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## Avifaunal diversity in and around Berhampore, Murshidabad district, West Bengal, India

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### Abstract

Avifauna are important for the ecosystem as they play various roles as scavenger, pollinators, seeds dispersal agent and predators of insect pest and an important indicator to evaluate different habitats both qualitatively and quantitatively. 13% of the world's bird fauna are found in Indian sub-continent. Estimated 1228 bird species diversity found in India. Berhampore is a district town located in Murshidabad district of West Bengal, India has 64 species of birds belonging to 34 families. Among the recorded species, 71.87% were resident, 15.62% were local migrant and 12.50% were winter migrant species. The order Passeriformes represented by 15 families and 22 species, dominated the birds community of the study area. It accounted for 34.37% of the total number of bird species in study area. In order Passeriformes, family Sturnidae has five species. In which common myna (*Acridotheres tristis*) are most abundant in the study area.

**Keywords:** Avifauna, diversity, family, migrant, order, resident, species.

### 1. Introduction

Indian subcontinent, a part of the vast Oriental Bio-geographic regions, is very rich in biodiversity. Indian biodiversity includes large number of species of invertebrates, 2546 species of fishes, 204 species of amphibians, 446 species of reptiles, 1228 species of birds and 372 species of mammals [1]. According to an estimate total 1228 bird species found in Indian sub-continent, out of the more than 9000 bird species of the world, over 13% of the world's bird fauna are found in India [2]. Avifauna are important for the ecosystem as they play various roles as scavenger, pollinators, seeds dispersal agent and predators of insect pest and an important indicator to evaluate different habitats both qualitatively and quantitatively [3-5]. Unfortunately global diversity of birds is decreasing due to anthropogenic activities and climate changes [6-8]. IUCN Red List of endangered birds has already recognized 1226 bird species as threatened globally and India with 88 threatened bird species [9]. Avian diversity has been studied by vast number of researchers in different regions in India [10-11, 2]. Roy *et al.* [14] studied avifaunal diversity in three different national parks and reserve forest in North Bengal and founded a total of 117 bird species belonging to 42 families. Patra and Chakrabarti [15] observed 86 bird species belonging 10 orders and 35 families in Digha in West Bengal. Pramanik *et al.* [16] studied Plats and animal diversity in Kulik Bird Sanctuary in Raigang, west Bengal and observed 29 bird species with 20 families. Khan [17] recorded a total of 198 species in the Sundarbans of Bangladesh. Though there are numerous habitats for birds across West Bengal, India. Very few have been systematically surveyed to understand their importance for birds. In Berhampore town, Murshidabad district, West Bengal, India has long been known to support rich diversity of birds. Ahran Lake situated in Murshidabad district harbor large populations of resident and migrant water birds [18]. The diversity, composition and structure of bird community in city and urban area have been poorly documented in particular to Murshidabad district, West Bengal, India. Thus, the present survey was conducted to document and assesses the avifauna found in and around Berhampore town at Murshidabad district in West Bengal, India.

### 2. Material and Methods

#### 2.1. Study Area

Berhampore is a district town located between 24.1N 88.25E in Murshidabad district of West Bengal, India (**Figure-1**). The town is located in bank of Indian Holy River Ganga also called Bhagirathi or Hoogly and communicated with National Highway 34 and Eastern Rail.

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The river bank side has numerous holy plants Banyan (*Ficus benghalensis*) and Peepal (*Ficus religiosa*) trees are sacred grooves and acts as habitat of numerous bird species. This town has thick cover of vegetation in many of its parts like Pulses Cultivation and Research Centre, Central Sericulture Research and Training Institute campus, mango orchards also has many wetlands that invite large number of migratory birds especially in winters. Present study was conducted in different habitats of the study area, viz., roadside plantation, agricultural fields, orchards and wetlands to record avian diversity from November, 2014 to April 2015.



Fig 1: Study Area

2.2. Methods

Observations were made in the morning and afternoon between the months of November 2014 to April 2015. Surveys were conducted daily basis at different locations like agriculture fields, wetlands and tanks, river banks, road side tree, sericulture research campus, mango orchards, Municipal dumping area. At each sighting birds were counted using a binocular and identified. In case of doubtful identification, photographs were taken and the species is identified later by consulting experts. The identification of birds was carried out using standard literature of Ali [19], Ali and Ripley [11]. All observations will be made by using binocular. Photographic documentation was done using Nikon D3200 with lens 55 mm and 200 mm.

3. Results

The checklist of recorded bird species along with their common name, scientific name and residential status is given in Table 1. The check list of species was prepared following Ali<sup>19</sup>, Manakadan and Pittie<sup>[20]</sup> and Grimmett and Inskipp<sup>[2]</sup>. Abbreviations used in Table 1 for residential status: R- Resident; M- Migrant; LM-Local Migrant; WM-Winter Migrant. The family Order Passeriformes represented by 15 families with 22 species, dominated the bird community of the study area.

Table 1. It shows orders, families, common names, scientific names and residential status of the birds. Here R = Resident, M = Migrant, WM = winter migrant, LM = Local migrant.

Order	Family	Common Name	Scientific Name	ResidentialStatus
Passeriformes	Dicruridae	Black Drongo	<i>Dicrurus macrocercus</i>	R
	Corvidae	House Crow	<i>Corvus splendens</i>	R
		Jungle Crow	<i>Corvus macrorhynchos</i>	R
		Rufous Indian Treepie	<i>Dendrocitta vagabunda</i>	R
	Muscicapidae	Indian Robin	<i>Saxicolodius fulvicatus</i>	R
	Pycnonotidae	Red-Vented Bulbul	<i>Pycnonotus cafer</i>	R
	Nectariniidae	Purple Sunbird	<i>Nectarinia asiatica</i>	R
	Sturnidae	Common Myna	<i>Acridotheres tristis</i>	R
		Jungle Myna	<i>Acridotheres fuscus</i>	R
		Bank Myna	<i>Acridotheres ginginianus</i>	LM
		Asian Pied Starling	<i>Sturnus contra</i>	R
	Passeridae	Brahminy Myna	<i>Sturnus pagodarum</i>	LM
		House Sparrow	<i>Passer domesticus</i>	R
		Paddyfield Pipit	<i>Anthus rufulus</i>	R
		Common Tailorbird	<i>Orthotomus sutorius</i>	R
		Jungle Babbler	<i>Turdoides striatus</i>	R
		Oriental Bush Lark	<i>Calandrella brachydactyla</i>	WM
Brown Shrike		<i>Lanius cristatus</i>	R	
Oriolidae		Eurasian Golden Oriole	<i>Oriolus oriolus</i>	R
		Black Hooded Oriole	<i>Oriolus xanthornus</i>	R
Hirundinidae		Barn Swallow	<i>Hirundo rustica</i>	R
Rhipiduridae	White-Throated Fantail	<i>Rhipidura albicollis</i>	R	
Cuculiformes	Cuculidae	Asian Koel(♂♀)	<i>Eudynamys scolopaceus</i>	R
		Greater Coucal	<i>Centropus sinensis</i>	R
		Common Hawk-Cuckoo / Brain Fever Birds	<i>Hierococcyx varius</i>	R
Ciconiiformes	Charadriidae	Red-Wattled Lapwing	<i>Vanellus indicus</i>	LM
		Yellow-Wattled Lapwing	<i>Vanellus malabaricus</i>	WM
		Grey-headed Lapwing	<i>Vanellus cinereus</i>	WM
		Little Ringed Plover	<i>Charadrius dubius</i>	WM
	Scolopacidae	Common Snipe	<i>Gallinago gallinago</i>	WM
		Wood Sandpiper	<i>Tringa glareola</i>	WM
		Common Sandpiper	<i>Actitis hypoleucos</i>	WM
	Ardeidae	Cattle Egret	<i>Bubulcus ibis</i>	R
		Little Egret	<i>Egretta garzetta</i>	R
		Large Egret	<i>Casmerodius albus</i>	R
		Indian Pond Heron	<i>Ardeola grayii</i>	R

	Phalacrocoracidae	Little Cormorant	<i>Phalacrocorax niger</i>	R
		Large Cormorant	<i>Phalacrocorax carbo</i>	LM
	Ciconiidae	Woolly-necked Stork	<i>Ciconia episcopus</i>	LM
		Asian Openbill-Stork	<i>Anastomus oscitans</i>	LM
Coraciformes	Halcyonidae	White-Breasted Kingfisher	<i>Halcyon smyrnensis</i>	R
		Stork-billed Kingfisher	<i>Plargopsis (Halcyon) capensis</i>	R
	Cerylidae	Pied Kingfisher	<i>Ceryle rudis</i>	R
	Meropidae	Small Bee-Eater	<i>Merops orientalis</i>	R
Blue-Tailed Bee Eater		<i>Merops philippinus</i>	R	
Columbiformes	Columbidae	Spotted Dove	<i>Streptopelia chinensis</i>	R
		Eurasian Collared Dove	<i>Streptopelia decaocto</i>	R
		Blue Rock Pigeon	<i>Columba livia</i>	R
		Yellow-Footed Green Pigeon	<i>Treron phoenicopterus</i>	WM
Psittaciformes	Psittacidae	Rose ringed Parakeet	<i>Psittacula krameri</i>	R
		Alexandrine Parakeet	<i>Psittacula eupatri</i>	R
		Plum-headed Parakeet	<i>Psittacula cyanocephala</i>	R
Gruiformes	Rallidae	White breasted Waterhen	<i>Amaurornis phoenicurus</i>	R
Strigiformes	Tytonidae	Barn Owl	<i>Tyto alba</i>	R
	Strigidae	Spotted Owlet	<i>Athene brama</i>	R
Upupiformes	Upupidae	Common Hoopoe	<i>Upupa epos</i>	R
Apodiformes	Apodidae	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	R
		House Swift	<i>Apus affinis</i>	R
Accipitriformes	Accipitridae	Shikra	<i>Accipiter badius</i>	LM
		Black/Pariah Kite	<i>Milvus migrans</i>	LM
		Black-shouldered Kite	<i>Elanus caeruleus</i>	LM
		Brahminy Kite	<i>Haliastur indus</i>	LM
Piciformes	Megalaimidae	Copper smith Barbet	<i>Megalamia haemacephala</i>	R
	Picidae	Lesser Golden-back Woodpecker	<i>Dinopium benghalense</i>	R

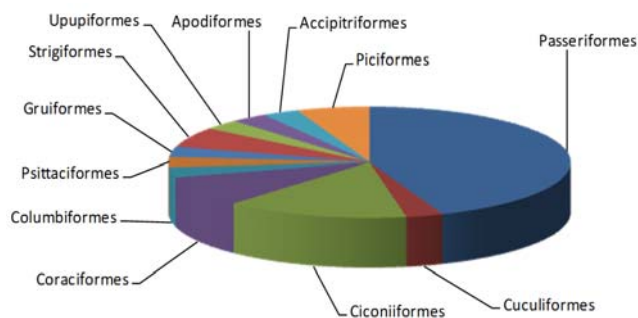


Fig 2: Species Diversity in 12 Orders of Birds in Berhampore

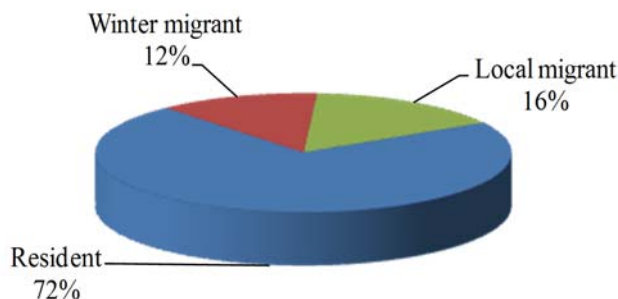


Fig 3: Residential Status of Birds in Berhampore

#### 4. Discussion

A total of 64 species of birds belonging to 34 families were recorded in and around Berhampore town in the month of November 2014 to April 2015. Of the 64 species about 46 are residential, 10 are local migrant, 8 are winter migrants. The checklist of recorded bird species along with their common name, scientific name and residential status is given in **Table 1**. The order Passeriformes represented by 15 families and 22

species, dominated the birds community of the study area (**Figure 2**). It accounted for 34.37% of the total number of bird species in study area. The Order Cuculiformes, Columbiformes, Psittaciformes, Gruiformes, Upupiformes, Apodiormes, Accipitriformes and Piciformes are less common and are 1.56%. Among the recorded species, 71.87% were resident, 15.62% were local migrant and 12.50% were winter migrant species. In order Passeriformes, family Sturnidae has five species. In which common myna (*Acridotheres tristis*) are most abundant in the study area. The Common Myna has been described as a “serious pest bird” in Australia [21]. The International Union for the Conservation of Nature has ranked the Indian Myna among the world’s top 100 most invasive plants and animals [22]. Indian Mynas thrive in and around human-modified environments, reaching high densities of more than 200 birds per km<sup>2</sup> in towns [23]. White-Breasted Kingfisher (*Halcyon smyrnensis*) in family Halcyonidae found in wetlands, tanks and agricultural fields, is the State Birds in West Bengal [24]. The winter migratory birds displayed a definite pattern specific to species for arrival at and departure from various wetland. They appeared at the wetland from November and stayed up to March. The peak of winter population of migratory birds was observed during the months of December to February. The basic requirements of migratory birds at their wintering ground are adequate food supply and safety [25], which are fulfilled by Bishnupur wetland, Chaltia wetland and nearby agricultural fields and also by River Ganges. Birds in different habitats are under threat due to increased anthropogenic activities resulting in habitat destruction and fragmentation [26-28]. The various landscapes serve as a balancing reservoir for sustaining native flora and fauna [13, 29]. Large numbers of anthropogenic activities like uses of pesticide in agriculture, deforestation, livestock grazing, hunting, fishing, development of industries and urbanization, sound pollution are some of the major threats to the bird biodiversity in the study area.

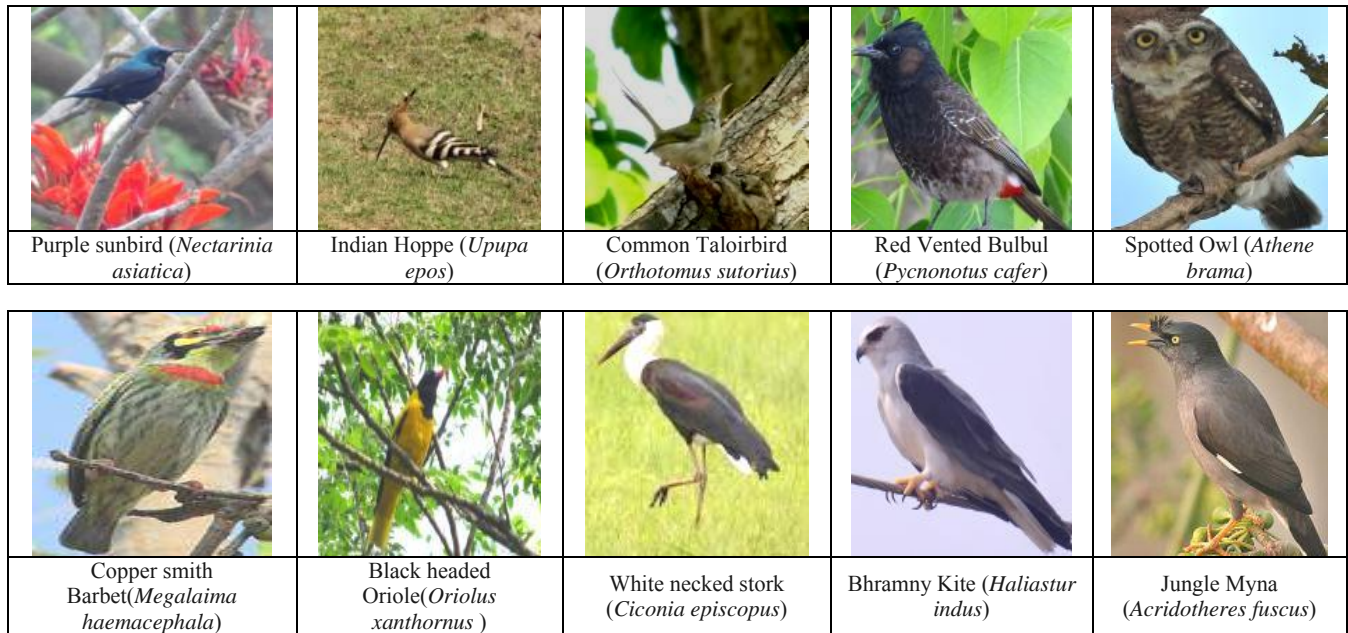


Fig 3: Different Birds species

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