

Avian Diversity of Jakkanari Reserve Forest of Kothagiri Foothills, Tamil Nadu, India

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ABSTRACT

Kothagiri foot hills is located in Western Ghats of India with a good number of endemic plant species that supports healthy faunal diversity. The present study deals with the avian diversity of the Jakkanari Reserve Forest of Kothagiri foothills, Latitude 11°19'N and Longitude 076°56'E Altitude- 365 MSL, from December 2015 to November 2016. The study revealed that presence of 115 bird species belongs to 15 orders and 44 families. The order Passeriformes dominated with maximum number of bird species of 55 (48%). The observed bird species were designated as Abundant 36 (31%), Common 33(29%), Uncommon 29 (25%) and Rare 17(15%). Out of 115 bird species observed in the study area, 85(74%) were resident birds, 21 (18%) were local migrants and 9 (8%) were winter migrants.

Keywords: Diversity, Endemic, Resident, Migratory.

INTRODUCTION

India lies at the junction of Africa, temperate Eurasia and Oriental bio-geographical provinces and as a result it has biological heritage that qualifies it as one of the twelve mega diversity nations of the world [1]. For conservation measures to be implemented, it becomes necessary to know the species diversity status of the animals of the concerned area. Birds form an important component of any natural ecosystem; Avifauna are important for the ecosystem as they play various roles as scavenger, pollinators, seeds dispersal agent and predators of insect pest and an important indicator to evaluate different habitats both qualitatively and quantitatively [2,3]. Indian biodiversity includes large number of species of invertebrates, 2546 species of fishes, 204 species of amphibians, 446 species of reptiles, 1228 species of birds and 372 species of mammals [4]The avian diversity of Jakkanari RF of Kothagiri comes under Western Ghats of India was yet to be exploited . The region has good vegetation and also has Bhavani River near to the forest area. Recently, numerous anthropogenic activities such as increased vehicles movement on Kothagiri road are affecting both flora and fauna of the region, especially on the avifauna. Therefore, present study was conducted to record avian diversity from December, 2015 to November 2016.

MATERIALS AND METHODS

Study Area

The present study deals with the avian diversity of the Jakkanari Reserve Forest, Latitude 11°19'N and Longitude 076°56'E Altitude- 365 MSL, from December 2015 to November 2016. The average temperature varied from 420C in summers to 220C in the peak winters.

Methodology

In order to record the avian diversity, periodic surveys were undertaken in the study area by adopting systematic field procedures and techniques for survey. The nomenclature followed in the present work is in accordance with those given in the "The Book of Indian Birds" by Salim Ali.(2012)for identification and field diagnosis of birds, colorful plates of [5] have been used. Colours are usually the best indicators of identity of a species at a close range or through binoculars. Classification of birds is in accordance with [5]. For recording avian diversity Line Transect Method and Point Transect Method (Verner, 1986) were used. Surveys were conducted from 6:30 am to 9:30 am in morning and 4:30 pm to 6:30 pm in evening during summers and 7:30 am to 10:30 am in morning and 3:30 pm to 5:30 pm in evening during winters. In addition to these fixed timings of surveys, some irregular visits

were also planned and made during other hours of the day. Birds were observed using the binoculars and were photographed using Nikon-D3100 digital camera. Classification of the recorded bird species was also done [7]. The observed birds during these visits were categorized as “Resident” or “R”, “Local migrants” or “LM”, and “winter migrants” or “WM” [8]. On the basis of frequency of sighting, various bird species were categorized as “Abundant” or “A” (encounter rate 95% to 100%), “Common” or “C” (encounter rate 60% to 95%), “Uncommon” or “UC” (encounter rate 20% to 60%) and “Rare” or “R” (encounter rate

less than 20%) [9]. Recorded data was statistically analyzed.

RESULTS AND DISCUSSION

Of the nearly 15,000 avian species reported worldwide [10], India, with its rich biological heritage, harbors 1300 of these and that too in different habitats. In the present study result reveals that a total of 115 avian species were identified during the periodic fortnightly visits to the “Jakkanari RF of Kothagiri foothills” from December, 2015 to November, 2016 (Table 1).

Table1. A classified chart of various bird species in the study area .

Sl.No	Common Name	Scientific Name	Residential Status	Abundance Status	Feeding
Order: Accipitriformes					
Family: Accipitridae					
1.	Black Kite	Milvusmigrans	R	C	Carnivore
2.	Black-shouldered kite	Elanusaxillaris	R	C	Carnivore
3.	Brahminy Kite	Haliasturindus	R	C	Carnivore
4.	Changeable hawk-eagle	Nisaetuscirrhatus	LM	R	Carnivore
5.	Crested serpent eagle	Spilorinscheela	LM	UC	Carnivore
6.	Oriental honey buzzard	Pernisptilorhynchus	R	UC	Carnivore
7.	Shikra	Accipiter badius	R	C	Carnivore
Order: Apodiformes					
Family: Apodidae					
8.	Asian Palm-swift	Cypsiurusbalasiensis	R	A	Insectivore
9.	House swift	Apusnipalensis	R	A	Insectivore
Family: Hemiprocnidae					
10.	Crested tree swift	Hemiprocne coronate	LM	UC	Insectivore
Order: Bucerotiformes					
Family: Bucerotidae					
11.	Great pied hornbill	Bucerosbicornis	WM	R	Frugivore
12.	Indian grey hornbill	Ocyerosbirostris	LM	R	Frugivore
Family: Upupidae					
13.	Common Hoopoe	Upupaepops	R	A	Insectivore
Order: Caprimulgiformes					
Family: Caprimulgidae					
14.	Common Indian Nightjar	Caprimulgusasiaticus	R	UC	Insectivore
15.	Indian jungle nightjar	Caprimulgusindicus	R	UC	Insectivore
Order: Charadriiformes					
Family: Charadriidae					
16.	Red-wattled Lapwing	Vanellusindicus	R	A	Insectivore
Family: Scolopacidae					
17.	Common sandpiper	Actitishypoleucos	WM	R	Insectivore
Order: Columbiformes					
Family: Columbidae					
18.	Blue rock pigeon	Columba livia	LM	UC	Granivore
19.	Eurasian collared dove	Streptopeliadecaocto	R	A	Granivore
20.	Little brown dove	Spilopeliasenegalensis	R	A	Granivore
21.	Oriental Turtle-dove	Streptopeliaorientalis	R	C	Granivore
22.	Pampadour green pigeon	Treronpompadora	WM	R	Frugivore
23.	Red collared dove	Streptopeliatranquebarica	R	C	Granivore
24.	Spotted dove	Streptopeliachinensis	R	A	Granivore
Order: Coraciiformes					
Family: Coraciidae					

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25.	Indian roller	Coraciasbenghalensis	R	A	Insectivore
Family:Halcyonidae					
26.	White-breasted kingfisher	Halcyon smyrnensis	R	C	Piscivore
Family:Meropidae					
27.	Blue bearded bee-eater	Nyctyornisathertoni	LM	R	Insectivore
28.	Chestnut-headed Bee-eater	Merops leschenaultia	R	A	Insectivore
29.	Small bee-eater	Meropsorientalis	R	A	Insectivore
Order: Cuculiformes					
Family:Cuculidae					
30.	Asian Koel	Eudynamysscolopacea	R	A	Frugivore
31.	Common hawk-cuckoo	Hierococyxvarius	R	UC	Frugivore
32.	Common cuckoo	Cuculuscanorus	R	A	Frugivore
33.	Greater coucal	Centropussinensis	R	A	Insectivore
34.	Indian cuckoo	Cuculusmicropterus	R	A	Frugivore
35.	Large green-billed malkoha	Phaenicophaeustristis	LM	R	Frugivore
36.	Lesser coucal	Centropusbengalensis	R	A	Insectivore
37.	Pied-crested cuckoo	Clamatorjacobinus	R	UC	Frugivore
38.	Small green-billed malkoha	Phaenicophaeusviridirostris	LM	R	Frugivore
Order: Falconiformes					
Family:Falconidae					
39.	Common kestrel	Falco tinnunculus	WM	R	Carnivore
40.	Shaheen falcon	Falco peregrinator	LM	R	Carnivore
Order: Galliformes					
Family:Phasianidae					
41.	Common quail	Coturnixcoturnix	R	A	Insectivore
42.	Grey Jungle fowl	Gallus sonneratii	R	C	Insectivore
43.	Indian peafowl	Pavocristatus	R	A	Insectivore
44.	Jungle bush quail	Perdiculaasiatica	R	UC	Insectivore
45.	Painted Francolin	Francolinuspictus	R	A	Insectivore
Order: Passeriformes					
Family:Aegithinidae					
46.	Common iora	Aegithinatiphia	R	UC	Frugivore
Family:Acrocephalidae					
47.	Paddy field warbler	Acrocephalusagricola	R	C	Insectivore
Family:Alaudidae					
48.	Singing bush lark	Mirafracantillans	R	C	Insectivore
49.	Eastern sky lark	Alaudagulgula	LM	R	Insectivore
Family:Cisticolidae					
50.	Ashy Prinia	Priniasocialis	R	C	Insectivore
51.	Common tailor bird	Orthotomussutorius	R	UC	Insectivore
52.	Jungle prinia	Priniasylvatica	R	C	Insectivore
53.	Plain prinia	Priniainornata	R	C	Insectivore
54.	Streaked fantail warbler	Cistiticolajuncidis	LM	UC	Insectivore
Family:Campephagidae					
55.	Black-headed cuckoo-shrike	Coracinamelanoptera	LM	UC	Insectivore
56.	Large Cuckoo shrike	Coracinamacei	LM	UC	Insectivore
57.	Scarlet minivet	Pericrocotusflammeus	WM	UC	Insectivore
58.	Small minivet	Pericrocotuscinnamomeus	WM	UC	Insectivore
Family:Corvidae					
59.	House crow	Corvussplendens	R	A	Omnivore
60.	Jungle crow	Corvusmacrorhynchos	R	A	Omnivore
61.	Indian treepie	Dendrocittavagabunda	LM	C	Insectivore
62.	White-bellied treepie	Dendrocittaleucogastra	LM	UC	Insectivore
Family:Chloropseidae					
63.	Jerdon'schloropsis	Chloropsisjerdoni	LM	R	Insectivore

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Family:Dicaeidae					
64.	Tickell'sflowerpecker	Dicaeumerythrorhynchos	R	C	Nectarivore
Family:Dicruridae					
65.	Ashy drongo	Dicrurusleucophaeus	R	C	Insectivore
66.	Black Drongo	Dicrurusmacrocerus	R	A	Insectivore
67.	White-bellied drongo	Dicruruscaerulescens	R	C	Insectivore
Family:Estrildidae					
68.	Spotted munia	Lonchurapunctulata	LM	UC	Granivore
69.	Black headed munia	Lonchuramalacca	R	UC	Granivore
Family:Hirundinidae					
70.	Common swallow	Hirundorustica	R	A	Insectivore
71.	House swallow	Hirundotahitica	R	A	Insectivore
Family:Laniidae					
72.	Bay-backed Shrike	Laniusvittatus	R	C	Insectivore
73.	Brown shrike	Laniuscristatus	R	C	Insectivore
74.	Great Grey Shrike	Laniusexcubitor	R	UC	Insectivore
75.	Rufous backed shrike	Laniusschach	R	C	Insectivore
Family:Leiothrichidae					
76.	Common babbler	Turdoidescaudata	R	A	Insectivore
77.	Jungle babbler	Turdoidesstriata	R	A	Insectivore
78.	Large grey babbler	Turdoidesmalcolmi	R	A	Insectivore
Family:Monarchidae					
79.	Asian paradise flycatcher	Terpsiphoneparadisi	R	C	Insectivore
Family:Motacillidae					
80.	Brown rock pipit	Anthussimilis	R	UC	Insectivore
81.	Grey wagtail	Motacillacinerea	R	C	Insectivore
82.	Large pied wagtail	Motacillamaderaspatensis	R	C	Insectivore
83.	Paddyfield pipit	Anthusrufulus	R	C	Insectivore
Family:Muscicapidae					
84.	Asian Brown flycatcher	Muscicapalatirostris	R	C	Insectivore
85.	Indian robin	Saxicoloidesfulcatus	R	A	Insectivore
86.	Oriental magpie-robin	Copsychussularis	R	A	Insectivore
87.	Pied bush chat	Saxicolacaprata	R	C	Insectivore
Family:Nectariniidae					
88.	Purple sunbird	Cinnyrisasiaticus	R	C	Nectarivore
89.	Purple-rumped sunbird	Leptocomazeylonica	R	C	Nectarivore
Family:Oriolidae					
90.	Black-headed oriole	Oriolusxanthornus	WM	UC	Frugivore
91.	Eurasian golden oriole	Oriolusoriolus	R	C	Frugivore
Family:Passeridae					
92.	House sparrow	Passer domesticus	R	A	Granivore
Family:Pittidae					
93.	Indian pitta	Pitta brachyuran	R	R	Insectivore
Family:Pycnonotidae					
94.	Red-vented bulbul	Pycnonotuscafer	R	A	Frugivore
95.	White-browed bulbul	Pycnonotusluteolus	R	UC	Frugivore
96.	Yellow throated bulbul	Pycnonotusxantholaemus	R	UC	Frugivore
Family:Sturnidae					
97.	Brahminy starling	Sturnuspagodarum	R	A	Omnivore
98.	Common myna	Acridotherestrictis	R	A	Omnivore
Family:Tephrodornithidae					
99.	Common wood shrike	Tephrodornispondicerianus	LM	UC	Insectivore
Family:Zosteropidae					
100.	Oriental white eye	Zosterospalpeprosus	LM	R	Omnivore
Order: Pelecaniformes					
Family:Ardeidae					
101.	Cattle Egret	Bubulcus ibis	R	A	Insectivore
102.	Indian pond heron	Ardeolagrayii	R	A	Piscivore
103.	Little egret	Egrettaarizetta	R	C	Piscivore

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Order: Piciformes					
Family: Megalaimidae					
104.	Brown headed barbet	Psilopogonzeylanicus	R	C	Frugivore
105.	Coppersmith barbet	Megalaimahaemacephala	R	C	Frugivore
106.	Crimson - throated barbet	Megalaimarubricapilla	R	UC	Frugivore
Family: Picidae					
107.	Brown-capped Pygmy Woodpecker	Yungipicusnanus	R	UC	Insectivore
108.	Heart spotted Woodpecker	Hemicircuscanente	R	R	Insectivore
109.	Lesser golden-backed woodpecker	Dinopiumbenghalense	LM	R	Insectivore
Order: Psittaciformes					
Family: Psittaculidae					
110.	Blue winged parakeet	Psittaculacolumboides	LM	C	Frugivore
111.	Indian hanging parrot	Loriculusvernalis	WM	R	Frugivore
112.	Plum headed parakeet	Psittaculacyanocephala	WM	R	Frugivore
113.	Rose-ringed parakeet	Psittaculakrameri	R	A	Frugivore
Order: Strigiformes					
Family: Strigidae					
114.	Forest eagle owl	Bubo nipalensis	R	UC	Carnivore
115.	Spotted owllet	Athenebrama	R	UC	Carnivore

Out of 115 recorded avian species, maximum number of species, 55(48%) were belongs to 24 families of Passeriformes order followed by 9 (8%) species of the Cuculiformes order, the

lowest number of species were recorded in Caprimulgiformes, Charadriiformes, Falconiformes and Strigiformes 2(2%) species of each order (Fig.1)

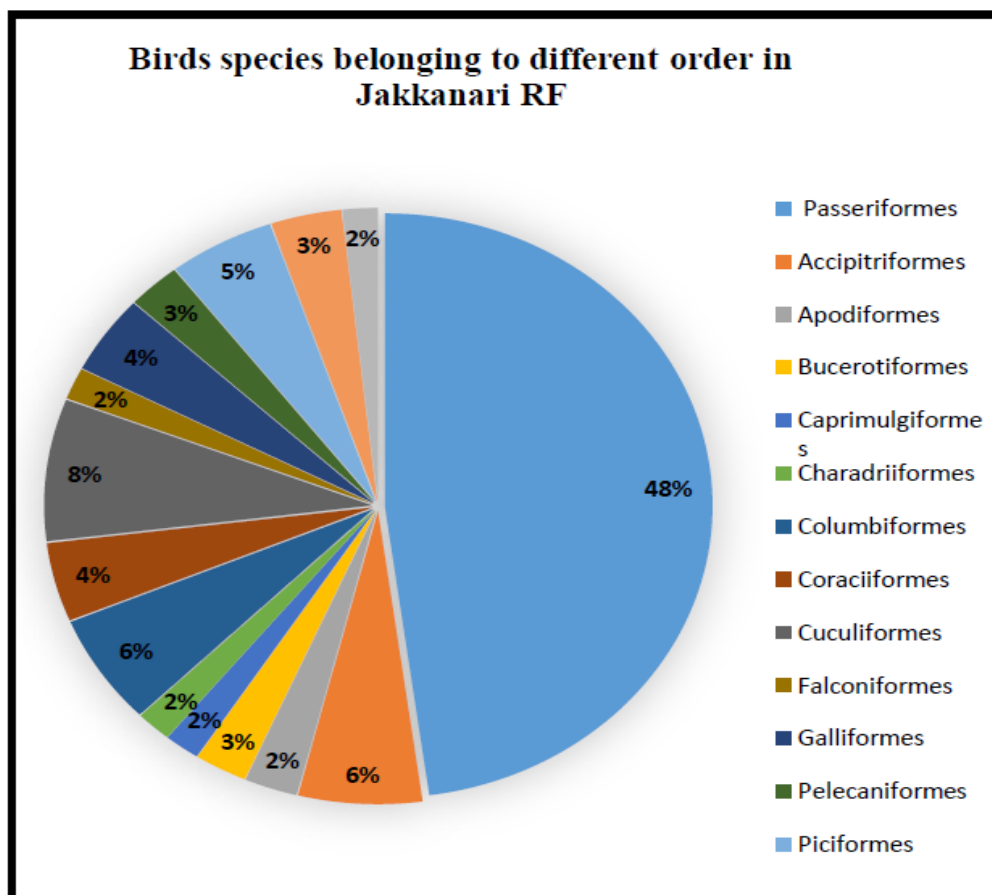


Figure.1 Bird species belonging to different order in Jakkannari RF

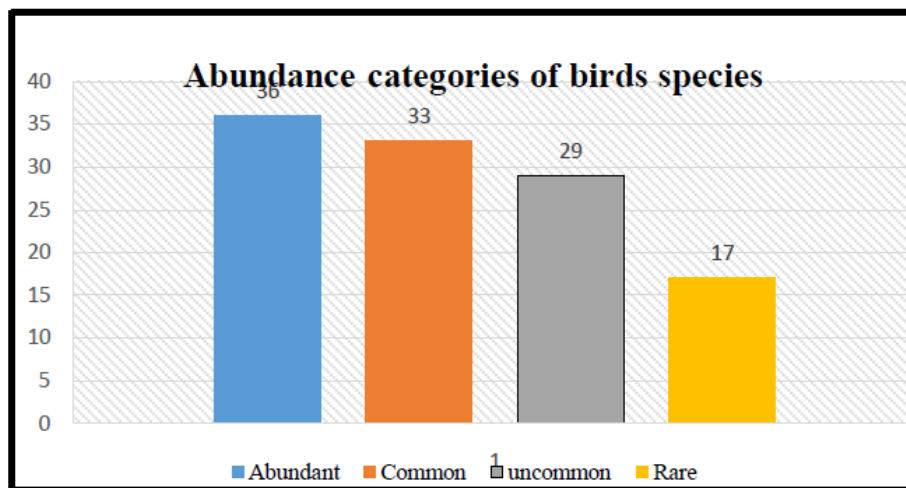


Figure.2 Abundance category of bird species.

During the field survey, based on frequency of their sighting, 36 (31%) bird species were “abundant”, 33 (29%) species were designated as “common”, 29 (25%) species as “uncommon” and 17 (15%) species as “rare” (Fig.2).

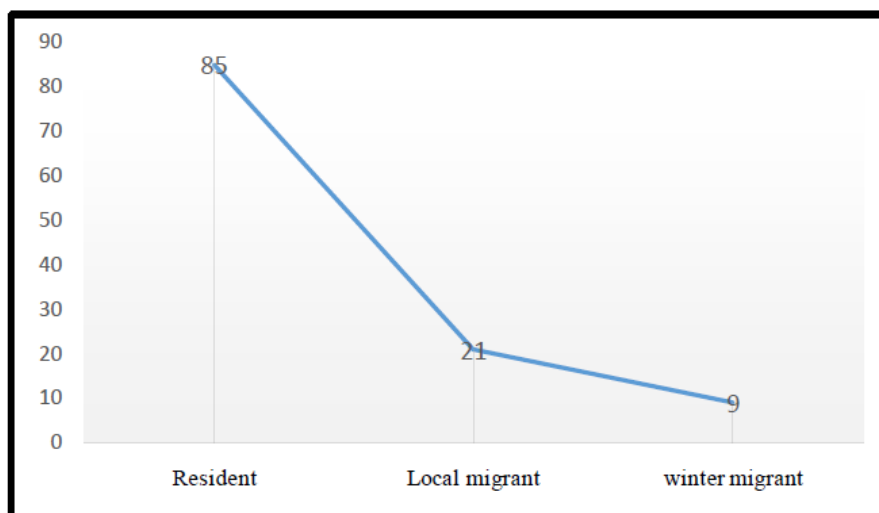


Figure.3 Number of resident and migratory bird species.

Number of species of the total recorded 115 bird species, 85 (74%) were “resident”, Based the above data regarding the avian diversity of Jakkanari RF of Kothagiri foothills can be said that the avian biodiversity of the area is very high and it should be protected for the conservation of bird’s species.

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