



Short Communication

Distribution and Habitat Use of Avian Fauna of Rawalakot City and its Surroundings, Azad Jammu and Kashmir, Pakistan

Saba Khalid*, Muhammad Saddique Awan, Riaz Aziz Minhas, Nasra Ashraf, Khawaja Basharat Ahmed, Nuzhat Shafi and Sajid Abassi

Department of Zoology, University of Azad Jammu and Kashmir, Muzaffarabad, Azad Jammu and Kashmir, Pakistan

ABSTRACT

Distribution and habitat use of avian fauna of Rawalakot city and its surrounding was studied from March 2006 to February 2007. The study area is situated in the center of district Poonch. For the convenience of data collection the study area was divided into six study sites; systematic surveys were conducted at each site. Direct sighting and indirect evidences were collected from all these sites. Seventy eight bird species were recorded that belonged to 34 families and 11 orders. Passeriformes was the dominant specie. The habitat destruction due to deforestation, agricultural activities, infrastructure and land sliding and disturbances by the increasing human population were major threats to the avian fauna of Rawalakot.

Article Information

Received 13 March 2015

Revised 23 June 2016

Accepted 03 June 2017

Available online 16 November 2017

Authors' Contributions

MSA designed the study. SK did field work and RAM and KBA analysed the data. SK, NA, NS and SA wrote the manuscript.

Key words

Avian fauna, Distribution, Habitat use, Habitat preference.

Azad Jammu and Kashmir is located at the junction of Palaearctic and Oriental region having rich mixed fauna and avian diversity of two geographical regions (Roberts, 1991) as well as the migratory birds of Central and Northern Europe who take the route of Afghanistan, Karakorum range, across river Indus in Pakistan, Azad Jammu and Kashmir and finally towards India (Ali and Ripley, 1987) to avoid adverse climatic conditions or in search of food but the local people are unaware of the avian role in ecosystems, leads to habitat destruction and hunting of bird species in the area. It is therefore required to document the avian diversity and address the factors that lead to habitat destruction and population decline of bird species in the area. In order to address these issues, the distribution, population status, and habitat preference of avian fauna in Rawalakot city was studied.

Materials and methods

The study was conducted at Rawalakot (32° 45' N to 35° 07' N and 73° 24' E to 74° 56' E), district Poonch, AJ&K (Anonymous, 2002). Topographically Rawalakot is mountainous area at an altitude of 5374 feet, having subtropical climate with pleasant summer and cold winter. The area receives precipitation in the form of rainfall and snow. Mild snowfall occurs almost in all areas of Rawalakot. The area possesses a rich flora, having dominant vegetation species of *Olea ferruginea*, *Ailanthus*, *Rosa indica* and *Euphorbia helioscopia*. Such diverse habitat

provides abode for a variety of bird species.

Bird population surveys (45) were conducted from March 2006 to February 2007. Study area was divided randomly into six localities having the same habitat to cover the maximum area for sampling. During the surveys, direct and indirect methods were used to gather information about the presence of avian fauna. Surveys were usually scheduled in the morning and evening time. Most of the day hours were used to gather indirect evidences. The bird fauna was observed by using Binocular (12X 50X) and identified with the help of available keys (Ali and Ripley, 1983; Roberts, 1991). GPS readings were taken in terms of coordinates and elevation at the points where any evidence was found. Habitat analysis was carried out to assess the flora by using quadrat method (Schemnitz, 1980). Dominance of plant species was calculated on the basis of important value index.

Results and discussion

Seventy eight bird species belonging to 34 families were identified (Table I) in forty five surveys. Among these species common myna, common swift, black bulbul, house crow, jungle crow were common. While, kalij pheasant, tree pipit, wagtail, kingfisher, spotted owl, spotted dove and Indian roller were scarce in numbers. Collared dove was frequently observed during survey. Himalayan tree creeper and red vented bulbul were residential birds of Rawalakot and were observed during all seasons. Observed birds were unevenly distributed in each locality. Mostly, avian abundance was observed in uninhabited areas. The percentage of relative abundance of all the species shows that Passeriformes (83.73%) is the dominant

* Corresponding author: saba_ak01@yahoo.com
0030-9923/2017/0006-2331 \$ 9.00/0

order in the study area followed by Columbiformes (3.40%), Cuculiformes (2.1%), Apodiformes (1.79%), Psittaciformes (1.7%), Coraciiformes (1.32%), Piciformes (0.76%), Upupiformes (0.31%), Ciconiiformes (0.24%) Strigiformes (0.12%) and Galliformes (0.10%). Among

plant species *Olea ferruginea* was dominant in study area followed by *Ailanthus altissima*, *Cannabis sativa*, *Dalbergia sissoo* and *Acacia nilotica* (Supplementary Fig. 1). Availability of abundant food resources and diverse habitat of Rawalakot city like open area, grass land,

Table I.- Bird species recorded in Rawalakot city and its surroundings.

S No.	Scientific name	Common name	Category residential status	IUCN red list (CR, EN, VU, NT)*	Protection status in Pakistan	Localstatus (R, C, F)*
Order Galliformes						
Family Phasianidae						
1	<i>Lophuraleucomelanos</i>	Kalij pheasant	Resident	LC		R
Order Piciformes						
Family Picidae						
2	<i>Dendrocopos himalayensis</i>	Himalayan woodpecker	Resident	LC		C
Order Upupiformes						
Family Upupidae						
3	<i>Upupa epops</i>	Common hoopoe	Resident	LC		C
Order Coraciiformes						
Family Coraciidae						
4	<i>Coracias benghalensis</i>	Indian roller	Resident	LC		R
Family Alcedinidae						
5	<i>Alcedo atthis</i>	Common king fisher	Resident	LC		R
6	<i>Halcyon smyrnensis</i>	White breasted Kingfisher	Resident	LC		R
Family Cerylidae						
7	<i>Ceryle rudis</i>	Pied kingfisher	Resident	LC		R
Order Cuculiformes						
Family Cuculidae						
8	<i>Cuculus varius</i>	Common Hawk cuckoo	Resident	LC		R
9	<i>Clamator jacobinus</i>	Pied cuckoo	Resident	LC		R
10	<i>Eudynamis scolopacea</i>	Asian Koel	Resident	LC		C
Order Psittaciformes						
Family Psittaculidae						
11	<i>Psittacula eupatria</i>	Alexandrine parakeet	Resident	LC		C
12	<i>Psittacula krameri</i>	Rose ringed parakeet	Resident	LC		C
Order Apodiformes						
Family Apodidae						
13	<i>Apus apus</i>	Common swift	Resident	LC		C
14	<i>Apus affinis</i>	House swift	Resident	LC		C
Order Strigiformes						
Family Strigidae						
15	<i>Bubo bubo</i>	Eurasian eagle owl	Resident	LC		C
16	<i>Athene brama</i>	Spotted owl	Resident	LC		C
Order Columbiformes						
Family Columbidae						
17	<i>Columba livia</i>	Rock pigeon	Resident	LC		C
18	<i>Columba leuconota</i>	Snow pigeon	Resident	LC		C
19	<i>Columba palumbus</i>	Common wood pigeon	Resident	LC		C
20	<i>Streptopelia decaocto</i>	Collared dove	Resident	LC		C
21	<i>Streptopelia orientalis</i>	Oriental turtle dove	Resident	LC		C
22	<i>Streptopelia chinensis</i>	Spotted dove	Resident	LC		C

S No.	Scientific name	Common name	Category residential status	IUCN red list (CR, EN, VU, NT)*	Protection status in Pakistan	Localstatus (R, C, F)*
Order Falconiformes						
Family Falconidae						
23	<i>Falco tinnunculus</i>	Common kestrel	Resident	LC		R
Order Passeriformes						
Family Laniidae						
24	<i>Lanius schach</i>	Rufous-tailed shrike	Resident	LC		C
25	<i>Lanius excubitor</i>	Great grey shrike	Resident	LC		C
26	<i>Lanius vittatus</i>	Bay backed shrike	Resident	LC		C
Family Corvidae						
27	<i>Urocissa flavirostris</i>	Yellow billed blue magpie	Resident	LC		C
28	<i>Dendrocitta vagabunda</i>	Rufoustreepie	Resident	LC		C
29	<i>Corvus splendens</i>	House crow	Resident	LC		C
30	<i>Corvus macrorhynchos</i>	Jungle crow	Resident	LC		C
Family Dicruridae						
31	<i>Dicrurus macrocercus</i>	Black drongo	Resident	LC		C
Family Rhipiduridae						
32	<i>Rhipidura albigollis</i>	White throated fantail	Resident	LC		C
Family Strunidea						
33	<i>Acridothera tristis</i>	Common myna	Resident	LC		C
34	<i>Acridothera ginginianus</i>	Bank myna	Resident	LC		C
Family Passeridae						
35	<i>Passer domesticus</i>	House sparrow	Resident	LC		C
36	<i>Passer hispaniolensis</i>	Spanish sparrow	Resident	LC		C
37	<i>Passer rutilans</i>	Russet sparrow	Resident	LC		C
Family Estrildidae						
38	<i>Amandava amandava</i>	Red avadavat	Resident	LC		C
39	<i>Lonchura punctulata</i>	Spotted munia	Resident	LC		C
Family Fringillidae						
40	<i>Carduelis spinoides</i>	Himalayan green finch	Resident	LC		C
41	<i>Carduelis flavirostris</i>	Twite	Resident	LC		C
42	<i>Carpodacus erythrurus</i>	Common rose finch	Resident	LC		C
Family Emberizidae						
43	<i>Emberiza leucocephala</i>	Pine bunting	Resident	LC		C
44	<i>Emberiza stewarti</i>	White-capped bunting	Resident	LC		C
45	<i>Emberiza</i>	Rock bunting	Resident	LC		C
46	<i>Emberiza pusilla</i>	Little bunting	Resident	LC		C
Family Hirundinidae						
47	<i>Hirundo rustica</i>	Common swallow	Resident	LC		C
48	<i>Hirundo daurica</i>	Red ramped swallow	Resident	LC		C
Family Motacillidae						
49	<i>Motacilla alba</i>	White wagtail	Resident	LC		C
50	<i>Motacilla maderaspatensis</i>	Large pied wagtail	Resident	LC		C
51	<i>Motacilla citreola</i>	Yellow headed-wagtail	Resident	LC		C
52	<i>Motacilla flava</i>	Yellow wagtail	Resident	LC		C
53	<i>Anthus trivialis</i>	Tree pipit	Resident	LC		C
Family Campephagidae						
54	<i>Pericrocotus flammeus</i>	Scarlet minivet	Resident	LC		C
55	<i>Pycnonotus leucogenys</i>	Himalayan bulbul	Resident	LC		C
56	<i>Pycnonotus cafer</i>	Red vented bulbul	Resident	LC		C
57	<i>Hypsipetes leucocephalus</i>	Black bulbul	Resident	LC		C
Family Irenidae						
58	<i>Chloropsis aurifrons</i>	Golden fronted leaf bird	Resident	LC		C
Family Turdidae						
59	<i>Enicurus leschenaulti</i>	Leschenaults forktail	Resident	VU		C

S No.	Scientific name	Common name	Category residential status	IUCN red list (CR, EN, VU, NT)*	Protection status in Pakistan	Localstatus (R, C, F)*
60	<i>Enicurus scouleri</i>	Little forktail	Resident	LC		C
61	<i>Saxicolator quata</i>	Common stone chat	Resident	LC		C
62	<i>Saxicola ferrea</i>	Dark grey bush chat	Resident	LC		C
63	<i>Saxicola caprata</i>	Pied bush chat	Resident	LC		C
	Family Sittidae					
64	<i>Sitta castanea</i>	Chestnut-bellied Nuthatch	Resident	LC		C
	Family Paridae					
65	<i>Parus major</i>	Great Tit	Resident	LC		C
	Family Certhiidae					
66	<i>Certhia himalayana</i>	Himalayan tree creeper	Resident	LC		C
	Family Zosteropidae					
67	<i>Zosterops palpebrosus</i>	Oriental white-eye	Resident	LC		C
	Family Oriolidae					
68	<i>Oriolus oriolus</i>	Golden Oriole	Resident	LC		C
	Family Phylloscopidae					
69	<i>Phylloscopus affinis</i>	Tickell's leaf warbler	Resident	LC		C
70	<i>Phylloscopus xanthoschistos</i>	Grey hooded warbler	Resident	LC		C
	Family Cisticolidae					
71	<i>Prinia cinerascens</i>	striated prinia	Resident	LC		C
	Family Muscicapidae					
72	<i>Cyornis tickelliae</i>	Salty-blue flycatcher	Resident	LC		C
73	<i>Saxicola leucurus</i>	Stone chat	Resident	LC		C
74	<i>Saxicola fulicatus</i>	Indian robin	Resident	LC		C
75	<i>Ficedula superciliosa</i>	Ultramarine flycatcher	Resident	LC		C
76	<i>Eumyias thalassinus</i>	Verditer fly catcher	Resident	LC		C
77	<i>Muscicapra sibirica</i>	Sooty fly catcher	Resident	LC		C
	Family Monarchidae					
78	<i>Terpsiphone paradise</i>	Indian paradise flycatcher	Resident	LC		C

LC, least concern; VU, vulnerable; R, rare; C, common.

forest and cultivated (maize and wheat) area prop up species richness (Ashkenazi and Dimentman, 1998). Similarly, integration of species habitat contributes to a better understanding of species resource requirements for suitable management program on year-round basis (Hoffman et al., 1996).

Rawalakot provide large mosaic habitats for avian fauna and provides nesting, breeding, foraging, and roosting sites. Any disturbance (grass cutting, wood collection and insecticidal spray) in and around the roost sites especially, during the breeding seasons should be restricted.

Supplementary material

There is supplementary material associated with this article. Access the material online at: <http://dx.doi.org/10.17582/journal.pjz.2017.49.6.sc4>

Statement of conflict of interest

Authors have declared no conflict of interest.

References

Ali, S. and Ripley, S.D., 1987. *Birds of India and Pakistan*,

- 2nd ed. Oxford University Press, pp. 223-669.
- Ali, S. and Ripley, S.D., 1983. *Handbook of the birds of India and Pakistan*. Oxford University Press, Delhi.
- Anonymous, 2002. *Azad Kashmir at a glance*. Statistics section, Planning and Development, Azad Govt. of State of Jammu and Kashmir.
- Ashkenazi, S. and Dimentman, C., 1998. *Wetlands Ecol. Manage.*, **6**: 169-187. <https://doi.org/10.1023/A:1008488607329>
- Hoffman, L., Hafner, H. and Salathe, T., 1996. *Colonial Water Birds*, **19**: 12-30. <https://doi.org/10.2307/1521942>
- Mckinney, M.L., 2002. *Bioscience*, **52**: 883-890. [https://doi.org/10.1641/0006-3568\(2002\)052\[0883:UBAC\]2.0.CO;2](https://doi.org/10.1641/0006-3568(2002)052[0883:UBAC]2.0.CO;2)
- Roberts, T.J., 1991. *The birds of Pakistan. Non Passeriformes*. Oxford University Press, Karachi, pp. 558.
- Schmnitz, S.D., 1980. *Wildlife management techniques manual*, 4th edition, revised. The Wildlife Society Inc., Washington, pp. 113-126.