

## AVIFAUNA OF CHANDRAMPALLI DAM, CHINCHOLI, GULBARGA DISTRICT KARNATAKA

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### ABSTRACT

The study involves avifauna of Chandrampalli dam (Chincholi taluk, Gulbarga district). The objective of the study included evaluate of species composition, relative abundance and distribution of avifauna of the chosen area. Line and point transect technique method were used for the survey purpose. A total of 51 species of birds belonging to 11 orders and 26 families were recorded. The Species consisting 34 resident, 8 winter and summer migrants were identified. Among the birds recorded in this study, 25 species were insectivorous, 9 omnivorous, 6 piscivorous, 2 carnivorous, 10 frugivorous, and 8 grainivorous.

**KEYWORDS:** Avifauna, Chandrampalli Dam, Gulbarga

### INTRODUCTION

Biodiversity at present is better understood for birds in many respects than any other major group of organisms because they probably inspire more extreme interest in humans, are often spectacular, relatively easily observed and not too cryptic to identify. Avifauna is one of the most important ecological indicators to evaluate the quality of habitats. Most of the birds are useful to mankind. Birds play a useful role in the control of insect of pests of agricultural crops, as predators of rodents, as scavengers, as seed dispensers and as pollinating agents. Therefore birds are reared not only for preserving ecological balance but also for products of economic importance such as downs feather. (Simeone *et al* 2002).

Birds are often common denizens of the ecosystems and they have been considered as an indicator species of inhabited areas (Blair, 1999). Studies have shown that depressed abundance of various bird species in most human inhabited parts of the world today is of concern as cities are growing rapidly both in area and in population (Emlen, 1974; Donaldson *et al.*, 2007). Population of birds is a very sensitive indicator of degree 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 abundance of various species of other organisms (Turner, 2003). One of the major priorities in conserving animals is monitoring their populations to find methods for their long term survival (Caughley, 1982).

India being a megadiversity centre, harbours 1,200 species of birds which Amounts to 13% of the bird species of the world (9,600 species) (Ali & Ripely, 1987). These include (Ali 1941), (Ali 1968-74, 1983), (Alfred *et al.*, 2001), (Grewal *et al.*, 2002 and Pfister 2004). However, with the new classification coming in to force, the number of species may well be 1300 (Javed and Kaul 2000). Urban biodiversity has received very little attention from conservation biologist as compared to natural and protected ecosystem (Jules 1997, Vandermeer 1997). (Patvarthan *et al.* 2000) have identified educational and defense premises that occupy less than 5% of the total urban area and are the hotspot for the urban biodiversity. Study of the avifauna in the educational premises of the country (Trirumurthi and Balaji, 1997, Palot and

Pramod 2000, Ramitha and Vijayalaxmi 2001, Nazneen *et al* 2001, Nayan *et al* 2005) have mostly been completed. Recently with the increased concern for biodiversity census and monitoring, many new species were added to the list

Chincholi forest in Karnataka has now been declared South India's first dry land wildlife sanctuary. Chincholi taluk includes four small dams. However very little information is available about avifauna of Chandrampalli dam. This work has therefore undertaken to document avifaunal diversity. The aim of the study is to prepare a base-line information on avifauna in and around Chandrampalli dam. Except a preliminary survey done on Gulbarga University bird fauna (blog ref), there is little information available on the avifaunal composition.

## STUDY AREA

The study region include Chandrampalli dam (Chincholi taluk). Chincholi Forest has finally been declared as a dry land wildlife sanctuary in 2011 with an area of 134.88 sq.km. With Chincholi, the state now has a total of 24 wildlife sanctuaries, which is home to hyena and wolves. This sanctuary is the only area in Hyderabad-Karnataka region with features of Western Ghats and is therefore of importance from a biodiversity point

The forest area of the District is 267.20 sq. miles, occupying the 4% of the geographical area. The forests are mainly deciduous at North Eastern Zone, with fairly dense tree growth. Chincholi taluk (84 km distance from Gulbarga) itself reprints 50% (77 25' 48' E and Latitude of 17 28' 12'' N.) of the forest and possess teak, rosewood and nallamadri tress. The forest area is also host to many medicinal plants and wildlife. Having a rich biodiversity, the forest has dry deciduous and moist deciduous forest with acacia and teak plantations on the fringes. Apart from the large Chandrampalli dam, Chincholi taluk includes four small dams. Chandrampalli Dam has area of 108 acres (reservoir area 2.75 km<sup>2</sup>) along with average rainfall is 887 mm, Dam height is 26.21 m. Chandrampalli village is 12 km away from Chincholi. Just 0.5km away from this Village dam is constructed which is very beautiful and located between the two mountains. This provides the major irrigations to many villages in Chincholi taluk.

## MATERIALS AND METHODS

The study area was surveyed for recording of avifauna diversity by applying line transect method, (Sale and Berkmuller 1988), and point transect method (Verner 1985). The study was conducted at monthly intervals from Aug 2007 to May 2010. The other most important aspect kept in consideration was to make the observations during the peak activity of birds. Since the peak activity in most birds lasts for 1 or 2 hours after sunrise or before sunset, so monitoring of transects was done either in early morning or late evening hours as used by Thakur [Thakur, M.L. 2008]. Besides visits were also made during different hours of the day. Photography was done by making use of Sony DH-7 (8.1 mp with x15 optical zoom lenses) camera. For identification and field-diagnosis of birds, colored plates of (Ali and Ripley 1968-74), were used.

Feeding guilds were classified as per direct observations and available literatures (Ali and Ripley 1987). Birds were identified using field guide books of (Ali and Ripley 1987). The Common - Rare, Resident- Migratory Status of the birds are classified as per (Saikia & Saikia, 2000).

Breeding birds nest were also observed in this study area and subsequently this information was used to assess the status of bird species that are resident to the area. The following formula was used for determining percentage of occurrence of Families (Basavarajappa, 2006).

$$\text{Percentage Occurance} = \frac{\text{No.of species of each Family}}{\text{Total No.Different species seen}} \times 100$$

## RESULTS AND DISCUSSIONS

Avifauna in and around Chandrampalli dam is good. The study reveals the occurrence of 51 species of birds belonging to 11 orders of 27- families (Table 2). (Table 1a) details the relative percentage of total bird species belonging to different families. Most of the families represented by one or two species (relative percentage of species 0-2, 15 families; 2-4, 8 families; 4-6, 1 family), while the maximum relative percentage is from Corvidae respectively). In the present study, 51 resident 9 winter, and 2 summer migrants were recorded (figure 3). Based on the food/foraging, from the present data it is apparent that the avifauna of these region is dominated by insectivorous (25 species), followed by piscivorous, carnivorous, grainivorous, frugivorous and omnivorous birds (6, 2, 8, 10 and 9 species with respectively (figure 4). Most of the family contained 0-2 species. Maximum percent occurrence was found in the Families: *Corvidae* (11.7647), than *Muscicapidae* (5.8823), and *Ciconiidae*(1.9607), respectively (Table-1b).

Among the avifauna the most common one in Asia are common crow, house sparrow, myna and egrets. However found they are still in good numbers in villages. It is interesting to note that the sparrows and starlings, mynas have attained pest status in USA and are not given any legal protection in the USA (Sruti).

Our study area has less human interference. It is well known that birds are friends of human as they destroy lot of harmful insects and mosquitoes from the environment (Jaman *et al.* 1999). The forest hosts rich biodiversity. Apart from the rich medicinal herbs and trees, species like red sanders and sandalwood have been found abundantly. The present work establishes the richness of the chandrampalli dam in respect of bird fauna which are excellent indicators of ecological health. As the area shows a rich floral diversity, the data collected highlights a good density of avian species. Bird species not only add aesthetic to life but also help in agriculture and in maintaining a healthy ecological balance. In addition, the area, with economically important tree species and the region is vulnerable even to mild disturbances. It requires careful management and is considered as 'ecologically and economically important.

**Table 1a: Relative Percentage of Number of Species in Various Families of Birds in the Study Area**

Relative Percentage of Species		
0-2	2-4	4-6
Phalacrocoracidae	Ardeidae	Corvidae
Ciconiidae	Phasianidae	
Accipitridae	Charadriidae	
Rallidae	Columbidae	
Solopacidae	Cuculidae	
Psittacidae	Muscicapidae	
Centropodidae	Passeridae	
Strigidae	Ploceidae	
Alcedinidae		
Dacelonidae		
Meropidae		
Coraciidae		
Upupidae		
Capitonidae		
Sturnidae		
Pycnonotidae		
Sylviidae		
Nectarinidae		

**Table 1b: Percentage of Species Occurrence in Avifauna Represented in Families**

Sl. No	Families	Percent Occurrence
1	Ardeidae	5.88235
2	Phalacrocoracidae	1.96071
3	Ciconiidae	1.96071
4	Accipitridae	1.96071
5	Phasianidae	5.88235
6	Rallidae	3.92157
7	Charadriidae	5.88235
8	Solopacidae	1.96071
9	Columbidae	5.88235
10	Psittacidae	1.96071
11	Cuculidae	5.88235
12	Centropodidae	3.92157
13	Strigidae	1.96071
14	Alcedinidae	1.96071
15	Dacelonidae	1.96071
16	Meropidae	1.96071
17	Coraciidae	1.96071
18	Upupidae	1.96071
19	Capitonidae	1.96071
20	Corvidae	11.7647
21	Sturnidae	3.92157
22	Pycnontidae	1.96071
23	Muscicapidae	5.88235
24	Sylviidae	1.96071
25	Passeridae	5.88235
26	Nectariniidae	1.96071
27	Ploceidae	5.88235

**Table 2: List of Birds with Their Status and Food Habitat in the Study Area**

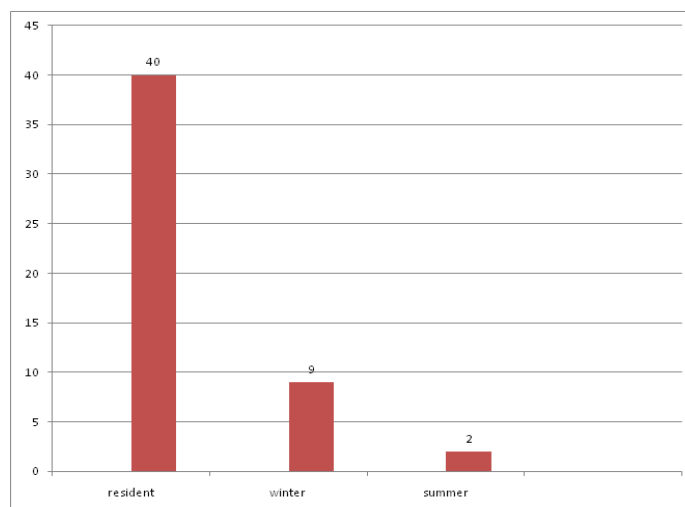
Scientific Name	Common Name	S	F
<b>Ardeidae</b>			
<i>Nycticorax nycticorax</i>	Night Heron	R	P
<i>Bubulcus ibis</i>	Cattle Egret	WM	P
<i>Egreta intermedia</i>	Median or Small Egret	WM	P
<b>Phalacrocoracidae</b>			
<i>Phalacrocorax niger</i>	Little cormorant	WM	P
<b>Ciconiidae</b>			
<i>Ciconia episcopus</i>	White-necked stork	WM	P
<b>Accipitridae</b>			
<i>Milvus migrans</i>	Common Pariah Kite	R	C
<b>Phasianidae</b>			
<i>Francolinus pondicerianusb</i>	Grey partridge	R	O
<i>Gallus gallus</i>	Red junglefowl	R	F, I
<i>Pavo cristatus</i>	Common peafowl	R	O
<b>Rallidae</b>			
<i>Amaurornis phoenicurus</i>	Water Hen	R	I, G
<i>Porphyrio porphyrio</i>	Purple Moorhen	R	O
<b>Charadriidae</b>			
<i>Himantopus himantopus</i>	Black-winged stilt	R	I
<i>Vanellus indicus</i>	Red-wattled lapwing	R	I
<i>Vanellus malabaricus</i>	Yellow-wattled lapwing	R	I
<b>Solopacidae</b>			

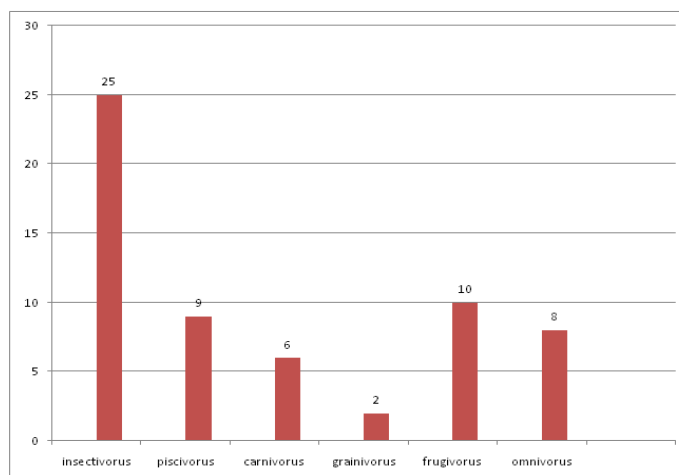
Table 2: Contd.,

<i>Calidris temminckii</i>	Temminck's stint	WM	I
<b>Columbidae</b>			
<i>Columba livia</i>	Blue Rock Pigeon	R	G, F
<i>Streptopelia decaocto</i>	Ring Dove	R	G, F
<i>Streptopelia orientalis</i>	Rufous Turtle Dove	R	G, F
<b>Psittacidae</b>			
<i>Psittacula krameri</i>	Rose Ringed Parakeet	R	F
<b>Cuculidae</b>			
<i>Clamator jacobinums</i>	Pied Crested Cuckoo	SM	F, I
<i>Eudynamys scolopaea</i>	Koel	R	F, I
<i>Rhopodytes viridirostris</i>	Small Greenbilled Malkoha	R	F, I
<b>Centropodidae</b>			
<i>Centropus sinensis</i>	Greater Coucal	R	I
<b>Strigidae</b>			
<i>Athene brama</i>	Spotted owlet	R	O
<b>Cerylidae</b>			
<b>Alcedinidae</b>			
<i>Alcedo atthis</i>	Blue-Eared kingfisher	WM	P
<b>Dacelonidae</b>			
<i>Halcyon smyrnensis</i>	White-Breasted kingfisher	R	P
<b>Meropidae</b>			
<i>Merops superciliosus</i>	Bluecheeked Bee-Eater	R	I
<b>Coraciidae</b>			
<i>Coracias benghalensis</i>	Indian Roller	R	I
<b>Upupidae</b>			
<i>Upupa epops</i>	Hoopoe	R	I
<b>Capitonidae</b>			
<i>Megalaima haemacephala</i>	Coppersmith Barbet	R	F
<b>Corvidae</b>			
<i>Oriolus oriolus</i>	Golden oriole	SM	O
<i>Dicrurus paradiseus</i>	Black Drongo	R	C
<i>Dendrocitta Vagabunda</i>	Tree Pie	R	O
<i>Corvus splendens</i>	House Crow	R	O
<i>Corvus cinnsmomeus</i>	Jungle crow	R	O
<i>Pericrocotus cinnsmomeus</i>	Small Minivit	R	I
<i>Aegithina tiphia</i>	Common iora	R	I
<b>Sturnidae</b>			
<i>Sturnus pagodarum</i>	Brahminy Myna	R	O
<i>Acridotheres tristis</i>	Indian Myna	R	O
<b>Pycnonotidae</b>			
<i>Pycnonotus cafer</i>	Red-vented Bulbul	R	F
<b>Muscicapidae</b>			
<i>Turdoides malcolmi</i>	Large Grey Babbler	R	I
<i>Copsychus saularis</i>	Oriental Magpie robin	R	I
<i>Saxicoloides fulicata</i>	Indian Robin	R	I
<b>Sylviidae</b>			
<i>Orthotomus sutorius</i>	Common Tailorbird	R	I
<b>Passeridae</b>			
<i>Motacilla flava</i>	Yellow Wagtail	WM	I
<i>Motacilla citreola</i>	Yellowheaded Wagtail	WM	I
<i>Motacilla maderaspatensis</i>	Large Pied Wagtail	WM	I
<b>Nectariniidae</b>			
<i>Nectarinia zeylonica</i>	PurpleRumped Sunbird	R	F, G, I
<b>Ploceidae</b>			

**Table 2: Contd.,**

<i>Passer domesticus</i>	House Sparrow	R	G, I
<i>Lonchura punctulata</i>	Spotted Munia	R	G
<i>Lonchura malabarica</i>	Whitethroated Muina	R	G

**Figure 1: Map of the Study Area****Figure 2: Chandrampalli Dam****Figure 3: Numbers of Resident, Winter and Summer Migrant Bird Species in the Study Area**



**Figure 4: Distribution of Birds According to Their Feeding in the Study Area**

## CONCLUSIONS

This study area has not explored earlier, hence the study explore avifaunal diversity of this reservoir. Contrary to the general belief the diversity of the avifauna is impressive. From the above results it could be conclude that the abundance of avifauna indicates the healthy status of dam owing the availability of water, safe habitat and food sources for both adults and nestlings and essential nesting/roosting sites in and around the dam are important for the occurrence and abundance of aquatic bird populations. Since the Chincholi is declared as a wildlife sanctuary, Government of Karnataka, bird watching may be encouraged, unchecked poaching may be prevented, and Destruction of the habitat by the local people for the firewood collection and cattle grazing may be prohibited. As water depth, quality and trophic structure are the important habitat characteristics that influence the abundance and diversity of aquatic birds in dam, the proper and regular maintenance of this dam would further increase the aquatic bird populations. Further, the present study on the Survey of Avianfauna would be useful for future initiatives in studying ecotourism and conserving the dam, the most important wet land of Chincholi region.

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