

A Notational Composition of Bird Species of Nilgiri Western Slope Forests - A Paradise of Avifauna in the Southern Western Ghats

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Abstract- Avifaunal composition of Nilgiri Western Slope forests was studied. A total of 160 species were identified of which 9.38% are migratory. 56.25% were common, 35.46% were not common, 1.94% were rare, 1.25% were local migratory by status. Very high richness index (25.56846) and Shannon's diversity index (4.822978) indicating a luxuriant bird species composition in this habitat. The low value of dominant index (0.008) indicating co-dominance of species and the evenness index value near to one indicating even distribution or continuous distribution of bird species in this locality. Lower anthropogenic disturbances, lack of hydroelectric dams, forest continuity and luxuriant vegetation of the area harbours good avian population in this locality and the area can be considered as a paradise for avian conservation in the Southern Western Ghats.

Index Terms- Species composition, Forest habitat, Species richness, Species diversity, Avifauna.

I. INTRODUCTION

The Nilgiri Western Slope forests comprised of Attappady, Silent Valley and Nilambur forest skirting the Southern Western edge of the Nilgiris. It lies between 11°N to 11°23' N latitude and 76° 15' E to 76° 33' E longitudes. This tract of forest is essentially a series of parallel ridges starting from the Nilgiri edge and running down to the Attappady plateau in the average annual rainfall ranging from 2500-5000mm. This area has four dry months, higher reaches three dry months and the crest line of Kundar along the eastern edge of New Amarambalam only two dry months (Nair, 1988). The mean temperature in the hottest month is 35°C and that of coldest month is 15°C.

This forest tract is a paradise of avifauna. Common birds, rare birds, endemic and endangered birds are seen in this locality. Several migratory and local migratory birds are also found in this forest patches. A detailed investigation of bird species in this region was conducted with special reference to richness, dominance, diversity, abundance, evenness and habitat preference.

II. MATERIALS AND METHODS

The selection of study plots was based on the differences in the vegetation structure. Forest tracts were used as baseline and plots were taken as belt transect of approximately 20-30 m width

and with a length varying 2 Km – 5 Km. Observations were made on foot during day time between 6.30 12 h and were aided with a 10 x 40 super zenith binoculars. During each observation the following details were recorded. a) Name of the species, b) Location of sighting-ground, tree, shrub or at flight and c) activity. From this data species richness diversity, dominance and evenness were calculated as per Margalef (1958), Shannon-weinner (1949), Simpson (1948) and Pielou (1975) index method.

III. RESULTS

A total of 160 species were observed from this region. Almost all sightings were from vegetation. Species dwells on the ground were very few. 75% of the sightings from vegetation were from large trees and remaining from shrubs and bushes.

This area supports 15 migratory birds (9.38%). They were Indian Pitta (*Pitta brachyura*), Forest wagtail (*Motacilla indica*), Grey headed wag tail (*Motacilla caspica*), Common snipe (*Gallinago gallinago*), Cylon frog mouth (*Batrachostromus moniliger*), Blyth's reed warbler (*Acrocephalus dumetorum*), Greenish leaf warbler (*Phylloscopus trochiloides*), Indian rose finch (*Carpodacus crythinus*), little ring plover (*Charadrius dubius*), brown shrike (*Lanius cristatus*), Redbreasted flycatcher (*Muscicapa parva*), Blue throated flycatcher (*Muscicapa rubeculoides*), Large billed leaf warbler (*Phylloscopus sp.*), Richard pipit (*Anthur novaeselandiae*), Yellow wagtail (*Motacilla flava*). Cylon frogmouth is a tree resident of evergreen forests of the Western Ghats. Its nocturnal and shy habits make it more elusive in the forests.

Out of 160 species identified from this region 90(56.25%) were common, 50 (32.46%) were not common, 3 (1.94%) were rare, 15 (9.38%) were migratory and 2 (1.25%) were local migratory (Table 1). The rare birds were Crested hawk eagle (*Spizactus cirrhatus*), Blue rock thrush (*Monticola solitarius*) and Blue grey quail (*Coturnix chinensis*). Two local migrants were southern green pigeon (*Treron phoenicoptera*) and Indian nightjar (*Caprimulgus asiaticus*).

The common species include Emerald dove (*Chaleophaps indica*), Spotted dove (*Streptopelia himensis*), Blossom headed parakeet (*Psittacula cyanocephalus*), Blue winged parakeet (*Psittacula krameri*), Malabar lorikeet (*Loriculus vernalis*), White breasted kingfisher (*Halcyon smyrtensis*), Crow pheasant (*Centropus sinensis*), Small green bee-eater (*Merops orientalis*),

Crimson breasted barbet (*Megalamia haemacephala*), Malabar grey horn bill (*Tockus glisens*), Golden backed wood pecker (*Dinopium benghalensis*), Golden oriole (*Oriolus oriolus*), Black drongo (*Dicrurus adsimilis*), Racket tailed drongo (*Dicrurus paradisens*), etc.

Species like Blue jay (*Coracias bengalensis*), Tailor bird (*Orthotomis sutorius*), Black bird (*Turdus merula*), Marsh sand piper (*Tringa stagnatilis*), Indian drongo cuckoo (*Surniculus lugubris*), Great horned owl (*Otus bakkamoena*), Palm swift (*Cypsisurus parvus*), Black headed wood pecker (*Chrysocolaptes festivus*), Rufous bellied munia (*Lonchura kelaatti*), etc were not common.

Margalef's richness index was 25.56846 and Hill's abundant numbers were 125.1842 (N_1) and 119.6489 (N_2). The Shannon's species diversity index was 4.822978 and Simpson's dominant index was 0.008. The Pielou's evenness index was 0.9516 (Table 2).

IV. DISCUSSION

The area is highly rich in avifauna. This high diversity may be attributed to the fact that this area supports good vegetation and human interferences is very low. Among the 160 species identified, 125 are abundant and 119 are very abundant. The value of Simpson's dominant index is very low (0.008) indicating co-dominance of species structure. The diversity index is rather fair (4.8297) which is almost similar to the bird diversity index of other luxuriant Western Ghat forests. The bird species were more or less evenly distributed in this area as indicated by the evenness value close to one (0.9516). The development of forest plantation in the Nilambur region has depleted the floristic diversity which in turn reflects the low diversity of birds in plantation habitats. The region is free of hydroelectric projects due to geographical reasons. This has also increased bird species diversity in this region.

Table 1. Status of bird species in the Nilgiri Western Slope

Status	Number	Percentage
Common	90	56.25
Not common	50	32.46
Rare	3	1.94
Migratory	15	9.38
Local migratory	2	1.25
Total	160	100.00

Table 2. Various alpha diversity indices of bird species at Nilgiri Western Slope.

Indices	Value
Richness index	25.56846
Hill's abundant number (N_1)	125.184
Hill's abundant number (N_2)	119.648
Simpson's dominant index	0.008
Shannon's diversity index	4.8297
Pielou's evenness index	0.9516

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