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## RESEARCH ARTICLE

### AVIFAUNAL DIVERSITY OF PAKHAL LAKE IN PAKHAL WILDLIFE SANCTUARY, WARANGAL, TS, INDIA

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#### ABSTRACT

This paper deals with avifaunal diversity of Pakhal lake, Khanapur Mandal, Warangal District, Telangana State. Observations were carried out during the period of 2013-2014. Visual method was used for counting the different birds. During the study period 23 genera belonging to 15 families and 7 orders were recorded. Pelecaniformes were highest among the observed birds. Maximum 7 species of birds were recorded from order Pelecaniformes followed by 5 species in Charadriiformes, 4 species in Passeriformes, 2 species each in Bucerotiformes, Coraciiformes and Suliformes and 1 species in Ciconiiformes. Continuous monitoring on the avifaunal diversity was suggested to evaluate and ecological status of the birds in habitats.

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## INTRODUCTION

The birds are very successful animals. They have adapted to a number of habitats and modes of life. Birds constitute a well defined group of vertebrate animals. The world is inhabited with over 9000 species of birds. Birds contribute most significantly to the diversity of terrestrial habitats. Birds also have a special role in conservation as they not only help identify areas most worth saving, but also have the capacity to make conservation (Daniels Ranjit, 1994). Birds can live in different habitats depending upon the living conditions, different species live in different geographical zones. Birds exhibit the most diverse range of ecological functions among vertebrates and they symbolize an indicator group with regard to the effect of habitat changes in ecosystem (Rajashekhara and Venkatesha, 2013). Avian biodiversity studies are crucial in determining the effect of urbanization on bird's communities and also in many other factors of biodiversity conservation (Turner, 2003). Bird population is a sensitive indicator of pollution in both terrestrial and aquatic ecosystem (Hardy et al., 1987). All birds are not aquatic but few of them reside on the bank of reservoir. Birds are important group of aquatic food chain. They feed on vegetation, fishes and other animals of the reservoir. Seasonal migration of birds in their life, helps in their survival, food gathering and breeding.

The purpose of migration is obvious and logical migration helps to the birds to avoid adverse climatic conditions (Kedar et al., 2005). The estimation of local densities of avian fauna helps to understand the abundance of various species of other organisms. The current study was taken to know the present status of diversity and distributive pattern of the birds along various habitats of the study area. No work has been done on the birds of this area. So the data would also be the baseline for future studies.

## MATERIALS AND METHODS

The study was conducted in and around Pakhal lake of Khanapur Mandal, Warangal District, Telagana state from 2013 to 2014. Eight sites belonging to 3 different habitats were selected for surveying the birds. These observations were made in the morning hours. The identification of birds was based on the standard data as described in ornithology text books (The Book of Indian Birds by Salim Ali (2012), Birds of Western Ghats, Konkan and Malabar and Goa by Pande Satish et al. (2009), Grimmett et al., 1999 and Kazmierczak, 2006).

## RESULTS AND DISCUSSION

The number and percentage of genera and species under various families were represented in the Table I and II and Fig: 1, 2, 3.

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Table I. List of birds collected from Pakhal lake 2013-2014

S.No.	Order	Family	Scientific name	Common name	Occurance and Residential Status
1	Charadriiformes	Charadriidae	Vanellus indicus	Red-wattled lapwing	RU
			Charadrius dubius	Little ringed plover	WMO
		Scolopacidae	Actitis hypoleucos	Common sand piper	WMU
			Tringa glareola	Wood sand piper	SMU
			Himantopus himantopus	Black winged stilt	SMO
2	Ciconiiformes	Ciconiidae	Anastomus oscitans	Asian open bill stork	WMr
3	Bucerotiformes	Bucerotidae	Ocyrceros birostris	Indian grey horn bill	Rr
		Upupidae	Upupa epops	Common hoope	WM
4	Coraciiformes	Meropidae	Merops orientalis	Green bee eater	RU
		Alcedinidae	Halcyon smynensis	White breasted kingfisher	WMU
5	Passeriformes	Alaudidae	Eremopterix griseus	Ashy crowned Sparrow lark	RC
		Corvidae	Corvus splendens	House crow	RC
		Motacillidae	Motacilla maderaspatensis	White browed wag-tail	SMO
			Motacilla flava	Yellow wag-tail	WO
6	Suliformes	Phalacrocoracidae	Phalacrocorax niger	Little cormorant	SMC
		Anhingidae	Anhina melanogaster	Oriental dater	SMr
7	Pelecaniformes	Ardeidae	Ardeola grayii	Indian pond heron	SMC
			Ardea cinerea	Grey heron	SMr
			Bubulcus ibis ibis	Cattle egret	SMr
			Ardea alba	Large egret	RMO
			Egretta garzetta	Little egret	RMO
			Pseudibis papillosa	Red-naped ibis	SMU
		Threskiornithidae	Threskiornis melanocephalus	Black headed ibis	SMU

Occurrence : R=Resident bird RM=Resident migratory WM=Winter migratory SM=Summer migratory  
Status : r=rare U=Uncommon O=Occasional C=Common  
(up to 5) (up to 20) (up to 50) (up to 100)

Table II. Overall qualitative and distribution of Birds

S.No	Order	Family	Genus	Species	% of Family	% of Genus	% of Species
1	Charadriiformes	3	5	5	20	24	22
2	Ciconiiformes	1	1	1	8	5	4
3	Bucerotiformes	2	2	2	13	9	9
4	Coraciiformes	2	2	2	13	9	9
5	Passeriformes	3	3	4	20	15	17
6	Suliformes	2	2	2	13	9	9
7	Pelecaniformes	2	6	7	13	29	30
	Total	15	21	23			

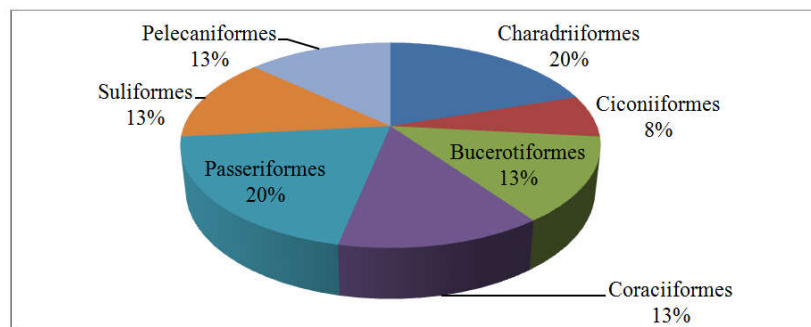


Fig. 1. Family wise percentage distribution of birds in Pakhal lake

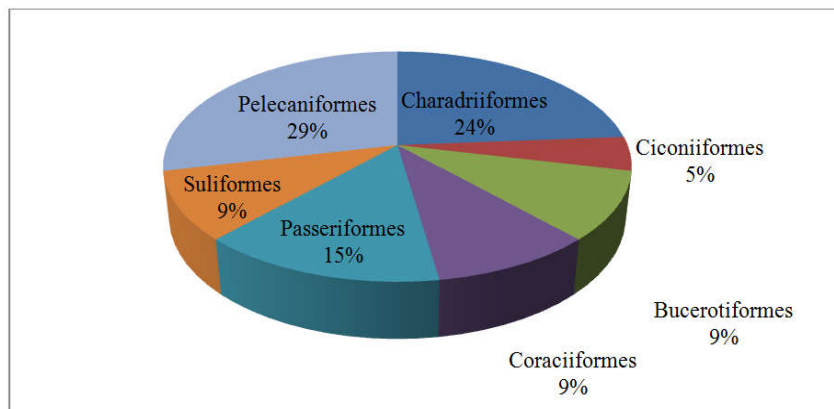


Fig. 2. Genus wise percentage distribution of birds in Pakhal lake

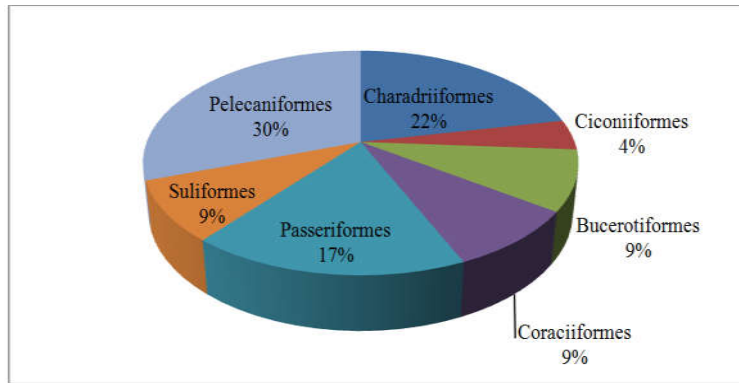


Fig. 3. Species wise percentage distribution of birds in Pakhal lake

Birds collected from Pakhal Lake



Fig:4 Vanellus indicus



Fig:5 Charadrius dubis



Fig:6 Himantopus himantopus



Fig: 7 Anastomus oscitans



Fig:8 Ocyrceros briostrius

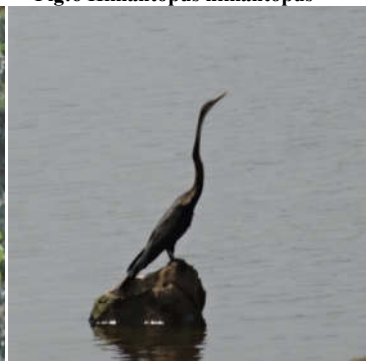


Fig: 9 Anhina melanogaster



Fig: 10 Pseudibis papillosa



Fig:11 Upupa epops



Fig:12 Threskiornis melanocephalus



Fig:13 Actitis hypoleucos



Fig:14 Tringa glareola



Fig:15 Bubulcus ibis ibis

In the present investigation various habitats especially the water bodies, around the water bodies, hilly areas of Pakhal area were observed for sighting the birds. In this investigation 23 species of birds belonging to 7 orders and 15 families and 21 genera were recorded. 7 species were identified belonging to Pelecaniformes, 5 species belongs to Charadriiformes, 4 species belongs to Passeriforms. 2 species belongs to each of Bucerotiformes, Coraciformes and Suliformes, 1 species belonging to the order Ciconiiformes were identified. By observing Species wise percentage distribution of birds in Pakhal lake area, Pelecaniformes about 30 % (high percentage), Charadriiformes (22%), Passeriformes (17%), Bucerotiformes, Coraciformes and Suliformes (9 % each) and Ciconiiformes (4%). Table: II shows overall qualitative and distribution percentage of birds. Pelecaniforms are maximum in percentage (30%), Ciconiiformes are minimum in percentage (4 %) similar findings were made by Balkhande *et al.* (2012), Kulkarni *et al.* (2005), Chilke (2012), Kosambe and Wadatkar (2007), Prasad *et al.* (2014).

### Conclusion

This study could effectively provide the base line for research which could be used in the near future for conservation purpose. Urbanization affects the diversity and the behavior of the birds. Planned human activities, plantation in pasture land and around industries, developing small green area as gardens and public parks, water harvesting and arousing awareness in people towards environment are some steps which can secure the future of the biodiversity of this area.

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