

# Ecological Study and Avian Faunal Diversity of Narmada River and its Surrounding Areas of Dindori District (M.P.)

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**Abstract** — A study to find out the avian diversity at the Dindori, M.P., was carried out over a period of two years from May 2013 to April 2015. Physiographically Dindori is located between Satpura as Vindhayan Hills. A total of 127 avian species belonging to 38 families were recorded during the study covering research area of about 6128 Km<sup>2</sup>. Bird species mainly find into following feeding guilds: carnivore, ground insectivore, sallying insectivore, canopy and bark insectivore, nectar insectivore, general insectivore, frugivore and water birds. The present studies investigate the environmental condition and other associated factors to document the bird diversity because many of the wild bird species are gradually vanishing from Indian forest. The biological imbalance created due to disappearance of particular species which have put may problem.

**Keywords** — Avifauna, Hunting, Pollution, Diversity, Food Chain, Adaptation.

## I. INTRODUCTION

Birds are an integral part of the ecosystem and serve many important purposes. They are one of the most precious gift life forms on the earth. They are able to adapt in aquatic as well as terrestrial environment. Birds balance the food chain as top predator in case of Eagle and Crane in terrestrial and aquatic food web. About 9,000 living species of birds in the world and more than 1250 species in India are known at present. Birds are better adapted for migration either daily or seasonal and called glorified animal of open sky. It may be influenced by biogeography (Karr 1976). Birds are the key species in an ecosystem for maintaining the ecological balance, (Mariappan, 2013). Some area show rich diversity of animal due to high altitude more food and less pollution. During the last few decades considerable studies on avifauna diversity from different parts of India have been carried out by researchers like Chandra and Singh 2004, Dodia and Dhadhal 2010, Joshi et al 2012 and Bagde N. 2015. Observations by professionals bird watchers may support the idea of the value of habitat of bird diversity and density in respect to conservation. The Dindori is located in the district Dindori M.P.. Narmada river is west flowing river in this area support many aquatic bird diversity in this region. Due to declaration of Dindori as a newly formed district list in M.P. have many environmental issues like urbanization and some construction and mining related activities are rising up in the Dindori district. There is very few information

available of bird diversity in this area due to proper research facilities and lacking scientific phenomenon view in this area. Many reasons showing the bird population is declining due to deforestation, high mobile radiation, population explosion, thoughtless use of pesticides instead of organic farming, hunting, and destruction of habitat, pollution and contaminated water.

## II. MATERIAL AND METHODS

Many of the avifauna species are gradually vanishing from Indian forest and man affect the survival of birds by modifying their habitats, so aim of the present study providing a document the diversity and utility of avian fauna comprehensive list of the bird's species of Dindori District Madhya Pradesh.

## III. STUDY AREA

Dindori geographically located with longitudes of 22.00<sup>0</sup> to 23.22<sup>0</sup> and latitudes 80.85<sup>0</sup> to 80.58<sup>0</sup> on North to East respectively with approximate 1100 meter maximum and 885 meter minimum above means sea level experiencing a annual rainfall of 1200-1300 mm. Average climatic temperature in winter season (October to January) 8-25<sup>0</sup>C, summer season (February to June) 27-45<sup>0</sup>C and rainy season (June to September) 17-32<sup>0</sup>C. The total area of the Dindori district is about 6128 Km<sup>2</sup>. The district is divided into two tehsel viz. Dindori and Shahpura and seven block viz.

Karanjiya, Bajag, Samnapur, Amarpur, Dindori, Shahapura Mehadwani.

IV. OBSERVATIONS

The present studies were carried out for a period of two years from May 2013 to April 2015 with the aim of providing detail list of the bird’s species. The identification

and classification of bird was based on the standard data as prescribed by (Ali and Ripely 2001) . Birds sighted during the study period and analyzed their feeding also. All observations were made using binocular (10 X 50) magnification while walking on the boundary of the selected sampling sites. Another aspect keep in consideration, the activity of birds during sunrise and sunset, and monitoring of transects done.

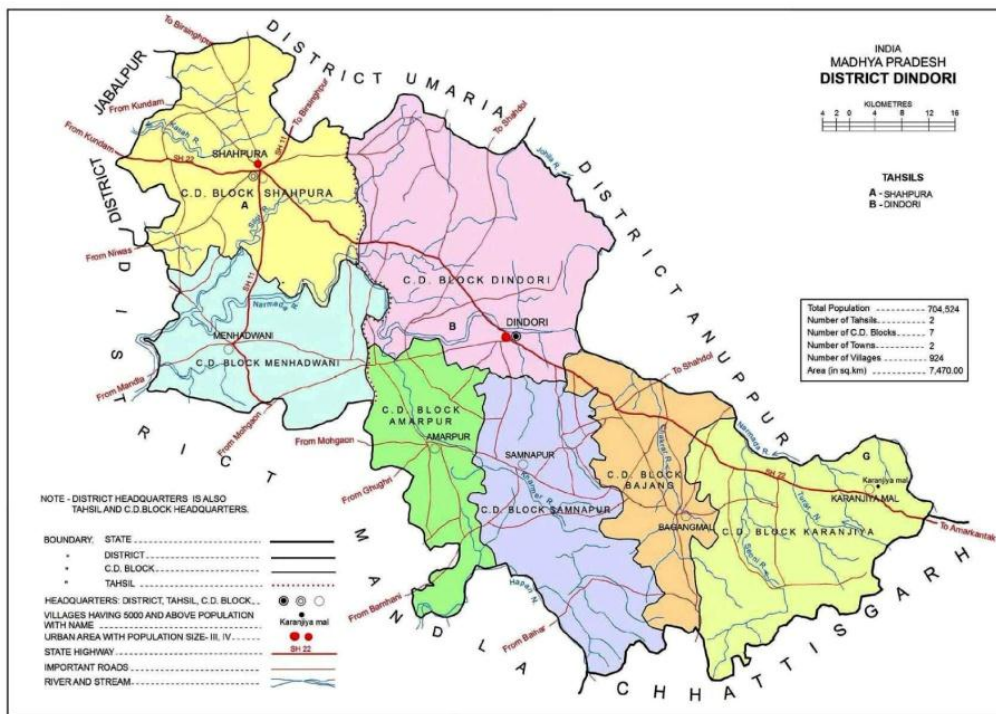


Plate.1: Map showing study area of Dindori, Madhya Pradesh

V. RESULT AND DISCUSSION

Table 1: List of Avian fauna recorded in Dindori, Madhya Pradesh during May, 2013 to April, 2015

S.N.	English name	Scientific name	Local name	Family/ Class
1	Indian ring dove	<i>Streptopelia decaocta</i>	Fakta	Collumbidae
2	Blue rock pigeon	<i>Columba livia</i>	Kabutar	Collumbidae
3	Little Brown Dove	<i>Streptopelia senegalensis</i>	Chota Fakta	Collumbidae
4	Spotted Dove	<i>Streptopelia chinensis</i>	Fakta	Collumbidae
5	Red Collared-Dove	<i>Streptopelia tranquebarica</i>	Laal Fakta	Collumbidae
6	Yellow-legged Green-Pigeon	<i>Treron phoenicoptera</i>	Kabutar	Collumbidae
7	House swift	<i>Apus affinis</i>	Babilo batasi	Apodidae
8	Alpine swift	<i>Apus melba</i>	Bada batasi	Apodidae
9	Common quail	<i>Coturnix coturnix</i>	Bater	Phasianidae
10	Brown partridge	<i>Francolinus pictus</i>	Bhura titar	Phasianidae
11	Common pea fowl	<i>Pavo cristatus</i>	Mor	Phasianidae
12	Grey partridge	<i>Francolinus pondicerianus</i>	Safed titar	Phasianidae

12	Red spur fowl	<i>Galloperdix spondica</i>	Jangli murgi	Phasianidae
13	Red Jungle fowl	<i>Gallus gallus</i>	Jangli murgi	Phasianidae
14	Jangle bush quail	<i>Perdica asiatica</i>	Lawa	Phasianidae
15	Pied hornbill	<i>Anthraceres coronatus</i>	Ghanchuri	Bucerotidae
16	Indian Grey hornbill	<i>Ocyrceros birostris</i>	Ghanhuri	Bucerotidae
17	Common hornbill	<i>Tocus birostris</i>	Chalotra	Bucerotidae
18	Golden backed woodpecker	<i>Dinopium bengalensis</i>	Kathphodwa	Picidae
19	Yellow froned pied woodpecker	<i>Picoides manrattensis</i>	Kathphodwa	Picidae
20	Heart spotted woodpecker	<i>Hemicircu sconente</i>	Kathphodwa	Picidae
21	Blue winged teal	<i>Anus querquedula</i>	Khera	Anatidae
22	Tufted duck	<i>Anthya fukugula</i>	Dubaru	Anatidae
23	Nukta ducker comb duck	<i>Sarkidiornis melanoros</i>	Nakta	Anatidae
24	Cottontail	<i>Nettapus coromon delianus</i>	Gurguri pandubbi	Anatidae
25	White eyed pochard	<i>Arthya nyrola</i>	Kurachia	Anatidae
26	Common teal	<i>Anus crecea</i>	Kera	Anatidae
27	Brahmini duck	<i>Tadorna ferruginea</i>	Surkhab	Anatidae
28	Lesser whistling teal	<i>Dendrocygna javanica</i>	Silhi	Anatidae
29	Large pied wagtail	<i>Motacilla maderaspatensis</i>	Khanjan	Motacillidae
30	Yellow wagtail	<i>Motacilla glava</i>	Pilakh	Motacillidae
31	King vulture	<i>Torgas calvus</i>	Rajgighha	Accipitridae
32	White scavenger vulture	<i>Neophron perencoprerus</i>	Safed giddh	Accipitridae
33	Small Kite	<i>Accipiter badius</i>	Shikra	Accipitridae
34	Crested serpent eagle	<i>Spilornis cheela</i>	Dogracheel	Accipitridae
35	Common pariah kite	<i>Milvus migrans</i>	Cheel	Accipitridae
36	Tawny eagle	<i>Aquila refax</i>	Okab	Accipitridae
37	Black winged kite	<i>Elanus caeruleus</i>	Kapasi	Accipitridae
38	Blue cheeked bee eater	<i>Merops superciliosus</i>	Patringa	Meropidae
39	Blue tailed bee eater	<i>Merops philipinus</i>	Bada patringa	Meropidae
40	Green bee eater	<i>Merops orientalis</i>	Patringa	Meropidae
41	Red-vented bulbul	<i>Pycnonotus cafer</i>	Bulbul	Pycnonotidae
42	Black Drongo	<i>Dicrurus macrocercus</i>		Dicruridae
43	White-bellied Drongo	<i>Dicrurus caerulescens</i>		Dicruridae
44	Greater Racket-tailed Drongo	<i>Dicrurus paradiseus</i>		Dicruridae
45	Jangle myna	<i>Acridotheres fuscus</i>	Jangli mayna	Sturnidae
46	Common myna	<i>Acridotheres tristis</i>	Myna	Sturnidae
47	Bank Myna	<i>Acridotheres ginginianus</i>	Nadi myna	Sturnidae
48	Pied Myna	<i>Sturnus contra</i>	Myna	Sturnidae
49	Black headed myna	<i>Sturnus pagodarum</i>	Brahman myna	Sturnidae
50	Chestnut ballied nuthatch	<i>Sitta castanea</i>	Kthphodia	Sittidae
51	Velvet fronted nuthatch	<i>Sitta frontalis</i>	Kthphodawa	Sittidae
52	Large cuckoo	<i>Coradina novacholladiae</i>	Kasaya	Campephagidae
53	Pied crested cuckoo	<i>Clamator jacobinus</i>	Papiha/Chatak	Cuculidae
54	Coucal	<i>Centropus sinensis</i>	Mokha	Cuculidae
55	Koel	<i>Eudynamys scolopaceae</i>	Koyal	Cuculidae
56	Common Cuckoo	<i>Cuculus canorus</i>	Koyal	Cuculidae
57	Indian Cuckoo	<i>Cuculus micropterus</i>	Koyal	Cuculidae
58	Black capped kingfisher	<i>Haleyan Pileata</i>	Korila	Alcedinidae
59	Pied kingfisher	<i>Ceryle rudis</i>	Kilkila	Alcenididae
60	Stork-billed Kingfisher	<i>Halcyon capensis</i>	Kilkila	Alcenididae
61	White breasted kingfisher	<i>Halcyon smyrnensis</i>	Kourilla	Alcenididae
62	Lesser Pied Kingfisher	<i>Ceryle rudis</i>	Koryala	Alcenididae

63	Comman king fisher	<i>Alcedo atthis</i>	Chhota kilkila	Alcedinidae
64	House crow	<i>Corvus splendens</i>	Kaua	Covidae
65	Common Raven	<i>Corvus corax</i>	Kaua	Covidae
66	Large Billed Crow	<i>Corvus macrorhynchus</i>	Kaua	Covidae
67	Mahalot	<i>Dendrocitta vagabunda</i>	Mahalat	Covidae
68	Jangle crow	<i>Corvus macrorhynchus</i>	Jangli kaua	Corvidae
69	Indian Treepie	<i>Dendroitta vagabunda</i>	Magpie	Corvidae
70	Purple moorhen	<i>Gallinula chloropus</i>	Jal murgi	Rallidae
71	Moorhen	<i>Pirphyrio parphyrio</i>	Kalim	Rallidae
72	Indian robin	<i>Saxicolides falicata</i>	Kalchuri	Turdinae
73	Pied bushchat	<i>Saxicola caprata</i>	Kala pidda	Turdinae
74	Little cormorant	<i>Phalacrocora xnizer</i>	Pankaua	Phalacrocoracidae
75	Rose ringed parakeet	<i>Psittacula krameri</i>	Tota	Psittacidae
76	Large Indian parakeet	<i>Psittacula eupatria</i>	Ram tota	Psittacidae
77	Blossom headed parakeet	<i>Psittacula cynocephala</i>	Tuiya tota	Psittacidae
78	Purple sun bird	<i>Nectarinia asiatica</i>	Shakar khora	Nectarinidae
79	Pheasant tailed jacana	<i>Hydrophasianus chirurgus</i>	Pihua	Jacanidae
80	Tickell's blue flycatcher	<i>Muscicapatickel ling</i>	Shama	Muscicapidae
81	<i>Oriental Magpie Robin</i>	<i>Copsychus saularis</i>	Robin	Muscicapidae
82	<i>Indian Robin</i>	<i>Saxicoloides fulicatus</i>	Robin	Muscicapidae
83	Red-throated Flycatcher	<i>Ficedula parva</i>	Kalchura	Muscicapidae
84	Ultramarine Flycatcher	<i>Ficedula superciliaris</i>	Kalchura	Muscicapidae
85	Tickell's Blue-Flycatcher	<i>Cyornis tickelliae</i>	Kalchura	Muscicapidae
86	Grey-headed Flycatcher	<i>Culicicapa ceylonensis</i>	Kalchura	Muscicapidae
87	Shama	<i>Copsychus malabaricus</i>	Shama	Muscicapidae
88	Ashy wren warbler	<i>Prinia socialis</i>	Futki	Muscicapidae
89	Paradise flycatcher	<i>Terpsiphone paradisi</i>	Sun bulbul dudhraj	Muscicapidae
90	Black napped blue flycatcher	<i>Monarcha azurea azurea</i>	Sun bulbul dudhraj	Muscicapidae
91	Jungal babblar	<i>Turdoides striatus</i>	Sat bhai	Muscicapidae
92	Quaker babblar	<i>Alcippe poioicephale</i>	Sat bhai	Muscicapidae
93	Common Hoopoe	<i>Upupa epops</i>	Ghattitaker	Upupidae
94	Indian Roller	<i>Coracias benghalensis</i>	Neelkanth	Coraciidae
95	Black ibis	<i>Pseudibis papillosa</i>	Kala buja	Threskiornithidae
96	Owl	<i>Bubo bubo</i>	Ullu	Strigidae
97	Spotted Owlet	<i>Athene brama</i>	Ullu	Strigidae
98	Mottled Wood-Owl	<i>Strix ocellata</i>	Ullu	Strigidae
99	Barn Owl	<i>Tyto alba</i>	Bada Ullu	Tytonidae
100	Tickellus flower peaker	<i>Dicaeum erythrarhynchus</i>	Fulchuki	Dicaeidae
101	Fire breasted flower peaker	<i>Dicaeum ignipectus</i>	Fulchuki	Dicaeidae
102	Paddy bird pond heron	<i>Ardeola grayii</i>	Andha bagla	Ardeidae
103	Grey heron	<i>Ardea cinerea</i>	Anjan	Ardeidae
104	Purple Heron	<i>Ardea purpurea</i>	Bagula	Ardeidae
105	Large egret	<i>Egretta alba</i>	Bada bagla	Ardeidae
106	Little egret	<i>Egretta garzetta</i>	Kilchia	Ardeidae
107	Chestnut Bittern	<i>Ixobrychus cinnamomeus</i>		Ardeidae
108	Cattle egret	<i>Bubulcus ibis</i>	Gay bagla	Ardeidae
109	Indian Clift swallow	<i>Hirundo fluvicola</i>	Lesra	Hirumidae
110	Wire tailed swallow	<i>Hirundo smithii</i>	Lesra	Hirumidae
111	House sparrow	<i>Passer domestica</i>	Goraiya	Ploceidae
112	Red mania	<i>Estrilda amandava</i>	Lal munia	Ploceidae
113	Weaver bird	<i>Ploceus philippinus</i>	Baya	Ploceidae

114	Black headed munia	<i>Lonchura malacca</i>	Nakal nar	Ploceidae
115	Black winged stilts	<i>Himantopus himantopus</i>	Gajpin	Recurvirostidae
116	White neck stork	<i>Ciconia episcopus</i>	Galgal	Ciconidae
117	White stork	<i>Ciconia ciconia</i>	Galgal	Ciconidae
118	Painted stork	<i>Ibis leucocephalus</i>	Dokh	Ciconidae
119	White Tailed Lapwing	<i>Vanellus leucurus</i>		Charadriidae
120	Red Wattled Lapwing	<i>Vanellus indicus</i>	Tithari	Charadriidae
121	Little Ringed Plover	<i>Charadrius dubius</i>		Charadriidae
122	Red shank	<i>Tringa totanus</i>	Surma	Charadriidae
123	Fontail snipe	<i>Capelle gelliango</i>	Chaha	Charadriidae
124	River Tern	<i>Sterna aurantia</i>	Badi Kurri	Laridae
125	Little Turn	<i>Sterna albifrons</i>	Choti kurri	Laridae
126	Indian Skimmer	<i>Rynchops albicollis</i>	Panchira	Laridae
127	<i>Syke's Lark</i>	<i>Galerida deva</i>		Alaudidae

During the above survey period a total of 127 bird species were recorded (Table 1) belonging to 38 families. Muscipidae family represented maximum (13) number of birds followed by Anatidae (8) and Accipitridae, Ardeidae and Phasianidae were found to be the third most dominant families represented by 7 species each. Columbidae, Coidae, Aledinidae Family represent (6 each) while Sturnidae, Cuculidae, Charadriidae represent (4) species each. Family Ploceidae represent 4 species. And Rest of the families represents three to one in range species of bird. The least (1) number of bird species was represented by Upupidae, Tytonidae, Pycnonotidae, Campephagidae, Phalarocoracidae, Nectarinidae, Jaanidae, Threskiornithidae, Recurvirostidae and Alaudidae (Table 1). During the study period maximum avian fauna reported along Narmada belt and dense forest area of research near Karanjia and Bajag Study sites where as minimum fauna recorded near naked mountain ranges of Shahpura and Gorakhpur to Gadasari region. The earlier studies on birds were undertaken by investigators like Bagde Neelima who studied birds from Chhindwara Region. Listed birds of Nikol Bandhra (Bhavnagar), Gujrat, studied by Dodia and Dhadhal. Joshi, Bhatt and Thapliyal reported birds from Nainital district. Arya And Mishra studied birds of Madhav National Park Shivpuri M.P. India . Basavarajappa (2006) recorded 27 species of water birds belonging to 13 families in the agro ecosystem of Maidan area of Karnataka which provided congenial habitat for the survival of water birds. Surana (2007) recorded Anatidae to be most dominant family with 12 species and Ardeidae with 9 species in Chimdi lake of Nepal. The rich diversity (not density) of bird species show amazing evolutionary adaptations, and learning behavior to protect them to adapt in particular area of study. There are various factors showing the bird population is declining is due to deforestation, mobile radiation, population explosion, thoughtless use of pesticides instead of organic farming,

hunting, and destruction of habitat, pollution and contaminated water. But the present investigation shows Muscipidae , Anatidae , Accipitridae, Ardeidae and Phasianidae maximum number of bird species. Bagde N. (2015) while working on Chhindwara Region of Madhya Pradesh, also recorded similar observations.

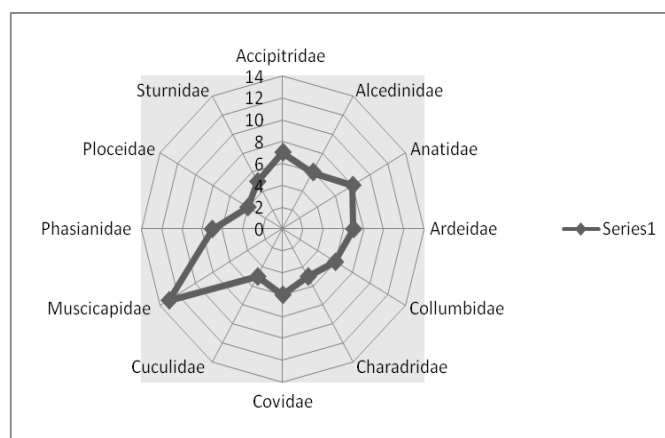


Fig. 2: Dominant family of avian fauna in Dindori, Madhya Pradesh.

## VI. ACKNOWLEDGEMENT

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