



## Research Paper

### Bird diversity at Chhatarpur District Madhya Pradesh, India

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**Abstract:** The incredible numbers of bird species demonstrate amazing evolutionary adaptations, and by learning how birds are able to adapt throughout the world. We can begin to adapt our own behaviors to live in our world, rather than to force our world into an artificial and unsustainable mold. Biodiversity is not evenly distributed across the earth. Many reasons the bird population is declining is due to deforestation, population explosion, indiscriminate use of

#### INTRODUCTION

Birds are an integral part of the ecosystem and have importance for eco-balance. Migratory birds can gain a better understanding of seasonal climate changes. By conserving birds and protecting their habitats we can continue to gain insights from our birds friends. Birds are one of the most populous life forms on the planet, and that biodiversity leads to a richness of life and beauty. It may be influenced by biogeography (Karr 1976). Some landscape exhibit high richness in biological diversity where others show an impoverished flora and fauna. Various scientist have been conducted to look at bird diversity in South Indian Forest (Joshua and Johnsing 1986, Pramod et al 1997, Kunte et al 1999), relationship between birds species diversity

pesticides, hunting, and destruction of habitat, pollution and contaminated water. Therefore, in the present investigation preliminary observation of Birds carried out in Chhatarpur district Madhya Pradesh, India.

**Abbreviations:** Lipid peroxidation: LOP, Superoxide dismutase: SOD, Ascorbic acid: AsA, Polyunsaturated Fatty Acids: PUFA.

**Keywords:** Lipid peroxidation, Superoxide dismutase, Ascorbic acid, Brain, Oxidative damage, Heteropneustes fossilis.

and vegetation (Able 1976, Terbrgh 1985, Hawkins 1999, Joshi et al 2012), factors responsible for species distribution (Lee 2004, Bhatt and Joshi 2011) bird diversity (Dodia and Dhadhal 2010).

The numerous observations by amateur and professional bird watchers may support the idea of the value of habitat of bird diversity conservation. The world famous monuments Khajuraho is located in the district Chhatarpur and as a result high flow of foreign tourist. Due to the tourism industries, many environmental issues are rising up in the Chhatarpur district. Nevertheless there is lack information of scientific documentation and preventive measure on bird diversity conservation in this area.

Many reasons the bird population is declining is due to deforestation, population explosion, indiscriminate use of pesticides, hunting, and destruction of habitat, pollution and contaminated water. Therefore, in the present investigation preliminary observation of Birds carried out in Chhatarpur district Madhya Pradesh, India.

## MATERIAL AND METHODS

Human beings affect the survival of birds by modifying their habitats. Aim of the present study providing a comprehensive list of the bird's species of Chhatarpur District Madhya Pradesh.

### 2.1 Study Area

Chhatarpur geographically located with longitudes and latitudes of  $24^{\circ}06'$  and  $25^{\circ}20'$  on North  $78^{\circ}59'$  and  $80^{\circ}26'$  on East

respectively with approximate 182 meter above means sea level experiencing a annual rainfall of 1000-1200 mm. Average climatic temperature in winter season (October to January)  $10-27^{\circ}\text{C}$ , summer season (February to June)  $29-48^{\circ}\text{C}$  and rainy season (June to September)  $19-30^{\circ}\text{C}$ . The total area of the Chhatarpur district is about 8,687  $\text{Km}^2$ . Chhatarpur district is bounded by Uttar Pradesh state of the North and the Madhya Pradesh district of Panna to the East, Damoh to the South Sagar to the Southwest, and Tikamgarh to the West. The district is divided into eleven tahseel viz. Badamalahra, Bakswaha, Chandala, Chhatarpur, Gaurihar, Ghuwara, Lovekushnagar (Laundi), Maharajpur, Nowgong, Rajnagar and Vijawar.

### 2.2 Map

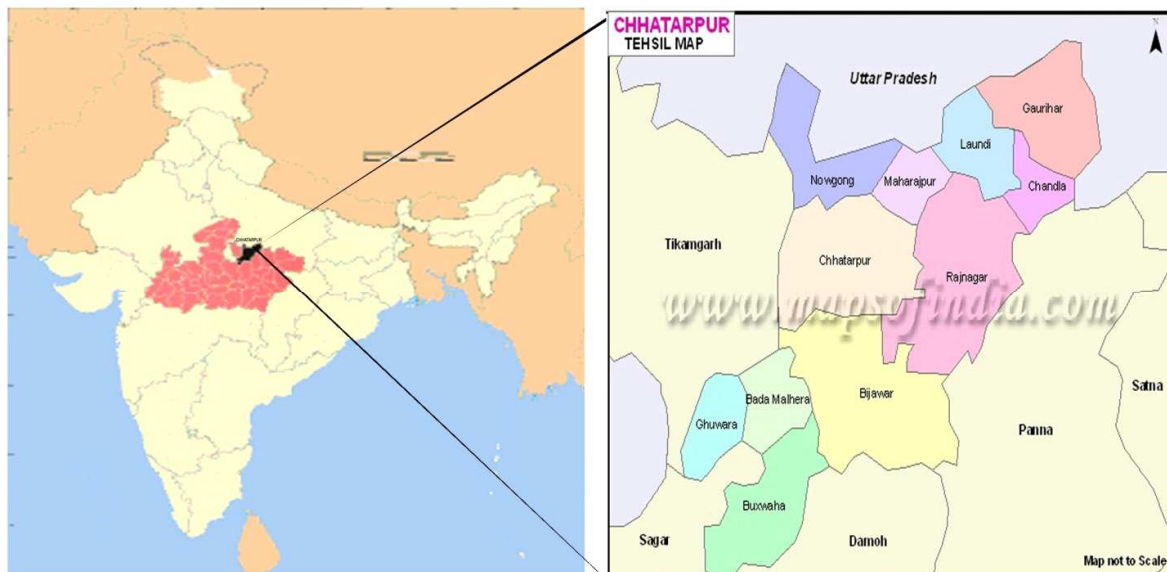


Figure: showing geographic location of Chhatarpur District Madhya Pradesh, India.

### 2.3 Animal Observations

In the present study we considered the Chhatarpur district Madhya Pradesh for bird diversity because world famous monuments Khajuraho is located in this district and as a

result high flow of foreign tourist. Almost worldwide bird lovers are visited this place. Field study was conducted for three year from June 2010 to August 2013 with the aim of providing comprehensive list of the bird's

species. The birds have been monitored using Variable Circular Plot method (de Filippo et al 1996). Field identifications were carried out with the help of field guide (Ali and Ripely 1983) Field binoculars (7×50) were used to observe the birds. Another aspect keep in consideration, the activity of birds during sunrise and sunset, and monitoring of transects done. The scientific names of birds are according to after (Manakadan and Pittie 2001).

### RESULTS AND DISCUSSION

Diverse populations of birds have been identified in the Chhatarpur district at different selected geographic site either as breeding population, winter, rainy and summer visitor or migration. Aquatic birds observed in randomly selected ponds; Prem sagar Khajuraho, Jalsena Rajnagar, Godavari Fisheries Demonstration Centre Nahdora, Sankat mochan Chhatarpur, Dam; Banisagar, Budha, Gangaun, Rangan, Bariyarpur and in the bank of River Ken and Dhasan. Total 73 birds species belonging to twenty eight families were reported in and around Chhatarpur district (Table).

Bird diversity is critical study. We share more than 10,000 species of birds. Study of bird diversity means understanding ecology. Birds are an integral part of the ecosystem and serve many important purposes. Biodiversity, we can better understand the relationships between all living organisms and how the interactions of those

relationships can affect humans directly. Species richness decreased with increasing urbanization (Melles et al 2003). Urban birds communities are usually characterized by the dominance of a few species (Beissinger and Osborne 1982, Marzluff 2001) and most of the species making up the communities are introduced. Most of the researchers studied on the base of urban avoiders, suburban adaptive and urban exploiters (Blair 1996, McKinney 2002). Localized extensions may be a result of species invasions by non-native species (Kowarik 1995, Blair 2004). A low spatial variation of urban bird communities is expected and may probably result to more similar bird communities all over the world (Jokimaki et al 1996).

Bird can also highlight the diversity of different habitats. All birds cannot live in the same habitats, and understanding the needs and requirements of different species can lead us to have more compassionate tolerance for different environment condition. It is also indicators of pollutants and habitat variety. In Chhatarpur district *Motacilla alba* can be seen only in winter season. It may be direct indication of winter climate. One of the genuine appreciations for our natural world by participating in different programs and working to save unique species and habitats. By recognizing birds as unique and individual creatures, we can better understand the need for appropriate conservation efforts.

**Table: List of the Birds species recorded during the study (2011-2013)**

S.No.	Family	Scientific Name	Common Name	Conservation Status (IUCN)	Conservation Status (IWPA)
01	Acciptridae	Milvus migrans	Black kite		Schedule IV
02		Gyps bengalensis	White backed vulture	CR	Schedule IV
03		Gypus fulvus	Vulture		

04		Gypus indiacus	Long billed vulture		
05		Neophron percnopterus	Egyptian vulture		
06		Hieraaetus pennatus*	eagle		Schedule IV
07		Accipiter virgatus*	hawk		Schedule IV
08		Aviceda jerdoni			Schedule IV
09	Alaudidae	Calandrella cinerea			Schedule IV
10	Alcedinidae	Halcyon smyrnensis			Schedule IV
11		Alcedo atthis	Common kingfisher		Schedule IV
12		Halcyon pileata			Schedule IV
13	Anatidae	Anas acuta			Schedule IV
14		Anas peocilorhyncha	Indian spot billed duck		Schedule IV
15		Aythya ferialis	Common pochard		Schedule IV
16		Mergus merganser			Schedule IV
17	Apodidae	Bubulcus ibis	Cattle egret		Schedule IV
18		Apus affinis	House swift		Schedule IV
19	Bucerotidae	Anthracoseros malabaricus			Schedule IV
20	Campephagidae	Pericrocotus ethologus	Long tailed minivet		Schedule IV
21	Ciconiidae	Ciconia episcopus	Woolly-necked-stork		Schedule IV
22	Charadriidae	Vanellus indicus	Red-wattled lapwing		Schedule
23		Ciconia nigra	Black stork		
24	Columbidae	Columba livia	Blue rock pigeon		Schedule IV
25	Coraciidae	Coracias benghalensis	Indian roller		Schedule IV
26	Corvidae	Corvus splendens	Common crow		Schedule IV
27		Corvus macrorhynchos	Large billed crow		Schedule IV
28	Cuculidae	Eudynamis scolopacea	Asian koel		Schedule IV
29		Centropus sinensis	Greater coucal		Schedule IV
30		Cuculus canorus	Common cuckoo		Schedule IV
31		Centropus micropterus	Indian cuckoo		Schedule IV
32	Egrets	Ardea goliah			Schedule IV
33		Ardea cinerea			Schedule IV
34		Ardea alba			Schedule IV
35		Ardeola grayii			Schedule IV
36		Bulbulcus ibis			Schedule IV
37		Egretta gangetica	Little egret		Schedule IV
38		Egretta intermedia	Intermediate egret		

39		Egretta aalba	Great egret	
40	Gruidae	Grus grus		Schedule IV
41		Bubo coromandus	Western cattle egret	
42		Grus antigone		Schedule IV
43	Hirundinidae	Hirundo rupestris		Schedule IV
44	Motacillidae	Motacilla alba	Khanjan	Schedule IV
45	Muscicapidae	Terpsiphone paradisi	Asian paradise fly catcher	Schedule IV
46	Passeridae	Passer domesticus	House sparrow	Schedule IV
47		Ploceus philippinus	Baya	Schedule IV
48	Phasianidae	Pavo cristatus	Indian peafowl	Schedule IV
49		Francolinus pictus	Kala Teetar	Schedule IV
50		Francolinus pondicerianus	Ram Teetar	Schedule IV
51		Gallus gallus	Red jungle fowl	Schedule IV
52		Gallo perdix spadicea	Grey jungle fowl	
53		Gallus sonneratti		Schedule IV
54	Picidae	Dendrocopos maharattensis	Yellow crowned woodpecker	Schedule IV
55		Brachypternus bengalensis	Woodpecker	Schedule IV
56		Chrysocolaptes festivus	Woodpecker	Schedule IV
57	Prinia warblers	Prinia socialis		Schedule IV
58		Chrysocolaptes festivus		Schedule IV
59	Psittacidae	Psittacula eupatria	Alexandrine parakeets	Schedule IV
60		Psittacula krameri	Rose ring parakeets	Schedule IV
61		Psittacula cyanocephala	Plum headed parakeet	
62	Pycnonotidae	Pycnonotus cafer	Red vented bulbul	Schedule IV
63		Pycnonotus melanicterus	Bulbul	Schedule IV
64	Sturnidae	Acridotheres ginginianus	Bank myna	Schedule IV
65		Acridotheres tristis	Common maina	Schedule IV
66		Acridotheres fuscus	Jungle myna	Schedule IV
67		Sturnus contra	Pied myna	Schedule IV
68	Threskiornithidae	Threskiornis melanocephala	Blach headed ibis	Schedule IV
69		Pseudibis papillosa	Indian Black Ibis	Schedule IV
70	Tytonidae	Tyto capensis		Schedule IV
71		Bubo bubo		Schedule IV

72		Bubo zeylonensis			Schedule IV
73	Upupidae	Upupa epops	Common Hoopoe		Schedule IV

\*Rare species, IUCN= International Union for Conservation of Nature and Natural resources, IWPA= Indian Wildlife Protection Act, CR= Critical Rare,

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