

Biological Forum – An International Journal

11(2): 27-49(2019)

ISSN No. (Print): 0975-1130 ISSN No. (Online): 2249-3239

A Preliminary Survey of Bird Communities around Jammu (Jammu & Kashmir)

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ABSTRACT: Landscape heterogeneity strongly influences the bird community structure. With the objectives to understand the richness, assemblages and guild structure of the bird communities in the contagious habitats around Jammu, we carried out the organized avian surveys from January 2017 to December 2017. During this study, 207 species of birds belonging to 63 families and 16 orders were recorded from six contrasting habitats (aquatic and terrestrial). Order Passeriformes (35 families) and family Muscicapidae (17 species) numerically dominated the area. The protected areas and semi disturbed landscapes revealed higher species richness while the moderately disturbed aquatic habitats reflected higher dominance. Based on our observations, 89 birds were found migratory and 10 as globally threatened. The baseline information so generated will prove handy in devising conservation and management plan for birds around Jammu.

Keywords: Bird communities, assemblages, guild structure, contrasting habitats, globally threatened, management plan.

How to cite this article: Sohil, Asha and Sharma, Neeraj (2019). A preliminary Survey of Bird Communities around Jammu, (Jammu & Kashmir). *Biological Forum – An International Journal*, **11**(2): 27-49.

INTRODUCTION

Birds are forestanding species of global biodiversity found in every habitat (Olechnowski, 2009) and key indicators of ecosystem health and stress (Taper et al., 1995). Habitat heterogeneity is paramount for avian diversity and distribution (Karr, 1976; Manhães and Loures-Ribeiro, 2005). Knowledge of the composition of bird communities is crucial to determine the ecology and health of the local ecosystem or regional landscapes (Nagya et al., 2017). Understanding of bird community structure and diversity is therefore essential to recognize the importance of landscapes for avian conservation (Kattan and Franco, 2004). India, one of the 17 mega diverse nations (Mittermeier and Mittermeier, 1997), ranks 9th in terms of bird species richness (BirdLife International, 2019). This spectacular avian diversity is attributed to unique and heterogeneous bio-geographical and ecological features and a high degree of eco-climatic variations (Praveen et al., 2016). The avian rich state of Jammu and Kashmir (Rahmani et al., 2013) with 28 important bird areas (Islam and Rahmani, 2012) is home to 12 globally threatened bird species and six near-threatened species (Rahmani et al., 2013). All the three regions viz., Jammu, Kashmir and Ladakh have been well surveyed for birds. Besides the opportunistic sightings, many researchers, amateur birders and hobbyists have contributed to the avian database for the state which

includes the work of Pfister (2001), Gupta (2002), Ahmed and Sahi (2005), Namgail (2005), Kumar and Sahi (2006), Wani and Sahi (2007), Aggarwal et al., (2008), Kotwal et al., (2009), Namgail and Yom-Tov (2009), Choudhary (2010), Kait (2011). Bhat and Bhat (2012), Khah et al., (2012), Hussain and Kait (2013), Singh et al., (2014), Kait et al., (2014), Ahmed et al., (2015), Sharma and Saini (2012), Noor et al., (2014), Pandotra and Sahi (2014), Syed (2014), Bharadwaj (2017), Raina (2017), Sharma and Kichloo (2015), Sharma and Sohil (2017), Sharma and Sharma (2017), Fazili et al., (2017), Sharma (2017), Kichloo et al., (2018) and Sharma et al., (2018). The present study aimed at exploring the avian diversity, their trophic and habitat guilds, migratory and conservation status in the mosaic landscapes around Jammu. Besides defining the bird assemblages among the contrasting landscapes, the results will prove handy in devising the effective bird conservation and management strategies for the region.

MATERIALS AND METHODS

Six sites with varied physiography and environmental attributes were selected to understand the avian assemblages and distribution in the inter-connected urban-suburban-agricultural landscapes around Jammu city. Of these, two sections are exclusively aquatic and four terrestrial. The aquatic ecosystems comprised of Nikki Tawi $(32^{\circ}43'14 \text{ N } 74^{\circ}50'17 \text{ E})$ and Gharana wetland conservation reserve $(32^{\circ}34'29 \text{ N } 74^{\circ}40'06 \text{ E})$.

Nikki Tawi is a right bank offshoot of river Tawi and Gharana wetland conservation reserve, a small eutrophic wetland spread in 185 acres lie very close to the international Indo-Pak border. The terrestrial ecosystems included two protected areas, the Ramnagar Wildlife Sanctuary (32°45'08 N 74°52'15 E) and BahuMahamaya forest $(32^{\circ}43'43 \text{ N } 74^{\circ}53'29 \text{ E})$, an urban forest patch as University of Jammu Campus $(32^{\circ}43'08 \text{ N } 74^{\circ}51'58 \text{ E})$ and Southern Open Plains $(32^{\circ}45'32 \text{ N } 74^{\circ}48'26 \text{ E})$ comprised of mosaic of agricultural fields, ponds, villages and fallows around Gharana wetland (Fig. 1).



Fig. 1. Map of Jammu district showing different study sites.

Monthly field surveys were conducted for a period of one year during January 2017 to December 2017 mainly during the morning and evening hours ranging from 30 minutes to few hours depending on terrain and topography of the area. Twenty linear transects were walked for a variable distance of 50 m to 2 km separated by a 50 m strip on either side to avoid double counting of birds (Bibby et al., 1992). Water birds were counted using visual census (Shah, 1984) and block method (Ahangar, 2008). We noted the information on bird species richness, behaviour, trophic and habitat guilds besides their conservation status. The observations were made using the naked eyes, binoculars, spotting scopes, and the images were captured using the digital camera. Due precautions were taken to avoid any harm to the birds and damage to their habitat. Most of the birds were identified in the field by consulting field Guides (Ali, 2002, Grimmet et al., 2011). The online bird identification platforms like

J & K Birdlife, Indian Birds, Ask id's of Indian Birds, etc. proved quite handy in bird identification. Only the species personally seen or captured are presented here. Praveen *et al.*, (2016) and Praveen *et al.*, (2018) were followed for the binomial nomenclature and taxonomy to avoid any ambiguity.

We followed MacKinnon and Phillipps (1993) to classify the frequency of occurrence as very common (VC) sighted > 10 times; common (C) sighted from seven to nine times; uncommon (UC) sighted from three to six times; rare (R) sighted once or twice. The feeding guilds have been identified following Shekhawat and Bhatnagar (2014), and habitat guilds evaluated on their habitat preferences. The birds were assigned the migratory and threat status based on the ground records (Grimmet *et al.*, 2011; Kumar, 2018) and IUCN Red List of Threatened Species Version 2019-2.

RESULTS AND DISCUSSION

We observed 207 species of birds belonging to 63 families and 16 orders during the study period. Their distribution (common and binomial names, familial representation), guild structure and migratory status of has been provided in Table-2 & Images 1-207. The peri-urban protected area, Ramnagar Wildlife Sanctuary harbored 112 birds belonging to 46 families and 12 orders followed by a semi-disturbed vast landscape, the Southern Open Plains (108 species in 37 families, 13 orders), Bahu-Mahamaya Forest (106/46 /13), Gharana wetland conservation reserve (105/38/13), University of Jammu Campus (97/ 43/12) and Nikki Tawi (64/23/8) (Fig. 2). Order Passeriformes (35 families) dominated the entire study area, followed by Charadriiformes (6

families). In terms of familial richness, Muscicapidae dominated the field comprising 17 species followed by Accipitridae (11 species). Anatidae and Scolopacidae (10 species each) were recorded exclusively from Gharana wetland conservation reserve and Nikki Tawi. Data analysis of visual abundance revealed that 76 birds (36.71%) were very common, 36 (17.39%) common, 55 (26.57%) uncommon and 40 (19.32%) species spotted once or twice and thus Rare (Fig. 3). Bar-headed Goose recorded the maximum number of 2263 individuals representing the highest abundance (RA=0.14) in Gharana wetland followed by Streak-throated Swallow with 1426 individuals (RA=0.08) dominated the Nikki Tawi. The House Crow, Jungle Babblers, Black-Winged Stilt, etc. were among the other co-dominants.





Fig. 2. Representation of bird species in families and orders at different sites and whole study area.

Fig 3. Visual abundance of birds at different study sites and whole study area.

We identified six different trophic guilds during the surveys. Ninety birds (43.47%) were observed insectivorous (feeding on insects, earthworms, small crustaceans, arthropods etc.) followed by 55 (26.57%) omnivores (feeding on both animals and plants). The carnivores (feeding on large animals, their dead bodies / carcasses) comprised of 44 species and granivorous (feeding exclusively on seeds and grains) included ten species only. The frugivores (fruit-eating) and nectarivores (nectar feeding) included 6 and 2 birds, respectively (Fig. 4). Based on the habitats preferences, we identified 13 principal avian habitat guilds across the whole study area. The subtropical scrub forests recorded the highest number of birds (114 species, 55.07%) followed by urban forests (112, 54.10%),

broadleaved forests (104, 50.24%), subtropical subtropical pine forests (41 birds, 19.80%). Sixty-two species (29.95%)were recorded from agricultural/cultivable fields/fallow lands while 54 species (26.08%) were exclusively aquatic found within or close to Gharana wetland conservation reserve and Nikki Tawi. Around 46 birds (22.22%) were found along Tawi riverbed while 28 birds (13.52%) were found resting/foraging on vegetation around the wetland. Fifteen species (7.24%) were observed from fallow land whereas 12 species (5.79%), mostly raptors seen in flight were included as aerial. Five species (2.41%) were found mainly near the garbage dump while four around the carcass dumps (Fig. 5).



Fig. 4. Trophic guild composition in the study area.



Fig. 5. Habitat guild composition of the study area.

In terms of global conservation status of IUCN 2019-2, viz., Himalayan Vulture (Gyps species six himalayensis), Northern Lapwing (Vanellus vanellus), Painted Stork (Mycteria leucocephala), River Tern (Sterna aurantia), Alexandrine Parakeet (Psittacula eupatria nipalensis), Black-headed Ibis (Threskiornis melanocephalus) fall in Near Threatened Category (NT) whereas Egyptian Vulture (Neophron percnopterus percnopterus), Steppe Eagle (Aquila nipalensis) were recognized as Endangered (EN) and Indian Spotted Eagle (Clanga hastata) and Woollynecked Stork (Ciconia episcopus) as Vulnerable (VU). 197 birds were found least concerned (LC) category (Table 1).

Table 1: Table showing global conservation status (as per IUCN 2019-2) of birds in study area.

IUCN threat category	Species	Proportion (%)
Least Concerned	197	95
Near Threatened	6	3
Endangered	2	1
Vulnerable	2	1

The Jammu region comprising of southern alluvial plains, low lying Shivaliks, Pir-Panjal and some extent of Great Himalaya have been well studied by Choudhary (2002), Sharma (2003), Ahmed and Sahi (2005), Kumar and Sahi (2006), Wani and Sahi (2007), Aggarwal et al., (2008), Kotwal et al., (2009), Choudhary (2010), Kait (2011), Singh et al., (2013), Pandotra and Sahi (2014), Sharma and Kichloo (2015), Sharma and Sohil (2017), Sharma and Sharma (2017), Sharma (2017), Kichloo et al., (2018), Sharma et al., (2018) whereas Shah et al., (2000), Dar and Dar (2009), Hussain et al., (2012), Kait et al., (2014), Noor et al., (2014), Jan et al., (2016). Fazili et al., (2017) carried out the avifaunal study in different parts of Kashmir division. Mishra and Humbert-Droz (1998), Namgail and Yom-Tov (2009), Pfister (2004), Motup (2013) and Ahmed et al., (2015) carried avifaunal surveys in Trans-Himalayan Ladakh. Passeriformes appeared as the most abundant order as reported by Kumar (2008), Thakur et al., (2010), Chopra et al., (2012), Dey et al., (2013), Pattnaik et al., (2016), Khan and Pant (2017) in their studies in different part of Indian Himalayan region and that of Jammu and Kashmir (Ahmed and Sahi 2005, Motup 2013, Singh et al., 2013, Thakur et al., 2014, Singh 2015, Singh et al., 2014, Kichloo et al., 2018, Chopra and Sharma 2012 and Sharma et al., 2018). Manakadan and Pittie (2001), Mahabal (2005), Thakur et al., (2010), Naithani and Bhatt (2010), Thakur and Mattu (2011), Joshi and Bhatt (2015), Joshi et al., (2012), Thakur et al., (2012), Singh et al., (2013), Thakur et al., (2014), Kichloo et al., (2018) and Sharma *et al.*, (2018) during their avifaunal studies across the country and in the state of Jammu and Kashmir revealed the dominance of family Muscicapidae.

We observed the highest species richness (N=112) in Ramnagar Wildlife Sanctuary, a peri-urban protected area comprising the subtropical broadleaved forests and dry scrub interspersed with patches of subtropical pine forests and thus provides the conducive habitats for diverse avian communities. Bar-headed Goose (RA=0.14) showed the highest abundance, followed by Streak-throated Swallow (RA=0.08). A massive flock of Bar-headed Goose, an inter-continental winter migrant to India, visit Gharana and adjoining wetlands during early November each year while large nesting colonies of Streak-throated Swallow were seen under the slab of fourth Tawi bridge. Most of the individuals were often seen sallying close to the river, feeding, roosting and nest building. In terms of their food preferences, insectivorous birds dominated other feeding guilds and this is in conformity with Ahmed and Sahi (2005), Wani et al., (2008), Agarwal et al., (2008), Kait (2011), Khah et al., (2012), Singh et al., (2013), Motup (2013), Sharma and Kichloo (2015), Kichloo et al., (2018) and Sharma et al., (2018) from different parts of Jammu and Kashmir state. Avifaunal studies carried out in different regions of western Himalaya also revealed similar findings (Joshi and Bhatt, 2015, Thakur et al., 2012, Singh et al., 2014, Kidwai et al., 2013, Chandel et al., 2014). In terms of habitat guilds, the study indicated that more than half of the species preferred the forested landscapes. Sharma and Kichloo (2015), Ahmed et al., (2015), Aggarwal et al., (2015), Sharma et al., (2018) observed similar trends during their surveys in different parts of the state. Saikia and Saikia (2015) recorded similar observations for the birds of Assam. In terms of migratory status, more than half (118) of the birds were found to be resident, while 89 species were found to be migrants with majority being winter migrants. Singh et al., (2013), Pandotra and Sahi (2014), Kait et al., (2014), Ahmed et al., (2015), Jan et al., (2016), Kichloo et al., (2018) and Sharma et al., (2018) recorded similar observations during their surveys in Jammu and Kashmir.

The present study concluded that the bird species composition and abundance varied among the six study sites. Bird species richness was found highest in terrestrial habitats attributed to corresponding vegetational diversity, while aquatic habitats supporting adequate food source represented the highest abundance. Being a preliminary study, it calls for more intensive surveys and investigations to establish the drivers of avian distribution, richness and diversity in the region at a larger spatial scale.

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Table 2: Species distribution (common and binomial names, familial representation), guild structure and migratory status of birds in mosaic landscapes around Jammu.

a	T 1 1 1		NUT	GW		DUU G		000	TT 1 1 1	F			W.C.N.	
Sr.No.	Binomial name	Common name	NT	GH	JU	RWLS	BMF	SOP	Habitat	G	MS	VA	IUCN	Image
ORDE	R: ACCIPITRIFORMES													
Family	Accipitridae						-	-				-		
1	Accipiter badius dussumieri (Temminck, 1824)	Shikra	-	-	+	-	+	+	SS,BF,UF,AE	С	R	С	LC	1
2	Aquila nipalensis (Hodgson, 1833)	Steppe Eagle	+	+	+	-	+	+	SS,UF,RB,AE,AF	C	R	С	EN	2
3	Butastur teesa (Franklin,1831)	White-eyed Buzzard	-	-	-	-	+	+	BF,AE	C	R	R	LC	3
4	Buteo rufinus rufinus (Cretzschmar, 1829)	Long-legged Buzzard	-	+	-	+	+	+	SS,BF,UF,AE	C	R	R	LC	4
5	Circus aeruginosus (Linnaeus, 1758)	Western Marsh Harrier	-	+	-	-	-	+	AE,AF	С	WV	R	LC	5
6	Circus cyaneus (Linnaeus, 1766)	Hen Harrier	-	+	-	-	-	+	AE,AF	С	WV	R	LC	6
7	Clanga hastata (Lesson, 1834)	Indian Spotted Eagle	-	+	-	-	-	+	AF,AE	С	R	R	VU	7
8	Elanus caeruleus vociferus (Latham, 1790)	Black-winged Kite	-	+	-	-	+	+	SS,BF,UF,AE,AF	С	R	С	LC	8
9	Gyps himalayensis (Hume, 1869)	Himalayan Vulture	-	-	+	+	+	+	BF,PF,AE,CD	С	R	UC	NT	9
10	Milvus migrans lineatus (Gray,1831)	Black- eared Kite	+	+	+	-	-	+	SS,UF,RB,GD,AE, AF	C	R	С	LC	10
11	Neophron percnopterus percnopterus (Linnaeus, 1758)	Egyptian Vulture	+	-	+	-	+	+	GD,AE,RB,CD	С	R	UC	EN	11
ORDE	R:ANSERIFORMES													
Family	: Anatidae													
12	Anas acuta (Linnaeus, 1758)	Northern Pintail	-	+	-	-	-	-	AQ	0	WV	UC	LC	12
13	Anas crecca (Linnaeus, 1758)	Common Teal	-	+	-	-	-	-	AQ	0	WV	VC	LC	13
14	Anser albifrons albifrons (Scopoli,1769)	Greater White -fronted Goose	-	+	-	-	-	-	AQ	0	WV	R	LC	14
15	Anser anser rubrirostris (Swinhoe, 1871)	Greylag Goose	-	+	-	-	-	-	AQ	0	WV	UC	LC	15
16	Anser indicus (Latham, 1790)	Bar-headed Goose	-	+	-	-	-	-	AQ	0	WV	VC	LC	16
17	Dendrocygna javanica (Horsfield,1821)	Lesser Whistling Duck	-	+	-	-	-	-	AQ	0	SV	R	LC	17
18	Mareca strepera (Linnaeus, 1758)	Gadwall	-	+	-	-	-	-	AQ	0	WV	С	LC	18
19	Spatula clypeata (Linnaeus, 1758)	Northern Shoveler	-	+	-	-	-	-	AQ	0	WV	VC	LC	19
20	Spatula querquedula (Linnaeus, 1758)	Garganey	-	+	-	-	-	-	AQ	0	WV	С	LC	20
21	Tadorna ferruginea (Pallas, 1764)	Ruddy Shelduck	-	+	-	-	-	-	AQ	0	WV	R	LC	21
ORDE	R: BUCEROTIFORMES													
Family	: Bucerotidae													
22	Ocyceros birostris (Scopoli,1786	Indian Grey Hornbill	+	-	+	+	+	-	SS,UF	0	R	VC	LC	22
Family	: Upupidae													
23	Upupa epops epops (Linnaeus, 1758)	Common Hoopoe	+	-	+	+	+	+	SS,UF,FL	Ι	R	VC	LC	23
Order	CHARADRIIFORMES	• •												
Family	: Charadriidae													
24	Charadrius dubius jerdoni (Legge, 1880)	Little Ringed Plover	+	+	-	-	-	+	AQ,RB	C	R	VC	LC	24
25	Vanellus indicus (Boddaert, 1783)	Red-wattled Lapwing	+	+	+	+	+	+	UF,RB,FL	Ι	R	VC	LC	25
26	Vanellus leucurus (Lichtenstein, 1823)	White-tailed Lapwing	-	+	-	-	-	-	AQ,RB	С	WV	R	LC	26
27	Vanellus vanellus (Linnaeus, 1758)	Northern Lapwing	+	-	-	-	-	-	AQ,RB	С	WV	R	NT	27
Family	: Jacanidae													
28	Hydrophasianus chirurgus (Scopoli,1786)	Pheasant-tailed Jacana	-	+	-	-	-	-	AQ	Ι	SV	С	LC	28
Family	: Laridae				L			t	<u>`</u>	4				
29	Sterna aurantia (Gray,1831)	River Tern	+	+	-	-	-	-	AQ,RB	C	R	С	NT	29
30	Sterna hirundo tibetana (Saunders, 1876)	Common Tern	+	-	-	-	-	-	AQ,RB	С	SV	UC	LC	30

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Sr.No.	Common name	Binomial name	NT	GH	JU	RWLS	BMF	SOP	Habitat	FG	MS	VA	IUCN	Image
Order:	CHARADRIIFORMES													
Family:	Recurvirostridae													
31	Himantopus himantopus himantopus (Linnaeus, 1758)	Black-winged Stilt	+	+	-	-	-	+	AQ,RB,LZ	С	WV	VC	LC	31
Family:	Rostratulidae								-					
32	Rostratula benghalensis (Linnaeus, 1758)	Greater Painted-snipe	-	+	-	-	-	-	AQ,LZ	0	R	R	LC	32
Family:	Scolopacidae													
33	Actitis hypoleucos (Linnaeus, 1758)	Common Sandpiper	+	+	+	-	-	+	AQ,RB,LZ	Ι	R	VC	LC	33
34	Calidris minuta (Leisler, 1812)	Little Stint	+	+	-	-	-	+	AQ,RB,LZ	Ι	PM	VC	LC	34
35	Calidris pugnax (Linnaeus, 1758)	Ruff	+	+	-	-	-	-	AQ,LZ	Ι	WV	С	LC	35
36	Calidris temminckii (Leisler, 1812)	Temminck's Stint	+	+	-	-	-	-	AQ,LZ	Ι	WV	UC	LC	36
37	Gallinago gallinago gallinago (Linnaeus, 1758)	Common Snipe	+	+	-	-	-	+	AQ,LZ	Ι	WV	UC	LC	37
38	Tringa erythropus (Pallas,1764)	Spotted Redshank	-	+	-	-	-	-	AQ,LZ	Ι	PM	R	LC	38
39	Tringa nebularia (Gunnerus, 1767)	Common Greenshank	+	+	-	-	-	+	AQ,LZ	Ι	WV	VC	LC	39
40	Tringa ochropus (Linnaeus, 1758)	Green Sandpiper	+	+	-	-	-	+	AQ,RB,LZ	Ι	WV	VC	LC	40
41	Tringa tetanus eurhina (Oberholser, 1900)	Common Redshank	+	+	-	-	-	-	AQ,RB	Ι	PM	VC	LC	41
42	Tringa glareola (Linnaeus, 1758)	Wood Sandpiper	+	+	-	-	-	+	AQ,RB,LZ	Ι	WV	VC	LC	42
ORDEF	R: COLUMBIFORMES								-					
Family:	Columbidae													
43	Columba livia intermedia (Strickland, 1844)	Rock Pigeon	+	+	+	+	+	+	UF,RB,FL,AF	G	R	VC	LC	43
44	Streptopelia chinensis chinensis (Scopoli, 1786)	Spotted Dove	+	+	+	+	+	+	SS,BF,UF	G	R	VC	LC	44
45	Streptopelia decaocto decaocto (Frivaldszky, 1838)	Eurasian Collared Dove	+	+	+	+	+	+	UF,AF	G	R	VC	LC	45
46	Streptopelia orientalis meena (Sykes, 1832)	Oriental Turtle Dove	-	-	-	+	+	-	UF	G	SV	R	LC	46
47	Streptopelia senegalensis cambayensis (Gmelin, 1789)	Laughing Dove	+	-	+	+	+	+	SS,BF,UF	G	R	С	LC	47
48	Streptopelia tranquebarica (Hermann, 1804)	Red Collared Dove	-	-	+	+	+	-	SS,BF,UF	G	SV	UC	LC	48
ORDEF	R: CORACIIFORMES													
Family:	Alcedinidae													
49	Alcedo atthis atthis (Linnaeus, 1758)	Common Kingfisher	+	+	+	-	-	-	UF,RB,AQ	С	R	UC	LC	49
50	Ceryle rudis leucomelanurus (Reichenbach, 1851)	Pied Kingfisher	+	+	+	-	-	+	UF,RB,AQ.AF	С	R	С	LC	50
51	Halcyon smyrnensis smyrnensis (Linnaeus, 1758)	White-throated Kingfisher	+	+	+	+	+	+	UF,RB,AQ,AF	С	R	VC	LC	51
52	Megaceryle lugubris continentalis (Temminck, 1834)	Crested Kingfisher	+	+	-	-	-	-	RB,AQ	С	R	R	LC	52
Family:	Coraciidae	-												
53	Coracias benghalensis benghalensis (Linnaeus, 1758)	Indian Roller	-	+	-	+	+	+	AF	С	R	С	LC	53
Family:	Meropidae													
54	Merops orientalis (Latham, 1801)	Green Bee-eater	+	+	+	+	+	+	SS,BF,UF,AF	Ι	R	VC	LC	54
55	Merops philippinus javanicus (Horsfield, 1821)	Blue-tailed Bee-eater	-	+	-	-	+	+	SS,BF,UF,AF	Ι	SV	UC	LC	55
ORDEF	R:CUCULIFORMES	-												
Family:	Cuculidae													
56	Centropus sinensis (Stephens, 1815)	Greater Coucal	-	+	+	+	+	+	SS,BF,UF,AF	0	R	VC	LC	56
57	Clamator jacobinus pica (Hemprich & Ehrenberg, 1833)	Pied Cuckoo	-	-	+	+	+	+	SS,BF,UF	0	SV	R	LC	57
58	Cuculus Canorus bakeri (Hartert, 1912)	Common Cuckoo	-	-	+	-	+	-	SS,BF,UF	С	SV	UC	LC	58
59	Eudynamys scolopaceus scolopaceus (Linnaeus, 1758)	Asian Koel	-	+	+	+	-	+	SS,UF,BF	0	SV	VC	LC	59
60	Hierococcyx varius (Vahl,1797)	Common Hawk Cuckoo	-	-	+	+	-	+	SS,BF,UF	С	R	UC	LC	60

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Sr.No.	Common name	Binomial name	NT	GH	JU	RWLS	BMF	SOP	Habitat	FG	MS	VA	IUCN	Image
ORDE	R: FALCONIFORMES													Ŭ
Family	: Falconidae													
61	Falco tinnunculus tinnunculus (Linnaeus, 1758)	Common Kestrel	-	+	-	+	-	+	SS,BF,PF,UF,AE	С	R	С	LC	61
ORDE	R: GALLIFORMES													
Family	: Phasianidae													
62	Francolinus francolinus asiae (Bonaparte, 1856)	Black Francolin	-	-	-	-	+	+	SS,BF	0	R	UC	LC	62
63	Gallus gallus murghi (Robinson & Kloss, 1920)	Red Junglefowl	-	-	-	+	+	-	SS,BF,PF	0	R	С	LC	63
64	Pavo cristatus (Linnaeus, 1758)	Indian Peafowl	-	-	-	+	+	+	SS,BF,PF	0	R	VC	LC	64
65	Perdicula asiatica (Latham, 1790)	Jungle Bush Quail	-	-	-	+	+	+	SS,BF,PF	0	R	UC	LC	65
ORDE	R: GRUIFORMES													
Family	: Gruidae													
66	Grus grus grus (Linnaeus, 1758)	Common Crane	-	+	-	-	-	+	AQ	0	WV	R	LC	
Family	: Rallidae													
67	Amaurornis Phoenicurus (Pennant, 1769)	White-breasted Waterhen	-	+	+	-	-	+	AQ,LZ	0	R	VC	LC	67
68	Fulica atra australis (Gould, 1845)	Common Coot	-	+	+	-	-	-	AQ,LZ	0	R	VC	LC	68
69	Gallinula chloropus chloropus (Linnaeus, 1758)	Common Moorhen	-	+	-	-	-	-	AQ,LZ	0	R	VC	LC	69
70	Porphyrio porphyrio (Linnaeus, 1758)	Purple Swamphen	-	+	-	-	-	+	AQ.LZ	0	R	VC	LC	70
ORDE	R: PASSERIFORMES													
Family	: Acrocephalidae													
71	Iduna caligata (Lichtenstein, 1823)	Booted Warbler	-	-	+	-	-	-	SS,BF,UF	Ι	WV	R	LC	71
Family	: Aegithinidae													
72	Aegithina tiphia (Linnaeus, 1758)	Common Iora	-	-	-	+	+	-	SS,BF,UF	Ι	R	UC	LC	72
Family	: Alaudidae													
73	Eremopterix griseus (Scopoli,1786)	Ashy-crowned Sparrow-Lark	+	-	-	-	-	+	RB,FL	0	R	UC	LC	73
74	Galerida cristata chenodoola (Franklin, 1831)	Crested Lark	+	-	-	-	-	+	RB,FL	0	R	UC	LC	74
75	Mirafra assamica (Horsfield, 1840)	Bengal Bushlark	-	+	-	-	-	+	RB,FL,AF	0	R	UC	LC	75
Family	: Campephagidae													
76	Pericrocotus cinnamomeus pallidus (Baker, 1920)	Small Minivet	-	-	+	+	+	-	SS,BF,PF,UF	Ι	R	С	LC	76
77	Pericrocotus ethologus (Bangs & Phillips, 1914)	Long-tailed Minivet	-	-	+	+	+	-	SS,BF,PF,UF	Ι	WV	R	LC	77
Family	: Certhiidae													
78	Certhia himalayana (Vigors, 1832)	Bar-tailed Treecreeper	-	-	+	+	+	-	SS,BF,PF,UF	Ι	R	R	LC	78
Family	: Cisticolidae													
79	Cisticola juncidis (Rafinesque, 1810)	Zitting Cisticola	-	+	-	-	-	+	AF	Ι	R	С	LC	79
80	Orthotomus sutorius patia (Hodgson, 1845)	Common Tailorbird	-	-	+	+	+	+	SS,BF,UF,AF	Ι	R	VC	LC	80
81	Prinia buchanani (Blyth, 1844)	Rufous-fronted Prinia	-	+	-	+	-	+	SS,BF,AF	Ι	R	UC	LC	81
82	Prinia crinigera (Hodgson, 1836)	Striated Prinia	-	-	-	+	+	+	SS,BF,AF	Ι	R	UC	LC	82
83	Prinia hodgsonii rufula (Godwin-Austen, 1874)	Grey-breasted Prinia	-	-	-	+	+	+	SS,BF,UF,AF	Ι	R	С	LC	83
84	Prinia inornata (Sykes,1832)	Plain Prinia	-	-	-	+	+	-	SS,BF,UF,AF	Ι	R	UC	LC	84
85	Prinia socialis (Sykes, 1832)	Ashy Prinia	-	-	+	+	+	+	SS,BF,UF,AF	Ι	R	VC	LC	85
Family	: Corvidae													
86	Corvus frugilegus frugilegus (Linnaeus, 1758)	Rook	-	-	-	-	-	+	AF	0	WV	С	LC	86
87	Corvus macrorhynchos macrorhynchos (Wagler, 1827)	Large-billed Crow	+	-	+	-	+	+	SS,BF,UF,RB,FL,GD,CD,AF	0	R	VC	LC	87
88	Corvus splendens (Vieillot, 1817)	House Crow	+	+	+	+	+	+	SS,BF,UF,RB,FL,GD,CD,AF	0	R	VC	LC	88
89	Dendrocitta vagabunda bristoli (Paynter, 1961)	Rufous Treepie	+	+	+	+	+	+	SS,BF,UF	0	R	VC	LC	89
90	Dendrocitta formosae formosae (Swinhoe, 1863)	Grey Treepie	-	-	+	+	+	-	SS,BF,UF	0	R	UC	LC	90

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Sr.No.	Common name	Binomial name	NT	GH	JU	RWLS	BMF	SOP	Habitat	FG	MS	VA	IUCN	Image
ORDE	R: PASSERIFORMES													
Family	: Dicruridae													
91	Dicrurus hottentottus (Linnaeus, 1766)	Hair-crested Drongo	-	-	+	-	-	-	UF	0	WV	R	LC	91
92	Dicrurus leucophaeus longicaudatus (Hay, 1854)	Ashy Drongo	-	-	+	+	-	-	SS,BF,UF	Ι	SV	С	LC	92
93	Dicrurus macrocercus albirictus (Hodgson, 1836)	Black Drongo	+	+	+	+	+	+	SS,BF,UF,AF	Ι	R	VC	LC	93
Family	: Emberizidae													
94	Emberiza cia (Linnaeus, 1766)	Rock Bunting	-	-	-	+	+	-	SS,BF,PF,UF	0	R	С	LC	94
95	Emberiza lathami (Gray, 1831)	Crested Bunting	-	-	-	-	+	-	SS,BF,PF,UF	0	SV	R	LC	95
96	Emberiza leucocephalus (Gmelin,1771)	Pine Bunting	-	-	-	-	+	-	SS,BF,PF,UF	0	WV	R	LC	96
97	Emberiza stewarti (Blyth, 1854)	White-capped Bunting	-	-	-	+	+	-	SS,BF,PF,UF	0	SV	R	LC	97
Family	: Estrildidae													
98	Euodice malabarica (Linnaeus, 1758)	Indian Silverbill	-	-	+	+	+	-	SS,UF,AF	G	R	С	LC	98
99	Lonchura punctulata punctulata (Linnaeus, 1758)	Scaly-breasted Munia	-	-	+	+	+	+	SS,UF,AF	G	R	UC	LC	99
Family	: Fringillidae								· · ·					
100	Carpodacus erythrinus (Pallas, 1770)	Common Rosefinch	-	-	+	+	+	-	SS,BF,PF,UF	0	PM	UC	LC	100
Family	: Hirundinidae													
101	Cecropis daurica (Laxmann, 1769)	Red-rumped Swallow	-	-	-	+	+	+	SS,RB,FL,AF	Ι	SV	VC	LC	101
102	Hirundo rustica rustica (Linnaeus, 1758)	Barn Swallow	-	+	-	+	-	+	UF,RB,FL	Ι	SV	VC	LC	102
103	Hirundo smithii filifera (Stephens, 1826)	Wire-tailed Swallow	-	-	+	+	-	+	UF,RB,FL	Ι	SV	UC	LC	103
104	Petrochelidon fluvicola (Blyth, 1855)	Streak-throated Swallow	+	-	-	-	-	+	RB,FL	Ι	R	VC	LC	104
105	Riparia chinensis (Grav.1830)	Grev-throated Martin	+	-	-	-	-	-	RB.FL	Ι	R	UC	LC	105
Family	: Laniidae					1 1							1	
106	Lanius cristatus (Linnaeus, 1758)	Brown Shrike	-	+	-	-	-	+	AF	I	WV	R	LC	106
107	Lanius schach schach (Linnaeus, 1758)	Long -tailed Shrike	-	+	+	+	+	+	SS LIF AF	C	R	VC	LC	107
Family	: Leiothrichidae	Long tuned binne				II			55,01,11				20	107
108	Argya earlei (Blyth 1844)	Striated Babbler	-	+	-	-	-	+	AF	I	R	UC	LC	108
109	Trochalopteron lineatum (Vigors 1831)	Streaked Laughingthrush	-	-	-	+	+	-	SS BE PE	I	R	UC	LC	109
110	Turdoides striata striata (Dumont 1823)	Jungle Babbler	-	-	+	+	+	+	SS UF BF AF	T	R	VC	LC	110
Family	: Monarchidae	vulgie Bussier			· ·	· · ·			55,61,51,11	-			20	110
111	Ternsinhone paradisi leucogaster (Swainson, 1838)	Indian Paradise Flycatcher	-	-	+	+	+	-	SS BE UF	I	SV	С	LC	111
Family	: Motacillidae	indian Faradise Fryeatener							55,51,61		51	C	LC	
112	Anthus campestris (Linnaeus 1758)	Tawny Pinit	+	-	-	-	_	-	RB	T	WV	R	LC	112
112	Anthus roseatus (Blyth 1847)	Rosy Pipit	-	-	+	+	-	-	SS BE UE AF	I	WV	VC	LC	112
114	Anthus rufulus rufulus (Vieillot 1818)	Paddyfield Pinit	-	+	-	+	-	+	AF	I	R	VC	LC	114
115	Anthus trivialis (Linnaeus, 1758)	Tree Pipit	-	-	-	-	+	-	BF	I	PM	R	LC	115
116	Motacilla alba dukhunensis (Sykes 1832)	White Wagtail	+	+	+	+	-	-	RB L7 AF	T	WV	VC	LC	116
117	Motacilla cinerea (Tunstall 1771)	Grey Wagtail	+	+	+	-		+	RB AF I Z	T	SV	VC	LC	117
118	Motacilla citreola (Pallas, 1776)	Citrine Wagtail	+	+	-	_	-	+	RB AF LZ	T	SV	VC	LC	118
110	Motacilla flava thunharai (Billherg 1828)	Western Vellow Wagtail	-	- -		-		-	RBIZ AF	T	PM	VC	LC	110
120	Motacilla maderaspatensis (Gmelin 1789)	White-browed Wagtail	-	۱ ــــــــــــــــــــــــــــــــــــ		-		+	RB LZ	I	R	VC	LC	120
Family	•Muscicanidae	mine browed wagtan	т	1°		r				1	N	,,,	ы	120
121	Luscinia svecica (Linnaeus, 1758)	Bluethroat	+	+			-	+	RB AF	T	WV	С	IC	121
121	Myonhonus caerulaus temminchii (Vigors 1921)	Blue Whistling Thrush		-	-		-		SS RE PE LIE	I	WV	VC		121
122	Phoenicurus ochruros rufiventris (Vigilot 1818)	Black Redstart	-	-	r +	۲ +	۰ ^۳	_ г 	SS UF	0	WV	VC	LC	122
123	Consychus sqularis (Linnaeus, 1758)	Oriental Magnie Robin	T	-	r +	۲ +	+	г 	SS, BELIE AF	J	R	VC		123
124	Copychus suulutis (Linnacus, 1756)	Blue-throated Elycatcher		Τ.	т.	T	т	T	SS BE PE LIE	I	SV	P		125
143	Cyonus nuoeculolues (vigois,1051)	Blue-unoaleu Flycalchei		-	-	+	-		SS,DF,FF,UF	1	5 V	N I	LL	140

	Sohil and Sharma							36								
Sr.No.	Common name	Binomial name	NT	GH	JU	RWLS	BMF	SOP	Habitat	FG	MS	VA	IUCN	Image		
ORDER: PASSERIF	ORMES															
Family: Muscicapida	e															
126	Eumyias thalassinus (Swainson, 1838)	Verditer Flycatcher	-	-	-	+	+	-	SS,BF,PF,UF	Ι	WV	UC	LC	126		
127	Ficedula parva (Bechstein, 1792)	Red-breasted Flycatcher	-	-	+	-	-	-	UF	Ι	PM	R	LC	127		
128	Ficedula strophiata (Hodgson,1837)	Rufous-gorgeted Flycatcher	-	-	-	-	+	-	SS,BF,PF,UF	Ι	WV	R	LC	128		
129	Monticola rufiventris (Jardine & Selby, 1833)	Chestnut-bellied Rock Thrush	-	-	-	+	-	-	SS,BF,PF,UF	Ι	WV	R	LC	129		
130	Niltava sundara (Hodgson,1837)	Rufous-bellied Niltava	-	-	-	-	+	-	SS,BF,PF,UF	Ι	WV	R	LC	130		
131	Oenanthe fusca (Blyth, 1851)	Brown Rock Chat	+	+	+	+	+	+	BF,SS UF,AF,RB	Ι	R	VC	LC	131		
132	Phoenicurus fuliginosus fuliginosus (Vigors, 1831)	Plumbeous Water Redstart	+	-	-	-	-	-	AQ,RB	Ι	R	С	LC	132		
133	Phoenicurus leucocephalus (Vigors,1831)	White-capped Water Redstart	+	+	+	+	-	+	RB	Ι	R	С	LC	132		
134	Saxicola caprata bicolor (Sykes, 1832)	Pied Bushchat	+	+	+	+	+	+	SS, BF,UF,AF	Ι	R	С	LC	134		
135	Saxicola ferreus (Gray & Gray, 1847)	Grey Bushchat	+	-	+	+	+	+	SS, BF, PF, UF, AF	Ι	R	VC	LC	135		
136	Saxicola maurus indicus (Blyth, 1847)	Siberian Stonechat	-	+	-	-	+	+	AF,UF,BF	0	SV	VC	LC	136		
137	Saxicoloides fulicatus (Linnaeus, 1766)	Indian Robin	-	+	+	+	+	+	SS,BF,UF,AF	Ι	R	VC	LC	137		
Family: Nectariniidae	6								, , ,							
138	Aethopyga siparaja (Raffles, 1822)	Crimson Sunbird	-	-	+	+	+	-	SS.BF.UF	Ν	R	VC	LC	138		
139	Cinnyris asiaticus asiaticus (Latham.1790)	Purple Sunbird	-	-	+	+	+	+	SS.BF.UF	Ν	R	VC	LC	139		
Family: Oriolidae		I I I I I I I I I I I I I I I I I I I				1			, ,-		1 1					
140	Oriolus kundoo (Sykes, 1832)	Indian Golden Oriole	-	-	+	+	+	-	SS,BF,UF	0	SV	UC	LC	140		
Family: Paridae									, ,-							
141	Parus cinereus cashmirensis (Hartert, 1905)	Cinereous Tit	-	+	+	+	+	-	SS.BF.PF.UF.AF	I	R	С	LC	141		
Family: Passeridae									~~,==,==,==,==			-				
142	Gymnoris xanthocollis xanthocollis (Burton, 1838)	Yellow-throated Sparrow	-	-	-	+	+	+	SS.BF.UF	G	SV	UC	LC	142		
143	Passer domesticus parkini (Whistler 1920)	House Sparrow	+	+	+	+	+	+	SS BE UE RB FL AF	G	R	C	LC	143		
Family: Pellorneidae									~~,==,==,==,==,==			-				
144	Pellorneum ruficeps (Swainson,1832)	Puff-throated Babbler	-	-	-	+	+	-	SS.BF	Ι	R	С	LC	144		
Family: Phylloscopid	ae											-		L		
145	Abrornis chloronotus simlaensis (Ticehurst, 1920)	Lemon-rumped warbler	-	-	+	+	+	+	SS.BF.PF.UF	I	SV	VC	LC	145		
146	Abrornis humei humei (Brooks 1878)	Hume's Leaf Warbler	-	-	+	+	+	-	SS BE PE UE	T	SV	UC	LC	146		
147	Abrornis nulcher (Blyth 1845)	Buff-barred Warbler	-	-	+	+	-	-	SS BE PE LIE	T	SV	UC		147		
148	Phylloscopus tristis (Blyth 1843)	Common Chiffchaff	+	-	+	+	+	-	SS,BF,PF,UF	T	WV	UC	LC	148		
140	Seicercus magnirostris (Blyth 1843)	Large-billed Leaf Warbler	-	_	-	+	-		SS BE PE LIE	I	SV	UC	LC	140		
150	Seicercus trachiloides (Sundevall 1837)	Greenish Leaf Warbler							SS BE PE LIE	T	SV	UC	LC	150		
150	Seicercus whistleri (Ticehurst 1925)	Whistler's warbler		-	-	+	+		SS BE PE LIE	I	SV	UC	LC	150		
152	Seicercus vanthoschistos (Gray & Gray 1847)	Grey-hooded Leaf Warbler	_	-	+	+	+	+	SS,BF,PF,UF	I	R	VC	LC	152		
Family: Placeidae	Selecteus xuninosenisios (Glay & Glay, 1047)	Grey-nooded Lear Warbler			1			1	55,51,11,01		ĸ	10	LC	152		
153	Placeus benghalensis (Linnaeus, 1758)	Black-breasted Weaver		+	-			+	ΔF	T	R	С	IC	153		
153	Placeus philippinus philippinus (Linnacus, 1756)	Baya Waavar		т 1	_	-	-	+	AE	I	D	C		153		
Fomily: Prupollidoo	Tioceus philippinus philippinus (Emilaeus, 1700)	Baya weaver	-	Ŧ	-	-	-	Ŧ	Al	1	K	U	LC	134		
155	Drumolla atricoularia (Prop. dt 1844)	Plack threated Accentor							CC DE DE LIE	т	D	UC	IC	155		
133 Family: Dyanapatida	Frunetta atrogutaris (Brandt, 1844)	Black-ultoated Accentor	-	-	-	+	Ŧ	Ŧ	33,DF,FF,UF	1	ĸ	UC	LC	155		
156	Pycnonotus cafar intermedius (Plyth 1946)	Red-vented Bulbul		L	J	, I		_	SS BELIE AF		P	VC	IC	156		
150	Pychonoius cajer intermedius (Diyui, 1640)	Uimalayan Bulbul	+	+	+	+	+	+	SS, DF, UF, AF		R D	VC		150		
1J/ Familes Dhinida	1 yenonolus leucogenis (Gray, 1855)		+	+	+	+	+	+	ss,dг,гг,∪г,АГ	+0	ĸ	vC	ш	157		
ramily: Knipiduridae	Phinidurg albiaollia (Viaillat 1919)	White threated Fortail				,			CC DE LIE	- T	р	VC	LC	159		
IJO Fomilus Citti J-	Knipiaura aldicollis (vienioi,1818)	winte-throated Fantan	-	-	+	+	+	-	SS,DF,UF		ĸ	٧U	ш	138		
Family: Sittidae		XX7_11								+	****	LIC.	IC	150		
159	Lichodroma muraria nepalensis (Bonaparte, 1850)	Wallcreeper	-	-	+	-	-	-	UB,RB	1	wv	UC	LC	159		

Sohil	and	Sharma	

Sr No	Common nomo	Binomial name	NT	СЧ	ΠI	DWIS	BME	SOP	Habitat	FC	MS	VA	IUCN	Imaga
ORDEL	2. PASSERIEORMES	Billonnai name	111	GI	30	KWLS	DIVIT	501	Habitat	ru	WIS	VA	IUCI	mage
Family	Stepostiridae													
160	Chelidorhynx hypoxanthus (Blyth, 1843)	Yellow-bellied Fairy-Fantail	-	-	+	+	+	-	SS.BF.UF	I	WV	UC	LC	160
161	Culicicapa cevlonensis (Swainson 1820)	Grev-headed Canary-flycatcher	-	-	-	+	-	-	SS BF	Ĭ	SV	R	LC	161
Family:	Sturnidae	orby mounded cumming injourcher	1						55,51		5.		20	101
162	Acridotheres ginginianus (Latham, 1790)	Bank Myna	+	+	+	_	-	+	UF.AF.LZ	0	R	VC	LC	162
163	Acridotheres tristis (Linnaeus, 1766)	Common Myna	+	+	+	+	+	+	SS,UF,RB,FL,GD, AF	0	R	VC	LC	163
164	Gracupica contra (Linnaeus, 1758)	Asian Pied Starling	-	+	+	+	+	+	SS,UF,AF,LZ	0	R	VC	LC	164
165	Sturnia malabarica (Gmelin,1789)	Chestnut-tailed Starling	-	-	+	-	-	-	SS,BF,UF	0	SV	R	LC	165
166	Sturnia pagodarum (Gmelin, 1789)	Brahminy Starling	-	-	+	+	+	+	SS,BF,UF	0	R	VC	LC	166
167	Sturnus vulgaris (Linnaeus, 1758)	Common Starling	-	+	+	+	-	+	SS,UF,AF	0	WV	VC	LC	167
Family:	Sylviidae	·											•	•
168	Chrysomma sinense (Gmelin, 1789)	Yellow-eyed Babbler	-	-	-	+	+	+	SS,BF	0	R	UC	LC	168
169	Sylvia curruca (Linnaeus, 1758)	Lesser Whitethroat	-	-	+	+	+	-	SS,BF,UF	Ι	WV	UC	LC	169
Family:	Timaliidae													
170	Cyanoderma pyrrhops (Blyth, 1844)	Black-chinned Babbler	-	-	-	+	+	-	SS,BF,PF	0	R	R	LC	170
171	Erythrogenys erythrogenys (Vigors, 1831)	Rusty-cheeked Scimitar-Babbler	-	-	-	+	+	-	SS,BF	0	R	С	LC	171
Family:	Turdidae	· ·												
172	Geokichla citrine (Latham, 1790)	Orange-headed Thrush	-	-	-	+	+	-	SS,BF,PF	Ι	SV	UC	LC	172
173	Turdus atrogularis (Jarocki, 1819)	Black-throated Thrush	-	-	+	+	-	-	SS,BF,PF,UF	Ι	WV	R	LC	173
174	Turdus boulboul (Latham, 1790)	Grey-winged Blackbird	-	-	-	+	-	-	SS,BF,PF	Ι	R	R	LC	174
Family:	Vangidae													
175	Tephrodornis pondicerianus (Gmelin, 1789)	Common Woodshrike	-	-	-	+	+	-	SS,BF,UF	0	R	UC	LC	175
Family:	Zosteropidae													
176	Zosterops palpebrosus (Temminck, 1824)	Oriental White-eye	-	+	+	+	+	+	SS,BF,UF	0	R	VC	LC	176
ORDE	R:PELECANIFORMES													
Family:	Ardeidae													
177	Ardea alba (Linnaeus, 1758)	Great Egret	-	+	+	-	-	-	AQ	С	R	VC	LC	177
178	Ardea cinerea (Linnaeus, 1758)	Grey Heron	+	+	-	-	-	-	AQ,AF,LZ	С	WV	С	LC	178
179	Ardea intermedia (Wagler,1827)	Intermediate Egret	+	+	-	-	-	+	RB,AF,AQ	С	R	VC	LC	179
180	Ardea purpurea (Linnaeus,1766)	Purple Heron	-	+	-	-	-	-	AQ,AF,LZ	С	R	С	LC	180
181	Ardeola grayii (Sykes,1832)	Indian Pond Heron	+	+	+	-	-	+	AQ,AF,LZ	С	R	VC	LC	181
182	Bubulcus ibis (Linnaeus, 1758)	Cattle Egret	+	+	+	-	+	+	RB,UF,AF,AQ	С	R	VC	LC	182
183	Egretta garzetta (Linnaeus,1766)	Little Egret	+	+	+	-	-	+	RB,AF,AQ	С	R	VC	LC	183
184	Nycticorax nycticorax (Linnaeus, 1758)	Black-crowned Night Heron	-	+	-	-	-	-	AQ,LZ	С	R	UC	LC	184
Family:	Ciconiidae													
185	Ciconia episcopus (Boddaert, 1783)	Woolly-necked Stork	-	+	-	-	-	+	AQ	С	WV	UC	VU	185
186	Ciconia nigra (Linnaeus, 1758)	Black Stork	-	+	-	-	-	+	AQ	С	WV	R	LC	186
187	Mycteria leucocephala (Pennant, 1769)	Painted Stork	-	+	-	-	-	+	AQ	С	WV	R	NT	

+ Presence, - Absence

Sites: NT-Nikki Tawi; GH-Gharana Wetland; JU-University of Jammu Campus ; RWL-Ramnagar Wildlife Sanctuary

BMF- Bahu-Mahamaya Forest; SOP-Southern open Plains

FG: Feeding Guild; I- Insectivorous; C-Carnivorous; O-Omnivorous; F-Frugivorous; G - Granivorous; N- Nectarivorous

MS: Migratory Status; R- Resident; WV- Winter Visitor; SV-Summer Visitor; PM-Passage Migrant

VA: Visual Abundance; VC- Very Common; C- Common; UC-Uncommon; R- Rare

IUCN: International Union for Conservation of nature and natural resources; LC- Least Concern; NT- Near Threatened; VU- Vulnerable; EN- Endangered

SS: Subtropical Scrub forests; PF - Subtropical Pine Forests; BF- Subtropical Broadleaved Forests; UF- Urban Forests; FL- Fallow Land; LZ-Littoral Zone of Wetland; AE- Aerial; AF- Agricultural Field; CD-Carcass Dump; AQ-Aquatic; UB-Urban Buildings; RB- Riverbed; GD- Garbage Dump.



Plate I. 1. Accipiter badius dussumieri; 2. Aquila nipalensis; 3. Butastur teesa; 4. Buteo rufinus rufinus; 5. Circus aeruginosus; 6. Circus cyaneus; 7. Clanga hastate; 8. Elanus caeruleus vociferus; 9. Gyps himalayensis; 10. Milvus migrans lineatus; 11. Neophron percnopterus percnopterus; 12. Anas acuta; 13. Anas crecca; 14. Anser albifrons albifrons; 15. Anser anser rubrirostris; 16. Anser indicus; 17. Dendrocygna javanica; 18. Mareca strepera; 19. Spatula clypeata; 20. Spatula querquedula; 21. Tadorna ferruginea; 22. Ocyceros birostris; 23. Upupa epops epops; 24. Charadrius dubius jerdoni.

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**Plate II.** 25. Vanellus indicus; 26. Vanellus leucurus; 27. Vanellus vanellus; 28. Hydrophasianus chirurgus; 29. Sterna aurantia; 30. Sterna hirundo tibetana; 31. Himantopus himantopus himantopus; 32. Rostratula benghalensis; 33. Actitis hypoleucos; 34. Calidris minuta; 35. Calidris pugnax; 36. Calidris temminckii; 37. Gallinago gallinago; 38. Tringa erythropus; 39. Tringa nebularia; 40. Tringa ochropus; 41. Tringa tetanus eurhina; 42. Tringa glareola; 43. Columba livia intermedia; 44. Streptopelia chinensis chinensis; 45. Streptopelia decaocto decaocto; 46. Streptopelia orientalis meena; 47: Streptopelia senegalensis cambayensis; 48. Streptopelia tranquebarica.



**Plate III.** 49. Alcedo atthis atthis; 50. Ceryle rudis leucomelanurus; 51. Halcyon smyrnensis smyrnensis; 52. Megaceryle lugubris continentalis; 53. Coracias benghalensis benghalensis; 54. Merops orientalis; 55. Merops philippinus javanicus; 56. Centropus sinensis; 57. Clamator jacobinus pica; 58. Cuculus Canorus bakeri; 59. Eudynamys scolopaceus scolopaceus; 60. Hierococcyx varius; 61. Falco tinnunculus tinnunculus; 62. Francolinus francolinus asiae; 63. Gallus gallus murghi; 64. Pavo cristatus; 65. Perdicula asiatica; 67. Amaurornis Phoenicurus; 68. Fulica atra australis; 69. Gallinula chloropus chloropus; 70. Porphyrio porphyrio; 71. Iduna caligata; 72. Aegithina tiphia; 73. Eremopterix griseus.



Plate IV. 74. Galerida cristata chenodoola; 75. Mirafra assamica; 76. Pericrocotus cinnamomeus pallidus; 77. Pericrocotus ethologus; 78. Certhia himalayana; 79. Cisticola juncidis; 80. Orthotomus sutorius patia; 81. Prinia buchanani; 82. Prinia crinigera; 83. Prinia hodgsonii rufula; 84. Prinia inornata; 85. Prinia socialis; 86. Corvus frugilegus frugilegus; 87. Corvus macrorhynchos macrorhynchos; 88. Corvus splendens; 89. Dendrocitta vagabunda bristoli; 90. Dendrocitta formosae formosae; 91. Dicrurus hottentottus; 92. Dicrurus leucophaeus longicaudatus; 93. Dicrurus macrocercus albirictus; 94. Emberiza cia; 95. Emberiza lathami; 96. Emberiza leucocephalus; 97. Emberiza stewarti.



Plate V. 98. Euodice malabarica : 99. Lonchura punctulata punctulata; 100. Carpodacus erythrinus; 101. Cecropis daurica; 102. Hirundo rustica rustica; 103. Hirundo smithii filifera; 104. Petrochelidon fluvicola; 105. Riparia chinensis; 106. Lanius cristatus; 107. Lanius schach schach; 108. Argya earlei; 109. Trochalopteron lineatum; 110. Turdoides striata striata; 111. Terpsiphone paradisi leucogaster; 112. Anthus campestris; 113. Anthus roseatus; 114. Anthus rufulus rufulus; 115. Anthus trivialis; 116. Motacilla alba dukhunensis; 117. Motacilla cinerea; 118. Motacilla citreola; 119. Motacilla flava thunbergi; 120. Motacilla maderaspatensis; 121. Luscinia svecica.



**Plate VI.** 122. Myophonus caeruleus temminckii; 123. Phoenicurus ochruros rufiventris; 124. Copsychus saularis; 125. Cyornis rubeculoides; 126. Eumyias thalassinus; 127. Ficedula parva; 128. Ficedula strophiata; 129. Monticola rufiventris; 130. Niltava sundara; 131. Oenanthe fusca; 132. Phoenicurus fuliginosus fuliginosus ; 133. Phoenicurus leucocephalus ; 134. Saxicola caprata bicolor ; 135. Saxicola ferreus; 136. Saxicola maurus indicus; 137. Saxicoloides fulicatus; 138. Aethopyga siparaja; 139. Cinnyris asiaticus asiaticus; 140. Oriolus kundoo; 141. Parus cinereus cashmirensis; 142. Gymnoris xanthocollis ; 143. Passer domesticus parkini; 144. Pellorneum ruficeps; 145. Abrornis chloronotus simlaensis.



**Plate VII.** 146. Abrornis humei humei; 147. Abrornis pulcher; 148. Phylloscopus tristis; 149. Seicercus magnirostris; 150. Seicercus trochiloides; 151. Seicercus whistleri; 152. Seicercus xanthoschistos; 153. Ploceus benghalensis; 154. Ploceus philippinus; 155. Prunella atrogularis; 156. Pycnonotus cafer intermedius; 157. Pycnonotus leucogenis; 158. Rhipidura albicollis; 159. Tichodroma muraria nepalensis; 160. Chelidorhynx hypoxanthus; 161. Culicicapa ceylonensis; 162. Acridotheres ginginianus; 163. Acridotheres tristis; 164. Gracupica contra; 165. Sturnia malabarica; 166. Sturnia pagodarum; 167. Sturnus vulgaris; 168. Chrysomma sinense; 169. Sylvia curruca.



Plate VIII. 170. Cyanoderma pyrrhops; 171. Erythrogenys erythrogenys; 172. Geokichla citrine; 173. Turdus atrogularis; 174. Turdus boulboul; 175. Tephrodornis pondicerianus; 176. Zosterops palpebrosus; 177. Ardea alba; 178. Ardea cinerea; 179. Ardea intermedia; 180. Ardea purpurea; 181. Ardeola grayii; 182. Bubulcus ibis; 183. Egretta garzetta; 184. Nycticorax nycticorax; 185. Ciconia episcopus; 186. Ciconia nigra; 188. Microcarbo niger; 189. Phalacrocorax carbo; 190. Pseudibis papillosa ; 191. Threskiornis melanocephalus; 192. Tachybaptus ruficollis; 193. Psilopogon haemacephalus indicus; 194. Psilopogon haemacephalus indicus.

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**Plate IX.** 195. Psilopogon haemacephalus indicus; 196. Psilopogon virens marshallorum; 197. Dendrocopos auriceps; 198. Jynx torquilla; 199. Dendrocopos macei; 200. Dendrocopos canicapillus; 201. Dendrocopos himalayensis; 202. Dinopium benghalense dilutum 203. Psittacula eupatria nipalensis; 204. Psittacula cyanocephala 205. Psittacula krameri borealis; 206. Glaucidium cuculoides; 207. Athene brama.

#### ACKNOWLEDGEMENTS

Authors gratefully acknowledge Department Wildlife Protection, Govt. of Jammu and Kashmir for providing necessary permits for field surveys in the protected areas. We thank Rector Bhaderwah Campus for providing the financial support and logistics during the investigations.

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