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COMMUNITY STRUCTURE OF AVIAN FAUNA (MORNING HOURS) IN GHINGRAN VALLEY, GARHWAL HIMALAYA, INDIA

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ABSTRACT

Frequent surveys from July 2016 to June 2017 in a temperate deciduous forest of Ghingran valley resulted in identification 41 birds species, 15 families and 4 orders. Family *Accipitdae* with 7 species dominants in all birds. The fauna includes 3 threatened, viz. *Gyps indicus, Gyps himalayensis and lophura lecomelanus*, 9 endemic species, 27 species were found to have widespread distribution and very common in Ghingran valley.

Keywords: Temperate deciduous forest, Community, Relative abundance, avian fauna, Garhwal Himalaya.

INTRODUCTION

The community structure and distribution patterns of the bird fauna of temperate deciduous forest depends on its physical structure and function. Much information concerning the communities structure of birds of the temperate forest were derives from studies conducted at high latitude (Mac Arthur, 1959; Hilden, 1965, James, 1971, Bisht *et al.,* 2004) and almost nothing is known about the temperate forest birds of subtropics. The mountain of Uttarakhand harbours a variety of forest, and some 500 species of birds (Ali and Repley, 1983, Grimmett *et.al.,* 1999). In present paper seasonal bird species occurrence, relative abundance, community of birds of temperate forest in Ghingran valley, Garhwal Himalaya have been discussed.

MATERILAS AND METHODS

Survey was carried out from July 2016 to June 2017 at the morning hours from 6:00 to 9:00 am. The transect walks, point count, calls count methods was followed to record the birds species status and relative abundance. With the aid of field binocular (10×50) and pictorial field guides (Grimmett *et al.,* 1999; Kazmeirzak, 2000) each birds was identified. Mostly, transect of 0.5 to 1.0 km. length was silently walked and all birds were counted. The birds flying about 30-50 meter above from ground level were also recorded.

The data collected was analyzed by using the following formulae:

Relative abundance = No. of individuals of a species / total no of individuals of the all species.

RESULTS

The monthly occurrence of bird species was also recorded, which showed fluctuation. Some birds seemed few months and other remained present throughout study period, mostly this due to the altitudinal and monthly migration (Table 1). Some birds like Blue rock pigeon, Spotted dove, streaked laughningthrough, common myna, Himalayan bulbul, Red vented bulbul, Blue whistling thrush and House sparrow were recorded all the months but other like birds, Black francolin, Rose ringed parakeet and common hoopoe were observed only two months during study period.

The average relative abundance showed great variations (Table). The maximum relative abundance was recorded of House sparrow (0.1007) followed by common myna (0.0474), Grey hooded warbler (0.0427), Black headed Jay (0.0349), Himalayan Griffon 0.0114), Kaleej pheasant (0.0226) and yellow wagtail with minimum relative abundance (0.0071) was recorded.

The sub continental status was assessed after Kazimerirzac (2000), Grimmett *et.al.* (1999) and Bird life

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international (2001). White rumped vulture was found as resident and threatened, Jungle myna as endemic, and Black lowred tits as endemic and altitudinal migrant and yellow crowned woodpecker as near endemic. Other birds were recorded as breeder, winter visitor, passage migrant, etc. (Table 1).

The nomenclature adopted here is after Grimmett *et al.* 2000 and sub-continental status after Kazmierczak (2000) and Bird life international (2001).

Table 1. Relative abundance and distribution of bird species in study site Ghingran valley Garhwal Himalaya.

Systematic List		Sub Continental Status	Average relative abundance
FALCONIFORMES			
Accipitridae			
Himalayan Griffon	*Gyps himalayensis*	A	0.00544
Long billed vulture	*G. indicus*	R(A), Th	
Red headed vulture	*Sarcogyps calvus*	R	0.0082
Egyptian vulture	*Neophron percnopterus*	R(A)	0.0279
Black kite	*Milvus migrans*	RM	0.0077
Shikra	*A. badius*	RM	0.0071
Steppe eagle	*A. nipalensis*	W	0.0039
GALLIFORMES			
Phasianidae			
Kalij pheasant	*Lophura leucomelanos hamiltoni*	A	0.0226
Black francolin	*Francolinus francolinus*	R	0.0024
Chukar	*Alectoris chukar*	R	0.0109
COLUMBIFORMES			
Columbidae			
Rock pigeon	*Columba livia*	RA	0.0302
Oriental turtle dove	*S. orientalis*	RMW	0.0199
Spotted dove	*S. chinensis*	RA	0.0295
Rose-ringed parakeet	*P. krameri*	R	0.0272
Slaty headed parakeet	*P. himalayana*	RA	0.0248
Upupidae			
Common hoopoe	*Upupa epops*	RBW	0.0049
PICIFORMES			
Capitonidae			
Grey headed woodpecker	*P. canus*	R	0.0255
Scaly bellied woodpecker	*P. squamatus*	R	0.0180
Yellow crowned woodpecker	*D. mahrattensis*	N	0.0115
Red-rumped swallow	*H. daurica*	RAMW	0.0118
Dicruridae			
Black drongo	*D. macrocercus*	RA	0.0113
Common myna	*A. tristis*	R	0.0474
Jungle myna	*A. fuscus*	R	0.0285
Corvidae Black headed jay	*Garrulus lanceolatus*	RA	0.0349
Red billed blue magpie	*U. erythrorhyncha*	RA	0.0393
Grey treepie	*Dendrocitta formosae*	RA	0.0145

Large billed crow	*C. macrorhynchos*	RA	0.0385
Campephagidae			
Scarlet minivet	*P. flammeus*	RA	0.0159
Pycnonotidae Himalayan bulbul	*Pycnonotus leucogenys*	R	0.0612
Red vented bulbul	*P. cafer*	R	0.0368
Streaked laughing thrush	*G. lineatus*		0.0506
Certhidae			
Eurasian treecreeper	*C. familiaris*	RA	0.0173
Great tit	*P. major*	RA	0.0337
Turdidae			
Blue whistling thrush	*Myiophonus caeruleus*	AM	0.0372
Oriental magpie robin	*Copsychus saularis*	RM	0.0091
White capped redstart	*Chaimarrornis leucocephalus*	A	0.0093
Yellow wagtail	*M. flava*	BWP	0.0071
Yellow bellied fantail	*R. hypoxantha*	RA	0.0077
Sylviidae			
Grey hooded warbler	*S. xanthoschistos*	A	0.0427
Zosteropidae Oriental white eye	*Zosterops palpebrosus*	R	0.0157
Ploceidae			
House sparrow	*P. domesticus*	M	0.1007

E- endemic to the Indian sub-continent.

N-near endemic.

R-resident.

B- breeder.

A- altitudinal migrant.

M- migrates within sub-continent (breeds in the Himalaya and winters in southern India and/Sri Lanka).

P-passage migrant.

W-winter visitor.

Th- threatened with extinction.

DISCUSSION

Findings of present study suggest that the bird community structure of the temperate forest of Garhwal Himalya also exhibit variation in time and is a function of the food as reported by Sabo and Holmes (1983), Mac Arthur (1958) and Holmes *et al.* (1986). During winter months (December-January) low occurrence appears due to shift of birds to low altitude. With the onset of spring – summer, growth of vegetation and insects population, birds populations and patterns of relative abundance have been linked with habitat structure (Javed and Kaul, 2002). Mostly birds depend for their food in the habitat. The rich floral diversity emphasis on the richest bird diversity but it is always not true. The strength depends upon the food availability and better protected habitat and some other factors effects the density of bird's species. Also the data of morning hours collected at site the highest bird species are found in morning time in Ghingran valley. This mean that more than 50 types of forest have been described in Garhwal Himalaya by Champion and Seth (1968), must have been good number of species of bird fauna.

CONCLUSION

The study shows that temperate deciduous forests have the greater number of bird species, this kind of studies produce some premonitory information about birds of particular forest type which will helpful to make strategies for their protection and conservation.

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