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Studies on Avian diversity of Tehsil Mendhar, Poonch, J&K, India

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Abstract: A survey was carried out in tehsil Mendhar of district Poonch of Jammu and Kashmir state for inventoriation of the avifauna. The study area lies at the longitudes 74° 8' 0" E and latitudes 33° 37' 0" N. A total of 82 species belonging to 39 families and 14 orders were recorded. Order Passeriformes is the largest order representing 62% of the species diversity in the area. The local abundance status was determined and it was found that 42% of the avifauna was common, 23% uncommon, 17% occasional and 19% was rare. Line transect and Point transect methods were used to study avifauna of the study area.

Key words: Avian diversity; Passeriformes; line transect; point transect; local abundance status.

1. Introduction

For conservation measures to be implemented, it becomes necessary to know the species diversity, type of the habitat, they live in and the local abundance status of the animals of the concerned area. Birds form an important component of any natural ecosystem; they play a useful role in the control of insect pests of agricultural crops, as predators of rodents, as scavengers and as pollinating agents.

As far as study of avian diversity of India is concerned, many workers have made useful contributions in this regard, these include, Ali (1941), Ali & Ripley (1968-74,), Grimmett *et al.* (1998), Alfred *et al*. (2001), Grewal *et al*. (2002) and Pfister (2004). State level faunistic surveys have been carried by Choudhary (2002), Sharma (2003), Ahmed (2004), Wani and Sahi (2005), Kait and Sahi (2006), Kumar and Sahi (2005-06), Kumar (2006), Kotwal and Sahi (2007) and Kait (2011). The area under present investigation remained virgin as for as diversity of avifauna is concerned.

2. Material and methods

2.1 Study area

Tehsil Mendhar of District Poonch, Jammu & Kashmir, India lies in Pir Panjal Range located latitudinally 33° 37' 0" N and longitudinally 74° 8' 0" E at an attitude of 977m. The area displays steep slopes and high ridges broken by rocky cliffs and in between narrow valleys. Floristically this area is inhabited by the sub-tropical and temperate forests. The sub-tropical forest is inhabited by different tree species like *Olea cuspidate* (Khor), *Punica granatum* (Dhurni), *Pinus roxberghii* chir (pine) and temperate forest is occupied by *Quercus* species and *Eleagnus* species. Temperature of summer ranges between 30 to 35 °C and of winter between 2 °C to -4.8 °C. In winter its mountain top felt periodic snow fall where as low lying area may (for one or two days) or may not felt the snow fall. Water resources of this area are springs only which may feed the Mendhar stream for at least 10 months and most of them dried up for one or two months before monsoon. Crops of this area include wheat in winter, and maize and paddy in summer. This area has very poor horticulture influence with only few trees of apple, walnut, akhrot, plumps and nashpati.

2.2 Methodology

In order to record the avian diversity, periodic surveys were undertaken in the study area by adopting systematic field procedures and techniques for survey.

The nomenclature followed in the present work is in accordance with those given in the "Handbook of Birds of India and Pakistan" by Ali and Ripley (1968-74). The more popular English names in use within India have also been provided.

For identification and field diagnosis of birds, colourful plates of Ali and Ripley (1968-74), Ali (1996), Grimmett *et al.* (1998) and Grewal *et al.* (2002) have been used. Colours are usually the best indicators of identity of a species at a close range or through binoculars.

Classification of birds is in accordance with Grewal *et al.* (2002).For inventorization and density determination of Aves, Line Transect Method and Point Transect Method **(**Verner, 1985) were used. The points transect method was more helpful in thick forest area

Surveys were conducted from 6:30 am to 9:30 am in morning and 4:30 pm to 6:30 pm in evening during summers and 7:30 am to 10:30 am in morning and

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3:30 pm to 5:30 pm in evening during winters. In addition to these fixed timings of surveys, some irregular visits were also planned and made during other hours of the day

Local Abundance status after Srinivasulu and Nagulu (2002) of the recorded bird was established upon the following criteria: Common-recorded 9-10 times out of 10 visits, uncommon -recorded 6 -8 times out of 10 visits, occasional- recorded 3 -5 times out of 10 visits, rare- recorded 0 -2 times out of 10 visits.

Observations were carried out with the help of Binoculars (12x50 Super Zenith) whenever found necessary. Photographs were taken with Canon (EOS) fitted with 300mm zoom lens and Sony DV Camera with 40X Zoom and Calls of the birds were recorded by tape recorders and mobile.

3. Results and discussion

During the present study, 82 species of birds belonging to 39 families and 14 orders were recorded from the study area (Table 1). Grimmett *et al.* (1998) reported 1300 species of birds belonging to 78 families and 17 orders in India. Studies carried out by Kait (2011) in Trikuta hills reported 90 species belonging to 39 families and 11 orders, Ahmed (2009) in district Doda reported 71 species belonging to 27 families and 9 orders, Wani and Sahi (2005) in tehsil Doda recorded 41 species belonging to 22 families and 9 orders and Kumar (2006) reported 117 species belonging to 39 families and 12 orders from district Kathua. Studies conducted by Sahi and Sharma (2004) in Ramnagar Wildlife Sanctuary showed 69 species from 13 orders and 29 families, where as

Table 1. Checklist and local abundance status of avifauna of Mendhar.

Common Name	Zoological Name	L. S.
	Class: AVES	
	Order: CICCONIFORMES	
	Family: ARDEIDAE	
Cattle Egret	*Bubulcus ibis coromandus* Boddaert	C
	Order: FALCONIFORMES or ACCIPITRIFORMES	
	Family: ACCIPITRIDAE	
Pariah Kite	*Milvus migrans govinda* Sykes	C
Indian Shikra	*Accipiter badius dussumieri* Temminck	O
Indian Long Billed Vulture	*Gyps indicus* G. R. Gray	R
Himalayan Griffon Vulture	*Gyps himalayensis* Hume	R
Common buzzard	*Buteo buteo*	O
	Order: CHARADRIIFORMES	
	Family: CHARADRIIDAE	
Red Wattled Lapwing	*Vanellus indicus indicus* (Boddaert)	UC
	Family: Jacanidae	
Pheasant tailed Jacana	*Hydrphasianus chirurgus*	R
	Family Scolopaci	
Common Sandpiper	*Actitis hypoleucos*	C
	Order: GALLIFORMES	
	Family: PHASIANIDAE	
Kalij Pheasant	*Lophura leucomelanos hamiltonii* (Gray)	UC
Black Francolin	*Francolinus francolinus*	UC
	Order: COLUMBIFORMES	
	Family: COLUMBIDAE	
Indian Ring Dove	*Streptopelia decaocto decaocto* (Frivaldszky)	UC
Indian Spotted Dove	*Streptopelia chinensis suratensis* (Gmelin)	C
Indian Blue Rock Pigeon	*Columba livia intermedia* Strickland	C
Wedge-Tailed Green pigeon	*Treron sphenura*	R
	Order: PSITTACIFORMES	
	Family PSITTACIDAE	
Slaty headed Parakeet	*Psittacula himalayana*	UC
Plum Headed Parakeet	*Psittacula cyanocephala*	UC

	Order: STRIGIFORMES	
	Family: STRIGIDAE	
Northern Spotted Owlet	*Athene brama indica* (Franklin)	UC
	Order: CORACIFORMES	
	Family: CORACIIDAE	
Indian roller	*Coracias benghalensis*	R
	Family: ALCEDINIDAE	
White Breasted Kingfisher	*Halcyon smyrnensis smyrnensis* (Linnaeus)	C
Common Kingfisher	*Alcedo atthis*	C
	Family: CERYLIDAE	
Crested Kingfisher	*Megaceryle lugubris*	C
	Order: CUCULIFORMES	
	Family: CUCULIDAE	
Pied Crested Cuckoo	*Clamator jacobinus serratus* (Sparrman)	R
	Order: UPUPIFORMES	
	Family: UPUPIDAE	
European Hoopoe	*Upupa epops epops* Linnaeus	O
	Order: PICIFORMES	
	Family: CAPITONIDAE (MEGALAIMIDAE)	
Himalayan Great Barbet	*Megalaima virens* (Boddaert)	C
	Family: PICIDAE	
Brown Fronted Woodpecker	*Dendrocopos auriceps* (Vigors)	C
Scaly-Bellied Woodpecker	*Picus squamatus*	C
Lesser yellownape Woodpecker	*Picus chlorolophus*	C
	Order: PASSERIFORMES	
	Family: LANIIDAE	
Long-tailed Shrike	*Lanius schach*	UC
	Family: DICRURIDAE	
Black Drongo	*Dicrurus adsimilis albirictus* (Hodgson)	C
	Family: STURNIDAE	
Indian Myna	*Acridotheres tristis tristis* (Linnaeus)	C
Brahminy Myna	*Sturnus pagodarum* (Gmelin)	O
Starling	*Sturnus vulgaris indicus* Blyth	C
	Family: CORVIDAE	
House Crow	*Corvus splendens splendens* Vieillot	O
Himalayan Jungle Crow	*Corvus macrorhynchos intermedius* Adams	C
Northwestern Tree Pie	*Dendrocitta vagabunda* (Blyth)	C
Black Headed Jay	*Garrulus laceolatus*	C
Yellow billed blue magpie	*Urocissa flavirostris*	C
	Family: CAMPEPHAGIDAE	
North Indian Scarlet Minivet	*Pericrocotus flammeus speciosus* (Latham)	R
	Family: PYCNONOTIDAE	
Red-Vented Bulbul	*Pycnonotus cafer cafer* (Linnaeus)	C
White-Cheeked Bulbul	*Pycnonotus leucogenys leucogenys* (Grey)	C
Black Bulbul	*Hypsipetes madagascariensis* (Muller)	C
	Family: TIMALIIDAE	
Jungle Babbler	*Turdoides striatus somervillei* (Sykes)	C
Streaked Laughing Thrush	*Garrulax lineatus* Vigors	C
Rufouse sibia	*Heterophasia*	R
Red billed leothrix	*Leothrix lutea*	R

	Family: MONARCHIDAE	
Paradise Flycatcher	*Terpsiphone paradisii paradisii* (Linnaeus)	O
	Family: MUSCICAPIDAE	
Verditer Flycatcher	*Muscicapa thalassina thalassina* Swainson	C
Blue Capped Rock Thrush	*Monticola cinclorhynchus*	R
Brown Rock Chat	*Cercomela fusca* (Blyth)	C
Collared Bush Chat	*Saxicola torquata indica* (Blyth)	O
Pied Bush Chat	*Saxicola caprata bicolor* (Sykes)	O
White Capped Redstart	*Chaimarrornis leucocephalus* (Vigors)	O
Plumbeous Water Redstart	*Rhyacornis fuliginosus* (Vigors)	UC
Spotted forktail	*Enicurus maculates*	O
Little Pied Flycatcher	*Ficedula westermanni*	R
Common stone Chat	*Saxicola torquata*	C
Bushchat	*Saxicola ferreus*	UC
Oriental magpie	*Copsychus saularis*	C
	Family: TURDIDAE	
Himalayan Whistling Thrush	*Myophonus caeruleus* (Scopoli)	C
Scaly thrush	*Zoothera dauma*	R
	Family: MOTACILLIDAE	
Indian White Wagtail	*Motacilla alba dukhunensis* Sykes	UC
Grey Wagtail	*Motacillla cinerea* Tunstall	C
Citrine Wagtail	*Motacilla citreola*	C
	Family: ZOSTEROPIDAE	
Indian White Eye	*Zosterops palpebrosa palpebrosa* (Temminck)	UC
	Family: PASSERIDAE	
Indian House Sparrow	*Passer domesticus* (Linnaeus)	C
Russet Sparrow	*Passer rutilans*	UC
	Family: ESTRILDIDAE	
Spotted Munia	*Lonchura punctulata* (Linnaeus)	UC
	Family: PARIDAE	
Great Tit	*Parus major* (Linnaeus)	UC
Black Lored Tit	*Parus xanthogenys*	O
	Family: AEGITHALIDAE	
Black Throated Tit	*Aegithalos concinnus*	R
	Family: EMBERIZIDAE	
Crested Bunting	*Melophus lathami* (Gray)	O
	Family: HIRUDINIDAE	
Wire Tailed Swallow	*Hirundo smithii*	C
	Family: TICHODROMADIDAE	
Wallcreeper	*Tichodroma muraria*	R
	Family: FRINGILLIDAE	
Yellow Breasted Greenfinch	*Carduelis spinoides*	R
Common rosefinch	*Caprodacus erythrinus*	UC
	Family: PHYLLOSCOPIDAE	
Dusky warbler	*Phylloscopus fuscatus*	UC
Grey hooded Warbler	*Seicercus xanthoschistos*	UC
	Order: GRUIFORMES	
	Family: RALLIDAE	
White breasted waterhen	*Amaurornis phoenicurus*	UC
	Order: PELECANIFORMES	
	Family: ARDEIDAE	
Indian Pond Heron	*Ardeola grayii grayii* Sykes	O
Little Egret	*Egretta garzetta* (Linnaeus)	C
Black crowned night heron	*Nicticorex nycticorex*	O

Kotwal and Sahi (2007) reported 63 species belonging to 35 families and 12 orders from Mansar and Choudhary (2010) recorded 74 species belonging to 30 families and 11 orders from district Rajouri.

Percentage occurrence of species of various orders of birds revealed that 62% of the species in study area belonged to order Passeriformes where as order Cicconiformes had 4% of species, Galliformes and Strigiformes 2%, orders Piciformes, Coraciformes, Falconiformes and Columbiformes represent 5% each, Psittaciformes and Charadriiformes 3%, and Cuculiformes, Upupiformes, Pelicaniformes and Gruiformes had 1% species each (Fig. 1). This is in accordance with the order wise distributions of the bird species reported from India by Grimmett *et al.* (1998). Avifauna of Mendhar represent 5.85% of the avifauna of India thus has a fair contribution to Indian avifauna. The distribution of avifauna of Mendhar showed great resemblance with the avifauna of district Kathua, district Rajouri and Trikuta hills.

Comparison between the order wise distributions of the bird species already reported from India (Grimmett *et al.*, 1998), from district Kathua (Kumar, 2006) from Trikuta hills (Kait, 2011) and Mendher during the present study revealed that most of the species belonged to order Passeriformes.

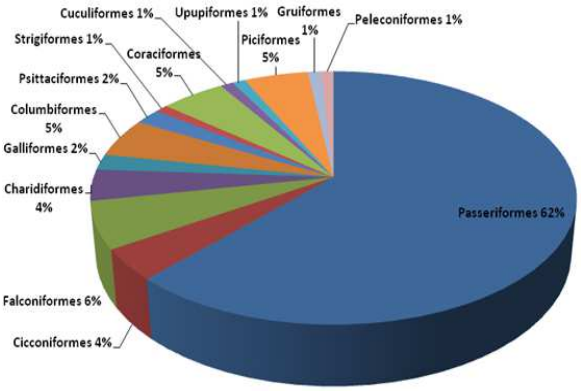

Figure 1. Percentage contribution of the various avifauna orders in Mendhar

Of the 39 families of birds recorded from Mendhar, 21 families belonged to order Passeriformes containing 50 species, 3 families belonging to order Coraciformes are represented by 4 species and 2 families belonging to order Piciformes are represented by 4 species (Fig. 2).

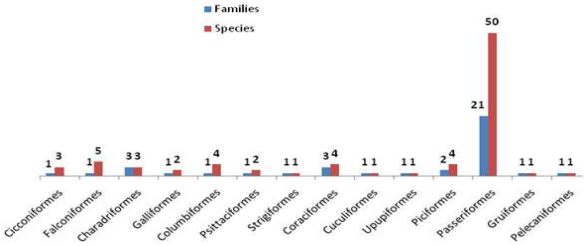

Figure 2. Number of families and species in various orders

The studies on local abundance status after Srinivasulu and Nagulu (2002) of avifauna of Mendhar reveal that avifauna of the study area can be placed into four abundance categories viz. common (C) represented by 33 species (i.e., 44%), uncommon (UC) by 17 species or (22%), occasional (O) by 13 species (17%) and rare R) by 13 species or (17%) (Fig. 3 & 4).

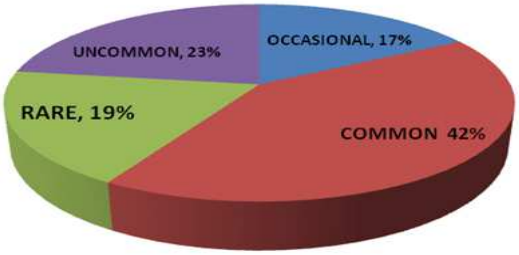

Figure 3. Percentage local abundance of avifauna in Mendhar

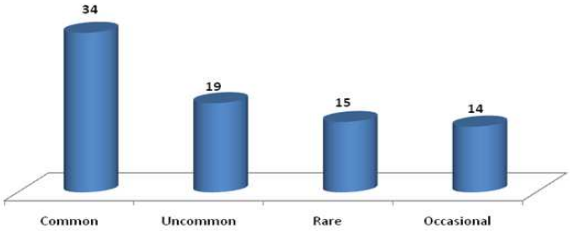

Figure 4. Local abundance status of avifauna in Mendhar

The comparison of the abundance status of the present study with the works of Kumar (2006), Kotwal and Sahi (2007) and Kait (2011) reveals that the status of avifauna is better in Mendhar than that of rest of the areas of the Jammu province of the Jammu and Kashmir state. However, occasional and rare species collectively count for more than 34% of the avian species in the study area, thus there is a need to take the steps to conserve the avifauna whose abundance status could otherwise degrade further.

References

Ahmed, A. 2004. Diversity and Community Structure of the Birds of Tehsil Doda, Jammu. *M. Phil. Dissertation*. Univ. of Jammu, Jammu.

Ahmed, A. 2009. *Studies on Diversity of avian fauna of District Doda (J&K)*. Ph. D Thesis submitted to Univ. of Jammu, Jammu.

Alfred, J. R. B, Kumar, A., Tak, P. C., and Sati, J. P. 2001. *Water birds of Northern India*. Zoological Survey of India.

Ali, S. 1941. *The Book of Indian Birds*. Oxford University Press, Bombay.

Ali, S. 1996. *The Book of Indian Birds*. 12th and enlarged centenary edition. Oxford Univ. Press, New Delhi.

Ali, S. and Ripley, S. D. 1968-74. *The Handbook of Birds of India and Pakistan*. Ten Volumes. Oxford University Press, Bombay.

Choudhary, N. J. 2010. *Diversity and status of wildlife fauna of District Rajouri, J&K State*. Ph. D. Thesis submitted to Univ. of Jammu, Jammu.

Grewal, B., Harvey, V. and Pfister, O. 2002. *A Photographic guide to the Birds of India*. Periplus Editions (HK) Ltd. Singapore.

Grimmett, R., Inskipp, C. and Inskipp, T. 1998. *Birds of The Indian Subcontinent.* Oxford Univ. Press, Delhi.

Kotwal, D. and Sahi, D. N. 2007. Diversity and abundance of avifauna of Mansar (J&K). *The Bioscan*, 2(4): 323-327.

Kumar, S., Kait, R. and Sahi, D. N. 2007. Diversity and status of mammals of Jasrota Wildlife Sanctuary, Kathua (Jammu and Kashmir). *The Bioscan.*, 2(3): 257-259.

Kumar, S. and Sahi, D. N. 2005. Avifauna of Sewa river catchment area, district Kathua (J&K). *National Journal of Life Sciences*., 2(supp.): 83-89.

Kumar, S. and Sahi, D. N. 2006a. Diversity and status of avifauna of Jasrota Wildlife Sanctuary, Kathua (J&K state). *J. Himalayan. Ecol. Sustain. Dev.*, 1: 95-104.

Kumar, S. and Sahi, D. N. 2006b. Mammalian diversity and Management plan for Jasrota wildlife Sanctuary, Kathua (J&K). *Tiger paper*, 34(1): 18-23.

Kumar, S. and Sahi, D. N. 2007. Diversity and status of mammals of district Kathua (J&K). *J. Nat. Con.*, 19(2): 369-374.

Pfister, O. 2004. *Birds and Mammals of Ladakh*. Oxford University Press, New Delhi.

Sahi, D. N. and Sharma, B. 2004. Diversity, Status and feeding ecology of avifauna of Ramnagar wildlife sanctuary.

Sharma, B. 2003. *Faunal Diversity of Ramnagar Wildlife Sanctuary, Jammu.* M. Phil. Dissertation, University of Jammu, Jammu.

Srinivasulu, C. and Nagulu, V. 2002. Mammalian and Avian diversity of the Nallamala Hills, Andhra Pradesh. *J. Zoos Print*., 171: 675-684.

Verner, J. 1985. Assesment of counting techniques. *Current Ornithology.*, 2: 247-302.

Wani, A. A. and Sahi, D. N. 2005. Diversity and status of birds of tehsil Doda, Jammu. *J. Natcon*., 17(1**)**: 135-143.