

Assessment of Avifaunal Species Composition and Diversity of Bhimer Gali of District Rajouri J&K Union Territory

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ABSTRACT: Birds are of immense ecological importance as bio-indicators for the quality of environment and habitat structure. They are very sensitive to any slight changes occurring in the ecosystem. Lot of challenges needed to overcome for the conservation of species, habitat loss due to urbanisation is the major challenge for the conservation. Random field survey was conducted by following line transect and point count method in early morning and evening of the day. Photograph and direct sighting were used for identification of bird species by using field guide books and field expert. The present study was undertaken from October 2020 to December 2021. Overall, 92 species of birds belonging to total 47 families including IUCN status small birds, resident birds and migratory birds were reported in the study area.

Keywords: Avifaunal diversity, species, Rajouri, Union Territory, Composition, Bio-Indicator.

INTRODUCTION

Birds are the most well-known vertebrate animal class, occurring in practically every environment on the planet and providing several ecological functions. With its very variable climatic conditions, rich habitat, and vast stretch of vegetation, the Indian subcontinent attracts and maintains a diverse avifauna, including many unique species, all year. The Indian subcontinent is home to around 1,300 bird species, accounting for more than 13% of the world's birds (Das and Aditya 2016).

The study of avifaunal diversity is an important ecological technique that may be used to assess various habitats both qualitatively and statistically. Unfortunately, manmade disturbances and climate change are causing a steady decline in world bird diversity (Roy *et al.*, 2019). Understanding the richness, structure, and niche linkages of bird communities is critical for determining the value of regional or local landscapes for avian conservation (Patode *et al.*, 2021). Birds are often abundant occupants of ecosystems, and they have long been seen as an indicator species of populated places, prompting scientists to study them for generations (Blair, 1999).

Study area: The current research was conducted in Bhimber Gali, Rajouri district, Union territory of Jammu and Kashmir, India. It is situated between Jammu and Kashmir's twin district of Pirpanchal. The research region is located between 33°50'36"N and 73°51'05"E, at an elevation of 327 m and with an annual rainfall of

974 mm. The maximum and minimum mean value of temperature 12-23°C respectively. BhimberGali is often shortened as BG by locals. Bhimber Gali is a mountain pass on the ridge that runs between the Poonch River and the Rajouri Tawi basins, thus the name. The study region is home to a unique variety of vegetation and animals. The forest type present over here is subtropical forest. The predominant tree species are used by the birds for nesting, resting and roosting purpose. Diversity of the vegetation and geographical supports larger number of bird species by providing different habitat and ecological condition for the species.

MATERIAL AND METHOD

The findings presented here are based on surveys that were randomly selected and taken between January 2020 and December 2021. The observations were done in the early morning (7:00–10:00 a.m.) and late afternoon (5:00–6:00 p.m.) using Nikon 10X35 binoculars, and photos were taken with a DSLR camera, a Nikon D-60 with a 30×70 zooming lens. Bird species were surveyed using the point count and line transect techniques where it was feasible. Occasionally occurring bird interactions on non-birding expeditions were also included in these investigations. On a few occasions, bird sounds were also captured on tape. Grimmett *et al.* (2011); Ali and Ripley (1987), and specialists in each subject were used to make all of the identifications. The species that have been positively identified are listed in this paper.

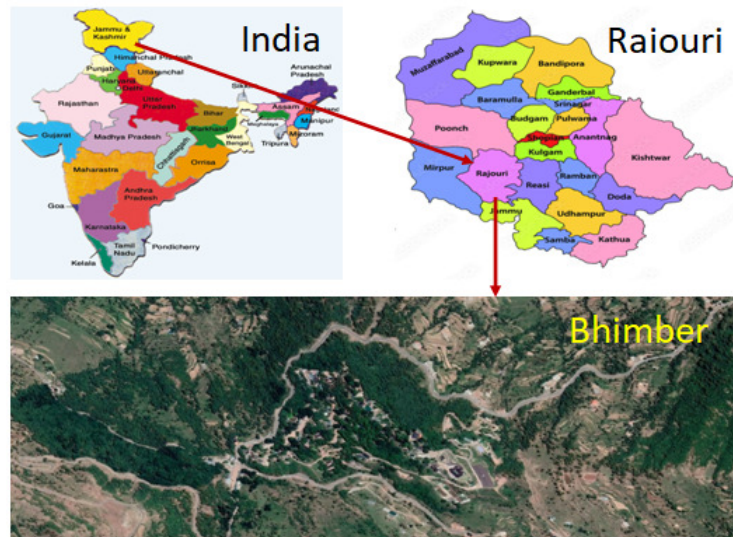


Fig. 1. Location map of study area.

RESULT AND DISCUSSION

During study period a total of 92 bird species which belongs to 13 orders with 47 families were identified in Bhimber Gali, Rajouri district (Table 1). From identified species, Passeriformes was recorded dominant order with highest species **57**(61.9%) followed by order of Piciformes 7 (7.60%) species, Coraciiformes 5 (5.43%), Accipitriformes 4 (4.34%), Columbiformes 4 (4.3%), Cuculiformes **2** (2.17%), Psittaciformes 3 (3.2%), Pelecaniformes 2 (2.1%), Charadriiformes 2 (2.1%), Strigiformes 2(2.1%), Bucerotiformes 1 (1%), Gruiformes 1 (1.%) and Galliformes **2**(2.17%). According to the current research, BhimberGali hosts a wide variety of avifauna. According to recent studies, the Rajouri district of Jammu and Kashmir UT, which has a total size of 2,630 sq. km², is home to 92 different bird

species Dey *et al.* (2014). The area's ability to supply these bird species with ecological stability by providing adequate amounts of food and shelter is shown by the presence of a high number of bird species there (Dutta *et al.*, 2011). Due to the presence of numerous kinds of microhabitats in the region, as well as surrounding rivers and huge lakes, the majority of the observed species are breeding residents. This demonstrates the importance of mosaic habitats, which include different types of flora, water bodies, and riverbeds, for the preservation of the campus's bird population. Seasonal variations in species richness have been noted, which are mostly caused by variations in the weather or variations in food production and habitat quality (Khah, *et al.*, 2012). Because there are more insects available and the weather is more favourable during the rainy season, the species richness of the birds in the Bhimber Gali is at its highest.

Table 1: Checklist with taxonomic position of avifaunal species Bhimber Gali, Rajouri J&K UT.

S. No.	Order	Family	Scientific Name	Species Name	IUCN Status	Res. Status
1.	Passeriformes	Muscicapidae	<i>Cyornis rubeculoides</i>	Blue-throated blue flycatcher	LC	RM
2.			<i>Monticola rufiventris</i>	Chestnut-bellied Rock-thrush	LC	M
3.			<i>Eumyias thalassinus</i>	Verditer Flycatcher	LC	M
4.			<i>Saxicola caprata</i>	Pied bush chat	LC	RM
5.			<i>Myophonus caeruleus</i>	Blue whistling thrush	LC	M
6.			<i>Aethopyga siparaja</i>	Crimson sun bird	LC	RM
7.			<i>Phoenicurus leucocephalus</i>	White-capped Water-redstart	LC	R
8.			<i>Ficedula tricolor</i>	Slaty-blue Flycatcher	LC	RM
9.			<i>Copsychus fulvicatus</i>	Indian Robin	LC	R
10.			<i>Saxicola torquatus</i>	Common Stonechat	LC	R
11.			<i>Copsychus saularis</i>	Oriental Magpie robin	LC	R
12.			<i>Saxicola ferreus</i>	Grey bush chat	LC	R
13.		Corvidae	<i>Urocissa flavirostris</i>	Yellow-billed Blue Magpie	LC	RM
14.			<i>Corvus splendens</i>	House Crow	LC	R
15.			<i>Dendrocitta vagabunda</i>	Rufoustreepie	LC	R
16.			<i>Garrulus lanceolatus</i>	Black-headed jay	LC	R
17.			<i>Dendrocitta formosae</i>	Grey treepie	LC	R

18.			<i>Orthotomus sutorius</i>	Common tailorbird	LC	M
19.			<i>Prinia nigreria</i>	HimalayanPrinia	LC	R
20.		Pycnonotidae	<i>Pycnonotus leucogenys</i>	Himalayan Bulbul	LC	R
21.			<i>Pycnonotus cafer</i>	Red-vented Bulbul	LC	R
22.			<i>Hypsipetes leucocephalus</i>	Black Bulbul	LC	R
23.		Motacillidae	<i>Anthus trivialis</i>	Tree Pipit	LC	R
24.			<i>Motacilla alba</i>	White Wagtail	LC	R
25.			<i>Motacilla citreola</i>	Citrine wagtail	LC	M
26.		Phylloscopidae	<i>Phylloscopus occipitalis</i>	Western Crowned Leaf-warbler	LC	R
27.			<i>Phylloscopus tristis</i>	Siberian Chiffchaff	LC	R
28.		Leiothrichidae	<i>Argyriastrata</i>	Jungle Babbler	LC	R
29.			<i>Argya caudata</i>	Common babbler	LC	M
30.		Sturnidae	<i>Sturnia pagodarum</i>	Brahminy Starling	LC	R
31.			<i>Acridotheres tristis</i>	Common Myna	LC	M
32.		Aegithinidae	<i>Aegithina tiphia</i>	Common iora	LC	M
33.			<i>Aegithalos concinnus</i>	Black throated bushtit	LC	R
34.		Paridae	<i>Parus cinereus</i>	Cinereous tit	LC	M
35.			<i>Parus monticolus</i>	Green-backed tit	LC	R
36.		Passeridae	<i>Passer domesticus</i>	House sparrow	LC	R
37.		Parulidae	<i>Basileuterus griseiceps</i>	Grey headed warbler	EN	R
38.		Certhiidae	<i>Certhia himalayana</i>	Bar-tailed treecreeper	LC	R
39.		Prunellidae	<i>Prunella atrogularis</i>	Black-throated accentor	LC	M
40.		Dicruridae	<i>Dicrurus macrocerus</i>	Black drongo	LC	M
41.		Fringillidae	<i>Carpodacus erythrinus</i>	Common rosefinch	LC	M
42.		Emberizidae	<i>Emberiza lathami</i>	Crested Bunting	LC	M
43.		Emberizidae	<i>Emberiza cia</i>	Rock bunting	LC	R
44.		Muscicapidae	<i>Phoenicurus fuliginosus</i>	Plumbeous water Redstart	LC	R
45.		Nectarinidae	<i>Cinnyris asiaticus</i>	Purple sunbird	LC	R
46.		Stenostiridae	<i>Culicicapa ceylonensis</i>	Grey headed canary flycatcher	LC	R
47.		Campephagidae	<i>Pericrocotus ethologus</i>	Longtailed minivet	LC	R
48.		Laniidae	<i>Lanius schach</i>	Long-tailed Shrike	LC	R
49.		Phylloscopidae	<i>Phylloscopus sindianus</i>	Mountain chiff chaff	LC	R
50.		Oriolidae	<i>Oriolus kundoo</i>	Indian Golden oriole	LC	R
51.		Estrildidae	<i>Lonchura punctulata</i>	Scaly-breasted Munia	LC	R
52.		Leiothrichidae	<i>Heterophasia capistrata</i>	Rufoussibia	LC	R
53.		Monarchidae	<i>Terpsiphone paradisi</i>	Indian Paradise Flycatcher	LC	R
54.		Zosteropidae	<i>Zosterops palpebrosus</i>	Indian white eye	LC	R
55.		Hirundinidae	<i>Cecropis daurica</i>	Red-rumped swallow	LC	R
56.		Turdidae	<i>Turdus boulboul</i>	Grey winged blackbird	LC	R
57.		Dicrurus	<i>Dicrurus leucophaeus</i>	Ashy drongo	LC	M
58.	Piciformes	Picidae	<i>Dendrocoptes auriceps</i>	Brown-fronted woodpecker	LC	R
59.			<i>Picus chlorolophus</i>	Lesser yellow nape	LC	R
60.			<i>Picus canus</i>	Grey-headed woodpecker	LC	R
61.			<i>Picumnus innominatus</i>	Speckled Piculet	LC	R
62.			<i>Picus squamatus</i>	Scaly-bellied Woodpecker	LC	R
63.		Megalaimidae	<i>Psilopogon virens</i>	Great Barbet	LC	R
64.	<i>Psilopogon asiaticus</i>		Blue throated barbet	LC	R	
65.	Coraciiformes	Alcedinidae	<i>Alcedo atthis</i>	Common Kingfisher	LC	M
66.			<i>Halcyon smyrnensis</i>	White-throated Kingfisher	LC	R
67.			<i>Megaceryle lugubris</i>	Crested Kingfisher	LC	M
68.		Coraciidae	<i>Coracias garrulus</i>	European roller	LC	M
69.			<i>Coracias benghalensis</i>	Indian Roller	LC	R
70.	Accipitriformes	Accipitridae	<i>Milvus migrans</i>	Black Kite	LC	R

71.			<i>Accipiter nisus</i>	Eurasian sparrowhawk	LC	M
72.			<i>Gyps himalayensis</i>	Himalayan Vulture	NT	R
73.			<i>Aquila nipalensis</i>	Steppe Eagle	EN	R
74.	Columbiformes	Columbidae	<i>Streptopelia decacto</i>	Eurasian collared dove	LC	R
75.			<i>Streptopelia orientallis</i>	Oriental turtle dove	LC	R
76.			<i>Columba livia</i>	Rock dove	LC	R
77.			<i>Spilopelia chinensis</i>	Eastern Spotted Dove	LC	R
78.	Cuculiformes	Cuculidae	<i>Cuculus canorus</i>	Common Cuckoo	LC	R
79.			<i>Taccocua leschenaultii</i>	Sirkeer Malkoha	LC	R
80.	Psittaciformes	Psittaculidae	<i>Psittacula cyanocephala</i>	Plum headed parakeet	LC	R
81.			<i>Psittacula eupatria</i>	Alexandrine Parakeet	LC	RM
82.			<i>Psittacula krameri</i>	Rose ringed parakeet	LC	R
83.	Pelecaniformes	Ardeidae	<i>Bubulcus ibis</i>	Cattle egret	LC	M
84.			<i>Egretta garzetta</i>	Little egret	LC	R
85.	Charadriiformes	Scolopacidae	<i>Actitis hypoleucos</i>	Common Sandpiper	LC	M
86.		Charadriidae	<i>Vanellus indicus</i>	Red Wattled lapwing	LC	R
87.	Strigiformes	Strigidae	<i>Glaucidium cuculoides</i>	Asian Barred Owllet	LC	RM
88.			<i>Ous letitia</i>	Collared scops Owl	LC	M
89.			Bucerotiformes	Upupa	<i>Upupa epops</i>	Eurasian Hoopoe
90.	Gruiformes	Rallidae	<i>Gallinula chloropus</i>	Eurasian Moorhen	LC	M
91.	Galliformes	Phasianidae	<i>Lophura leucomelanos</i>	Kalij pheasant	LC	R
92.			<i>Francolinus francolinus</i>	Black Francolin	LC	R

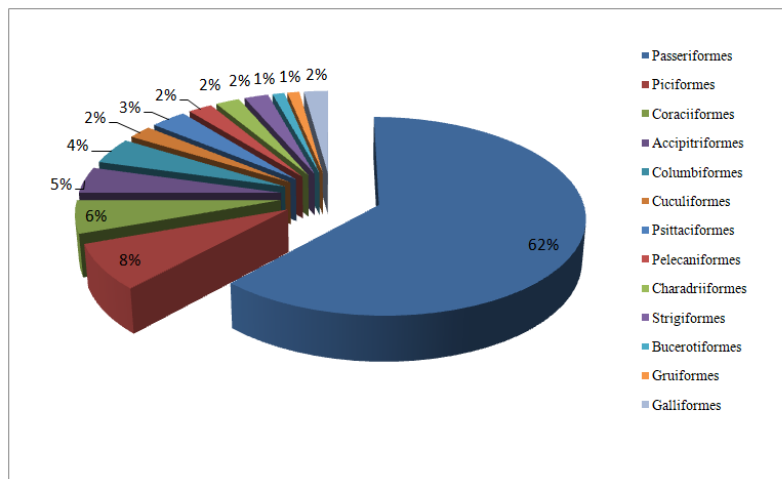


Fig. 2. Order wise percentage of species computation in study area.

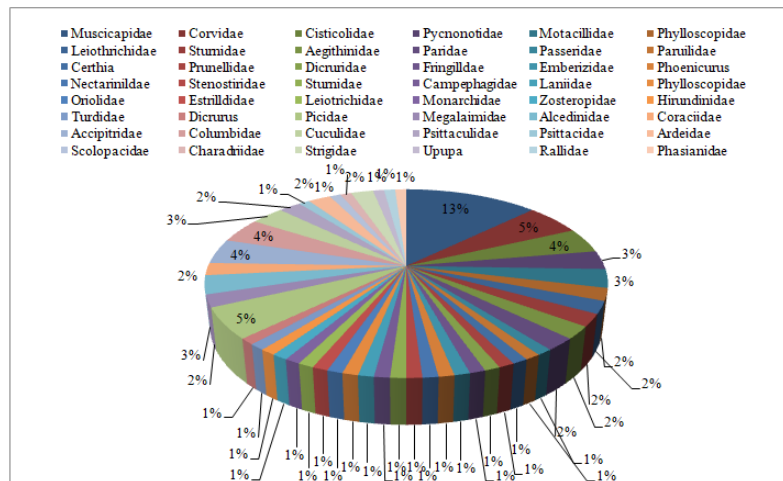


Fig. 3. Family wise percentage of species computation in study area.

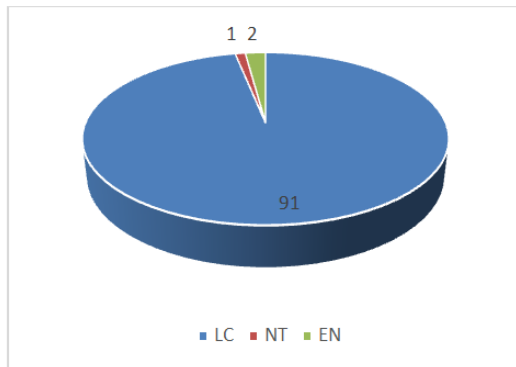


Fig. 4. IUCN status of recorded species.

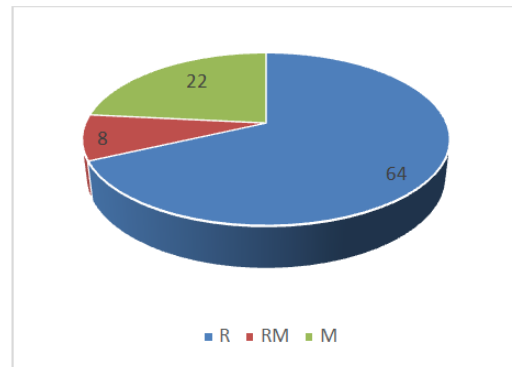


Fig. 5. Residential status of recorded species.

The research location has a diverse avifauna, but there have lately been issues since unplanned actions carried out in support of human growth are endangering the habitats of these birds. Birds are sensitive to their surroundings, and changes in plant patterns may have an impact on the local bird population (Savard *et al.*, 2000). To draw in more bird species and make the area conducive for different bird species, such a unique green space should be preserved effectively.

CONCLUSIONS

The study revealed that the study area is suitable for various bird species mostly resident, migratory, least concerned, and endemic species, the area provides heterogeneous habitat for the conservation of bird species, since the study was carried out during day time only and there might be nocturnal bird species.

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Conflict of Interest. None.

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