

**DIVERSITY AND HABITAT ASSOCIATION OF AVIFAUNA IN
SOMESHWOR RANGE OF MADI, CHITWAN, NEPAL**



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RECOMMENDATIONS

This is to recommend that the thesis entitled “**Diversity and Habitat Association of Avifauna in Someshwor Range of Madi, Chitwan, Nepal**” has been carried out by **Mr. Bishnu Thapa** for the partial fulfilment of the Degree of Master of Science in Zoology with special paper Ecology and Environment. This is his original work and has been carried out under my supervision. To the best of my knowledge, this thesis work has not been submitted for any other degree in any institutions.

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On recommendation of supervisor Prof. Dr. Tej Bahadur Thapa, this thesis submitted by Mr. Bishnu Thapa entitled **“Diversity and Habitat Association of Avifauna in Someshwor Range of Madi, Chitwan, Nepal”** is approved for examination and submitted to the Tribhuvan University in partial fulfilment of the requirements for the Degree of Master of Science in Zoology with special paper Ecology and Environment.

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DECLARATION

I hereby declare that the work presented in this thesis has been done by myself, and has not been submitted elsewhere for the award of any degree. All sources of information have been specifically acknowledged by reference to the author(s) or institution(s).

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ABSTRACT

This study was carried out in and around Someshwor range Forest of Madi, Chitwan, Nepal with the objective of investigating the Avifaunal Seasonal Diversity and its association with vegetation structure. To facilitate the research objective, forest range were categorized into two different belts i.e. lower and upper belt on the basis of altitude. Bird surveys were conducted in two different seasons of a single year from January to June of 2014. For the survey, point count method was used for bird sampling on each 50m altitude difference. Human trail were taken as reference line for the plot setup and size of the Plots were of 50 m radius and vegetation character such as DBH, Basal area and tree diversity was measured from the same sampling plots where birds sampling were done. All the data were analyzed by using SPSS-17.0 software. Altogether, 101 bird species belonging to 11 orders and 32 families were recorded. Among them 65 bird species were resident, 22 species winter migrants and 14 species summer migrants. The highest number of species which was 59 was represented by the order Passeriformes. I found significant difference (P-value= 0.674, df = 1, $t = 1.134$) in species richness of birds between two different seasons. The species richness was higher in winter season and lowest in summer season. Easy availability of food, suitable climate, increased vegetation and flowering of plant in winter attracted large number of birds in winter. One way ANOVA revealed that there was a significant difference ($F = 5.46$, $df = 1$, $P < 0.05$) in bird species richness among the two different belt of the forest. The species richness was higher in Lower belt than the upper belt. Different Factors like availability of food and disturbances, elevation, heterogeneity and edge effect were the important factor for occurrence and distribution pattern of birds in different belts in the study area. Sharp effect of altitude variation was seen on the species richness and population of bird species. Tree species diversity and density were found more on lower belt but tree DBH and Basal area were found more on upper belt. The correlation between avian diversity parameters and vegetation structure revealed that Bird species richness was significantly positively correlated with tree species diversity ($r = 0.69$) and tree density ($r = 0.71$) but Negative correlation was found between bird species richness and tree DBH ($r = -0.539$). Habitat disturbances, forest fire, overfishing, Use of pesticides by the farmers near the forest, Hunting and rearing, lack of awareness education were the major threats to the avian community. Further research should be conducted to find out more interesting relation between birds and its habitats throughout the Someshwor range.

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ABBREVIATIONS AND ACRONYMS

Abbreviated form	Details of abbreviations
BCN	Bird Conservation Nepal
BES	Bird Education Society
BCF	Barandabhar Corridor Forest
CDZ	Central Department of Zoology
CNP	Chitwan National Park
DBH	Diameter at Breast Height
DNPWC	Department of National Parks and Wildlife Conservation
GPS	Global Positioning System
GIS	Geographic Information System
Ha	Hectare
IUCN	World Conservation Union
KMTNC	King Mahendra Trust for Nature Conservation
SPSS	Statistical Package for Social Science
TUCL	Tribhuvan University Central Library