



Original Research Article

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## CHECK LIST OF AVIFAUNA OF ROURKELA URBAN AREA OF SUNDARGARH DISTRICT, ODISHA, INDIA

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**ABSTRACT:** The preliminary observation was made to record avifauna at few places namely: Indira Gandhi Park, Nehru Park, NIT Campus, Omfed Factory, Fertilizers Plant area, Koel River, Vaishno Devi Hill and Water treatment Plant areas of Rourkela urban in and around Rourkela urban area of Sundargarh District during March, 2015 to April, 2016 by employing visual count methods. Altogether 57 bird species, which belong to 30 families of the class Aves, were recorded, identified and prepared the check list. The data revealed that from Cuculidae family, highest numbers (Seven species) of birds were recorded and it was followed by Muscicapidae family (Five species) and Ardeidae and Sturnidae families (Four species each). The identified birds were grouped into common, occasional and abundantly occurring birds and their per cent occurrence was 10.5, 47.4 and 42.1% respectively. Further, based on the occurrence during different seasons, birds were classified into resident, local migrant and winter migrant birds and their per cent occurrence was respectively 77.2, 8.8 and 14%. These bird species are visiting different places for foraging, resting, roosting and nesting on various tree species during different seasons. Birds are jewels of every ecosystem, help in maintaining the ecological balance in local environment, hence their conservation is essential to restore avifaunal diversity in this part of the region.

**KEYWORDS:** Avifauna, different places, Rourkela urban area

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## 1.INTRODUCTION

Avifauna includes feathered bipedal warm-blooded animals (Ali, 1941), their diversity proven as a treasury of biodiversity (Bhat et al., 2009). Birds are a familiar feature of various habitats due to their varied life styles and adaptation. Birds help evaluate environmental quality (Patil, 2013) and become potential species for ecological, economical, ethical, medicinal and scientific values (Ali and Ripley, 1983). Several species of birds inhabit 'in water' or 'associated with water ways and terrestrial ecosystems' or 'in wetlands' or 'marshy areas' for feeding, breeding, nesting etc. However, India being one of the mega biodiversity centers harbors 1, 340 bird species which amounts to 13% of the bird species of the world (Ali and Ripley, 1983). Many species occupy several trophic levels in the food web of different habitats and become part of food chains and control insect pests of agricultural importance. Few species act as predators for rodents, scavengers for dead animal carcasses, seed dispersers for trees and pollinating agents for many flowering plants (Manjunath and Joshi, 2014) amidst terrestrial ecosystems. Therefore, it is important to know about avifaunal diversity, commonly and abundantly occurring species and their status at each and every ecosystem. Therefore, the present study was undertaken at various places in and around Rourkela urban area to record the birds and to prepare check list.

## 2.MATERIALS AND METHODS

**Study Area:** Rourkela is one of the industrial centers in Odisha State, lies in between  $12^{\circ}46'02''$  to  $12^{\circ}39'06''$  N longitude and  $76^{\circ}30'23''$  to  $76^{\circ}30'23''$  E latitude at an altitude of 2622 ft mean sea level. The climate is tropical type and is characterized by warm temperature with moderate relative humidity along with rainfall.

**Methodology:** Different places namely: Indira Gandhi Park, Nehru Park, NIT Campus, Omfed Factory, Fertilizers Plant area, Koel River, Vaishno Devi Hill and Water treatment Plant areas of Rourkela urban area were selected randomly and each place was visited on an average three times in a month to record the bird species. Observations were made by searching around the study places and at the vicinity of trees, marshy areas and water bodies by employing visual count method (VCM) and an all out search method (AOSM). Birds living in water and in marshy area were observed by naked eyes and they were photographed with the help of camera. The birds were identified based on their morphological features such as beak shape and colour, type of foot (eg. webbed or non-webbed), colour of shank, foot, feathers colour and size of birds with the help of field guides as per Ali and Ripley (1983), Ali (1941) and Grimmett *et al.* (2011). Moreover, recorded birds were identified as residents and migrants as per the description of Ali and Ripley (1983), Ali (1941) and Grimmett *et*

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*al.* (2011) and their status such as 'Common', 'Occasional', and 'Abundant' was calculated. Further, EXCEL software was used to tabulate the collected data, to prepare necessary tables and figures.

### 3. RESULTS AND DISCUSSION

Distribution of aquatic birds at different places at Rourkela urban area is depicted in Table 1. Altogether, 57 species of birds, which belong to 30 families, were recorded. The common name, scientific name, family and their status are given in Table 1. Per cent occurrence of resident birds, local and winter migrants, common, occasional and abundantly occurring birds are shown in Table 2. The Rourkela urban area is rich (77.2%) with resident bird species (44 species). Only 14 and 8.8% of birds were winter migrants (eight species) and local migrants (five species) respectively (Table 2). Twenty four bird species (42.1%) were abundantly occurring in Rourkela urban area. Only six bird species (10.5%) were commonly observed during most of the year in this area. However, 27 bird species (47.4%) were occasionally visiting Rourkela urban area (Table 2). Further, Cuculidae family members were more in number (Seven species) and it was followed by Muscicapidae family (Five species) and Ardeidae and Sturnidae families (Four species each). However, from Alcedinidae, Psittacidae and Motacillidae families, only three bird species each was recorded in this area. The Accipitridae, Columbidae, Ploceidae, Cisticolidae and Laniidae families have shown their presence with two bird species each. Other 18 families have represented by only one bird species in this part of Odisha State. Families, number of bird species and their per cent occurrence is shown in Table 3.

#### Discussion

Around 57 bird species were recorded in Rourkela urban area of Odisha State. The Anatidae, Ardeidae, Phalacrocoracidae, Laridae and Rallidae family members mainly depend on wetlands for their roosting, resting, feeding, nesting. Their presence indicates the congenial conditions for their normal survival and indirectly reveals the wetland habitat (Basavarajappa, 2006). As, these species are considered as potential species of wetland ecosystems, birds have ecological and scientific values (Ali and Ripley, 1983). Although few species of birds are not true water birds, but they spend most of their time nearby aquatic bodies or live in association with water ways or marshy areas. They visit regularly to water bodies for feeding on aquatic organisms (e.g. Alcedinidae family member). Quite a good number of winter migrants are visiting Rourkela urban area of Odisha State. Since, these species are most remarkable components of global biodiversity, their preservation are essential. Few species are local migrants (five species) visiting this part of the State during different seasons when conditions are favorable for their activities. However, majority of birds (44 species) are residents of Rourkela urban area. Perhaps, prevailed conditions in and around Rourkela urban area might have

extended suitable resting or roosting place, good source of food and congenial nesting sites during their inhabitation. As these factors are very essential to have normal survival, more number of species might prefer to stay during different seasons at this area. Interestingly, diversified avifauna would show the healthy sign of good ecosystem (Newton, 1995; Kumar *et al.*, 2005), reveal indirectly the quality of habitat. Avifauna occupies different habitats (Patil, 2013) become important components of every ecosystem (Rajashekar and Venkatesh, 2010). They are useful to man (Mitra *et al.*, 2011) in various ways. They feed on crop pests and help bring down the pest population in agriculture ecosystem (Bhat *et al.*, 2009). They also predate on rodents, scavenge dead animal carcasses, disperse seeds and pollinate many flowering plants at various ecosystems (Damoor *et al.*, 2014). Thus, bird species are excellent indicators of environmental quality and measure of biodiversity. Diverse nature of ecosystems parallel with the diversity of avifauna, conservation of these bird species is indirect means of conservation of different ecosystems (Basavarajappa, 2007). Therefore, it is essential to preserve local avifauna and migratory birds (Shivaperuman and Jayson, 2000) to conserve local biodiversity.

#### **CONFLICT OF INTEREST**

The authors declare that no competing financial interests exist.

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## SUPPLEMENTARY FILES

Table 1. Check list of avifauna of Rourkela Urban area

Sl. No.	Common Name	Scientific name	Family	Occurrence	Status
1.	Black Kite	<i>Milvus migrans migrans</i>	Accipitridae	Common	Resident Bird
2.	Osprey	<i>Pandion halieatus</i>	-do-	-do-	-do-
3.	White breasted Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	-do-	-do-
4.	Common Kingfisher	<i>Alcedo atthis</i>	-do-	Occasional	-do-
5.	Strok-billed Kingfisher	<i>Pelargopsis capensis</i>	-do-	-do-	-do-
6.	Indian Bush lark	<i>Miraфра erithroptera</i>	Alaudidae (?)	-do-	-do-
7.	Cotton Pygmy Goose	<i>Nettapus coramandelianus</i>	Anatidae	-do-	Winter Migrant
8.	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Abundant	Resident Bird
9.	Indian pond heron	<i>Ardeola grayi</i>	-do-	Common	-do-
10.	Cattle egret	<i>Bubulcus ibis</i>	-do-	Abundant	-do-
11.	Little egret	<i>Egretta grazetta</i>	-do-	-do-	Local Migrant
12.	Indian Grey Hornbill or Common Hornbill	<i>Tockus birostris</i>	Bucerotidae	Occasional	Resident Bird
13.	Coppersmith barbet or Crimson breasted barbet	<i>Megalaima haemacephala</i>	Capitonidae	Abundant	-do-
14.	Asian Open billed stork	<i>Anastomus oscitans</i>	Ciconiidae	Occasional	Local Migrant
15.	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	Common	Resident Bird
16.	Common Pigeon or Blue Rock	<i>Columba livia</i>	Columbidae	Abundant	-do-

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	Pigeon				
17.	Spotted Dove	<i>Streptopelia chinensis</i>	-do-	Common	-do-
18.	Crow-pheasant or Coucal	<i>Centropus sinensis</i>	Cuculidae	Abundant	-do-
19.	Indian Koel	<i>Eudynamis scolopacea</i>	-do-	-do-	-do-
20.	Southern Coucal	<i>Centropus parroti</i>	-do-	-do-	-do-
21.	Common Hawk Cuckoo	<i>Hierococyx varius</i> (?)	-do-	-do-	Winter Migrant
22.	Jacobin Cuckoo	<i>Clamantor jacobinus</i>	-do-	-do-	Local Migrant
23.	Gray bellied Cuckoo	<i>Cacomantis passerines</i>	-do-	Occasional	Winter Migrant
24.	Plaintive Cuckoo	<i>Cacomantis merulinus</i>	-do-	-do-	-do-
25.	Plain Prinia	<i>Prinia inornata</i>	Cisticolidae	Abundant	Resident Bird
26.	Ashy Prinia	<i>Prinia socialis</i>	-do-	Occasional	-do-
27.	House Crow	<i>Corvus splendens</i>	Corvidae	Abundant	-do-
28.	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Occasional	-do-
29.	Brown Shrike	<i>Lanius cristatus</i>	Laniidae	Abundant	-do-
30.	Long tailed Shrike	<i>Lanius schach</i>	-do-	Occasional	Winter Migrant
31.	River Tern	<i>Sterna auratia</i>	Laridae	-do-	-do-
32.	Green bee-eater	<i>Merops orientalis</i>	Meropidae	Abundant	Resident Bird
33.	White browed Wagtail or Large Pied Wagtail	<i>Motacilla maerpspatensis</i>	Motacillidae	Occasional	Winter Migrant
34.	Grey Wagtail	<i>Motacilla cinerea</i>	-do-	-do-	-do-
35.	Paddy Pipit	<i>Anthus rufulus</i>	-do-	-do-	Resident Bird
36.	Oriental Magpie-Robin	<i>Copsychus saularis</i>	Musicapidae	-do-	-do-
37.	Common Tailorbird	<i>Orthotomus sutorius</i>	Musicapidae: Sylviinae	-do-	Local Migrant
38.	Blyth's Reed Warbler	<i>Acrocephalus dumetorum</i>	-do-	Abundant	Local Migrant
39.	Jungle Babbler	<i>Turdoides striatus</i>	Musicapidae	-do-	Resident Bird

40.	Indian Black Robin	<i>Saxicolodius fulicola</i>	-do-	Occasional	-do-
41.	Purple Rumped sunbird	<i>Nectarinia zeylanica</i>	Nectariniidae	Abundant	-do-
42.	Golden Oriole	<i>Oriolus oriolus</i>	Oriolidae	-do-	-do-
43.	Rose ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	-do-	-do-
44.	Alexandrine Parakeet	<i>Psittacula eupatria</i>	-do-	Occasional	-do-
45.	Plum headed Parakeet	<i>Cyanocephala sp.</i>	-do-	-do-	-do-
46.	House Sparrow	<i>Passer domesticus</i>	Ploceidae:Passerinae	Abundant	-do-
47.	Baya weaver Bird	<i>Ploceus Philippines</i>	Ploceidae:Ploceinae	-do-	-do-
48.	Red-vented Bulbul	<i>Pyconotus cafer</i>	Pycnonotidae	-do-	-do-
49.	Little Cormorant	<i>Phalacrocorax nigar</i>	Phalacrocoracidae	Occasional	-do-
50.	Red Jungle Fowl	<i>Gallus gallus</i>	Phasianidae	-do-	-do-
51.	White breasted water hen	<i>Amaurornis phoenicurus</i>	Rallidae	-do-	-do-
52.	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	-do-	-do-
53.	Asian pied Starling	<i>Sturnus contra</i>	-do-	Abundant	-do-
54.	Chestnut-tailed starling	<i>Sturnia malabarica</i>	-do-	Occasional	-do-
55.	Brahminy Myna	<i>Stunia pagodarum</i>	-do-	Abundant	-do-
56.	Spotted owlet	<i>Athene brama</i>	Tytonidae	Occasional	-do-
57.	Common Hoopoe	<i>Upupa epops</i>	Upupidae	-do-	-do-

**Table 2. Type and status of avifauna of Rourkela urban area of Sundargarh District**

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<b>Sl. No.</b>	<b>Type of Bird</b>	<b>No. of species</b>	<b>% Occurrence</b>	<b>Sl. No.</b>	<b>Status of Bird</b>	<b>No. of species</b>	<b>% Occurrence</b>
<b>1.</b>	Resident	44	77.2	<b>1.</b>	Common	06	10.5
<b>2.</b>	Winter Migrant	08	14.0	<b>2.</b>	Abundant	24	42.1
<b>3.</b>	Local Migrant	05	8.8	<b>3.</b>	Occasional	27	47.4
<b>Total</b>		<b>57</b>	<b>100.0</b>	<b>Total</b>		<b>57</b>	<b>100.0</b>

**Note: Data is based on Table 1.**

**Table 3. Bird family, no. of species and their per cent occurrence at Rourkela urban area of Sundargarh District**

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<b>Sl. No.</b>	<b>Family</b>	<b>No. of species</b>	<b>% Occurrence</b>	<b>Rank</b>
<b>1.</b>	Cuculidae	07	12.3	<b>5</b>
<b>2.</b>	Muscicapidae	05	8.8	<b>6</b>
<b>3.</b>	Ardeidae and Sturnidae <b>(Four each species)</b>	08	14.0	<b>4</b>
<b>4.</b>	Alcedinidae, Motacillidae and Psittacidae <b>(Three each species)</b>	09	15.7	<b>3</b>
<b>5.</b>	Accipitridae, Columbidae, Cisticolidae, Ploceidae and Laniidae <b>(Two each species)</b>	10	17.5	<b>2</b>
<b>6.</b>	Alaudidae, Anatidae, Bucerotidae, Capitonidae, Ciconiidae, Coraciidae, Corvidae, Dicruuridae, Laridae, Meropidae, Nectariniidae, Oriolidae, Phasianidae, Phalacrocoracidae, Pycnonotidae, Rallidae, Tytonidae and Upupidae <b>(One each species)</b>	18	31.7	<b>1</b>
<b>Total</b>		<b>57</b>	<b>100</b>	<b>-</b>

**Note: Data is based on Table 1.**