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Full Length Research Paper

Birds of Srinagar City, Jammu and Kashmir, India

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An avifaunal survey was carried out in Srinagar city of Jammu and Kashmir from November 2007 to December 2009 to assess the migratory status and local abundance of the birds. Line and point transect methods were used for sampling. A total of 54 species of birds were recorded. Of these 54 species, 25 species were residents, 17 species were summer visitors (summer migrants) and 12 species were winter visitors (winter migrants).

Key words: Srinagar, abundance, avifauna, migratory status, point transect.

INTRODUCTION

Birds form an important component of the ecosystem. They play useful role in the control of insect pests of agricultural crops, as predators of rodents, as scavengers and pollinating agents. But, this wildlife resource, like other resources, is being exploited at a greater pace. This overexploitation has endangered many species, various species have already become extinct and many more are losing their number at an alarming rate. Wildlife conservation takes precedence in world natural resource agenda; for conservation measures to be implemented, it becomes necessary to know the species diversity, type of the habitat they live in and local abundance of fauna of an ecosystem.

State level faunistic surveys have been carried out by Choudhary (2002), Sharma (2003), Ahmed (2004), Wani and Sahi (2005), Kumar and Sahi (2005, 2006), Kumar (2006) and Kotwal and Sahi (2007). These studies were carried in Jammu division of Jammu and Kashmir State. The workers who have contributed to database of aves of Kashmir division are Shah et al. (2000) and Dar and Dar (2009). The present study was carried out in Kashmir division of the Jammu and Kashmir state to know species diversity, habitat choice and abundance of the birds in the city, so that the conservation strategies may be devised for the area.

Study area

The study area lies between 34° 05' 24'' north latitude and 74° 47' 24'' east longitudes and at an altitude of 1730 m above sea level. Temperature of study area ranges between 37°C in June-July and -14°C in December-January.

Srinagar is the summer capital of Jammu and Kashmir State of India. Situated in the centre of Kashmir Valley, the city is known for its beauty all over the world. It has world famous Dal and Nageen lakes, and the Mughal gardens like Nishat Bagh, Shalimar Bagh, Cheshmashahi and Harwan. These gardens not only give picturesque look to Srinagar but also provide important habitat to the avifauna. Besides, the beautiful hills of Shankaracharya and Hari Parbat are situated on the eastern and western sides of Dal Lake, respectively.

The vegetation around Dal includes trees of *Populus nigra, Platenus orientatis*, *Salix babylonica*, *Salix wallichiana*, *Salix alba, Morus alba*, *Morus nigra*, *Cedrus deodara*, *Pinus wallichiana*, *Aesculus indica*, etc. There are almost no bushes or tall grasses like *Phragmetes* sp.

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Table 1. List of avifauna of Srinagar city together with their migratory status and abundance.

Zoological name	Common name	Migratory status	Abundance	Preferred habitat
Pycnonotus leucotes	White cheeked bulbul	Rst.	F	TH
Acredotheries tristis	Common myna	Rst.	C	TH
Columba livia	Rock pigeon	Rst.	C	TH
Curvus splendense	House crow	Rst.	C	TH
Corvus monedula	Eurasian jackdaw	Rst.	O	TH
Milvus migrans	Black kite	Rst.	C	TH
Myophonus caeruleus	Blue whistling thrush	Rst.	O	TH
Dicrurus macrocercus	Black drango	Rst.	O	TH
Parus major	Great tit	Rst.	F	TH
Passer domesticus	House sparrow	Rst.	F	TH
Tachybaptus ruficollis	Little grebe (Dabchick)	Rst.	F	AqH
Alcedo atthis	Common kingfisher	Rst.	O	SH
Halcyon smyrenensis	White throated kingfisher	Rst.	O	SH
Megaceryle lugubris	Crested kingfisher	Rst.	O	SH
Turdoides subrufus	Rufouse babbler	Rst.	F	TH
Dendrocopos himalayensis	Himalayan woodpecker	Rst.	F	TH
Dendrocopos atratus	Stripe breasted woodpecker	Rst.	O	TH
Dendrocopos macei	Fulvous breasted woodpecker	Rst.	O	TH
Actitis hypoleucos	Common sand piper	Rst.	O	SH
Ardea cinerea	Eastern grey heron	Rst.	O	SH
Ardeola grayii	Indian pond heron	Rst.	F	SH
Egretta garzetta	Little egret	Rst.	O	SH/ TH
Bubuicus ibus	Cattle egret	Rst.	O	SH/TH
Tyto alba	Indian barn owl	Rst.	R	TH
Gallinula chloropus	Common moorhen	Rst.	O	SH/AqH
Turdus unicolor	Tickell's thrush	SM.	R	TH
Ixobrychus minutes	Little bittern	SM	O	SH
Pericrocotus brevirostris	Indian short billed minivet	SM	R	TH
Lanius schah	Long tailed shrike	SM	R	TH
Cuculus canorus	Eurasian cuckoo	SM	O	TH
Eudynamus scolopacea	Asian koel	SM	O	TH
Apus apus	Common swift	SM	F	TH/SH
Delichon dasypus	Asian house martin	SM	F	TH/SH
Upupa epops	Eurasian hoopee	SM	O	TH
Psittacula krameri	Rose ringed paraket	SM	O	TH

for the nesting of birds in the lake in the city.

MATERIALS AND METHODS

The study area was surveyed for recording avifaunal diversity by applying line transect (Sales and Berkmuller, 1988) and point transect methods (Verner, 1985). The surveys were carried out from November, 2007 to December, 2009, daily during the morning (1-2 h) and evening (1-2 h) hours when the birds are more active. Besides, several irregular visits were also made during different hours of the day. Binoculars (12 x 50 Super Zenith) were used to record the observations in order to avoid any disturbance to the birds.

For the identification of bird species, coloured plates of Ali and Ripley (1974), Ali (1996), Grimmett et al. (1998) and Grewal et al. (2002) were used.

The birds reported were seperated into winter migrants/winter visitors, summer migrants/summer visitors and residents.

RESULTS AND DISCUSSION

A total of 54 species of birds were reported from the study area (Table 1). The migratory status of avifauna revealed that 25 species were residents, 17 species were summer migrants and 12 species were winter migrants. Thus, avifauna comprised of 46.3% residents, 31.5% summer visitors and 22.2% winter visitors. Similar studies carried

Table 1. Contd.

Psittacula himalayana	Slaty headed parakeet	SM	O	TH
Megalaima zeylanica	Brown headed barbet	SM	O	TH
Megalaima virens	Great barbet	SM	O	TH
Streptopelia chinensis	Spotted dove	SM	O	TH
Streptopelia senegalensis	Little brown dove	SM	O	TH
Oriolus oriolus	Golden oriole	SM	R	TH
Sturnus vulgaris	Common starling	SM	O	TH
Anas penelope	Eurasian wigeon	WM	O	AqH/SH
Marmaronetta angustirostris	Marbled duck	WM	O	AqH/SH
Anas strepera	Gadwall	WM	F	AqH/SH
Anas platyrhynchos	Mallard	WM	O	AqH/SH
Anas crecea	Common teal	WM	O	AqH/SH
Fulica atra	Coot	WM	C	AqH/SH
Anas clypeata	Northern shoveler	WM	O	AqH/SH
Rhodonessa rufina	Red crested pochard	WM	O	AqH/SH
Aythya farina	Common pochard	WM	O	AqH/SH
Aythya nyroca	Ferruginous pochard	WM	O	AqH/SH
Mergus merganser	Common merganser	WM	O	AqH/SH
Grus grus	Common crane	WM	R	SH/TH

C = Common, F = Frequent, O = Occasional, R = Rare, AqH = Aquatic habitat, SH = Shore habitat, TH = Terrestrial, Rst = Resident, WM = Winter migrant, SM = Summer migrant: Terminology after Khan (2002). C = Common means it can invariably be seen in the habitat where it occurs with the provision that the season is also appropriate. F = Frequent means that even visiting appropriate habitat, it will not be seen or heard invariably, perhaps only in one visit out of three. O = Occasional means seen or heard only in one visit out of six. R = Rare means even less likelihood of occurrence. Besides this, depending upon whether the species of birds are sighted during all the months/seasons of the year or only during particular season/some months of year and absent during others from the study area, it was referred to as residents (Rst) or migrants (M), respectively. Migrant category was further differentiated into: SM = summer migrants, those which visit the study area during summers. WM = winter migrants, those that visit the study area during winters.

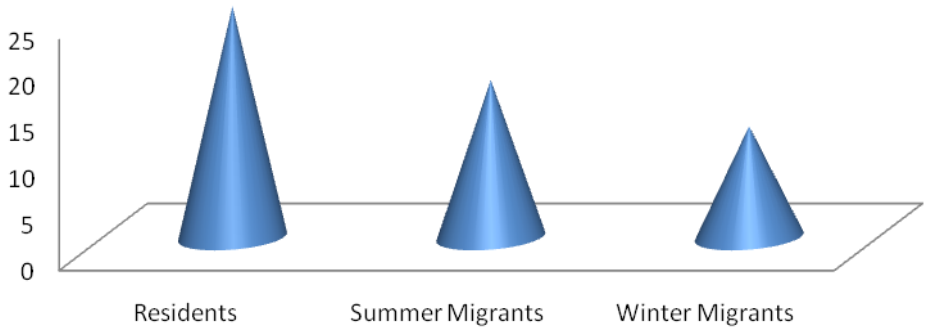

Figure 1. Migrant-resident status of avifauna of Srinagar city.

out by Sharma (2003) in Ramnagar wildlife sanctuary reported 70 species, Ahmed (2004) in Tehsil Doda recorded 45 species and Kotwal and Sahi (2007) reported 63 species of birds from Lake Manser. Out of total 63 species reported from Lake Manser (J & K), 50 species were residents, 11 species were winter migrants and two species were summer migrants (Figure 1).

Comparison with the works of Kumar (2005) and Kotwal and Sahi (2007), shows that number of summer migrants (17 species) in Srinagar is higher as compared to those in Jammu region (two species), but the number of winter migrants (12 species) is more or less the same at both places, however some of the species were different. This shows that the summer visitors are more in temperate regions.

Record of the preferred habitats was also made, and showed that the number of bird species living in terrestrial habitat was 29, in aquatic habitat was one and in shore

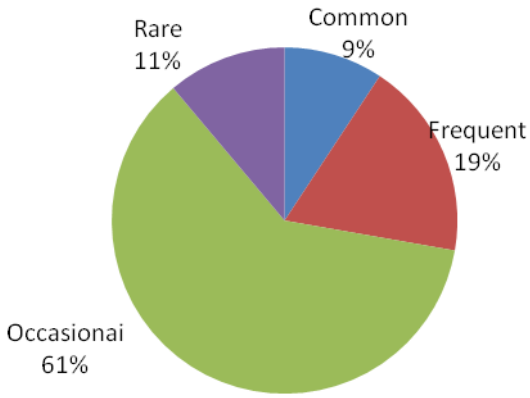

Figure 2. Pie chart showing abundance of bird species of Srinagar city.

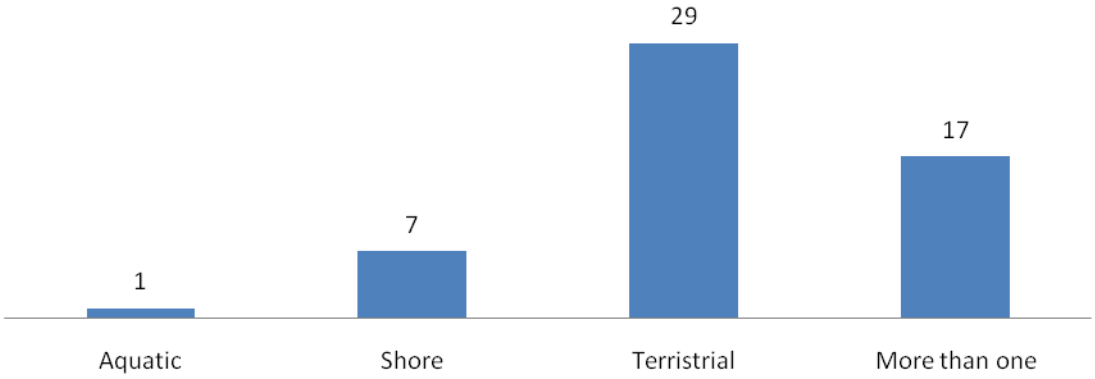

Figure 3. Number of species living in different habitats in Srinagar city.

habitat was seven species, whereas 17 species occupied more than one habitat. Thus, the number of species living in terrestrial habitat was more, which is in accordance with Kotwal and Sahi (2007) Figure 2 and Figure 3.

The study on abundance of bird species shows that five species were common, 10 species were frequent, 33 species were occasional and six species were rare. 72% of the avifauna was rare and occasional.

Thus, it is evident that most of the species are residents, terrestrial and occasional. The reasons for more numerous species in terrestrial habitat is that the terrestrial area of the city is larger than the aquatic habitat, the food items are abundant as compared to aquatic and shore habitats, and moreover, the human activities have degraded the aquatic habitat to a great extent. The study also shows that the Srinagar has good number of the species of birds, but most of the species are represented by very few individuals and the habitat needs proper care to raise the abundance of birds.

REFERENCES

Ahmed A (2004). Diversity and Community structure of the birds of Tehsil Doda, Jammu. M. Phil. Dissertation. University of Jammu, Jammu (J&K), India.

Ali S (1996). *The Book of Indian birds* (12th and enlarged centenary edition). Bomb. Nat. Hist. Soc. Oxford University Press, New Delhi.

Ali S, Ripley SD (1974). The *Handbook of Birds of India and Pakistan*. Ten volumes. Oxford University Press, Bombay.

Choudhary V (2002). *Studies on Avian Diversity of Jammu District of J&K State*. Ph. D. Thesis . University of Jammu, Jammu.

Dar IA, Dar MA (2009). Seasonal Variation of Avifauna of Shallabug Wetland, Kashmir. J. Wetland Ecol., 2:20-34.

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

Grimmet R, Inskipp C, Inskipp T (1998). *Birds of Indian Subcontinent*. Oxford University Press, Delhi.

Khan MA (2002). Avifauna of Kaghan Northwest Frontier Province, Pakistan. *Tiger Paper*, 29(3):16-19.

Kotwal D, Sahi DN (2007). Diversity, Status and Abundance of avifauna of lake Mansar, Jammu and Kashmir. J. *The Bioscan*, 2(4):323-327.

Kumar S (2006). *Diversity of avifauna of District Kathua, J&K*. Ph.D. Thesis. University of Jammu, Jammu.

Kumar S, Sahi DN (2005). Avian fauna of Sewa River catchment area, District, Kathua (J&K). *Nat. J. Life Sciences*, 2 (Supp):83-89.

Kumar S, Sahi DN (2006). Diversity of Avifauna of Jasrota Wildlife Sanctuary, Kathua (J&K State). J. Himalayan. Ecol. Sustain. Dev. (1):95-104.

Sales B, Berkmuller K (1998). Manual of Wildlife Techniques for India. Food and Agriculture Organisation of the United Nations, Dehradun.

Shah GM, Qadri MY, Jan U (2000). Species Composition and Population Dynamics of Birds of Hokarsar Wetland, Kashmir.

Environment, Biodiversity and Conservation. APH Publishing Corporation, New Delhi.
Sharma B (2003). *Faunal diversity of Ramnagar Wildlife Sanctuary, Jammu*. M. Phil. Dissertation, University of Jammu, Jammu.
Verner J (1985). Assessment of Counting Techniques. *Current Ornithology,* 2:247-302
Wani AA, Sahi DN (2005).Diversity and Status of birds of Tehsil Doda, Jammu. J. Nat. Con., 173(1): 135-143.