

A checklist of the avian diversity in different habitat types in Greater Jamugurihat area, Sonitpur, Assam

Manisha Das

*Department of Zoology, Tyagbir Hem Baruah College,
Jamugurihat-784180, Assam, India*

ABSTRACT

A total number of 72 species of birds belonging to 35 families were recorded from greater Jamugurihat area, Sonitpur, Assam, based on fieldwork carried out in April 2018 to March 2019. Out of these species 19 were water birds, 7 were water dependent birds while 46 species were terrestrial birds. There were one endangered species, one vulnerable species and one species were listed as near threatened. The avian diversity of this area is under threat due to various anthropogenic and environmental problems. The conservation threats of this area have been highlighted in this paper.

Key words: Avian diversity, Jamugurihat area, Anthropogenic, Conservation

INTRODUCTION

Diversity of avifauna is one of the most important ecological indicators to evaluate the quality of habitats. Birds are often common denizens of ecosystems and they have been considered as an indicator species of inhabited areas (Blair, 1999). Population of birds is a very sensitive indicator of degree of population in both terrestrial and aquatic ecosystem (Gaston, A.J. 1975, Ali, S. *et al.*, 1987). The estimation of local densities of avifauna helps to understand the abundance of various species of other organisms (Turner, W.R. 2003). Wetlands are the most productive important part of the global ecosystem, which support many valuable aquatic flora and fauna (Anonymous, Ramsar convention Bureau). Man's dependence and association with the wetlands has been started since the beginning of civilization. Wetlands are locally known as 'Beel', 'Jolah', 'Pitoni' etc. It plays a vital

role in creation of good ecosystem balance and in maintaining healthy environmental condition of the area. Wetland and water birds are inseparable elements and support a rich array of water birds communities (Grimmett. R. *et al.*, 2007). Water birds are an important component of most of the wetland ecosystem as they occupy several trophic levels in the food web of wetland nutrient cycles. (Custer, T.W. *et al.*, 1977)

As far as bird diversity is concerned, India is a blessed country, having more than 1300 species which is over 13% of the world bird species (Grimmett. R., C. *et al.*, 1999). But unfortunately India is the third among the countries having the largest number of threatened and rare species followed by Brazil and Indonesia (Dandapat, A.D. *et al.*, 2010). However, there is insufficient knowledge available regarding the bird communities and their dynamics in India (Khan, J.A., *et al.*, 1993, Safiq, T., S. *et al.*, 1997, Stattersfield, A.J., *et al.*, 1998)

*Corresponding author's Email: manishadas245@gmail.com

The eastern Himalaya, including NE India is a global hotspot of biodiversity and Endemic Bird area (Myers, N., *et al.*, 2000, Mittermeier, R.A., *et al.* 2005). Continued degradation of forest, habitat loss, urbanization are the major threats for avian biodiversity in North-East India (Pandit, M.K., *et al.* 2007), which has remained poorly explored and much of its biodiversity has been lost without any record (Singh, S., A. *et al.* 2012). As far as avian diversity of North-East region is concerned, many workers have been done a lot of work on this regard. The state of Assam is a constituent unit of Eastern Himalayan Biodiversity Region; one of the two biodiversity 'Hot spots' in the country. The climate of Assam is typically tropical monsoon rainfall type with high level of humidity and heavy rainfall. The climatic conditions and wide variety of physical features witnessed in Assam have resulted in a diversity of ecological habitats such as forests, grasslands, wetlands, which harbour and sustain wide ranging floral and faunal species placing.

Assam is one of the 'endemic bird areas' in the world. With 950 bird species the state is home to 53.5% of bird species found in the Indian Sub-continent and 17 species of birds are endemic to Assam. This richness and diversity in bird species is due to the fact that the North-East Assam in particular, is a meeting place of two zoogeographic sub-regions, the Indian and the Indo-Chinese within the framework of the oriental Zoogeographic Region (Choudhury, A.U., 2000). Assam is having more than 750 wetland areas which support a vast diversity of bird. Water birds need feeding and shelter ground in and around wetland areas. Wetland provides many such habitats where they can lay their eggs.

Jamuguri is a town in Sonitpur District of Assam. This is a newly planned town. The town is situated beside northern part of the river Brahmaputra and has a number of open field, paddy field area and swampy areas. Jamuguri falls in the tropical rainforest climate region. Climatic condition is very good for various

types of agricultural crops. Climatic condition and physical features of this area help to rich the avifaunal diversity. The present study is focused not only preparing the checklist of birds but also to find out their occurrence, status as well as to create awareness for their conservation.

MATERIALS AND METHODS

Study area: Jamugurihat occupies an area of 20 sq km, and the latitude 26.7314°N and longitude 92.9276°E. Jamugurihat lies between Kani Dekorai and Jia Bhoroli river. Sijusa is situated in the northern part of Jamugurihat and the 6th edition of Kaziranga National Park is extended upto Panur the southern part of Jamugurihat.

Data collection: Field surveys were conducted for a period of one year starting from April 2018 to March 2019 covering all the seasons' i.e. Pre-monsoon, Monsoon, Retreating monsoon and winter. The survey followed Line transect method (Bibby, C., *et al.* 199218). All the survey was carried out early morning, first three hours after sunrise and evening three hours before sunset. For data collection four to five days were allotted in one month. For watching and identifying birds Binocular (10x50) and telescope (25-40x) are used and field characteristics were noted down during the study period. Opportunistic observations were also added to the list so as to miss any species during the survey period. The photographs were taken during the study period with Canon camera with high zoom (48x).

Data analysis: Birds are identified using field guide books. The common and scientific names of the birds given in the world, recommended English Names. The threatened status of the birds given in the checklist is per IUCN Red List of Threatened Taxa (Birdlife International (2008). The birds were listed following the nomenclature of Rasmussen & Anderson (2012). Their Migratory and Resident status was categorized as R=Resident, W= Winter visitor, L=Local and altitudinal migrant, Bm=Breeding migrant

(summer), P=Passage migrant birds according to (Choudhury, A. (2000) in the context of Assam. Their IUCN status is also confirmed from the Red Data list for birds (www.iucn.org)

RESULT AND DISCUSSION

During the study period a total number of 72 species of birds belonging to 35 families were recorded. Out of these 19 species were water birds, 7 water dependent birds while 46 species were terrestrial birds depicted in the **Table-1**. All the species were least concerned except one endangered species viz., Greater Adjutant, one Vulnerable species, viz., Lesser Adjutant and one species were listed as near threatened, viz., River turn as per the IUCN Red list. There were 67 resident species, 8 winter visitor, two species, i.e, Common hoopoe and Indian roller was Local and altitudinal migrant and one species, i.e., Indian Plaintive Cuckoo was breeding migrant in summer.

18 species were represented only by one species each. The dominant family of birds were Ardidae contributing to 8 species(11.11 %) followed by Saturnidae contributing 6 species each (8.33%), Jacanidae contributing 4 species (5.55%), Motacillidae, Cuculidae, Corvidae, Coraciidae, Megalaimidae, Rallidae contributing 3 species each(4.16%), Columbidae, Paridae, Muscicapidae, Laniidae, Passcridae,

Pycronotidae, Ciconiidae and Anatidae contributing 2 species each (2.77%) and Cisticolidae, Ploceidae, Estrildidae, Discruridae, Oriolidae, Campepphagidae, Zosteropidae, Meropidae, Picidae, Phalacrocoacidae,Upipidae, Accipitridae, Phasianidae, Psittacidae, Laridae, Leiothrichidae, Strgidae, Tytonidae and Hirundinidae contributes 1 species each in the community comprising of 1.38%.

Birds occupy all most all habitat types and diversity of birds often serves as a good indication of overall diversity of a given area. Birds are also known to be responsive to any kind of changes to their ambient conditions hence can be used as bio-indicator. The present short span study which is recorded 72 bird species reflects a moderate type of bio-diversity for the present study areas. Study area indicates 19 species are water birds, 7 water dependent species and 46 birds in terrestrial habitat. Large number of water logging area, beels and open fields are found in the Panpur area. Panpur is nearer to the Kaziranga National Park so different types of faunal diversity are prevailing here. Water birds prefer swamps with vegetation for their nesting. But the human activities disturb them and birds migrated to another places for searching their home.

Table 1. Check list of birds recorded in Tezpur area during April 2018- March 2019

Family	Sl no.	Common name	Scientific name	Conser- vation status	Habitat	Migratory or Resident
Saturnidae	1	Jungle myna	<i>Acridotheres fuscus</i>	LC	T	R
	2	Common myna	<i>Acridotheres tristis</i>	LC	T	R
	3	Bank myna	<i>Acridotheres ginianus</i>	LC	T	R
	4	Pied myna	<i>Gracupica contra</i>	LC	T	R
	5	Common hill myna	<i>Gracula religiosa</i>	LC	T	R

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	6	Grey headed starling	<i>Sturnia malabarica</i>	LC	T	R
Muscicapidae	7	Red breasted flycatcher	<i>Ficedula parva</i>	LC	T	R
	8	Oriental magpie robin	<i>Copsychus saularis</i>	LC	T	R
Motacillidae	9	White wagtail	<i>Motacilla alba</i>	LC	WD	W
	10	Grey wagtail	<i>Motacilla cinerea</i>	LC	WD	W
	11	Olive backed pipit	<i>Anthus hodgsoni</i>	LC	T	R
	12	Paddy field pipit	<i>Anthus rufulus</i>	LC	T	R
Cisticolidae	13	Common tailor bird	<i>Orthotomus sutorius</i>	LC	T	R
Paridae	14	Cinereous tit	<i>Parus cinereus</i>	LC	T	R
	15	Sultan tit	<i>Melanochlora sultanea</i> <i>sultanea</i>	LC	T	R
Ploceidae	16	Baya weaver	<i>Ploceus philippinus</i>	LC	T	R
Estrildidae	17	Scaly breasted munia	<i>Lonchura punctulata</i>	LC	T	R
Discuridae	18	Black drongo	<i>Edolius macrocercus</i>	LC	T	R
Pycnonotidae	19	Red vented bulbul	<i>Pycnonotus cafer</i>	LC	T	R
	20	Red whiskered bulbul	<i>Pycnonotus jocosus</i>	LC	T	R
Passeridae	21	House sparrow	<i>Passer domesticus</i>	LC	T	R
	22	Eurasian tree sparrow	<i>Passer rutilans</i>	LC	T	R
Oriolidae	23	Black hooded oriole	<i>Oriolus xanthornus</i>	LC	T	R
Corvidae	24	Rufous treepie	<i>Dendrocitta vagabunda</i>	LC	T	R
	25	House Crow	<i>Corvus splendens</i>	LC	T	R
	26	Eastern jungle crow	<i>Corvus macrorhychos</i>	LC	T	R
Campephagidae	27	Large cuckoo shrike	<i>Coracina macei</i>	LC	T	R
Zosteropidae	28	Oriental white eye	<i>Zosterops palpebrosus</i>	LC	T	R
Laniidae	29	Grey backed shrike	<i>Lanius tephronotus</i>	LC	T	R
	30	Long tailed shrike	<i>Lanius schach</i>	LC	T	R
Meropidae	31	Green bee eater	<i>Merops orientalis</i>	LC	T	R
Columbidae	32	Yellow-footed Green pigeon	<i>Treron Phoenicoptera</i>	LC	T	R

	33	Spotted dove	<i>Spilopelia chinensis</i>	LC	T	R
Cuculidae	34	Asian koel	<i>Eudynamys scolopaceus</i>	LC	T	R
	35	Indian cuckoo	<i>Cuculus micropterus</i>	LC	T	R
	36	Indian plaintive cuckoo	<i>Cucomantis passerinus</i>	LC	T	Bm
Megalaimidae	37	Blue throated barbet	<i>Megalaima asiatica</i>	LC	T	R
	38	Lineated barbet	<i>Megalaima lineata</i>	LC	T	R
	39	Coppersmith barbet	<i>Xantholaema haemacephala</i>	LC	T	R
Picidae	40	Stripe breasted woodpecker	<i>Dendrocopos atratus</i>	LC	T	R
Coraciidae	41	Indian roller	<i>Coracias benghalensis</i>	LC	T	R, L
	42	White breasted kingfisher	<i>Halcyon smyrnensis</i>	LC	WD	R
	43	Common kingfisher	<i>Alcedo atthis</i>	LC	WD	R
Ardidae	44	Little cormorant	<i>Microcarba niger</i>	LC	WB	R
	45	Great cormorant	<i>Phalacrocorax carbo</i>	LC	WB	R
	46	Indian pond heron	<i>Ardeola grayii</i>	LC	WB	R
	47	Great egret	<i>Egretta alba</i>	LC	WB	R
	48	Cattle egret	<i>Bubulcus ibis</i>	LC	WB	R
	49	Intermediate egret	<i>Egretta intermedia</i>	LC	WB	R
	50	Little egret	<i>Egretta garzetta</i>	LC	WB	R
	51	Grey heron	<i>Ardea cinerea</i>	LC	WB	R
Jacaniidae	52	Bronze winged jacana	<i>Metopidius indicus</i>	LC	WB	R
	53	Pleasant tailed jacana	<i>Hydrophasianus chirurgus</i>	LC	WB	R
	54	Red watted lapwing	<i>Vanellus indicus</i>	LC	WD	R
	55	Yellow watted lapwing	<i>Vanellus Malabaricus</i>	LC	WD	R
Ciconiidae	56	Greater adjutant	<i>Leptoptilos dubius</i>	EN	WB	R

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	57	Lesser adjutant	<i>Leptoptilos javanicus</i>	VU	WB	R
	58	Asian openbill	<i>Anastomus oscitans</i>	LC	WB	R
Phalacrocoacidae	59	Indian cormorant	<i>Phalacrocorax fuscicollis</i>	LC	WB	R
Upipidae	60	Common hoope	<i>Upupa epops</i>	LC	T	R,W, L
Anatidae	61	Spotbill duck	<i>Anas poecilorhyncha</i>	LC	WB	R
	62	Lesser whistling duck	<i>Dendrocygna javanica</i>	LC	WB	W, M
Accipitridae	63	Black kite	<i>Milvus migrans</i>	LC	T	R
Rallidae	64	White breasted water hen	<i>Amaurnis phoenicurus</i>	LC	WB	W,R
		Common moorhen	<i>Gallinula chloropus</i>	LC	WB	W,R
	66	Water cock	<i>Gallicrex cinerea</i>	LC	WB	R
Leiotherichidae	67	Jungle babbler	<i>Turdoides striata</i>	LC	T	R
Psittacidae	68	Red ringed parakeet	<i>Psittacula krameri</i>	LC	T	R
Laridae	69	River turn	<i>Sterna aurantia</i>	NT	WD	W,R
Strigidae	70	Spotted owlet	<i>Athene brama</i>	LC	T	R
Tytonidae	71	Barn owlet	<i>Tyto alba</i>	LC	T	R
Hirundinidae	72	Barn swallow	<i>Hirundo rustica</i>	LC	T	W

Based on Rasmussen, P.C. & Anderson, J.C. (2012)

IUCN Red list Legend: LC-Least concerned; VU -Vulnerable; NT=Near threatened; EN-Endangered

Habitat: WB-Water bird; WD-Water dependent Bird; T- Terrestrial bird.

Migratory or Resident status: R-Resident, W- Winter visitor, L-Local and altitudinal migrant, Bm- Breeding migrant (summer), P-Passage migrant.

CONCLUSION

Avifaunal diversity has been decreasing due to the ecosystem as they play various roles as Scavengers, pollinators, predators of insect pest, bio-

indicators of different kinds of environment like urbanization and industrialization (Sharma, I.K. 1982, Bhattacharjee, P.C., *et al.*, 1985), human disturbance (Talukdar, B.K. 1997, Chakravarty, A.K.1981) illumination (Sandhu, P.S. *et al.*, 1980). They are very sensitive indicators of pollution problems and function as early warning system (Gole, P. 1984, Becker, P.H. 2003). Protection and maintenance of avifaunal diversity is important in maintaining species diversity of plants and animals. Therefore birds are reared not only for preserving ecological balance but also for products of economic importance and as down feathers (Someone, A., M. *et al.*, 2002). The study site is rich in avifauna but problems have arisen recently as the habitats of these birds are threatened due to unplanned activities being

carried out in favour of human development. In the area of Jamugurihat includes swampy areas, paddy fields and river bank of mighty Brahmaputra. Human activities like construction of buildings and noise due to vehicles are creating

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