

## 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:** 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

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

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).

**Table 1.** A Classified Chart Of Various Bird Species In The Study Area.

Sl.No	Common Name	Scientific Name	Residential Status	Abundance Status	Feeding
<b>Order:</b> Accipitriformes					
<b>Family:</b> Accipitridae					
1.	Black Kite	<i>Milvus migrans</i>	R	C	Carnivore
2.	Black-shouldered kite	<i>Elanus axillaris</i>	R	C	Carnivore
3.	Brahminy Kite	<i>Haliastur indus</i>	R	C	Carnivore
4.	Changeable hawk-eagle	<i>Nisaetus cirrhatus</i>	LM	R	Carnivore
5.	Crested serpent eagle	<i>Spilorinscheela</i>	LM	UC	Carnivore
6.	Oriental honey buzzard	<i>Pernis ptilorhynchus</i>	R	UC	Carnivore
7.	Shikra	<i>Accipiter badius</i>	R	C	Carnivore
<b>Order:</b> Apodiformes					
<b>Family:</b> Apodidae					
8.	Asian Palm-swift	<i>Cypsiurus balasiensis</i>	R	A	Insectivore
9.	House swift	<i>Apus nipalensis</i>	R	A	Insectivore
<b>Family:</b> Hemiprocidae					
10.	Crested tree swift	<i>Hemiprocne coronate</i>	LM	UC	Insectivore
<b>Order:</b> Bucerotiformes					
<b>Family:</b> Bucerotidae					
11.	Great pied hornbill	<i>Buceros bicornis</i>	WM	R	Frugivore
12.	Indian grey hornbill	<i>Ocyroceros birostris</i>	LM	R	Frugivore
<b>Family:</b> Upupidae					
13.	Common Hoopoe	<i>Upupa epops</i>	R	A	Insectivore
<b>Order:</b> Caprimulgiformes					
<b>Family:</b> Caprimulgidae					
14.	Common Indian Nightjar	<i>Caprimulgus asiaticus</i>	R	UC	Insectivore
15.	Indian jungle nightjar	<i>Caprimulgus indicus</i>	R	UC	Insectivore
<b>Order:</b> Charadriiformes					
<b>Family:</b> Charadriidae					
16.	Red-wattled Lapwing	<i>Vanellus indicus</i>	R	A	Insectivore
<b>Family:</b> Scolopacidae					
17.	Common sandpiper	<i>Actitis hypoleucos</i>	WM	R	Insectivore
<b>Order:</b> Columbiformes					
<b>Family:</b> Columbidae					
18.	Blue rock pigeon	<i>Columba livia</i>	LM	UC	Granivore
19.	Eurasian collared dove	<i>Streptopelia decaocto</i>	R	A	Granivore
20.	Little brown dove	<i>Spilopelia senegalensis</i>	R	A	Granivore
21.	Oriental Turtle-dove	<i>Streptopelia orientalis</i>	R	C	Granivore

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

22.	Pampadour green pigeon	<i>Treronpompadora</i>	WM	R	Frugivore
23.	Red collared dove	<i>Streptopeliatranquebarica</i>	R	C	Granivore
24.	Spotted dove	<i>Streptopeliachinensis</i>	R	A	Granivore
<b>Order:</b> Coraciiformes					
<b>Family:</b> Coraciidae					
25.	Indian roller	<i>Coraciasbenghalensis</i>	R	A	Insectivore
<b>Family:</b> Halcyonidae					
26.	White-breasted kingfisher	<i>Halcyon smyrnensis</i>	R	C	Piscivore
<b>Family:</b> Meropidae					
27.	Blue bearded bee-eater	<i>Nyctyornisathertoni</i>	LM	R	Insectivore
28.	Chestnut-headed Bee-eater	<i>Merops leschenaultia</i>	R	A	Insectivore
29.	Small bee-eater	<i>Meropsorientalis</i>	R	A	Insectivore
<b>Order:</b> Cuculiformes					
<b>Family:</b> Cuculidae					
30.	Asian Koel	<i>Eudynamysscolopacea</i>	R	A	Frugivore
31.	Common hawk-cuckoo	<i>Hierococyxvarius</i>	R	UC	Frugivore
32.	Common cuckoo	<i>Cuculuscanorus</i>	R	A	Frugivore
33.	Greater coucal	<i>Centropussinensis</i>	R	A	Insectivore
34.	Indian cuckoo	<i>Cuculusmicropterus</i>	R	A	Frugivore
35.	Large green-billed malkoha	<i>Phaenicophaeustristis</i>	LM	R	Frugivore
36.	Lesser coucal	<i>Centropusbengalensis</i>	R	A	Insectivore
37.	Pied-crested cuckoo	<i>Clamatorjacobinus</i>	R	UC	Frugivore
38.	Small green-billed malkoha	<i>Phaenicophaeusviridir ostris</i>	LM	R	Frugivore
<b>Order:</b> Falconiformes					
<b>Family:</b> Falconidae					
39.	Common kestrel	<i>Falco tinnunculus</i>	WM	R	Carnivore
40.	Shaheen falcon	<i>Falco peregrinator</i>	LM	R	Carnivore
<b>Order:</b> Galliformes					
<b>Family:</b> Phasianidae					
41.	Common quail	<i>Coturnixcoturnix</i>	R	A	Insectivore
42.	Grey Jungle fowl	<i>Gallus sonneratii</i>	R	C	Insectivore
43.	Indian peafowl	<i>Pavocristatus</i>	R	A	Insectivore
44.	Jungle bush quail	<i>Perdiculaasiatica</i>	R	UC	Insectivore
45.	Painted Francolin	<i>Francolinuspictus</i>	R	A	Insectivore
<b>Order:</b> Passeriformes					
<b>Family:</b> Aegithinidae					
46.	Common iora	<i>Aegithinatiphia</i>	R	UC	Frugivore
<b>Family:</b> Acrocephalidae					
47.	Paddy field warbler	<i>Acrocephalusagricola</i>	R	C	Insectivore
<b>Family:</b> Alaudidae					
48.	Singing bush lark	<i>Mirafracantillans</i>	R	C	Insectivore
49.	Eastern sky lark	<i>Alaudagulgula</i>	LM	R	Insectivore
<b>Family:</b> Cisticolidae					
50.	Ashy Prinia	<i>Priniasocialis</i>	R	C	Insectivore
51.	Common tailor bird	<i>Orthotomussutorius</i>	R	UC	Insectivore
52.	Jungle prinia	<i>Priniasylvatica</i>	R	C	Insectivore
53.	Plain prinia	<i>Priniainornata</i>	R	C	Insectivore
54.	Streaked fantail warbler	<i>Cistiticolajuncidis</i>	LM	UC	Insectivore
<b>Family:</b> Campephagidae					
55.	Black-headed cuckoo-shrike	<i>Coracinamelanoptera</i>	LM	UC	Insectivore
56.	Large Cuckoo shrike	<i>Coracinamacei</i>	LM	UC	Insectivore
57.	Scarlet minivet	<i>Pericrocotusflammeus</i>	WM	UC	Insectivore

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

58.	Small minivet	<i>Pericrocotuscinnamomus</i>	WM	UC	Insectivore
<b>Family: Corvidae</b>					
59.	House crow	<i>Corvus splendens</i>	R	A	Omnivore
60.	Jungle crow	<i>Corvus macrorhynchos</i>	R	A	Omnivore
61.	Indian treepie	<i>Dendrocitta vagabunda</i>	LM	C	Insectivore
62.	White-bellied treepie	<i>Dendrocitta leucogastra</i>	LM	UC	Insectivore
<b>Family: Chloropseidae</b>					
63.	Jerdon's chloropsis	<i>Chloropsis jerdoni</i>	LM	R	Insectivore
<b>Family: Dicaeidae</b>					
64.	Tickell's flowerpecker	<i>Dicaeum erythrorhynchos</i>	R	C	Nectarivore
<b>Family: Dicuridae</b>					
65.	Ashy drongo	<i>Dicurus leucophaeus</i>	R	C	Insectivore
66.	Black Drongo	<i>Dicurus macrocercus</i>	R	A	Insectivore
67.	White-bellied drongo	<i>Dicurus caeruleus</i>	R	C	Insectivore
<b>Family: Estrildidae</b>					
68.	Spotted munia	<i>Lonchura punctulata</i>	LM	UC	Granivore
69.	Black headed munia	<i>Lonchura malacca</i>	R	UC	Granivore
<b>Family: Hirundinidae</b>					
70.	Common swallow	<i>Hirundo rustica</i>	R	A	Insectivore
71.	House swallow	<i>Hirundo tahitica</i>	R	A	Insectivore
<b>Family: Laniidae</b>					
72.	Bay-backed Shrike	<i>Lanius vittatus</i>	R	C	Insectivore
73.	Brown shrike	<i>Lanius cristatus</i>	R	C	Insectivore
74.	Great Grey Shrike	<i>Lanius excubitor</i>	R	UC	Insectivore
75.	Rufous backed shrike	<i>Lanius schach</i>	R	C	Insectivore
<b>Family: Leiotherichidae</b>					
76.	Common babbler	<i>Turdoides caudata</i>	R	A	Insectivore
77.	Jungle babbler	<i>Turdoides striata</i>	R	A	Insectivore
78.	Large grey babbler	<i>Turdoides malcolmi</i>	R	A	Insectivore
<b>Family: Monarchidae</b>					
79.	Asian paradise flycatcher	<i>Terpsiphona paradisi</i>	R	C	Insectivore
<b>Family: Motacillidae</b>					
80.	Brown rock pipit	<i>Anthus similis</i>	R	UC	Insectivore
81.	Grey wagtail	<i>Motacilla cinerea</i>	R	C	Insectivore
82.	Large pied wagtail	<i>Motacilla maderaspatensis</i>	R	C	Insectivore
83.	Paddyfield pipit	<i>Anthus rufulus</i>	R	C	Insectivore
<b>Family: Muscipapidae</b>					
84.	Asian Brown flycatcher	<i>Muscicapala titostris</i>	R	C	Insectivore
85.	Indian robin	<i>Saxicoloides fulvatus</i>	R	A	Insectivore
86.	Oriental magpie-robin	<i>Copsychus saularis</i>	R	A	Insectivore
87.	Pied bush chat	<i>Saxicola caprata</i>	R	C	Insectivore
<b>Family: Nectariniidae</b>					
88.	Purple sunbird	<i>Cinnyris asiaticus</i>	R	C	Nectarivore
89.	Purple-rumped sunbird	<i>Leptocomazeylonica</i>	R	C	Nectarivore
<b>Family: Oriolidae</b>					
90.	Black-headed oriole	<i>Oriolus xanthornus</i>	WM	UC	Frugivore
91.	Eurasian golden oriole	<i>Oriolus oriolus</i>	R	C	Frugivore
<b>Family: Passeridae</b>					
92.	House sparrow	<i>Passer domesticus</i>	R	A	Granivore
<b>Family: Pittidae</b>					
93.	Indian pitta	<i>Pitta brachyuran</i>	R	R	Insectivore
<b>Family: Pycnonotidae</b>					
94.	Red-vented bulbul	<i>Pycnonotus cafer</i>	R	A	Frugivore
95.	White-browed bulbul	<i>Pycnonotus luteolus</i>	R	UC	Frugivore
96.	Yellow throated	<i>Pycnonotus xantholaem</i>	R	UC	Frugivore

	bulbul	<i>us</i>			
<b>Family: Sturnidae</b>					
97.	Brahminy starling	<i>Sturnuspagodarum</i>	R	A	Omnivore
98.	Common myna	<i>Acridotherestrictis</i>	R	A	Omnivore
<b>Family: Tephrodornithidae</b>					
99.	Common wood shrike	<i>Tephrodornispondiceriaanus</i>	LM	UC	Insectivore
<b>Family: Zosteropidae</b>					
100	Oriental white eye	<i>Zosterospalpeprosus</i>	LM	R	Omnivore
<b>Order: Pelecaniformes</b>					
<b>Family: Ardeidae</b>					
101	Cattle Egret	<i>Bubulcus ibis</i>	R	A	Insectivore
102	Indian pond heron	<i>Ardeolagrayii</i>	R	A	Piscivore
103	Little egret	<i>Egretta garzetta</i>	R	C	Piscivore
<b>Order: Piciformes</b>					
<b>Family: Megalaimidae</b>					
104	Brown headed barbet	<i>Psilopogonzeylanicus</i>	R	C	Frugivore
105	Coppersmith barbet	<i>Megalaimahaemacephala</i>	R	C	Frugivore
106	Crimson - throated barbet	<i>Megalaimarubricapilla</i>	R	UC	Frugivore
<b>Family: Picidae</b>					
107	Brown-capped Pygmy Woodpecker	<i>Yungipicusnanus</i>	R	UC	Insectivore
108	Heart spotted Woodpecker	<i>Hemicircuscanente</i>	R	R	Insectivore
109	Lesser golden-backed woodpecker	<i>Dinopiumbenghalense</i>	LM	R	Insectivore
<b>Order: Psittaciformes</b>					
<b>Family: Psittaculidae</b>					
110	Blue winged parakeet	<i>Psittaculacolumboides</i>	LM	C	Frugivore
111	Indian hanging parrot	<i>Loriculusvernalis</i>	WM	R	Frugivore
112	Plum headed parakeet	<i>Psittaculacyanocephala</i>	WM	R	Frugivore
113	Rose-ringed parakeet	<i>Psittaculakrameri</i>	R	A	Frugivore
<b>Order: Strigiformes</b>					
<b>Family: Strigidae</b>					
114	Forest eagle owl	<i>Bubo nipalensis</i>	R	UC	Carnivore
115	Spotted owlet	<i>Athenebrama</i>	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).

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).

Of the total recorded 115 bird species, 85 (74%) were “resident”, 21(18%) “Local migrants” and 9 (8%) “Winter migrants” (Fig. 3).

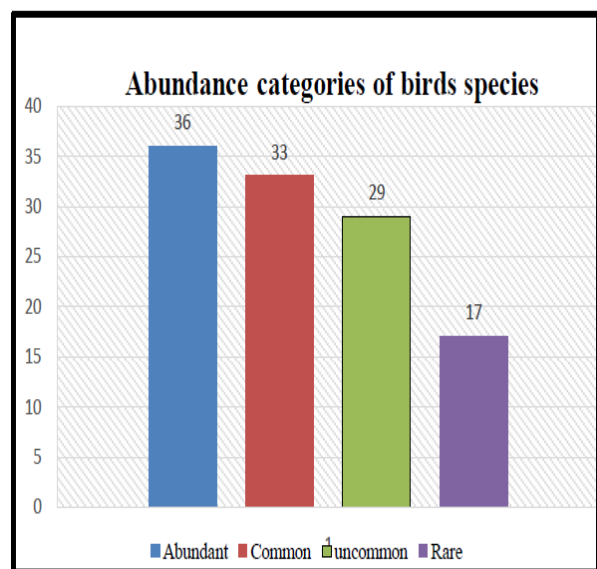


Figure1. Bird species belonging to different order in Jakkanari

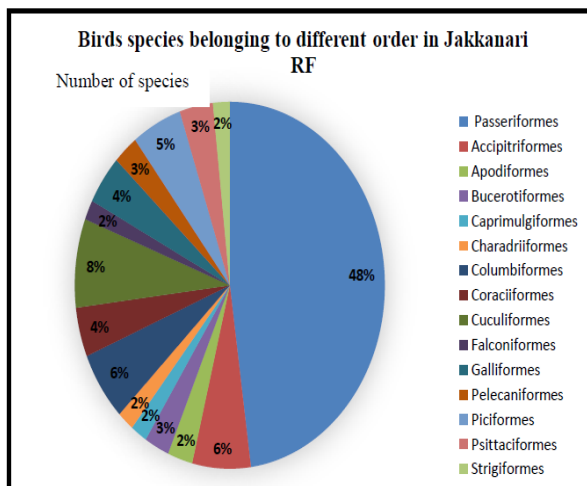


Figure 2. Abundance Category Of Bird Species.

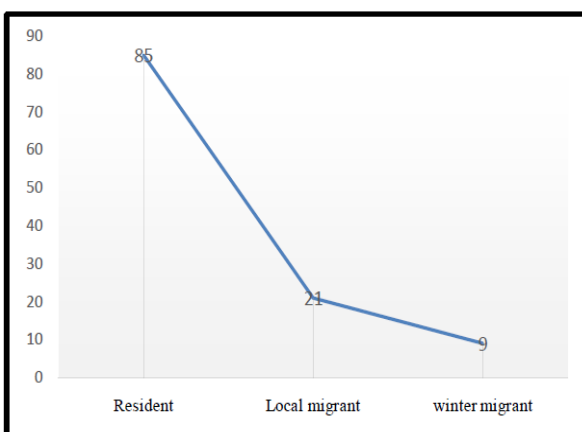


Figure 3. Number Of Resident And Migratory Bird's species.

Based the above data regarding the avian diversity of JakkanariRF 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 birds species.

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