

Avifaunal study of Majalgaon Reservoir and their tributaries, District Beed, Marathwada region of Maharashtra, India

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Abstract- An avifaunal survey was conducted at Majalgaon Reservoir for two years, starting from July 2016 to June 2018. The study reveals a rich avian diversity a total of 84 species of birds belonging to 15 orders and 30 families were identified. As the water of the wetland is clear, rich in dissolved oxygen and supports variety of aquatic weeds and fishes, it has been found to be suitable for birds and attracts many migratory birds like large egret, purple heron, white bellied heron, asian open bill stork, greater flamingo, white naked stork etc. Continuous monitoring on the avifaunal diversity was suggested to evaluate the ecological status of the habitats and birds. It can be considered as an efficient tool to the environmentalists, policy makers in order to conserve such species, because, the role of birds in an ecosystem cannot be ignored.

Keywords : Majalgaon Reservoir, Avian diversity, Sindphana river, Migratory Birds etc.

I. INTRODUCTION

Bird community evaluation has become an important tool in biodiversity conservation and for identifying conservation actions in areas of high human pressure. Indian subcontinent is known for diverse and rich bird species whose taxonomy, distribution and their general habitat characteristics are well documented in India. Bird communities have been studied fairly well both in temperate and tropical forests. However, only a very little is known about bird community structure and their dynamics in India. Understanding the diversity and structure of bird communities is essential to delineate the importance of regional or local landscapes for avian conservation. Determinations of bird population in different habitats are central to understanding the community structure and niche relationships, as well as for intelligent management of populations. Moreover seasonal monitoring is equally important to trace the dynamic movement of birds in such habitats

Researcher have studied avian fauna in Marathwada as this area is blessed with various natural habitats such as river, reservoirs, hills, forests, grassland. (Yardi, *et al.*, 2004) reported 64 species of birds in Salim Ali lake, Aurangabad. (Kulkarni, *et al.*, 2005) reported 151 species of birds in and around Nanded city. Kulkarni *et al.*, (2006) recorded 18 Piscivorous bird species in Dongarkheda irrigation tank. Dist. Hingoli. Kulkarni, *et al.*, (2006) also recorded 93 species of birds in Shikhachiwadi Wadi, reservoir Dist. Nanded; Kulkarni *et al.*, (2010) listed 62 bird species in

forest Jaldhara, Kinwat. Dist.Nanded. (Balkhande *et al.*, 2012) recorded 53 species of birds on river Godavari near Dhangar Takli; (Balkhande *et al.*, 2012) recorded 50 species of birds near river Purna Dist. Parbhani.

Through this paper we would like to draw attention towards the least known avifauna of the Majalgaon reservoir and their tributaries, Beed district.

II. MATERIALS AND METHODS

Study area

The study area comes under the Marathwada region of Maharashtra (Fig. 1).

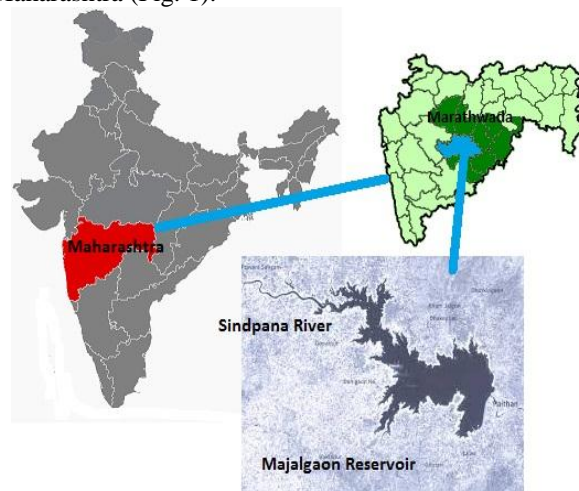


Fig. 1. Study area of Majalgaon Reservoir

Field surveys were conducted for a period of two years starting from July 2016 up to June 2018 covering all the seasons. The areas were surveyed using binoculars and digital cameras for proper bird records. Direct observations and species noting was made by walking on channel of river, reservoir tracks, and reservoir areas. The observations were carried out at different points around the large wetland. Birds were identified following with the avifaunal field guidebooks (Kazmierczak et. al., 2003; Grimmett et. al., 2011) and Internet Birds database were used. The checklist of bird species is prepared by following the guidelines for checklist of birds (Abdulali, 1981; Ali and Replav, 1983). The population status observed of bird species was recorded as per ACOR rating (Buckland et. al., 1983). Current status of threatened categories was adopted from Bird Life International (2000).

III. RESULTS AND DISCUSSION

The present studies on bird community structure of Majalgaon Reservoir of Beed district, Marathwada region, Maharashtra revealed the presence of 84 species of birds belonging to 60 genera spread over 30 families and 15 orders. Further, it was interesting to note that the order fasseriformes dominated among the avian diversity with 29 species. (Table 1).

Family wise analysis showed that family Ardeidae (07 species) dominated the avifauna, followed by Anatidae, Columbidae, Turdinae (6 species each), Cuculidae (5 Species), Rallidae, Pycnonotidae (4 species each) Cionidae, Charadriidae, Pisttaciidae, Alcedinidae, Hirundinidae, Paridae, Passerinae (3 species each), Phalacrocoracidae, Threskiornithidae, Phasianidae, Apodidae, Meropidae, Motacillidae, Laniidae, Sturnidae, Corvidae (2 species each) whereas, Podicipidae, Phoenicopteridae, Gruidae, Recurviorstridae, Strigidae, Estrildidae and Dicuridae (1 species each) were poorly represented in the area (Table 1). Similarly, Manakadan and Pittie (2000) have reported Muscipidae as the largest bird family of India with 370 species. Recently, Mahabal (2000) reported maximum number of birds (105 species) under this family. Similarly, Thakur (2008) also found Muscipidae as the biggest family of birds with 67 species from Himachal Pradesh.

Analysis of data on residential status revealed that out of 84 species, 33 were resident common and rest 51 showed migrant common, residential migrant common, uncommon rare, migrant rare, resident rare, uncommon, seasonally migrant common, uncommon, rare and breeding migrant rare, uncommon (Table 1). The present work is in conformity with the earlier work of S. P. Chavan et.al. (2015) was reported 168 birds from Godavari river basin Nanded, Thakur et al. (2003) carried out in Balh Valley of Mandi district in lower Himalayan region of Himachal Pradesh. Similarly, this investigation is in agreement with

the earlier works of Mahabal and Mukherjee (1991), Thakur et al. (2002), Mahabal (2000), Mattu and Thakur (2006), Thakur (2008) and Thakur et al. (2010) who also reported resident, altitudinal migrant, summer and winter visitor birds in different areas of Himachal Pradesh.

Analysis of data as per ACOR and IUCN status the ACOR rating only 12 species were abundant, 33 common, 23 occasional and 16 species were rare. According to IUCN categorization 79 species were least concern, 03 nearly threatened and 01 species from vulnerable and critically endangered. No any bird species from threatened and endangered (EN) category was sighted at any selected bird habitat. Similarly, there is no report of any species of bird which has been extinct from this region in recent time. (Table 1) The present work is in conformity with the earlier work according to Kulkarni et. al. (2005) had extensively studied the birds in and around Nanded city and enlisted with their categorization and ACOR rating for abundance. S. P. Chavan et.al. (2015) also reported ACOR categorization and IUCN status of birds from Godavari river basin Nanded.

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Table 1: Systematic list of birds of Majalgaon Reservoir, Marathwada region, Maharashtra

Sr. No.	Taxon	Common Name	Population, IUCN Status	Ecological status
	Order I: Podicipediformes			
	Family I: Podicipidae			
1	<i>Tachybaptus ruficollis</i> (Pallas, 1764)	Little grebe	C (LC)	MC
	Order II: Pelecaniformes			
	Family II : Phalacrocoracidae			
2	<i>Phalacrocorax niger</i> (Vieillot, 1817)	Little Cormorant	A (LC)	RMC
3	<i>Phalacrocorax fuscicollis</i> (Stephens, 1826)	Indian Cormorant	R (LC)	RMU
	Order III: Ciconiiformes			
	Family III: Ardeidae			
4	<i>Ardeola grayii</i> (Skyles, 1832)	Indian pond Heron	A (LC)	RC
5	<i>Egretta garzetta</i> (Linnaeus, 1766)	Little Egret	C (LC)	RM
6	<i>Bubulcus ibis</i> (Linnaeus, 1758)	Cattle Egret	A (LC)	RM
7	<i>Casmerodius albus</i> (Linnaeus, 1758)	Large Egret	O (LC)	Mr
8	<i>Ardea purpurea</i> (Linnaeus, 1766)	Purple Heron	R (LC)	Mr
9	<i>Ardea insignis</i> (Hume, 1878)	White bellied Heron	R (Cr)	Mr
10	<i>Nycticorax nycticorax</i> (Linnaeus, 1758)	Night Heron	C (LC)	Rr
	Family IV: Ciconiidae			
11	<i>Mycteria leucocephala</i> (Pennant, 1769)	Painted Stork	C (NT)	MC
12	<i>Anastomus oscitans</i> (Boddaert, 1783)	Asian Open bill Stork	R (LC)	Mr
13	<i>Ciconia episcopus</i> (Boddaert, 1783)	White Necked/Wooly Stork	O (LC)	WMr
	Family V: Threskiornithidae			
14	<i>Pseudibis papillosa</i> (Temminck, 1824)	Oriental White/Black Head Ibis	R (LC)	MU
15	<i>Platalea leucorodia</i> (Linnaeus, 1758)	Eurasian Spoonbill	C (LC)	WMU
	Order IV: Phoenicopteriformes			
	Family VI: Phoenicopteridae			
16	<i>Phoenicopeterus ruber</i> (Linnaeus, 1758)	Greater flamingo	R (LC)	WMr
	Order V: Ansariformes			
	Family VII: Anatidae			
17	<i>Tadorna ferruginea</i> (Pallas, 1764)	Ruddy Shelduck	M (LC)	WMC
18	<i>Dendrocygna javanica</i> (Horsfield, 1821)	Lesser Whistling Duck	C (LC)	WMC
19	<i>Anas poicillorhyncha</i> (Forster JR, 1781)	Spot Billed Duck	C (LC)	RMC
20	<i>Netapus coromandalianus</i> (Gmelin J F, 1789)	Cotton/Pigmy Goose	O (LC)	WMr
21	<i>Aythya ferina</i> (Linnaeus, 1758)	Common pochard	O (LC)	WMr
22	<i>Netta rufina</i> (Pallas, 1773)	Red crested pochard	O (LC)	WMr
	Order VI: Galliformes			
	Family VIII: Phasianidae			
23	<i>Pavo cristatus</i> (Linnaeus, 1758)	Indian Peafowl	A (LC)	RC

24	<i>Coturnix Coturnix</i> (Linnaeus, 1758)	Common Quail	A (LC)	RC
	Order VII: Gruiformes			
	Family IX: Gruidae			
25	<i>Grus antigone</i> (Linnaeus, 1758)	Sarus Crane	O (VU)	RU
	Family X: Rallidae			
26	<i>Amauromis phoenicurus</i> (Pennant, 1769)	White-breasted Waterhen	A (LC)	RC
27	<i>Porphyrio porphyrio</i> (Linnaeus, 1758)	Purple Moorhen	A (LC)	RC
28	<i>Fulica atra</i> (Linnaeus, 1758)	Eurasian Coot	O (LC)	RC
29	<i>Gallinula chloropus</i> (Linnaeus, 1758)	Common Moorhen	C (LC)	RC
	Order VIII: Charadriiformes			
	Family XI: Charadriidae			
30	<i>Vanellus duvaucelii</i> (Lesson, 1826)	River Lapwing	R (NT)	Rr
31	<i>Vanellus indicus</i> (Boddaert, 1783)	Red-wattled Lapwing	C (LC)	RC
32	<i>Vanellus malabricus</i> (Boddaert, 1783)	Yellow wattled Lapwing	O (LC)	RU
	Family XII: Recurvirostridae			
33	<i>Himantopus himantopus</i> (Linnaeus, 1758)	Black winged stilt	A (LC)	WMC
	Order IX: Columbiformes			
	Family XIII: Columbidae			
34	<i>Columba livia</i> (Gmelin, 1789)	Blue Rock Pigeon	C (LC)	RC
35	<i>Streptopelia senegalensis</i> (Linnaeus, 1766)	Little Brown Dove	C (LC)	RU
36	<i>Streptopelia chinensis</i> (Scopoli, 1786)	Spotted Dove	O (LC)	RU
37	<i>Streptopelia decaocto</i> (Frisvaldszky, 1838)	Eurasian Collared-Dove	C (LC)	RC
38	<i>Streptopelia tranquebarica</i> (Hermann, 1804)	Red collared Dove	R (LC)	RMC
39	<i>Treron phoenicoptera</i> (Latham, 1790)	Yellow-legged Green-Pigeon	R (LC)	Rr
	Order X: Psittaciformes			
	Family XIV: Psittacidae			
40	<i>Psittacula eupatria</i> (Linnaeus, 1766)	Alexandrine Parakeet	O (LC)	RC
41	<i>Psittacula krameri</i> (Scopoli, 1769)	Rose-ringed Parakeet	O (LC)	RC
42	<i>Psittacula roseate</i> (Biswas, 1951)	Blssom headed Parakeet	R (NT)	RC
	Order XI : Cuculiformes			
	Family XV: Cuculidae			
43	<i>Clamator jacobinus</i> (Boddaert, 1783)	Pied Crested Cuckoo	O (LC)	BMr
44	<i>Hierococcyx varius</i> (Vahl, 1797)	Brainfever Bird	C (LC)	BMU
45	<i>Cuculus micropterus</i> (Gould, 1838)	Indian Cuckoo	A (LC)	RC
46	<i>Cuculus canorus</i> (Linnaeus, 1758)	Common Cuckoo	R (LC)	RC
47	<i>Eudynamis scolopacea</i> (Linnaeus, 1758)	Asian Koel	C (LC)	RC
	Order XII: Strigiformes			
	Family XVI: Strigidae			
48	<i>Athene brama</i> (Temminck, 1821)	Spotted Owlet	C (LC)	RC
	Order XIII: Apodiformes			
	Family XVII: Apodidae			
49	<i>Apus affinis</i> (J.E. Gray, 1830)	House Swift	A (LC)	RMr
50	<i>Apus apus</i> (Linnaeus 1758)	Common swift	C (LC)	Rr
	Order XIV: Coraciiformes			
	Family XVIII: Alcedinidae			
51	<i>Alcedo atthis</i> (Linnaeus, 1758)	Small Blue Kingfisher	C (LC)	RU
52	<i>Halcyon smyrnensis</i> (Linnaeus, 1758)	White-breasted Kingfisher	C (LC)	RU
53	<i>Ceryle rudis</i> (Linnaeus, 1758)	Pied Kingfisher	C (LC)	RU
	Family XIX: Meropidae			
54	<i>Merops orientalis</i> (Latham, 1801)	Small Bee-eater	C (LC)	RMC
55	<i>Merops philippines</i> (Linnaeus, 1766)	Blue tailed bee eater	C (LC)	RMU
	Order XV: Passeriformes			
	Family XX: Hirundinidae			
56	<i>Hirundo rustica</i> (Linnaeus, 1758)	Common Swallow	O (LC)	RMC
57	<i>Hirundo daurica</i> (Linnaeus, 1771)	Red-rumped Swallow	O (LC)	RMC
58	<i>Hirundo smithii</i> (Leach, 1818)	Coire tailed swallow	O (LC)	WMr
	Family XXI: Motacillidae			
59	<i>Motacilla alba</i> (Linnaeus, 1758)	White Wagtail	R (LC)	MU

60	<i>Motacilla maderaspatensis</i> (Gmelin, 1789)	Large Pied Wagtail	R (LC)	RM
	Family XXII: Pycnonotidae			
61	<i>Pycnonotus leucogenys</i> (Gray, 1835)	Himalayan Bulbul	C (LC)	RC
62	<i>Pycnonotus cafer</i> (Linnaeus, 1766)	Red-vented Bulbul	C (LC)	RC
63	<i>Hypsipetes leucocephalus</i> (P.L.S. Muller, 1776)	Black Bulbul	O (LC)	WMr
64	<i>Pycnonotus jocosus</i> (Linnaeus, 1758)	Red-whiskered bulbul	A (LC)	RC
	Family XXIII: Laniidae			
65	<i>Lanius vittatus</i> Valenciennes, 1826	Bay-backed Shrike	O (LC)	WMU
66	<i>Lanius schach</i> (Linnaeus, 1758)	Rufous-backed Shrike	O (LC)	WMU
	Family XXIV: Muscicapidae			
	Subfamily: Turdinae			
67	<i>Copsychus saularis</i> (Linnaeus, 1758)	Oriental Magpie-Robin	C (LC)	RC
68	<i>Saxicoloides fulicata</i> (Linnaeus, 1776)	Indian Robin	C (LC)	RU
	Subfamily: Timaliinae			
69	<i>Turdoides striatus</i> (Dumont, 1823)	Jungle Babbler	C (LC)	RC
70	<i>Turdoides malcolmi</i> (Skyles, 1832)	Large Gray Babbler	C (LC)	RC
	Subfamily: Sylviinae			
71	<i>Prinia socialis</i> (Sykes, 1832)	Ashy Prinia	O (LC)	RC
72	<i>Orthotomus sutorius</i> (Pennant, 1769)	Common Tailorbird	O (LC)	Rr
	Family XXV: Paridae			
73	<i>Parus major</i> (Linnaeus, 1758)	Great Tit	R (LC)	Rr
74	<i>Parus monticolus</i> (Vigors, 1831)	Green-backed Tit	R (LC)	Rr
75	<i>Parus cinereus</i> (Vieillot, 1818)	Cinereous tit	R (LC)	RC
	Family XXVI: Estrildidae			
76	<i>Lonchura punctulata</i> (Linnaeus, 1758)	Spotted Munia	O (LC)	RC
	Family XXVII: Passeridae			
	Subfamily: Passerinae			
77	<i>Passer domesticus</i> (Linnaeus, 1758)	House Sparrow	C (LC)	RC
78	<i>Passer rutilans</i> (Temminck, 1835)	Cinnamon Tree Sparrow	C (LC)	RC
79	<i>Petronia xanthocollis</i> (Burton, 1838)	Yellow-throated Sparrow	C (LC)	RC
	Family XXVIII: Sturnidae			
80	<i>Sturnus pagodarum</i> (Gmelin, 1789)	Brahminy Starling	C (LC)	RC
81	<i>Acridotheres tristis</i> (Linnaeus, 1766)	Common Myna	C (LC)	RC
	Family XXIX: Dicruridae			
82	<i>Dicrurus macrocercus</i> (Vieillot, 1817)	Black Drongo	C (LC)	RC
	Family XXX: Corvidae			
83	<i>Corvus splendens</i> (Vieillot, 1817)	House Crow	O (LC)	RC
84	<i>Corvus macrorhynchos</i> (Wagler, 1827)	Jungle Crow	O (LC)	RU

Abbreviation in ACOR are A = Abundant, C = Common, O=Occasional, R = Rare

Abbreviation used for Ecological rating and status are WM = Winter Migrant, WMr= Winter Migrant Rare, WMU= Winter Migrant Uncommon, WMC= Winter Migrant Common, RU = Resident Uncommon, Rr = Resident Rare, RMR= Residence Migrant Rare, RMC = Residential Migrant Common, RMC= Residential Migrant Uncommon, RC =Resident Common, BM= Breeding Migrant, BMR= Breeding Migrant Rare, BMU= Breeding Migrant Uncommon, PM = Passage Migrant.

Abbreviation for IUCN Status are LC= Least Concern, NT = Nearly Threatened, T = Threatened, VU = Vulnerable, EN = Endangered, CR = Critically Endangered.