UC
White-Browed Fan Tail Fly Catcher	<i>Rhipidura aureola</i>	RB/UC
White-Throated Fantail Fly Catcher	<i>Rhipidura albicollis</i>	RB/UC
Yellow Bellied Fan Tail Fly Catcher	<i>Rhipidura hypoxantha</i>	WM/UC
Red-Breasted Fly Catcher	<i>Ficedula strophhiata parya</i>	WM/C
Family: Nectariniidae		
Crimson Sunbird	<i>Aethopyga siparaja</i>	RB/UC
Purple Sun Bird	<i>Nectarinia asiatica</i>	RB/C
Family: ORIOLIDAE		
Black Headed Oriole	<i>Oriolous xanthornus</i>	RB/C
Black Naped Oriole	<i>Oriolous chinensis</i>	RB/UC
Eurasian Golden Oriole	<i>Oriolous oriolus</i>	RB/UC
Family: Pachycephalinae, Sub- Sylviinae		
Brown Leaf Warbler Or Chiffchaff	<i>Phylloscopus collybita</i>	WM/UC
Dull Green Leaf Warbler	<i>Phylloscopus trochiloides</i>	WM/UC
Striated Marsh Warbler	<i>Megalurus palustris</i>	RB/UC
Tailor Bird	<i>Orthotomus sutorius</i>	RB/C
Family: Pachycephalinae, Sub- Turdinae		

R. Bal and A. Dua / Our Nature (2010) 8: 72-81

Black Redstart	<i>Phoenicurus ochruros</i>	WM/UC
Brown Rock Chat	<i>Cercomela fusca</i>	RB/UC
Collared Bush Chat (Stone Chat)	<i>Saxicola torquata</i>	RB/C
Dark-Grey Bush Chat	<i>Saxicola ferrea</i>	WM/UC
Magpie Robin	<i>Copsychus saularis</i>	RB/C
Pied Bush Chat	<i>Saxicola caprata</i>	RB/C
White Capped Water Redstart	<i>Chaimarrornis leucocephalus</i>	RB/C
White Tailed Stone Chat	<i>Saxicola leucura</i>	IB/UC
Family: Paridae		
Black Lored Tit	<i>Parus xanthogenys</i>	RB/R
Great Tit	<i>Parus major</i>	RB/C
Family: Phalacrocoracidae		
Darter	<i>Anhinga rufa</i>	RB/C
Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	IB/C
Large Cormorant	<i>Phalacrocorax carbo</i>	RB/C
Little Cormorant	<i>Phalacrocorax niger</i>	RB/C
Family: Phasianidae		
Black Breasted Quail (Rain Quail)	<i>Coturnix coromandelica</i>	RB/C
Black Partridges/Francolin	<i>Fringilla monticola</i>	RB/C
Blue Breasted Quail	<i>Coturnix chinensis</i>	RB/C
Common Peafowl	<i>Pavo cristatus</i>	RB/C
Grey Partridges /Francolin	<i>Fringilla monticola</i>	RB/C
Grey Quail(Common)	<i>Coturnix coturnix</i>	RB/C
Red Jungle Fowl	<i>Gallus gallus</i>	RB/C
Family: Picidae		
Black Backed Woodpecker	<i>Chrysocolaptes fectivus</i>	RB/R
Golden Beaked Woodpecker	<i>Dinopium shorii</i>	RB/C
Himalayan Pied Woodpecker	<i>Dendrocopos himalaYensis</i>	RB/UC
Larger Golden Backed Woodpecker	<i>Chrysocolaptes lucidus</i>	IB/UC
Lesser Golden Backed Woodpecker/ Black Fumped Flameback	<i>Dinopium benghalense</i>	RB/C
Wryneck	<i>Jynx torquilla</i>	WM/UC
Yellow Crowned Woodpecker	<i>Dendrocopos mahrattensis</i>	RB/UC
Family: Pittidae		
Indian Pitta	<i>Pitta brachyura</i>	RB/C
Family: Ploceidae		
Baya, Weaver Birds	<i>Ploceus philippinus</i>	RB/C
Black Throated Weaver Bird / Black Breasted	<i>Ploceus benghalensis</i>	RB/UC
Chest Nut- Shouldered Petronia	<i>Petronia xanthocollis</i>	RB/C
House Sparrow	<i>Passer domesticus</i>	RB/C
Red Munia Or Avadavat	<i>Estrilda amandava / Amandava amandava</i>	RB/C
Scaly-Breasted Munia/Spotted Munia	<i>Lonchura punctulata</i>	RB/C

R. Bal and A. Dua / Our Nature (2010) 8: 72-81

Streaked Weaver Bird	<i>Ploceus manyar</i>	RB/UC
Spanish Sparrow	<i>Passer hispaniolensis</i>	WM/UC
Family: Podicipedidae		
Great Crested Grebe	<i>Podiceps cristatus</i>	WM/R
Little Grebe	<i>Podiceps ruficollis</i>	RB/UC
Family: Prionopidae		
Common Wood Shrike	<i>Tephrodornis pondicerianus</i>	RB/C
Family: Psittacidae		
Alexandrine Parakeet	<i>Psittacula eupatria</i>	RB/C
Grey Headed Parakeet	<i>Psittacula finschii</i>	RB/C
Plum Headed Parakeet	<i>Psittacula cyanocephala</i>	RB/C
Rose Ringed Parakeet	<i>Psittacula krameri</i>	RB/C
Family: Pycnonotidae		
Black-Headed Yellow Bulbul	<i>Pycnonotus melanicterus flaviventris</i>	RB/UC
Grey Bulbul (Black Bulbul)	<i>Hypsipetes madagascariensis</i>	RB/C
Red Vented Bulbul	<i>Pycnonotus cafer</i>	RB/C
Red Whiskered Bulbul	<i>Pycnonotus jocosus</i>	RB/C
White Cheeked Bulbul	<i>Pycnonotus leucogenys</i>	RB/UC
Family: Rallidae		
Coot	<i>Fulica atra</i>	WM/C
Indian Gallinule/Indian Moorhen	<i>Gallinula chloropus</i>	RB/C
Purple Gallinule/Purple Moorhen	<i>Porphyrio porphyrio</i>	RB/C
Water Cock	<i>Gallicrex cinerea</i>	W/R
White Breasted Water Hen	<i>Amauromis phoenicurus</i>	RB/C
Family: Recurvirostridae		
Avocet	<i>Recurvirostra avosetta</i>	WM/UC
Black Winged Stilt	<i>Himantopus himantopus</i>	RB/C
Family: Strigidae		
Barn Owl	<i>Tyto alba</i>	RB/R
Barred Owlet	<i>Glaucidium cuculoides</i>	RB/UC
Great Horned Owl (Eagle Owl)	<i>Bubo bubo</i>	RB/UC
Jungle Owlet	<i>Glaucidium radiatum</i>	RB/C
Spotted Owlet	<i>Athene brama</i>	RB/UC
Family: Sturnidae		
Bank Myna	<i>Acridotheres ginginianus</i>	RB/C
Common Myna	<i>Acridotheres tristis</i>	RB/C
Common Starling	<i>Sturnus vulgaris</i>	WM/C
Jungle Myna	<i>Acridotheres fuscus</i>	RB/UC
Family: Tadorna		
Common Shelduck	<i>Tadorna tadorna</i>	WM/UC
Family: Threskiornithidae		
Black Headed Ibis	<i>Threskiornis melanocephalus</i>	WM/C

R. Bal and A. Dua / Our Nature (2010) 8: 72-81

Black Ibis (Nanjai)	<i>Pseudibis papillosa</i>	RB/C
Spoonbill (Nanjai)	<i>Platalea leucorodiu</i>	WM/R
Family: Timalinae		
Jungle Babbler (Seven Sisters)	<i>Turdoides striatus</i>	RB/C
Striated Babbler	<i>Turdoides earlei</i>	IB/R
White Throated Laughing-Thrush	<i>Garrulax albogularis</i> :	WM/R
Family: Turnicidae		
Barred Button Quail	<i>Tumix suscitator</i>	RB/R
Family: Upupidae		
Hoopoe	<i>Upupa epops</i>	RB/C

RB= Resident breeders, S= Sporadic, WM= Winter migrant, UC= Uncommon, R= Rare, C= Common

Perspective (XIX-XXI, 1999), Indian Society of Remote Sensing, Bangalore.

Grimmett, R., C. Inskipp and T. Inskipp 1999. *Pocket guide to the birds of the Indian subcontinent*. Oxford University Press, Delhi.

Prasad, S.N., T.V. Ramachandra, N. Ahalya, T. Sengupta, A. Kumar, A.K. Tiwari, V.S. Vijayan and L. Vijayan 2002. Conservation of wetlands of India- A review. *Tropical Ecology* **43(1)**: 173-186.