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Diversity of Avifauna in and around Himayatsagar Reservoir near Hyderabad, India

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ABSTRACT

Birds are bio-indicators of different kind of environment like Urbanization and Industrialization. They are one of the best indicators of our ecosystem, so study of Avifauna is an important component for biological environment. The present investigation was carried out to document the Avifauna diversity in and around the Himayatsagar reservoir, located in the Hyderabad city of Telanagana State during 2012 to 2014. Altogether 35 species of birds were recorded of 20 families during the study. Among the recorded species 26 were residential, 6 were migrant, 2 were residential migratory and 1 is residential migratory common.

Keywords: *Birds, Urbanization and Industrialization, Avifauna, Ecosystem, Himayatsagar Reservoir*

INTRODUCTION

Population of birds is a sensitive indicator of pollution in both terrestrial and aquatic ecosystem (Gaston, 1975; Hardy et al. 1987). The estimation of local densities of avifauna helps to understand the abundances of various species of other organisms (Turner, 2003). Birds are often used as monitors of pollutants (Furness 1993) to indicate possible impacts of industrial interference in the ecosystems (Becker 2003). Noise pollution in metropolis caused physical irritance and disturbance in normal physiological processes of birds (Sharma et al. 1985). An assemblage of large number and diverse bird species is an indication of less species competition due to diverse niche requirements (Pianka 1974). Some birds are sensitive to noise or traffic and their movements get disturbed (Uttangi 2003) in such situations. They are one of the best indicators of ecosystem, health, pollution problems and function as early warning system (Gole 1984; Becker 2003; Ripley 1978; Sharma 1982; Bhattacharjee and Hazarika 1985; Sandhu and Dang 1980).

STUDY AREA

Hyderabad, the capital of Andhra Pradesh, is situated 20 km from the Osmansagar Reservoir, and the reservoir is one of the sources for supplying water for use to the city. Osmansagar was constructed across Musi river during the period 1912-1920 in Gandipet village, Rajendra nagar mandal in Ranga Reddy district. The reservoir is located at latitude 17022’30” and longitude 80004’00”.The catchment area is 738.14sq.km. From the Osmansagar and Himayatsagar reservoirs, there has been a decline in water supply

over the years due to reduced inflows. It is reported that there has been a progressive decline in the per cent of rainfall converted into inflows into these two reservoirs, even though the rainfall pattern has not changed much. Despite copious rains in Hyderabad and its surroundings, the inflows have been very less into these reservoirs. Barring 2010-14, it is reported that these two reservoirs were not at full level in earlier 7-8 years. The entire city lies in the Musi river sub-basin, which is a part of the Krishna river basin and is drained mainly into Musi river system. Esi is the main tributary to the river Musi.

MATERIALS AND METHODS

Field observations of avifauna in the study area were carried out during 2012-2014. The roadside counts of birds were undertaken following standard procedures (Clarke 1986; Ritcher & Sondgerath, 1990) by traversing a given distance through designated sampling areas. The milometer of the vehicle was used to measure the stretch of the study area. Birds were studied by direct observation with the help of 7x-15x35 ‘‘Optima Zenith’’ Binocular and were identified by adopting available literature (Ali and Ripley 1983; Woodcock 1998). Birds were counted at their point of first detection and care was taken to ensure that same birds were not counted again. Call notes of the birds were used for identification. The check list of species was prepared as per references available (Ali 1996; Manakadan and Pittie 2001 and Grimmett and Inskipp; 2007).

OBSERVATION & RESULT

In and around the Himayatsagar reservoir, good diversity of birds, comprising of 35 (including 16 aquatic) species, were observed. Dominant birds included Cattle egret, Blue rock pigeon, Coots, Common swallow, Little cormorant, River tern, Pond heron etc. Birds like Cattle egret, Common coot, Cotton teal, Little cormorant, Pond heron, River tern, Red-wattled lapwing, Small green bee eater etc. were found in flocks all over the year.

Table 1: Diversity of Avifauna in and around Himayatsagar during 2012-2014

Sr. No.	Common Name	Scientific Name	Family	Status	Season	Years		
						2012	2013	2014
1.	Barheaded geese	*Anser indicus*	Anatidae	R	W	+++	++	+++
					S	+++	++	+++
					M	+	++	+++
2.	Black Racket	*Dicrurus par*	Dicruridae	R	W	++	+	++
					S	+	+	++

Sr. No.	Common Name	Scientific Name	Family	Status	Season	Years		
						2012	2013	2014
	tailed drongo	*adiseus*			M	+	+	++
3.	Blue rock pigeon	*Columba livia*	Laridae	R	W	++	++	++
					S	++	++	++
					M	++	+	++
4.	Brown headed gull	*Chroicocephalus brunnicephalus*	Laridae	R	W	++	++	++
					S	++	++	++
					M	-	++	++
5.	Brown headed stork-billed kingfisher	*Pelargopsis capensis*	Alcedinidae	R	W	+	++	++
					S	+	++	++
					M	+	++	++
6.	Caspian tern	*Hydroprogne caspia*	Sturnidae	M	W	+++	+++	+++
					S	++	++	++
					M	-	-	-
7.	Cattle egret	*Bubulcus ibis*	Ardeidae	R	W	+++	+++	+++
					S	+++	+++	+++
					M	+++	+++	++
8.	Common coot	*Fulica atra*	Rallidae	RM	W	-	++	++
					S	+++	+++	+++
					M	+++	+++	+++
9.	Common swallow	*Hirunds rustica*	Hirundinidae	RMC	W	++	++	++
					S	++	++	++
					M	++	++	++
1	Cotton	*Nettapus*	Anatidae	R	W	++	++	++

Sr. No.	Common Name	Scientific Name	Family	Status	Season	Years		
						2012	2013	2014
0.	teal	*Coromandelianus*			S	++	++	++
					M	++	++	++
11.	Darter	*Anhinga melanogaster*	Anhingidae	R	W	-	+	-
					S	++	++	+
					M	++	++	+
12.	Grey heron	*Ardea cinerea*	Ardeidae	R	W	++	+	-
					S	+	+	+
					M	+	-	-
13.	House crow	*Corvus splendens*	Corvidae	R	W	++	++	+
					S	++	++	++
					M	++	++	++
14.	House sparrow	*Passer domesticus*	Passeridae	R	W	++	-	-
					S	++	+	+
					M	++	-	-
15.	House swift	*Apus affinus*	Apodidae	R	W	++	++	++
					S	++	++	++
					M	++	++	+
16.	Indian Roller	*Coracias benghalensis*	Coraciidae	R	W	+	-	-
					S	+	+	+
					M	-	+	+
17.	Indian black drongo	*Dicrurus adsimilis*	Dicruridae	R	W	++	+	+
					S	++	+	+
					M	++	+	+
18.	Indian skimmer	*Rynchops albicollis*	Laridae	R	W	+++	+++	+++
					S	++	+++	+++
					M	++	++	+++
19.	Large pied wagtail	*Motacilla maderaspatensis*	Motacillidae	R	W	+	+	+
					S	+	+	+
					M	+	+	+
2	Lesser	*Dendrocygn*	Anatidae	M	W	++	++	++

Sr. No.	Common Name	Scientific Name	Family	Status	Season	Years		
						2012	2013	2014
0.	whistling teal	*a javanica*				+	+	+
					S	++	++	++
					M	+	++	++
21.	Little cormorant	*Phalacrocorax niger*	Phalacrocoracidae	R	W	++	++	++
					S	++	+++	++
					M	++	++	+++
22.	Little grebe	*Podiceps ruficollics capensis*	Podicipedidae	R	W	+++	+++	+++
					S	++	+++	++
					M	++	++	+++
23.	Painted stork	*Mycteria leucocephala*	Ciconiidae	RM	W	+++	+++	+++
					S	+++	+++	+++
					M	-	-	-
24.	Pied kingfisher	*Ceryle rudis*	Cerylidae	R	W	+	-	+
					S	+	-	+
					M	+	-	-
25.	Pond heron	*Ardeola grayii*	Ardeidae	R	W	+++	+++	+++
					S	+++	+++	+++
					M	+++	+++	+++
26.	Purple heron	*Ardea sumatrana*	Ardeidae	R	W	-	+	+
					S	+	+	+
					M	+	+	+
27.	Purple swamphe	*Porphyrio porphyrio*	Rallidae	R	W	-	+	+
					S	+	-	+

Sr. No.	Common Name	Scientific Name	Family	Status	Season	Years		
						2012	2013	2014
	n				M	+	-	+
28.	River Tern	*Sterna aurantia*	Laridae	M	W	+++	+++	+++
					S	+++	+++	+++
					M	+++	+++	+++
29.	Rosy starling	*Sturnus roseus*	Sturnidae	M	W	+	+	-
					S	+	++	-
					M	-	-	-
30.	Small blue kingfisher	*Alcedo atthis*	Alcedinidae	R	W	+	+	+
					S	+	+	-
					M	+	+	-
31.	Small green bee eater	*Merops orientalis*	Meropidae	R	W	++	++	++
					S	+++	++	++
					M	+++	++	++
32.	Thick billed flowerpecker	*Dicaeum agile*	Dicaeeidae	M	W	+	++	++
					S	-	+	+
					M	-	+	-
33.	White breasted kingfisher	*Halcyon smyrnensis*	Alcedinidae	R	W	+	-	+
					S	+	-	+
					M	+	-	-
34.	White eyed pochard	*Aythya nyroca*	Anatidae	M	W	+++	+	+++
					S	+++	++	++
					M	+++	++	+++
3	White	*Lonchura*	Estrildidae	R	W	++	++	++

Sr. No.	Common Name	Scientific Name	Family	Status	Season	Years		
						2012	2013	2014
5.	backed munia	*striata*						+
					S	+	+++	++
					M	+	+++	+++

Note : +++ : Found in flocks, ++: frequently found, +: rarely found, - : not found

R = Resident M= Migrant
RM = Resident Migratory RMC = Resident Migrant Common

CONCLUSION

The Comprehensive study of Avifauna around Himayatsagar reservoir revealed fairly good diversity from different categories/habitats and feeding; In general, Birds were frequently seen around the reservoir due to ample accessibility of food, while only a few varieties were exhibited adjacent to human habit.

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