

Diversity of Avifauna in and around Osmansagar Lake near Hyderabad, India

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ABSTRACT

The present investigation was carried out to document the avifauna diversity in and around the Osmansagar lake, located in the Hyderabad city of Andhra Pradesh State during 2012 to 2014. Altogether 51 species of birds were recorded of 33 families during the study. Among the recorded species 43 were residential, 5 were migrant, 2 were residential migratory and 1 is residential migratory common.

Keywords: *Avifauna, Osmansagar Lake, Avifaunal diversity*

INTRODUCTION

Birds and their diversity constitute a main part of the natural environment and play a functional role as agents of flower pollination, seed dispersal, source of food chain and agents in breaking seed dormancy (Nason, 1992). Birds are found throughout the world, at approximately all altitudes and in nearly every climate. They are a natural way to control pests in gardens, on farms, and other places, besides help in pollination of plants. 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). Avifauna also acts as dispersal agents in transferring nutrients and spores from one place to another during their migration and local movements (Niemi, 1985). 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). The avian habitat is roughly divided into forest, scrub and wetlands, although many species require a mixed type of habitat.

STUDY AREA:

Hyderabad, the capital of Andhra Pradesh, is situated 20 km from the Osmansagar Lake, and the lake is one of the sources for supplying water for use to the city. Osmansagar was constructed across Musiriver during the period 1912-1920 in Gandipet village, Rajendranagarmandal in Ranga Reddy district. The lake is located at latitude 17⁰22'30" and longitude 80⁰04'00". The catchment area is 738.14sq.km. From the Osmansagar and Himayatsagar lakes, 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 lakes, 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 lakes. Barring 2010-14, it is reported that these two lakes 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).

RESULTS AND DISCUSSION

During the study period 51 species of birds were counted in and around Osmansagar lake. The list of birds observed during the survey along with their scientific names is presented in Table 1. The presence of 51 species of birds in and around the lake are markable numbers for such a small area. The number increased during winter months. The bird population varied amongst the seasons. Birds like cattle egret, common coot, cotton teal, Indian myna, lesser whistling teal, little cormorant, pond heron, river tern, redwattled lapwing, small green bee eater etc. were found in flocks all over the year. Various species of migratory waterfowl were seen in winter. Resident birds like black drongo, black kite, black Ibis and common myna were sighted all-round the year. Some locally migrant species, such as cattle egret, painted stork and yellow-wattled lapwing, spend most of the time of the year in the locality but leave during breeding season. Long distance migrants such as ducks, rosy starling arrived in winter in good numbers, and by summer return to their nesting grounds. Flocks of waders like ruff, redshank, black-winged stilt and sandpipers were commonly seen foraging in the shallow marshy land. A great variety of insects, worms, mollusks, frogs, fishes and rodents thrive on the garbage and sewage. Insectivorous and piscivorous birds feed on such organisms and raptors in turn predate them. Various species of trees such as *Acacia arabica*, *Pongamia pinnata*, *Parkinsonia acculeata*, *Azadiracta indica*, etc., as available in this area, serve as sheltering, perching, nesting sites for several species, whereas sunbirds and other birds feeding on nectar have abundant food supply during flowering season. Not only the lake waters, but the surroundings of the lake also attracted some of the winter and summer migrants.

Table 1
Diversity of Avifauna in and around Osmansagar Lake during 2012-2014

Sr. No.	Common name	Scientific name	Family	Status	Season	Osmansagar		
						2012	2013	2014
1.	Barheaded geese	<i>Anser indicus</i>	Anatidae	R	W	+++	+	+
					S	++	++	++
					M	++	+++	+++
2.	Brownheaded gull	<i>Larus brunnicephalus</i>	Laridae	R	W	++	+	+
					S	++	+	-
					M	++	++	+++
3.	Caspian tern	<i>Hydroprogne caspia</i>	Sturnidae	M	W	++	-	+
					S	++	++	+++
					M	++	++	+++
4.	Cattle egret	<i>Bubulcus ibis</i>	Ardeidae	R	W	+++	++	+++
					S	++	++	+++
					M	++	++	+++
5.	Common babbler	<i>Turdoides caudatus</i>	Leiotherichida	R	W	+	-	-

			e		S	+	++	+++
					M	++	++	+++
6.	Common coot	<i>Fulicaatra</i>	Rallidae	RM	W	+++	++	+++
					S	++	++	+++
					M	++	++	+++
7.	Common swallow	<i>Hirunds rustica</i>	Hirundinidae	RMC	W	++	++	+++
					S	+	++	+++
					M	+	++	+++
8.	Cotton teal	<i>Nettapus Coromandelianus</i>	Anatidae	R	W	+++	++	++
					S	++	+++	+++
					M	++	++	+++
9.	Crow pheasant	<i>Centropuss inensis</i>	Cuculidae	R	W	+	+	+
					S	+	-	+++
					M	-	+	+++
10.	Darter	<i>Anhinga melanogaster</i>	Anhingidae	R	W	+	+	++
					S	+	++	+
					M	+	+	+
11.	Grey heron	<i>Ardea cinerea</i>	Ardeidae	R	W	+	+	+
					S	+	+	+
					M	++	+	+
12.	Grey shrike	<i>Lanius excubitor</i>	Laniidae	R	W	+	-	-
					S	+	+	++
					M	+	-	+
13.	House crow	<i>Corvuss splendens</i>	Corvidae	R	W	+	++	+
					S	++	++	++
					M	++	++	++
14.	House sparrow	<i>Passer domesticus</i>	Passeridae	R	W	+	+	-
					S	+	-	-
					M	-	-	-
15.	House swift	<i>Apus affinus</i>	Apodidae	R	W	++	+	+
					S	+	++	+
					M	+	+	+
16.	Indian black drongo	<i>Dicrurus adsimilis</i>	Dicruridae	R	W	++	++	++
					S	+	+	+
					M	+	+	++
					M	++	++	+
17.	Indian cuckoo	<i>Cuculus micropterus</i>	Cuculidae	R	W	-	-	+
					S	+	-	+
					M	+	+	+
18.	Indian myna	<i>Acridotheres tristis</i>	Sturnidae	R	W	++	++	++
					S	+++	+++	+++
					M	+++	+++	+++
19.	Indian reef heron	<i>Egretta gularis</i>	Ardeidae	R	W	++	+	+
					S	+	++	+
					M	++	++	+
20.	Indian robin	<i>Saxicoloides fulicata</i>	Muscicapidae	R	W	+	+	+
					S	++	++	++
					M	++	+	++
21.	Indian skimmer	<i>Rynchops albicollis</i>	Laridae	R	W	++	+	++
					S	++	+++	++
					M	++	+++	++
22.	Jungle crow	<i>Corvus macrorhynchus</i>	Corvidae	R	W	++	+	+
					S	++	++	+
					M	++	+	++
23.	Jungle myna	<i>Acridotheres fuscus</i>	Sturnidae	R	W	++	+	-
					S	++	++	++
					M	++	+	++
24.	Large pied wagtail	<i>Motacillamaderas patensis</i>	Motacillidae	R	W	+	+	+
					S	+	+	++
					M	++	+	+
25.	Lesser whistling teal	<i>Dendrocygna javanica</i>	Anatidae	R	W	+	+++	++
					S	++	+++	++

					M	++	+++	++
26.	Little cormorant	<i>Phalacro coraxniger</i>	Phalacrocoracidae	R	W	+++	++	++
					S	+++	++	+++
					M	+++	++	+++
27.	Little egret	<i>Egretta garzetta</i>	Ardeidae	R	W	+++	++	+++
					S	+++	++	+++
					M	+++	++	+++
28.	Little grebe	<i>Podiceps ruficollis scapensis</i>	Podicipedidae	R	W	+++	++	-
					S	+++	++	++
					M	+++	++	++
29.	Magpie robin	<i>Copsychus saularis</i>	Turdidae	R	W	+	+	+
					S	+++	++	++
					M	+++	++	++
30.	Night heron	<i>Nycticorax nycticorax</i>	Ardeidae	R	W	+	+	+
					S	-	-	-
					M	+	+	-
31.	Painted stork	<i>Mycteria leucocephala</i>	Ciconiidae	RM	W	-	-	++
					S	+++	+++	++
					M	+++	+++	++
32.	Pied kingfisher	<i>Ceryle alcyon</i>	Cerylidae	R	W	++	+	++
					S	+	+	+
					M	+	+	+
33.	Pond heron	<i>Ardeo lagrayii</i>	Ardeidae	R	W	+++	+++	++
					S	+++	+++	+++
					M	+++	+++	+++
34.	Purple sunbird	<i>Nectarinia nectarinia</i>	Nectariniidae	R	W	+	+	+
					S	++	++	++
					M	++	++	++
35.	Purple swamphen	<i>Porphyrio porphyrio</i>	Rallidae	R	W	-	+	+
					S	++	+	+++
					M	+	+	+
36.	Redvented bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	R	W	+	+	++
					S	++	+	++
					M	++	++	++
37.	Redwattled lapwing	<i>Vanellus indicus</i>	Charadriidae	R	W	+++	+++	+++
					S	+++	+++	+++
					M	+++	+++	+++
38.	Redwhiskered bulbul	<i>Pycnonotus jocosus</i>	Pycnonotidae	R	W	++	++	++
					S	++	++	+++
					M	++	++	+++
39.	Yellow-wattled lapwing	<i>Vanellus malabaricus</i>	Charadriidae	R	W	++	++	+++
					S	-	-	+++
					M	-	-	-
40.	River tern	<i>Sterna aurantia</i>	Laridae	R	W	+++	+++	+++
					S	+++	+++	+++
					M	+++	+++	+++
41.	Roseringed parakeet	<i>Psittacula krameri</i>	Psittaculidae	R	W	+	+	-
					S	++	++	+++
					M	+	++	+++
42.	Rosy starling	<i>Sturna roseus</i>	Sturnidae	R	W	-	-	-
					S	+++	+++	+++
					M	-	-	-
43.	Small blue kingfisher	<i>Alcedo atthis</i>	Alcedinidae	R	W	+	+	+
					S	+	+	+
					M	+	+	+
44.	Small green bee eater	<i>Meropso orientalis</i>	Meropidae	R	W	++	++	++
					S	++	+++	++
					M	++	+++	++
45.	The brahminy kite	<i>Haliastur Indus</i>	Accipitridae	R	W	+	-	-
					S	+	-	+
					M	-	+	+
46.	White breasted	<i>Halcyon smyrnensis</i>	Alcedinidae	R	W	+	+	+

	kingfisher				S	+	+	+
					M	+	+	+
47.	White eyed pochard	<i>Aythya roca</i>	Anatidae	R	W	+	++	-
					S	+	++	+++
					M	++	+++	++
					W	++	+++	++
48.	The ruff	<i>Philomachus pugnax</i>	Scolopacidae	M	S	-	-	-
					M	-	-	-
49.	Common redshank	<i>Tringato tanus</i>	Scolopacidae	M	W	++	+++	++
					S	-	-	-
					M	-	-	-
50.	Black-winged stilt	<i>Himantopus himantopus</i>	Recurvirostridae	M	W	++	+++	++
					S	-	-	-
					M	-	-	-
51.	Common sandpiper	<i>Actitis hypoleucos</i>	Scolopacidae	M	W	++	+++	++
					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 results of our surveys and observations highlight the fact that avifauna are abundant in this area that indicates healthy status of the lake. Favorable habitat is due to the rich and easy availability of protein-rich invertebrates and other food items. Every organism maintains specific relations with the environment in which it lives. These relations entail different environmental parameters, eg: temperature, humidity, diet requirements, etc. (Bologna, G., 1979). The birds present in and around the Osmansagar Lake are affected by many factors such as organic pollution, distribution by human activities and lack of maintenance of lake, yet the avifauna of Osmansagar Lake is diverse. Keeping in view the varied avifauna recorded, steps should be taken to undertake proper maintenance and beautification of the lakes.

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