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A Study on Diversity of Birds of Chinab River Catchment at Earstwhile Akhnoor Sub Division of District Jammu, J & K

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Abstract: ***A survey to identify the birds diversity in the catchment area of Chinab river was conducted between September 2022 to September 2023. The study reveals a rich avian diversity and a total of 194 species of birds belonging to 63 families. The catchment of Chinab river is a biodiversity rich region. It harbors a variety of flora and fauna. The catchment is a house of number of migratory as well resident birds. Varieties of migratory birds visit the catchment during winter. Continuous monitoring of the avifaunal diversity is required to evaluate the ecological status of the birds and their habitats. Birds plays an important role in maintaining the ecological balance. Due to increase in urbanization and various anthropogenic activities, diversity and distribution of bird's species is on declining trend all over the globe. Out of 194 species of birds 26 species are migratory, 143 resident, 02 resident summer visitors, 03 resident winter visitors, 03 summer visitors, 16 winter visitors and partially 01 visitors were recorded.***

Keywords: Birds of Akhnoor, Akhnoor Tehsil, Chinab river Catchment, E-birds, Merlin, Birds of India, migratory birds, resident birds, Jammu.

1. Introduction

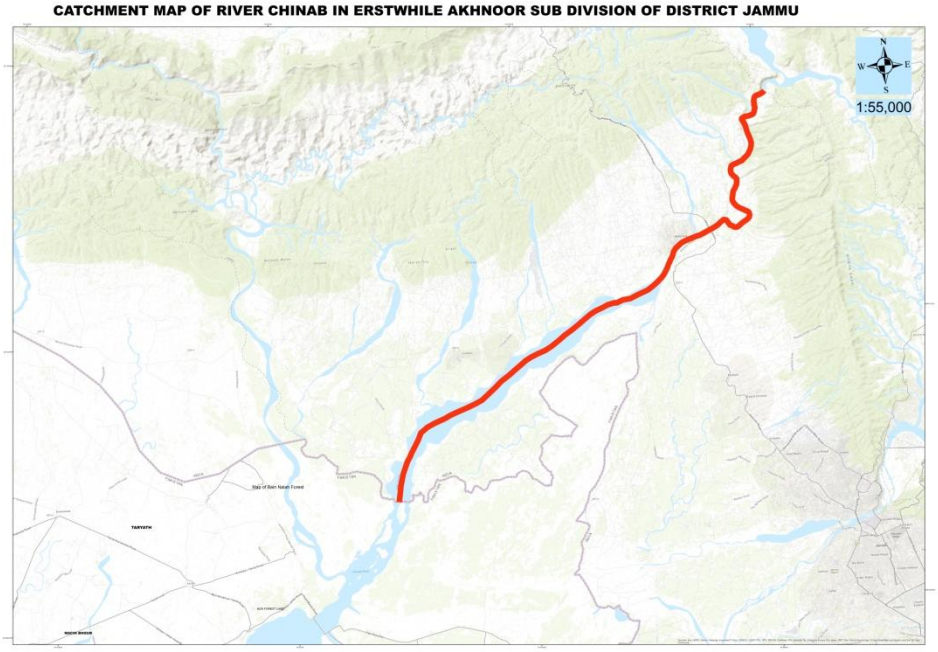
This paper puts together a checklist of the birds found within the catchment of Chinab river Jammu District. Geographically, the catchment represents heterogeneous landscape with a varied altitudinal range, characterized by enormous diversity in habitats. Birds are regarded as the important indicators of environmental health (Collar and Andrew, 1988) and their diversity is directly related with the environmental conditions of the area. The major factors determining the existence of birds with human settlements include the presence of remnant vegetation, competition among the species and structural and floral attributes of existing vegetation (Chace and Walsh, 2006). At spatial scales their distribution however is regulated by the quantity and quality of food available, perching, roosting and nesting sites (Muzaffar Ahmed Kitchloo et.al,2019). Birds are found throughout the world, at approximately all altitudes and in nearly every climate. Understanding the diversity and structure of bird communities is essential to delineate the importance of regional or local landscapes for avian conservation. Moreover, seasonal monitoring is very important to trace the dynamic movement of birds in various habitats. Water birds have attracted the attention of the public and researchers because of their beauty, abundance, visibility and social behaviour, as well as for their recreational and economic importance. Recently, water birds have become of interest as indicators of water quality and as parameters of restoration success and regional biodiversity (Gurdeep Kumar and Rajan Sharma, 2021), Bird surveys provide useful information for basic and applied ecology, and are useful for identifying priority areas for conservation (Daniels et al., 1991; Peterson et al., 2000). Though a number of avian studies have been conducted in the urban landscapes across India including many on the campuses and allied establishments, the information on the avian diversity for different institutes from the state of Jammu and Kashmir is scanty. Chinab river catchment was identified as one of study sites under our avian survey programme. Then catchment provides a rich array of habitats conducive to avian biodiversity. The present investigations attempt to provide a checklist of the birds, their preferences and migratory status based on the seasonal surveys carried out during the period of one and half year.

2. Study Area

District Jammu is one of the 10 districts in Jammu division of Jammu and Kashmir (UT) and is presently divided into seven Sub Divisions and 21 Tehsils 20 district Panchayats and 275 Panchayats. The present study is conducted in catchments of Chinab River which covers 56 Panchayats of erstwhile Akhnoor Sub Division of district Jammu, which is now reorganized into three Sub Divisions namely Akhnoor, Khour and Chowki Choura Sub Divisions having 20, 38 and 10 Panchayats respectively with 33 villages in Akhnoor, 54 villages in Khour and 10 villages in Chowki Choura Sub Division with total 68 Panchayats and 97 villages. The objective of the study was to prepare a checklist of avian fauna in erstwhile Akhnoor Sub Division of district Jammu. The Chinab River enters in the territorial jurisdiction of Akhnoor at Kathar village , which is a Tehsil headquarter and leaves the jurisdiction at village Pargwal at actual line of control. The catchment is situated 32.985457, 74.807540 at Nor village of Panchayat Kathar and 32.745216, 74.527010 at Jaade Ki Naali at Actual Line of Control between India and Pakistan. The altitudinal drop from Nor to Jaade Ki Naali is 116 meters. The altitude at Nor is 379 mts. msl and at Jaade Ki Naali is 263 mtr msl. The river flows between variety of flora and fauna. The main fauna of the study area is *Pinus roxburghii, kamila, dahin, kehmal, Cassia fistula, Acacia catechu, Terminalia chebula, T. ballerica, Coolibrockia , celtis australis,*

Bombax ceiba, Dalbergia sissoo, Acacia nilotica, A. modesta, etc. The River Chinab receives a number tributaries, nallah and khads(dry ravines), it catches Nor Khad at Nor, Tunge Nallah at Pian, Bagani Khad at Bagani, Mandrian Khad at Akhnoor, Daskal Khad at Akhnoor, Sungal Khad at Karangi, Rakh Muthi Khad at Rakh Muthi, Kot Garhi Khad at Lehrian and Sohal Khad at Badyala Chack, where drains into the territory of Pakistan at village Hamir Kona which is situated at Line of Actual Control. River Chinab is a home for variety of fishes and other aquatic animals. Local fish which is known as Chinab fish is very delicious, which fetches a very good price in local market. The Chenab River flows by Akhnoor, and the riverside offers a picturesque view. The river is significant for agriculture and irrigation in the region. The river water is known for its watering a distinct variety of basmati rice which has distinct flavor and fragrance.

3. Map of study



4. Material and Methods

The present study was conducted for a period of one year by using Nikon 30x60 binocular, Nikon D5600 DSLR camera. The study was divided into two parts : interviews with village elders who have seen the change in bird's habitat and quick spotting of birds in the study area by visiting the sites mainly during the morning hours besides some incidental sighting during day time and evening hours. The subjects were photo graphed and properly identified by using Merlin mobile app, using its photo ID feature. It is also cross checked with photo plates of Birds of India, Birds Nepal and other available literature. Where there is any confusion in identification of a particular bird, the expert help was also sought by using FB page JKbirdlife. The experts opinion was recorded, **Dr. Parmil Kumar, Sh. Parvaiz Shagoo, Dr. Sachin Bhagat** were the main experts who identified most of the birds of study area. Secondary data were collected from the published literature. In total, we reviewed more than 41 articles published in international and national journals, books, and reports focused on Avifauna of J&K. Articles were retrieved mainly from scientific databases, including Scopus, CAB Abstracts, and Web of Science (WoS). We also used Internet search engines such as Google Scholar. Keywords included "Avifauna", "Bird count" and "bird diversity". Findings from secondary sources support the descriptions with habitat of birds in J&K specifically focused on erstwhile Akhnoor Sub Division of district Jammu.. The observations are then properly uploaded on e-Birds cloud space with location and time of birding for feature reference. Bird's identification is bit challenging process as they are very active/ energetic. Quick eye spotting is required in order to get a detail of the particular bird species. Recognition of birds is done by observing their movement, feeding habits, habitats, specific voice calls, shape, size, etc. In order to get the data from village elders, a target group of old age villagers, who are above 70-80 years of age were called for personnel interviews. These persons provided the data regarding the change in habitat of birds due to urbanization, climate change etc. Many of the target groups told that house sparrow, common myna, Parakeets, Francolins were very common when the houses were thatched roofed, with the urbanization these birds migrated towards villages where there still area Kacha Ghar. They were shown photo tiles of Birds of India, Birds of Nepal and Google images. Recognition of birds is done by observing their movement, feeding habits, habitats, specific voice calls, shape, size, etc (Gurdeep Kumar and Dr. Rajan Sharma 2021).

5. Results and Conclusion

Table 1: Shows the checklist of species observed during study

S. No.	Family	Scientific name	Local name	F G	MS	IUCN
1	Accipitridae	*Milvus migrans*	Black kite	C	R	LC
2	Accipitridae	*Accipiter badius*	Shikra	C	R	LC
3	Accipitridae	*Accipiter nisus*	Euracian sparrow hawk	C	R,WV	LC
4	Accipitridae	*Butastur teesa*	White honey buzzard	C	WV	LC
5	Accipitridae	*Buteo buteo*	Common buzzard	C	WV	LC
6	Accipitridae	*Circaetus cinereus*	Brown snake eagle	C	M	LC
7	Accipitridae	*Elanus axillaris*	White shouldered kite	C	R	LC
8	Accipitridae	*Elanus caeruleus*	Black winged kite	C	R	LC
9	Accipitridae	*Gyps bengalensis*	White rumped vulture	C	R	NT
10	Accipitridae	*Gyps himalayensis*	Himalayan griffon	C	R	NT
11	Accipitridae	*Haliaeetus albicilla*	White-tailed eagle	C	WV	LC
12	Accipitridae	*Neophron percnopterus*	Egyptian vulture	C	R	EN
13	Accipitridae	*Pernis ptilorhynchus*	Oriental honey buzzard	C	M	LC
14	Accipitridae	*Aquila rapax*	Tawny eagle	C	M	LC
15	Acrocephalidae	*Iduna caligata*	Booted warbler	G	WV	LC
16	Aegithalidae	*Aegithalos concinnus*	Black throated bushtit	I	R	LC
17	Alaudidae	*Galerida cristata*	Crested lark	O	R	LC
18	Alcedinidae	*Ceryle rudis*	Pied kingfisher	C	R	LC
19	Alcedinidae	*Halcyon smyrnensis*	White throted kingfisher	C	R	LC
20	Alcedinidae	*Megaceryle lugubris*	Crested kingfisher	C	R	LC
21	Alcedinidae	*Halcyon smyrnensis*	White thoated kingfisher	C	R	LC
22	Anatidae	*Mergus merganser*	Common merganser	P	M	LC
23	Anatidae	*Dendrocygna javanica*	Lesser whistling duck	H	M	LC
24	Apodidae	*Aerodramus brevirostris*	Himalayan Swiftlet	I	R	LC
25	Apodidae	*Apus apus*	Common swift	I	SV	LC
26	Apodidae	*Tachymarptis melba*	Alpine swift	I	R	LC
27	Ardeidae	*Ardea cinerea*	Grey heron	C	R	LC
28	Ardeidae	*Ardea herodias*	Great Blue Heron	C	M	LC
29	Ardeidae	*Ardea purpurea*	Purple heron	C	R,WV	LC
30	Ardeidae	*Ardeola grayii*	Indian pond heron	C	R	LC
31	Ardeidae	*Bubulcus ibis*	Cattle egret	O	R	LC
32	Ardeidae	*Egretta garzetta*	Little egret	C	R	LC
33	Bucerotidae	*Ocyceros birostris*	Indian grey hornbill	F	R	LC
34	Campephagidae	*Pericrocotus cinnamomeu*	Small minivet	I	R	LC
35	Campephagidae	*Pericrocotus ethologus*	long-tailed minivet	I	R	LC
36	Campephagidae	*Pericrocotus roseus*	Rosy minivet	I	R	LC
37	Campephagidae	*Pericrocotus ethologus*	Long tailed minivet	I, H	M	LC
38	Campephagidae	*Coracina melanoptera*	Black headed cuckoo shrike	O	R	LC
39	Certhiidae	*Certhia himalayana*	Bar tailed tree creeper	C	R	LC
40	Cettidae	*Horornis fortipes*	Brown flanked bush wabler	C	R	LC
41	Charadriidae	*Vanellus albiceps*	White -tailed lapwing	I	WV	LC
42	Charadriidae	*Vanellus indicus*	Red wattled lap wing	O	R	LC
43	Charadriidae	*Vanellus malabaricus*	Yellow wattled lapwing	C	R	LC
44	Charadriidae	*Pluvialis fulva*	Pacific golden plover	P	M	LC
45	Ciconiidae	*Ciconia episcopus*	Wolly necked stork	C	R	LC
46	Cisticolidae	*Orthotomus sutorius*	Common tailor bird	I	R	LC
47	Cisticolidae	*Prinia crinigera*	Himalayan prinia	I,H	M	LC
48	Cisticolidae	*Prinia hodgsonii*	Grey brested prinia	I	R	LC
49	Cisticolidae	*Prinia inornata*	Plain prinia	I,H	R	LC
50	Cisticolidae	*Prinia socialis*	Ashy prinia	I,H	R	LC
51	Cisticolidae	*Prinia sylvatica*	Jungle Prinia	I	R	LC
52	Columbidae	*Columba livia*	Rock pigeon	G	R	LC
53	Columbidae	*Spilopelia chinensis*	Spotted dove	G	R	LC
54	Columbidae	*Streptopelia decaocto*	Eurasian collared dove	G	R	LC
55	Columbidae	*Streptopelia tranquebarica*	Red collared dove	G	R	LC
56	Coraciidae	*Coracias benghalensis*	Indian roller	C	R	LC
57	Coraciidae	*Coracias garrulus*	European roller	I	M	NT
58	Corvidae	*Corvus corone*	Carrion crow	O	R	LC
59	Corvidae	*Corvus culminatus*	Jungle crow	G	R	LC
60	Corvidae	*Corvus macrorhynchos*	Large billed crow	O	R	LC
61	Corvidae	*Corvus splendens*	House crow	O	R	LC
62	Corvidae	*Dendrocitta formosae*	Grey treepie	O	R	LC
63	Corvidae	*Dendrocitta vagabunda*	Rufous tree pie	O	R	LC
64	Corvidae	*Garruluslanceolatus*	Black headed jay	O	R	LC
65	Corvidae	*Urocissa flavirostris*	Yellow-billed blue-magpie	O	R	LC

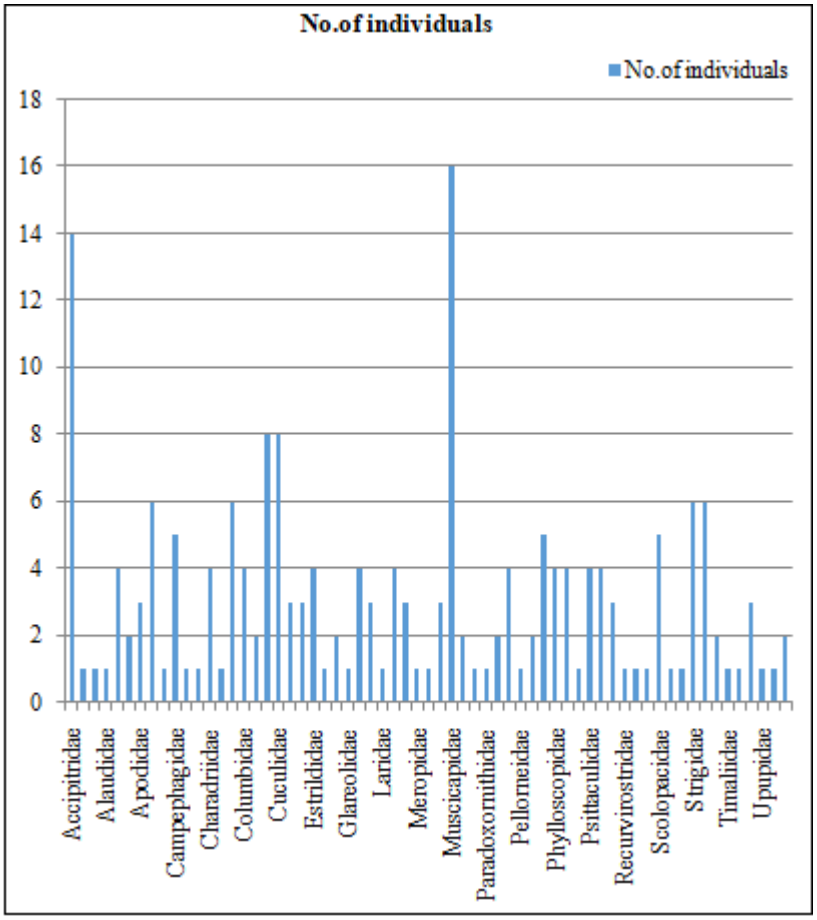
66	Cuculidae	*Centropus sinensis*	Greater coucal	O	R	LC
67	Cuculidae	*Clamator jacobinus*	Pied cuckoo	O	R	LC
68	Cuculidae	*Cuculus canorus*	Common cuckoo	O	R	LC
69	Cuculidae	*Cuculus micropterus*	Indian cuckoo	O	R	LC
70	Cuculidae	*Eudynamys scolopaceus*	Asian koel	O	R	LC
71	Cuculidae	*Hierococcyx varius*	Common hawk cuckoo	I	R	LC
72	Cuculidae	*Taccocua leschenaultii*	Sirkeer malkoha	O	R	LC
73	Cuculidae	*Surniculus lugubris*	Square tailed drongo cuckoo	I	R	LC
74	Dicruridae	*Dicrurus hottentottus*	Hair crested drongo	I,N	R	LC
75	Dicruridae	*Dicrurus leucophaeus*	Ashy drongo	I,N	R	LC
76	Dicruridae	*Dicrurus macrocercus*	Black drongo	I,N	R	LC
77	Emberizidae	*Emberiza cia*	Rock bunting	O	R	LC
78	Emberizidae	*Emberiza lathami*	Crested bunting	O	R	LC
79	Emberizidae	*Emberiza stewarti*	White capped bunting	O	R	LC
80	Estrildidae	*Euodice malabarica*	Indian silverbill	O	R	LC
81	Estrildidae	*Lonchura punctulata*	Scally brested munnia	G	R	LC
82	Estrildidae	*Amandava amandava*	Red munia	G	M	LC
83	Estrildidae	*Amandava amandava*	Red adavat	H	R	LC
84	Falconidae	*Falco tinnunculus*	Asian kestral	I	R	LC
85	Fringillidae	*Carpodacus erythrinus*	Common rose finch	F	M	LC
86	Fringillidae	*Chloris spinoides*	Yellow breasted greenfinch	F	M	LC
87	Glareolidae	*Glareola maldivarum*	Oriental prantincole	I	M	LC
88	Hirundinidae	*Cecropis daurica*	Red rumped swallow	I	R	LC
89	Hirundinidae	*Hirundo rustica*	Barn swallow	I	R	LC
90	Hirundinidae	*Petrochelidon fluvicola*	Streak throated swallow	I	R	LC
91	Hirundinidae	*Riparia chinensis*	Grey throated martin	I	M	LC
92	Laniidae	*Lanius tephronotus*	Gray-backed shrike	I	M	LC
93	Laniidae	*Lanius schach*	Long tailed shrike	I	R	LC
94	Laniidae	*Lanius cristatus*	Brown shrike	C	M	LC
95	Laridae	*Sterna aurantia*	River tern	P	M	LC
96	Leiothrichidae	*Argya caudata*	Common babbler	O	R	LC
97	Leiothrichidae	*Leiothrix lutea*	Red billed leiothorix	O	R	LC
98	Leiothrichidae	*Trochalopteron lineatum*	Streaked laughingthrush	O	R	LC
99	Leiothrichidae	*Turdoides striata*	Jungle babbler	O	R	LC
100	Megalaimidae	*Psilopogon asiaticus*	Blue throted barbet	O	R	LC
101	Megalaimidae	*Psilopogon haemacephalus*	Coppersmith barbat	O	R	LC
102	Megalaimidae	*Psilopogon virens*	Great barbet	O	R,SV	LC
103	Meropidae	*Merops orientalis*	Green bee eater	C	WV	LC
104	Monarchidae	*Terpsiphone paradisi*	Indian paradise flycatcher	I	WV	LC
105	Motacillidae	*Motacilla cinerea*	Grey wagtail	A,I	WV	LC
106	Motacillidae	*Motacilla citreola*	Citrine wag tail	A,I	WV	LC
107	Motacillidae	*Motacilla maderaspatensis*	White browed wagtail	A,I	WV	LC
108	Muscicapidae	*Oenanthe picata*	Variable wheatear	I	WV	LC
109	Muscicapidae	*Calliope pectoralis*	Himalayan ruby throat	I	R	LC
110	Muscicapidae	*Chaimarrornis leucocephalus*	White capped redstart	I	R	LC
111	Muscicapidae	*Copsychus saularis*	Oriental magpie robin	I	R	LC
112	Muscicapidae	*Eumyias thalassinus*	Verditer flycatcher	O	SV	LC
113	Muscicapidae	*Ficedula tricolor*	Slaty blue flycatcher	C	SV	LC
114	Muscicapidae	*Monticola solitarius*	Blue rock thrush	I	R,WV	LC
115	Muscicapidae	*Myophonus caeruleus*	Blue whistling	O	R	LC
116	Muscicapidae	*Oenanthe fusca*	Brown rock chat	I	R	LC
117	Muscicapidae	*Phoenicurus ochruros*	Black redstart	O	R	LC
118	Muscicapidae	*Rhyacornis fuliginosa*	Plumbeous water redstart	O	R	LC
119	Muscicapidae	*Saxicola caprata*	Pied bushchat	C	R	LC
120	Muscicapidae	*Saxicola ferreus*	Gray bushchat	C	R	LC
121	Muscicapidae	*Saxicoloides fulicatus*	Indian robin	I	R	LC
122	Muscicapidae	*Enicurus maculatus*	Spotted forktail	A,I	R	LC
123	Muscicapidae	*Monticola cinclorhyncha*	Blue capped rock thrush	I	PM	LC
124	Nectariniidae	*Aethopyga siparaja*	Crimson sun bird	N	R	LC
125	Nectariniidae	*Cinnyris asiaticus*	Purple sun bird	N	R	LC
126	Pandionidae	*Pandion haliaetus*	Ospery	C	M	LC
127	Paradoxornithi dae	*Chrysomma sinense*	Yellow eyed babbler	I	R	LC
128	Paridae	*Parus cinereus*	Cinereous tit	I	R	LC
129	Paridae	*Parus monticolus*	Green-backed tit	I	R	LC
130	Passeridae	*Gymnoris xanthocollis*	Yellow throated sparrow	G	R	LC
131	Passeridae	*Passer cinnamomeus*	Russet sparrow	G	R	LC
132	Passeridae	*Passer domesticus*	House sparrow	G	R	LC

133	Passeridae	*Petronia petronia*	Rock sparrow	G	WV	LC
134	Pellorneidae	*Pellorneum ruficeps*	Puff throted babbler	I	R	LC
135	Phalacrocoracidae	*Microcarbo niger*	Little cormorant	AA	R	LC
136	Phalacrocoracidae	*Phalacrocorax fuscicollis*	Indian cormorant	AA	R	LC
137	Phasianidae	*Gallus gallus*	Red jungle fowl	O	R	LC
138	Phasianidae	*Lophura leucomelanos*	Kalij pheasant	O	R	LC
139	Phasianidae	*Ortygornis pondicerianus*	Grey francolin	O	R	LC
140	Phasianidae	*Pavo cristatus*	Indian peafowl	O	R	LC
141	Phasianidae	*Perdicula asiatica*	Jungle Bush Quail	O	R	LC
142	Phylloscopidae	*Phylloscopus collybita*	Common chiffchaff	C	WV	LC
143	Phylloscopidae	*Phylloscopus humei*	Humes leaf wabler	I	R	LC
144	Phylloscopidae	*Phylloscopus xanthoschistos*	Grey hooded warbler	I	R	LC
145	Phylloscopidae	*Phylloscopus griseolus*	Sulphur bellied warbler	I	M	LC
146	Picidae	*Dendrocopos macei*	Fulvous brested woodpecker	O	R	LC
147	Picidae	*Dendrocopos nanus*	Brown capped pygmy woodpecker	O	R	LC
148	Picidae	*Dinopium benghalense*	Flameback wood pecker	O	R	LC
149	Picidae	*Leiopicus auriceps*	Brown fronted wood pecker	O	R	LC
150	Psittacidae	*Psittacula cyanocephala*	Plum headed parakeet	H	R	LC
151	Psittaculidae	*Psittacula himalayana*	Slaty-headed parakeet	H	R	LC
152	Psittaculidae	*Psittacula eupatria*	Alexandrine parakeet	H	R	LC
153	Psittaculidae	*Psittacula finschii*	Grey headed parakeet	H	R	LC
154	Psittaculidae	*Psittacula krameri*	Rose ringed parakeet	H	R	LC
155	Pycnonotidae	*Pycnonotus cafer*	Red vented bulbul	O	R	LC
156	Pycnonotidae	*Pycnonotus goiavier*	Yellow vented bulbul	O	R	LC
157	Pycnonotidae	*Pycnonotus leucogenys*	Himalayan bulbul	O	R	LC
158	Pycnonotidae	*Pycnonotus leucotis*	White eared bulbul	O	R	LC
159	Rallidae	*Amaurornis phoenicurus*	White-breasted waterhen	AA	R	LC
160	Rallidae	*Zapornia akool*	Brown crake (jal kukdi)	O	R	LC
161	Rallidae	*Porphyrio poliocephalus*	Gray headed swamphen	O	R	LC
162	Recurvirostridae	*Himantopus himantopus*	Black winged stilt	I	R,SV	LC
163	Rhipiduridae	*Rhipidura albicollis*	White throated fantail	I	R	LC
164	Rostratulidae	*Rostratula benghalensis*	Greater painted snipe	A,I	M	LC
165	Scolopacidae	*Tringa ochropus*	Green sandpiper	C	WV	LC
166	Scolopacidae	*Numenius arquata*	Eurasian curlew	I	M	LC
167	Scolopacidae	*Tringa totanus*	Common red shank	P	M	LC
168	Scolopacidae	*Tringa nebularia*	Common green shank	P	M	LC
169	Scolopacidae	*Gallinago gallinago*	Common snipe	P	M	LC
170	Sittidae	*Sitta cinnamoventriis*	Chestnut bellied nuthatch	O	R	LC
171	Stenostiridae	*Culicicapa ceylonensis*	Grey headed canary flycatcher	I	R	LC
172	Strigidae	*Athene brama*	Spotted owlet	C	R	LC
173	Strigidae	*Bubo bubo*	Eurasian eagle owl	C	R	LC
174	Strigidae	*Glaucidium cuculoides*	Asian barred owlet	C	R	LC
175	Strigidae	*Glaucidium radiatum*	Jungle owlet	C	R	LC
176	Strigidae	*Strix aluco*	Tawny owl	C	R	LC
177	Strigidae	*Otus bakkamoena*	Indian scoop owl	C	R	LC
178	Sturnidae	*Acridotheres fuscus*	Jungle myna	O	R	LC
179	Sturnidae	*Acridotheres ginginianus*	Bank myna	O	R	LC
180	Sturnidae	*Acridotheres tristis*	Common myna	O	R	LC
181	Sturnidae	*Sturnia malabarica*	Chestnut tailed starling	O	R	LC
182	Sturnidae	*Sturnia pagodarum*	Brahminy starling	O	R	LC
183	Sturnidae	*Saroglossa spiloptera*	Spot winged starling	I	R	LC
184	Threskiornithidae	*Pseudibis papillosa*	Red naped ibis	A	R	EN
185	Threskiornithidae	*Threskiornis melanocephalus*	Blck headed ibis	O	R	LC
186	Timaliidae	*Erythrogenys erythrogenys*	Rusty cheeked scimitar babbler	O	R	LC
187	Troglodytidae	*Troglodytes troglodytes*	Eurasian wren	I	R	LC
188	Turdidae	*Turdus atrogularis*	Black throated thrush	O	WV	LC
189	Turdidae	*Zoothera dauma*	Scaly thrush	O	R	LC
190	Turdidae	*Luscinia svecica*	Bluethroat	I	M	LC
191	Upupidae	*Upupa epops*	Euracian hoopoe	O	WV	LC
192	Vangidae	*Tephrodornis pondicerianus*	Common woodshrike	C	R	LC
193	Zosteropidae	*Zosterops palpebrosus*	Oriental white eye	I	R	LC
194	Zosteropidae	*Zosterops palpebrosus*	Indian white eye	O	R	LC

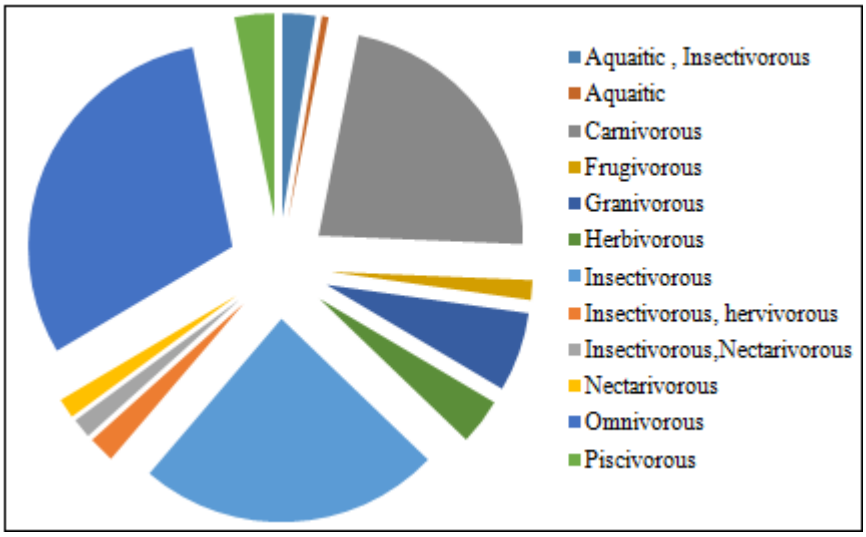
Abbreviations: FG-Forest guild: I-insectivorous, O-omnivorous, C- carnivorous, G-granivorous, H- herbivorous, F-frugivorous, N-nectorivorous, A-aquatic., P- Piscivorous
MS-Migratory status: R-resident, M-migratory, WV-winter visitor, SV-summer visitor, PM-Partially migratory
IUCN status: LC-least concern, NT-not threatened, EN-endangered

Table 2: Shows family wise distribution of species in the study area

Family	No.of individuals	Relative abundance
Accipitridae	14	7.21649
Acrocephalidae	1	0.51546
Aegithalidae	1	0.51546
Alaudidae	1	0.51546
Alcedinidae	4	2.06186
Anatidae	2	1.03093
Apodidae	3	1.54639
Ardeidae	6	3.09278
Bucerotidae	1	0.51546
Campephagidae	5	2.57732
Certhiidae	1	0.51546
Cettidae	1	0.51546
Charadriidae	4	2.06186
Ciconiidae	1	0.51546
Cisticolidae	6	3.09278
Columbidae	4	2.06186
Coraciidae	2	1.03093
Corvidae	8	4.12371
Cuculidae	8	4.12371
Dicruridae	3	1.54639
Emberizidae	3	1.54639
Estrildidae	4	2.06186
Falconidae	1	0.51546
Fringillidae	2	1.03093
Glareolidae	1	0.51546
Hirundinidae	4	2.06186
Laniidae	3	1.54639
Laridae	1	0.51546
Leiothrichidae	4	2.06186
Megalaimidae	3	1.54639
Meropidae	1	0.51546
Monarchidae	1	0.51546
Motacillidae	3	1.54639
Muscicapidae	16	8.24742
Nectariniidae	2	1.03093
Pandionidae	1	0.51546
Paradoxornithidae	1	0.51546
Paridae	2	1.03093
Passeridae	4	2.06186
Pellorneidae	1	0.51546
Phalacrocoracidae	2	1.03093
Phasianidae	5	2.57732
Phylloscopidae	4	2.06186
Picidae	4	2.06186
Psittacidae	1	0.51546
Psittaculidae	4	2.06186
Pycnonotidae	4	2.06186
Rallidae	3	1.54639
Recurvirostridae	1	0.51546
Rhipiduridae	1	0.51546
Rostratulidae	1	0.51546
Scolopacidae	5	2.57732
Sittidae	1	0.51546
Stenostiridae	1	0.51546
Strigidae	6	3.09278
Sturnidae	6	3.09278
Threskiornithidae	2	1.03093
Timaliidae	1	0.51546
Troglodytidae	1	0.51546
Turdidae	3	1.54639
Upupidae	1	0.51546
Vangidae	1	0.51546
Zosteropidae	2	1.03093
Total	194	100.00000



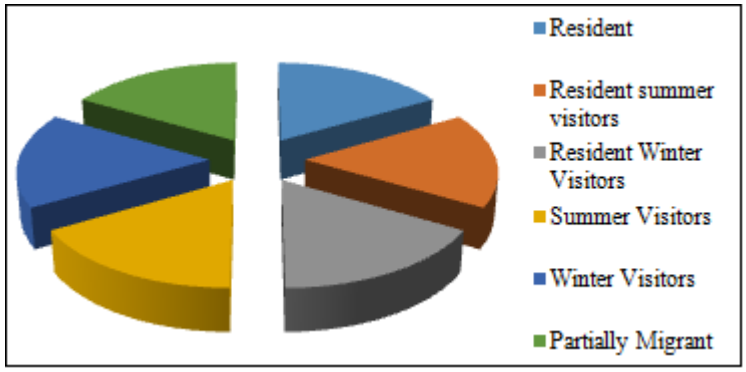
Graph 1: Graphs shows the family wise distribution pattern of birds in study area



Graph-2: Graph showing Forest Guild of birds in study area

Table 3: Table showing Forest Guild of birds in study area

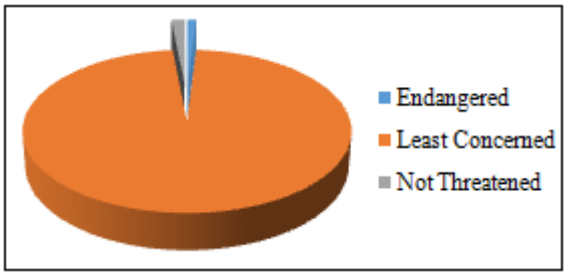
Aquaitic , Insectivorous	5
Aquaitic	1
Carnivorous	43
Frugivorous	3
Granivorous	12
Herbivorous	7
Insectivorous	46
Insectivorous, hervivorous	4
Insectivorous,Nectarivorous	3
Nectarivorous	3
Omnivorous	58
Piscivorous	6



Graph 3: Graphs showing IUCN status of birds in study area

Table 4: Table showing IUCN Status of birds in study area

Migrant	26
Resident	26
Resident summer visitors	26
Resident Winter Visitors	26
Summer Visitors	26
Winter Visitors	26
Partially Migrant	26



Graph 3: Graph showing Migratory status of birds in study area

Table 4: Table showing Migratory status of birds in study area

Endangered	2
Least Concerned	189
Not Threatened	3

During the observations of the study, it was observed that the catchment of Chinab River in District Jammu has rich avifaunal diversity. We have listed 194 birds from 63 families which shows that the area is rich in biodiversity point of view. On the basis of frequency of sightings in different study sites, abundance of birds was categorized following (MacKinnon and Phillipps, 1993). Besides this, the relative abundance of the birds was also calculated using formula as number of individuals of one species / total number of individuals of all species x 100. **Muscicapidae have highest relative abundance 8.25 % followed by Accipitridae 7.22 % , Corvidae 4.12 % and Cuculidae 4.12 %.** The migratory status assigned to the birds was partly based on the visual observations which were then confirmed with the available literature (Grimmet et al., 2011). 143 birds of the study area belonged to the resident category as compared to partially visitors which represented only 01. Forest guild study revealed that 58 birds were omnivorous and only 01 bird was respresented by Aquavorous. The IUCN status of birds has shown that 189 birds were under the category of least concerned and only two birds were from endangered category. There is also wide variety of plant and tree species which are present in the entire stretch of the study area may act as a suitable habitat for the avian diversity.

6. Conclusion

Presently, this area is not much studied in view of avifaunal diversity and this study may highlight the scope of avifaunal studies and helpful in conserving and maintaining the ecological balance. Further, it will play a significant role in biodiversity documentation at the regional level.

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