

Avian Diversity and Seasonal Abundance of Muchi Lake Wetland Near Pandharkawada, Dist. Yavatmal (M.S.) India

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Abstract: *The present study deals with the avian diversity and seasonal abundance of Muchi Lake Wetland located near Pandharkawada town in Yavatmal district of Maharashtra. The study was conducted at four selected sites of lake. Each of the sites was surveyed daily after sunrise to 2 hrs and before sunset to 2 hrs from March-2013 to February-2014 in which 34 species of birds belonging to different families were recorded. Maximum species were sighted during the winter season, some birds were found to be migratory and most being resident. We also observed that the variation in food availability in different season affects on avifaunal diversity in studied area.*

Keywords: Birds, diversity, wetland, seasons

1. Introduction

Birds are commonly utilized as indicators of ecosystem integrity. The recent studies assess freshwater biodiversity as the most threatened of all types of diversity and wetlands are found to be the richest sites by holding major share of the existing avifauna (Anon, 2000). Wetlands may be seen as natural ecological islands of freshwater habitats surrounded by terrestrial habitats. Wetlands provide food for birds in the form of plants, vertebrates, and invertebrates (Jaikrishna, 2008; Lameed, 2011).

Birds may be influenced by biogeography (Karr, 1976). Wetland are important conservation site due to rich biodiversity, they are among the most productive ecosystem in the world. They harbor many globally threatened species (Casados and Montes 1995; Green, 1996; Petric, 1998). Diverse wetland complex are of greatest value in providing habitat for wetland bird species (Miller, 2003). The avifauna is important for the ecosystem as they play various roles as scavenger, pollinators and predators of insect pest (Padmavat, *et al.*, 2010)

Many wetland have been lost due to agriculture expansion; urban development (Huford, *et al.*, 1998) reduction in water. Wetlands are very important for avifauna conservation and birds' life can be degraded due to various human activities impacting on wetland ecosystems (Dugan, 1990; Stewart, 2007). The intension of this study is to develop avian diversity. Considerable studies on avifaunal diversity from different freshwater wetland of India have carried out by many researchers but very little information is available about central India. This work is therefore beneficial document the avifaunal diversity of wetland near Pandharkawada town which is located in the central region of India.

2. Material and Method

Study Area

Muchi lake is located between 20.02(20°1'0 N) latitude & 78.52(78°37'60 E) longitude which is 5 km away from Pandharkawada and 150 km away from Nagpur. The legal area of wetland is 105.69 km². The observation was carried out in three distinct seasons; summer (Mar-June), monsoon (July-October) and winter (November-February); Average temperature varies from 40° C during summer to 09° C during winter. Annual rainfall ranges from 500-600 mm.

Site Selection and Survey

The study was conducted at the four selected sites and these sites were chosen as survey location. Each of the sites was surveyed daily during a period of 4 to 5 consecutive day depending on whether condition from March 2013 to February 2014. Survey were conducted either from sunrise to 2 hrs and before sunset to 2 hrs and until sunset.

The observation was carried out by using a field binocular, photo camera and tape recorder, which were later analyzed and identified to species with help of standard literature (Ali and Ripley, 1987 and 1995; Grimmet, *et al.*, 1999) and Multimedia software of bird identifier. Direct count method was used to record the avian diversity. Data was recorded on the basis of their visit to wetland as R-Widespread resident, W-Widespread winter visitor, RM-Resident migrant, M-Migratory and seasonal variation was identified as S-summer, M-Monsoon, W-winter.

3. Result and Discussion

During the present study investigation, 34 species of birds were documented, belonging to 10 different orders. Out these 27 species were resident and 7 species were found to be migratory or seasonal resident. It was observed that, the

maximum bird species were recorded during summer and winter followed by monsoon period. On the basis of genus, the highest number occurred during winter, followed by summer and monsoon. Among rare species 90% were present during winter followed by summer and monsoon. The density of water bird was lowest during summer, followed by monsoon and winter. Similar observation was made by Ericia, *et al* (2005). The lowest number of families was recorded at site I (50%) during summer & monsoon while the highest was documented at site IV during winter.

The bird's population fluctuated among sites in different seasons due to local environmentally dependant factors, habitat differences, local & regional habitat changes and climatic conditions (Ericia, *et al.*, 2005) the presence & abundance of water has been shown to exhibit a direct effect upon a avian population. Birds require water not only a critical component of Nutrition but also as an essential medium for other activities. Wetland provides aquatic food sources, protection from predators & areas for courting and preening. The presence of water also increases diversity and abundances of tree species resulting in a greater Variety of Nutritional resources & vegetative structure .

Bird researcher in the Maharashtra such as Yardi *et al.*,(2004) reported 64 species of birds in Salim Ali lake, Aurangabad. Kedar & Patil (2005) recorded 60 birds species from Rishi lake, Karnja(lad) of Washim district. Kulkarni *et al.*, (2005) reported 151 species of birds in and around Nanded city.

Table 1: List of avifaunal diversity of Muchi Lake wetland-

Sr.No.	Order/Family	Scientific Name	Common Name	Habitat status
A	Galliformes			
1	i)Phasianidae	<i>Fracolinus pondicerianus</i>	Grey francolin	R
2	ii)Gruidae	<i>fulica atra</i>	Common coot	RM
3	iii)Gruidae	<i>Amauromis phoenicurus</i>	White Breasted waterlien	R
B	Anseriformes			
4	i)Anatidae	<i>Anas poecilorhyncha</i>	Spot-billed duck	R
C	Piciformes			
5	i)picidae	<i>Dry copus javensis</i>	Common flame Black woodpecker	R
D	Coraciformes			
6	i)Alcedinidae	<i>Ceryle rudis</i>	Lesser pied Kingfisher	R
7	ii)coracidae	<i>Coracias benghalensis</i>	Indian roller	RM
8	iii)Meropidae	<i>Merops orientallis</i>	Green bee eater	R
9	iv)Upupidae	<i>Upupa schach</i>	Common Hoop	RM
E	Cuculiformes			
10	i)Cuculidae	<i>Clamatur jacobinus</i>	Pied cuckoo	RM
11	ii)centropodae	<i>Centropus sinesis</i>	Greater concal	R
12	iii)Psittacidae	<i>Psittacula kra</i>	Rose-ringed parakeet	R
F	Ciconiformes			
13	i)Rostratulidae	<i>Rostratula benghalensis</i>	Greter painted pheasant	R
14	ii)Jacanidae	<i>Hydrophasinus chirgus</i>	Pheasant tailed jacana	R
15	iii)Ciconiidae	<i>Anastomus</i>	Asian open Bill	R

		<i>osciatanus</i>	stork	
16	iv)Ciconiidae	<i>Ephipporhyrichos asiaticus</i>	Black Naked btork	M
17	V)Charadriidae	<i>Vanellus indicus</i>	Red watted Lapwing	R
G	Podicipediformes			
18	i)Podicipediae	<i>Tachybatus ruficollis</i>	Little grabe	R
19	ii)Ardeidae	<i>Ardeola grayii</i>	Indian grey heron	W
20	iii)Ardeidae	<i>Egretta garzetta</i>	Little Egret	R
H	Passeriformes			
21	i)Lanidae	<i>Lanius schach</i>	Long tailed surike	R
22	Ii)Corvidae	<i>Corvus macrorhynchos</i>	Jungle crow	R
23	iii)Corvidae	<i>Dicrurus macrocerus</i>	Black drongo	R
24	iv)Muscicaiae	<i>Saxicoloides fulicata</i>	Indian robin	R
25	v)Muscicadae	<i>Saxicola caprata</i>	Pied bush chat	R
26	vi)Sturnidae	<i>Acridotheres tristis</i>	Common myna	R
27	vii)Hirundinidae	<i>Hirundo rustica</i>	Common swallow	R
28	viii)Pycnotidae	<i>Pyconotus luteolus</i>	White browed bulbul	
29	ix)Passeridae	<i>Motacilla alba</i>	White wagtail	RM
30	x)Passeridae	<i>Pioceus phillippus</i>	Baya weaver	R
31	xi)Sylviidae	<i>Turdiides stritus</i>	Jungle barber	R
I	Columbiformes			
32	i)Columbidae	<i>Stigmatopelia senegalensis</i>	Little Brown Dove	R
33	ii)Columbidae	<i>Streptopelia tranquebarica</i>	Red collared Dove	R
J	Psittaciformes			
34	Cuculidae	<i>Centropus sinesis</i>	Reater concus	R

R-Widespread Resident, W-Widespread winter visitor, RM-Resident Migrant, M-Migratory

Table 2: Bird Abundance in different seasons

Site	Total Abundance		
	S	M	W
I	85	48	106
II	98	65	178
III	156	76	165
IV	168	87	196

S-Summer, M-Monsoon, W-Winter

4. Future Scope

In future study, correlate this study with ecological factors, availability and non availability of food products in selected studied area and measure the species specific diversity of birds. This study will provide factual data about the hierarchy of birds in wetland and their habitat. Therefore, this study will be benefited to Department of Forest, Department of Environment, Scientists, Researchers students and NGOs for the study and conservation purpose.

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