



Avifaunal diversity of Moghat reservoir Khandwa (East Nimar) M.P.

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Abstract

Khandwa is one of the districts of the state M.P. The Moghat reservoir is situated three Kilometres away in the Northwest area of Khandwa town on 21°49' 36" N latitude and 76° 20'56" E longitudes. It is a man made reservoir built in 1897. Reservoirs inhabit several local and migratory bird species. The present investigation was carried out to document the avifauna of this water body. This habitat attracted 24 bird species which are local and migratory belonging to 12 families and 07 different orders viz. , Ciconiformes, Anseriformes, Gruiformes Pelecaniformes, Charadriiformes, Coraciiformes and Suliformies Highest population of Rudy shelduck, Comb ducks and spot bill ducks were recorded in January. . Reduction in water retention in this reservoir in summer has affected the avifaunal diversity. Other prominent residents were herons and little cormorants. Interestingly, in spite of disturbances in activity, all the 24 species enjoyed the habitat from November to February during the study period.

Key words- Avifauna, water body, avifaunal diversity.

Introduction

Lakes and Reservoirs are highly complex water, land interactive systems, supposed to be the most fertile - productive ecosystems in the world and constitute a treasury of biodiversity(R G Wetzel, 2001). Birds use them for feeding, breeding, nesting and also for drinking. Due to inadequate attention and ignorance of common man, these lakes are referred as wastelands in the past, leading to their disappearance in the process of urbanization and development. The importance of local landscapes for avian conservation can only be understood by knowing the structure of the bird community of that region. Birds play prominent and diverse roles in folklore, religion, and popular culture. Birds have been always fascinated for their ability to fly in air and for their exquisite colouration. They have their functional role in the ecosystem as potential pollinators and scavengers, and are rightly called as bio-indicators. Birds are most useful to human as destroyers of harmful insects and as consumers of weed seeds. There have been a number of previous studies of the birds of the Bangladesh Sundarbans. Rashid et al. (1994) listed 315 species but this included species of Hypothetical occurrence. Hussain et al. (1983) recorded 83 species in the Bangladesh Sundarbans

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Nilkamal Sanctuary (Sundarbans South Wildlife Sanctuary) in May 1982, and Islam et al. (1999) recorded 181 species in the Bangladesh Sundarbans during winter months (October – March) from 1995 to 1997. During the last few decades considerable studies on avifauna diversity from different freshwater bodies of India have been carried out by researchers like, Osmatston (1922), Siungh (1929), Ali (1932), Kannon (1980), Davidar (1985), Jhingram (1988), Ghazi (1962), Mujumdar (1984), Newton *et al.*, (1986), Ghosal (1995), Kulkarni *et al.*, (2005), Yardi *et al.*, (2004) and Wadatkar and Kasambe (2002). However very little information is available about avifauna of central India. This work has therefore undertaken to document the avifauna of this historical and useful water body located near the town Khandwa, which lies in the central region of the country.

Material and Methods

The water body named Moghat reservoir was selected for study which is located in the northwest area of Khandwa town in Madhya Pradesh. It is a man made reservoir built in 1897 by brittishers to meet out the demand of drinking water for the population of Khandwa town. It is situated at about 21°49' 36" N latitude and 76° 20'56" E longitudes.



Results and Discussion

The present work was carried out from Oct. 2009 to Sept. 2011. The observation were made out monthly by using a field binocular (22x50x magnification) during the morning (6 to 9 AM) and in the evening (4 to 7 PM) and identification of species was done with the help of standard literature of Woodcock (1980), Ali, S. and Ripley, S.D. (1995) Grimmet *et al.*, (1999) and in many cases photographs were taken in order to confirm the identification.

Nearly 250 species of birds are Known to be highly depends on freshwater habitats foe various purposes, out of which nearly 62 % belongs to a single family Anatidae comprises ducks, swans and geese. Wading birds, such as herons, plovers, and sandpipers are also associated with fresh water bodies (Ananthkrishnan and Shivramkrishnan, 2006). During the present investigation, a total of 24 bird's species belonging to 7 different orders were recorded from this reservoir (Table 1).

Table 1 List of Moghat birds

Order	Family	Scientific name	Commen Name	Residential status
Pelecaniformes	Threkinornithidae	<i>Pseudibis</i>	Black ibis	CR
			Spoon bill	NR
Ciconiformes	Ardeidae	<i>Ardea cineria</i>	Grey heron	LCR
		<i>Ardeola grayii</i>	Pond heron	CR
		<i>Bubulcus ibis</i>	Great egret	NR
		<i>Egretta garzetta</i>	Little egret	CR
		Ciconidae	<i>Ciconia episcopus</i>	Wooly necked stork
<i>Mycteria leucocephala</i>	Painted stork		LCR	
Charedriformes	Recurvirostridae	<i>Himantopus himantopus</i>	Black winged stilt	NR
	Charadriidae	<i>Vanellus indicus</i>	Red wattled lapwing	CR
		<i>Charadrius dubius</i>	Little ringed plover	LCR
		<i>Tringa hypoleucos</i>	Common sandpiper	CW
	Scolopacidae	<i>Sterna aurantia</i>	Sandplover	V
Coraciformes	Helcyonidae	<i>Halcyon smyrnensis</i>	White throated kingfisher	CR
	Cerylidae	<i>Ceryle rudis</i>	Pied kingfisher	LCR
Anseriformes	Anatidae	<i>Tadoma ferruginea</i>	Ruddy shelduck	LCW
		<i>Sarcindiornis malanotos</i>	Comb duck	NR
			Spot bill duck	NR
Gruiformes	Ralidae	<i>Gallinula chloropus</i>	Common moorhen	LCR
			Purple swamphen	NR
		<i>Amaurornis phoenicula</i>	White breasted water Hen	NR
Suliformes	Anhingidae		Darter	NR
	Phalacrocoracidae	<i>Phalacrocorax fuscico</i>	Indian cormorant	LCR
			Little cormorant	LCR

LCR= Local common resident, NR= not resident, LCW= local common winter visitor, V = vegarant



The order Charadriiformes was dominant with five species while the orders pelicaniformes with four and other all five orders were recorded only three species respectively. It was observed that the maximum bird's species were recorded during spring, early monsoon and late winter, while comparatively less number of species were observed during late summer, late rainy season and early winter. Yardi *et al.*, (2004) reported 64 species of birds in Salim Ali lake, Aurangabad. Kedar and Patil (2005) recorded 60 birds species from Rishi lake Karanja (Lad) of Washim district. Kulkarni and Kanwate (2006) reported 18 species of birds in Dongarkhed irrigation of Hingoli district. Kulkarni *et al.*, (2006) reported 93 species of birds from Shikhachwadi reservoir of Nanded district. Kedar *et al.*, (2008) recorded 74 species of birds in Rishi and Zedshi lake of Washim district and Kukade *et al.*, (2011) recorded 68 bird species of Chhatri lake of Amravati district. In Moghat reservoir the less occurrence of submerged as well as floating weeds for resting, and the low food availability in the form of different aquatic macrozoobenthos, (crustaceans, insects and molluscans) the number of bird species and the individuals of a particular species is very low in comparison to other water bodies where the aquatic weeds and the zoo benthos are found in full bloom. Apart from this, low density of bushes and trees on reservoirs periphery which provide suitable habitat for migratory as well as many resident birds is also a region of lower avifaunal availability. It was observed that the avifaunal diversity was more in January, February and March as there was optimum water storage, availability of abundant food, increased vegetation and the arrival of migratory birds. The minimum diversity was recorded in July due to heavy rain, increased flow of water, on availability of food and return of migratory birds. Many of the birds were displaced during this season and spread in the neighbouring areas of agricultural activities, which form their feeding ground. Some birds find their breeding grounds elsewhere in this season. They start returning to the pond by September, same observations were recorded by P. Ishwara Bhat and B. B. Hosetti in Anekere wetland Udipi Karnataka. The above observations indicate that the reservoir supports at least 08 migratory and some threatened species of water birds, most of them are ducks

feeding and foraging in open water zone. Rathore and Sharma (1999) indicate that most of the members of family Anatidae are herbivore in nature and depend on aquatic flora. They dive up to the depth of 3 m for feeding. Hence a habitat of open water with submerged vegetation is the most suitable habitat for migratory birds. The study proved that the present ecological characteristics of the pond made the birds unable to inhabit the pond throughout the year. Siltation, low water level, less availability of food, pollution and lack of large trees for resting are the major threats to the avifauna of this water body. Hence, it is required to restore the original ecological features of Moghat Reservoir by the municipal corporation, NGOs and the general public at large to make the pond an abode of water fowl it is worth mentioning here that such habitats should be mapped in Moghat reservoir and attempts should be made to keep them free from human interference also.

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