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Ajaz Ahmed Wani*

Head Department of Zoology Govt. Degree College Doda, Jammu and Kashmir.

Email: dr.ajazwani@rediffmail.com



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Ajaz Ahmed Wani*

Head Department of Zoology Govt. Degree College Doda, Jammu and Kashmir.

Email: dr.ajazwani@rediffmail.com

ABSTRACT

Birds are not static and undergoes migration that can be local or over long distance in order to avoid unfavorable climatic conditions, in search of food or for breeding purpose. A study on altitudinal distribution was made in temperate and subtropical forest of middle Himalayan chain of Jammu and Kashmir. In the present study a total of 71 species of birds was documented from the study area belonging to 9 orders 27 families and 12 subfamilies. The study shows the distribution range of all species between 700m to 3500 m.

Keywords: *Altitudinal distribution, Birds, Doda Himalayas, Jammu and Kashmir.*

INTRODUCTION

Birds are warm blooded animals which can maintain their body. These are considered as master of air (Feathered Biped). This description is apt and precise and cannot apply to other animal groups. These being the master of air have been viewed as an indicator of environmental quality. The colour pattern of feathers is one of the important taxonomic diagnostic tool used for their identification. The good colour vision enables them to locate food to recognize other members of the species and to distinguish sex of each individual.

They perform a variety of function in a natural ecosystem. The prey birds which hunt during day and night. Vultures, Kites and Crows act as scavengers and efficiently dispose the animal carcasses, decaying matter and thus preventing epidemics.

In agricultural, the role of birds is complex yet it is interesting and varied. It depends upon number of factors like their feeding nature and the extent to which they depend on crops, their age and physical conditions. As aves appear to be a climax group at the height of their evolutionary career. They undergo extensive adoptions in terms of feeding habits such as some are carnivours, insectivores, grainivourse and omnivores.

As far as study of birds in Jammu division is concerned no such detailed study in the birds of Jammu region except a few records Omaston (1927), Whistler (1928), Sahi (1985) Choudhary (2002)

Sharma and Sahi (2006) and Wani and Sahi (2005) Kumar (2006).

Study Area:

The study was carried out in erstwhile district Doda of Jammu and Kashmir. It has seven tehsils viz Doda, Bhaderwah, Kishtwar, Ramban, Banihal, Thathri and Gandoh. These tehsil represent the study stations in the study area. It is located in Pir Panchal range of middle Himalayan Chain of North West Himalayas and is having a typical terrain. The lower parts of erstwhile district Doda experience a subtropical climate which is characterized by hot and dry season, while upper reaches the Bhaderwah, Kalash Kund, Marmat, Padder, Marwah, Dachan etc. are comparatively cooler in summer with temperate type of climate. The mean maximum and minimum temperature during summer ranges from 36⁰ C and 14⁰C respectively where as during winter ranges between 6⁰ C and -2⁰ C respectively.

The study area falls between 32⁰-53' and 34⁰-21' north latitude and 75⁰-1' and 76⁰-47' east longitude with an elevation ranges between 900m to 4200m above sea level. The forest is of temperate type including predominant ever green tree species comprises of *Pinus roxburgii*, *Cedrus deodara* and *Quercus sps*. Where as predominant deciduous tree species comprises of *Alunus nitida*, *Aesculus indica*, *Ficus sps*. Besides large no. of shrubs such as *Princepia utilis*, *Rhodendron arboreum*, *Puncia granatum*, *pyrus pashia* etc., and herbs species such

as *Clematis baccellata*, *Lepidium sativum*, *Desmodium triflorus*, *Allium graffithianum*, etc. were reported from the study area. Identification of Plant species was made in the museum of Botany Department, university of Jammu, help was also taken from the Thesis "Flora of Distt. Doda" (Lal 1997).

For identification and field diagnosis of birds, colourful plates of Ali and Repley (1968-74), Ali (1996), Grimmet et al; (1998) and Grewal et al; (2002) proved quite helpful.

METHODOLOGY

In order to record the feeding ecology of the birds; it is pertinent first to record the diversity of the bird. Following methods were used to record the diversity and feeding behavior of the birds.

- 1. Line transect Method:** This method is simple to use and offers greater flexibility. In this method the observer walks on the predetermined transects and records the birds which one sees or hears. All the birds sighted and calls of the birds which can be easily identified were recorded while sampling the birds. In the study area transects of 2km were set at each station by keeping 50m width on each side. But this width sample varies at different places as birds are not visible due to foliage cover or because of terrain of the area. The general bird activities viz feeding, flying, resting and nesting were recorded along with transect.
- 2. Point Transect method:** This method can be considered as Line transect done at zero speed for short duration of time (Verner 1985). This method gives information regarding vegetation condition of area, height of occurrence of birds, no. of

individuals sighted, social association, species diversity, food habits and social behaviour.

Observation and Discussion:

Birds are highly mobile and as a result can show the altitudinal movements. This movement is for feeding purpose or to avoid the unfavorable environmental conditions. In the present study an effort has been made to work out the altitudinal distribution of birds in the study area, as the birds prefer specific habitats and specific altitude and undergoes migration. Table 1 shows the altitudinal distribution of the birds in the study area. It has been observed that only one species i.e. Great Cormorant is found at an altitude of 700-900m; 3 species exist between 700-1500m range, whereas 17 species were present in the range between 700-2000m, 10 species were present in the range between 700-3000m and 7 species were observed within the range of 1200-3500m. Jungle Crow was found within the range of 700-4000m. Grey Wagtail was found between 1000-2500 m. Black Throated Tit was observed in the range between 1200-2600m.

Monal Pheasant was reported between 1600-3500 m whereas Cheer Pheasant and Kaleej Pheasant were found in the range between 1300 to 3000 m and 1300-2600m respectively. Rest of the ranges as depicted in the table was represented by each species. Some the species such as Long Legged Buzzard was present in the range of 1500 to 3400 m. Rock Bunting was reported within the range of 1000-3200 m. Himalayan Long Billed Vulture and Himalayan Griffon Vulture represents the range between 700-3000m, whereas White Backed Vulture was reported between 700-2500m.

Table 1: List of the Birds with their altitudinal distribution (Ranges) observed in the Study Area of Doda, Jammu and Kashmir

S.No	Name of the Bird	Altitudinal Ranges
1.	Pariah Kite	700-2800m
2.	Himalayan Long Billed Vulture	700-3000m
3.	Himalayan Griffon Vulture	700-3000m
4.	White Backed Vulture	700-2500m
5.	Monal Pheasant	1600-3500m
6.	Cheer Pheasant	1300-3000m
7.	Kaleej Pheasant	1300-2600m
8.	Chukar	700-2000m
9.	Blue Rock Pigeon	700-2200m
10.	Rufous Turtle Dove	700-2500m

11.	Indian Spotted Dove	700-2500m
12.	Indian Ring Dove	700-2000m
13.	Black Drongo	700-2200m
14.	Indian Golden Oriole	700-2000m
15.	Rufous Baked Shrike	700-2700m
16.	Great Grey Shrike	700-2500m
17.	Rose Ringed Parakeet	700-2200m
18.	Blossom Headed Parakeet	700-2200m
19.	Lorikeet	700-1600m
20.	Northern Spotted Owlet	700-1800m
21.	Barred Jungle Owlet	700-1900m
22.	Himalayan Pied Kingfisher	700-1800m

23.	White Breasted Kingfisher	700-2000m	48.	Himalayan Brown Dipper	1000-3200m
24.	European Hoopoe	700-2700m	49.	Himalayan Tree Creeper	1200-3200m
25.	Himalayan Great Barbet	700-2600m	50.	Jungle Babbler	700-2200m
26.	Mahratta Woodpecker	700-1800m	51.	Paradise Flycatcher	1000-2300m
27.	Lesser Golden Backed Woodpecker	700-1800m	52.	Veriditor Flycatcher	1200-2800m
28.	Streak Throated Woodpecker	700-1800m	53.	Himalayan Whistling Thrush	700-3100m
29.	Grey Headed woodpecker	700-2400m	54.	Grey Bush Chat	1200-2800m
30.	Common Myna	700-2600m	55.	Indian Magpie Robin	700-2000m
31.	Jungle Crow	700-3700m	56.	White Capped Redstart	900-2600m
32.	Indian Tree pie	700-2200m	57.	Plumbeous Water Redstart	900-2600m
33.	Yellow Billed Blue Magpie	700-2500m	58.	Blue Fronted Redstart	900-2800m
34.	Long Tailed Minivet	700-2200m	59.	Spotted Fork Tail	1100-2600m
35.	Red Rumped Swallow	700-1600m	60.	Blue Throat	1400-2800m
36.	Wire Tailed Swallow	700-1500m	61.	White Cheeked Bulbul	1200-3200m
37.	White Wagtail	700-2500m	62.	Black Bulbul	700-2500m
38.	Indian Pied Wagtail	700-1800m	63.	Blue Capped Rock Thrush	1200-2800m
39.	Yellow Wagtail	1200-2800m	64.	Asian Brown Flycatcher	700-1900m
40.	Grey Wagtail	1000-2500m	65.	Himalayan Cinnamon Tree Sparrow	700-2600m
41.	Indian White Eye	700-2000m	66.	Rufuous Sibia	1000-2800m
42.	Purple Sunbird	700-2200m	67.	Rock Bunting	1000-3100m
43.	House Sparrow	700-2800m	68.	Green Backed Tit	1500-2900m
44.	Baya Weaver	700-1800m	69.	Great Cormorant	700-900m
45.	Spotted Munia	700-2200m	70.	Common Wood Shrike	700-1600m
46.	Grey Tit	700-2400m	71.	Long Legged Buzzard	1500-3200m
47.	Black Throated Tit	1200-2600m			

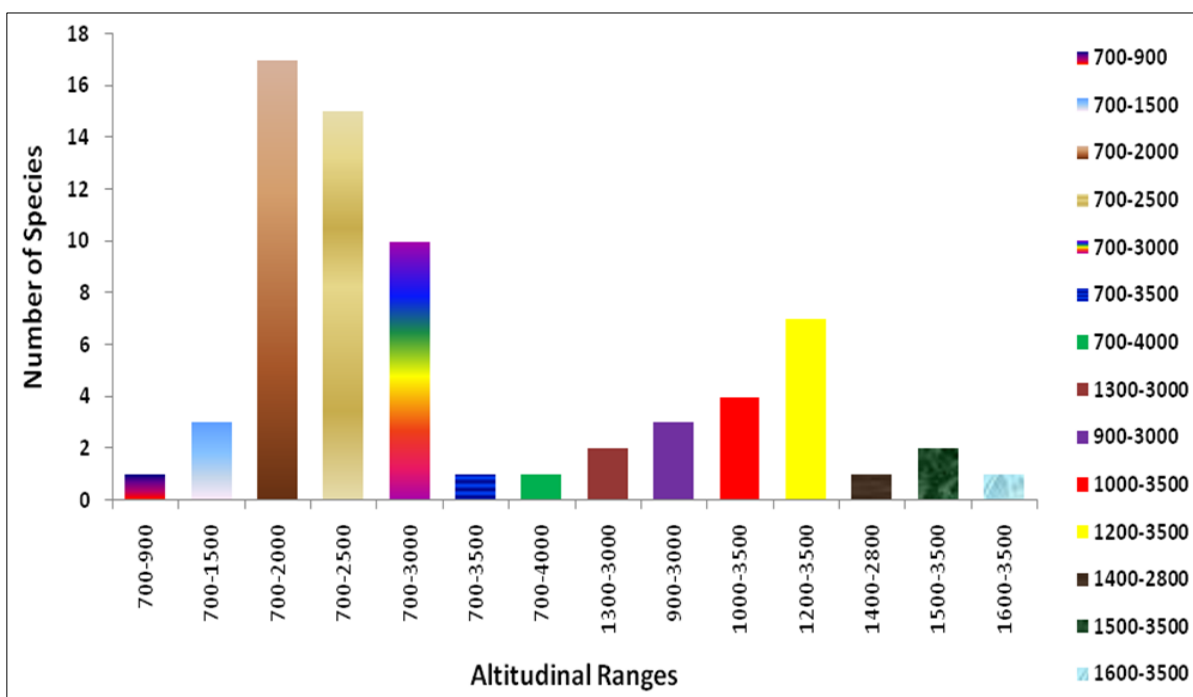


Figure No.1

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