A PRILIMINARY SURVEY OF AQUATIC AVIFAUNA OF GOBBUR (K) LAKE (FRESH WATER BODIES), KALABURAGI DISTRICT, KARNATAKA, INDIA

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ABSTRACT

A preliminary survey of aquatic avifauna was carried out in Gobbur (K) lake, Kalaburagi district, Karnataka, January 2018 to December-2018. A total of 20 species of birds belonging to 09orders and 16 families were recorded. The Species consisting 14 residents, 4 winter and 2 summer migrants were identified. Among the birds recorded in this study, Based on the food/foraging, from the present data it is apparent that the avifauna of these regions is dominated by 5 species were insectivorus, 3 omnivorus, 6 piscivorous, 1 carnivorus, 3 frugivorus and 5 grainivorus

Keywords: Aquatic birds, fresh-water reservoir, Status,Gobburlake(K).

Introduction:

Birds are beautiful creatures, found throughout the world, at approximately all altitudes and in nearly every climate. Birds are often common denizens of the ecosystems and they have been considered as an indicator species of inhabited areas (Blair, 1999). Population of birds is a sensitive indicator of pollution in both terrestrial and aquatic ecosystem (Gaston, 1975). Avifauna is an important constituent as well as an important link in the food chain of any ecosystem. Birds have been considered as useful biological indicators because they are ecologically versatile and inhabit all kinds of habitats (Sivaperuman and Jayson, 2006). In Indian wetlands 318 species of birds are recorded out of which 193 species are fully dependent on wetlands (Vijayan, 1986).

Waterbirds are an important component of most of the wetland ecosystem as they occupy several trophic levels in the food web of wetland nutrient cycles. Activities of

waterbirds are considered as indicator of quality of the wetland ecosystem and form the terminal links in many aquatic food chains, and as a result they reflect changes originating in several different ecosystem components (Custer and Osborne, 1977). Wetland birds provide us with some of nature's most wonderful sights, from vast flocks wheeling overhead to newly hatched chicks drying in the sun.

Apart from their beauty and recreational and economic importance, these birds are excellent indicators of water quality and measures of biodiversity. Wetlands are extremely important areas throughout the world for wildlife protection, recreation, sediment control, flood prevention. Wetlands are important bird's habitats and birds use them for feeding, roosting, nesting and rearing their young (Vishwakarma*et al.*,2014) (Lodhi, R. K., Gurjwar, R. K.*et. al.*, 2017). Present study focuses on the status of water birds and conservation of the species.

STUDY AREA

Kalaburagi has a climate that is almost typical of south Indian pennisula with semi-arid conditions. The temperature between 14ºC, – 45ºC; in winter to in summer and the average rainfall being 702mm.Gobbur (k) is a small Village/hamlet in Afzalpur Taluk in Kalaburagi District of Karnataka State, India. The total area of the Lake is approx. 70 Acres (Fig 2). The main source of water to this lake is rainwater. Average annual rainfall observed is about 750 mm and the mean daily temperatures for the same period ranges from 19 °C in winter (November-December) to over 40°C in summer (March-June).

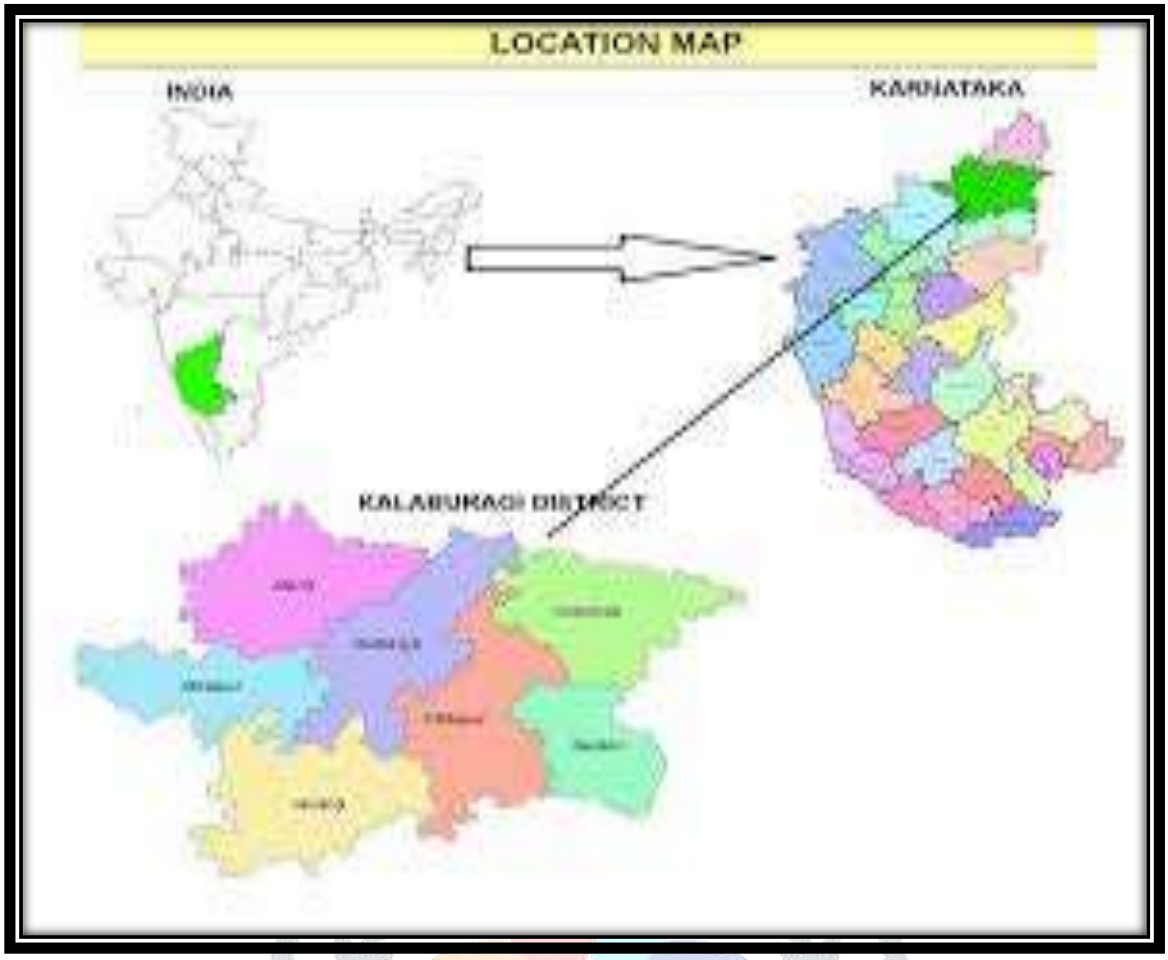

Figure 1: Map of the Study Area

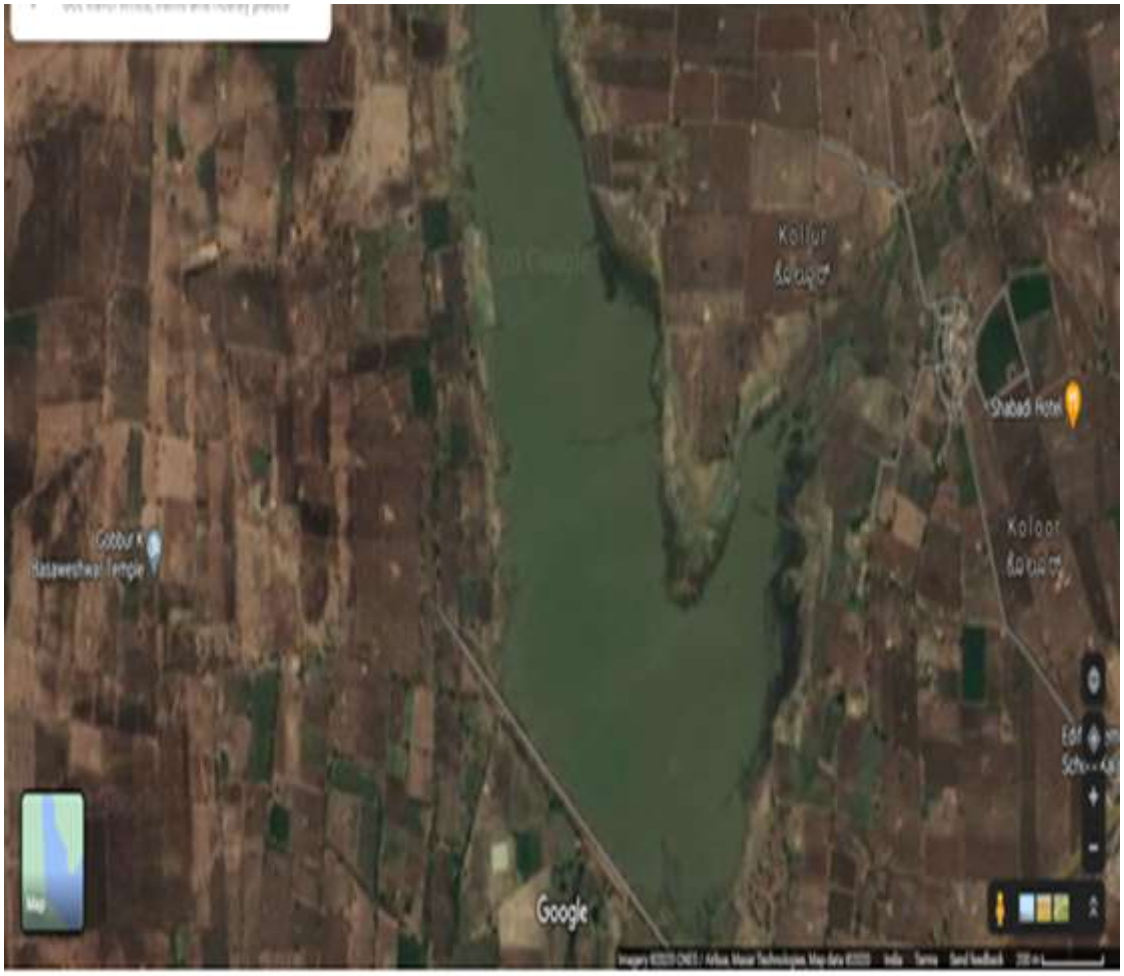

Figure 2: Map of the Study Area (Satellite View)

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 from January 2018 to December 2018. 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).

Bird sampling was made by walking at a slow pace (about 1-1.5 km hr-1) along the bank of the lakes (as the aquatic birds are usually found around or in the lake) as followed (Gaston 1975) and (Bibby*et al.*, 2000). However, wherever necessary point count of birds was also made within the visible radius by stopping briefly for 2-3 min as followed by other

workers (Fronemanet *al.*, 2001; Kaul and Howman, 1992; Urfiet *al.*, 2005). Identification, counting of the birds was made in the morning between 07:30 and 10:30 hr or in the afternoon between 15:00 and 18:00 hr, depending on the light conditions (Namgailet *al.*, 2009).

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.

The following formula was used for determining percentage of occurrence of Families (Basavarajappa, 2006).

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

RESULTS AND DISCUSSION

Abundance of avifauna indicates the healthy status of lake. Observations were made on the occurrence, abundance, richness of avifauna in and around the study area, point transect technique method were used for the survey purpose. A total of 20 species of birds belonging to 09 orders and 16 families were recorded (Table 1 and Fig. 3). The Species consisting 14 residents, 4 winter and 2 summer migrants were identified (Table 2). Among the birds recorded in this study, Based on the food/foraging, from the present data it is apparent that the avifauna of these regions is dominated by 5 species were insectivorus, 3 omnivorus, 6 piscivorous, 1 carnivorus, 3 frugivorus and 5 grainivorus

CONCLUSION

The preliminary work carried out from the study indicates the abundance of the species and status of the pond and the availability of water, safe habitat and food sources for both adults and nestlings and essential nesting/roosting sites in and around the lake are

important for the occurrence and abundance of aquatic bird populations. The proper and regular maintenance of these lakes would further increase the aquatic bird populations.

Table-1. Percentage of species occurrence in avifauna represented in families

SL.NO.	FAMILIES	PERCENT OCCURRENCE
1	Podicipedidae	5
2	Phalacroccoracidae	5
3	Ardeidae	15
4	Ciconiidae	5
5	Rallidae	5
6	Charadriidae	10
7	Columbidae	10
8	Psittacidae	5
9	Meropidae	5
10	Bucerotidae	5
11	Oriolidae	5
12	Dicruridae	5
13	Corvidae	5
14	Sturnidae	5
15	Passeridae	5
16	Ploceidae	5

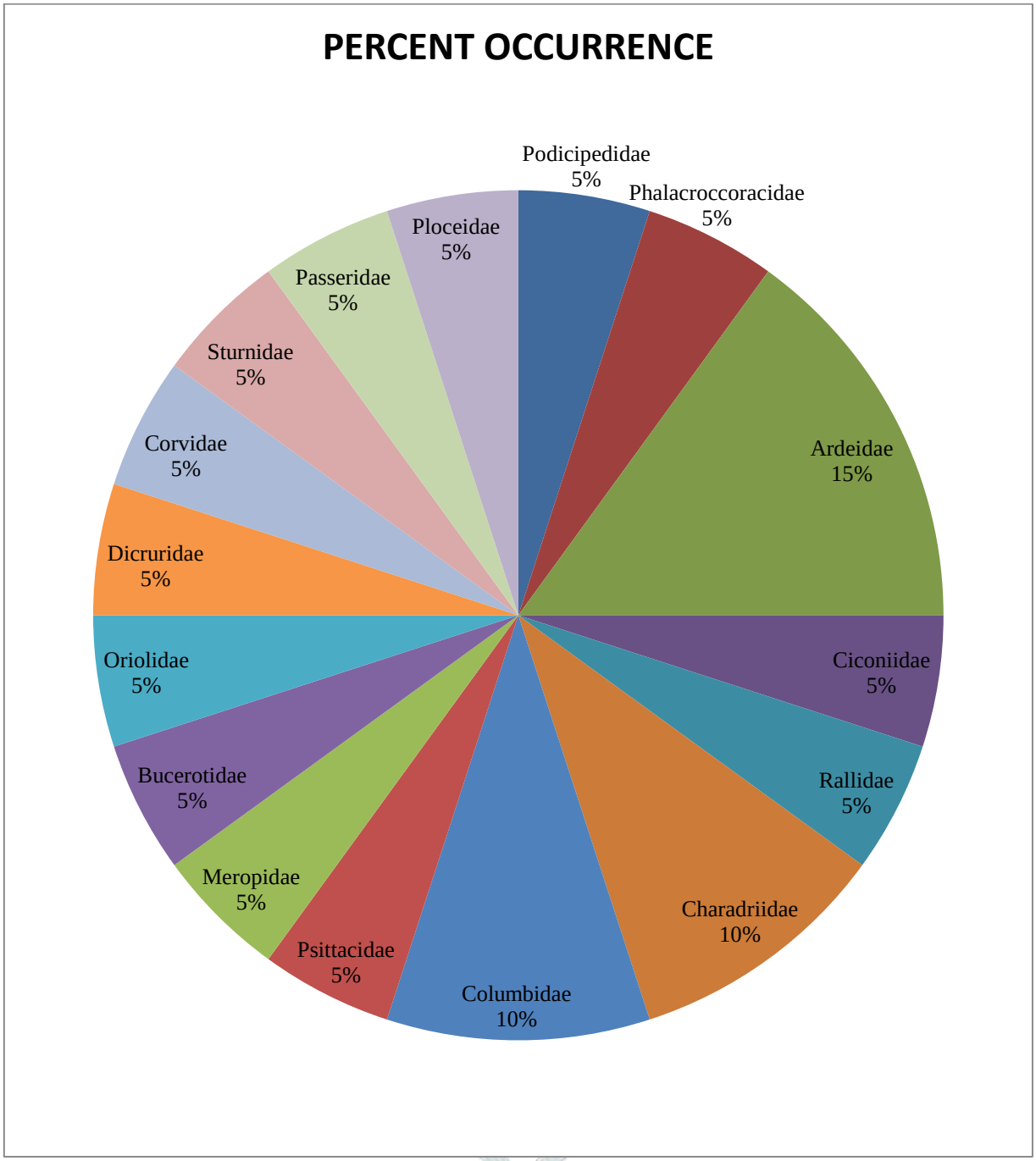

Figure - 3. Pie chart representing Percentage of species occurrence in avifauna represented in families

Table 2. A systematic list of birds with their status and food habitat in the region during the study period.

Scientific name	Common name	Status (Resident/migrant)	Feeding habitat
Podicipedidae			
Tachybaptusruficoliis	Little Grebe	R	P
Phalacrocoracidae			
Phalacrocoraxniger	Little Cormarant	WM	P
Ardeidae			
Ardeacinerea	Grey Heron	WM	P
Ardeolagrayii	Pond Heron	R	P
Bubulcus ibis	Cattle Egret	WM	P
Ciconiidae			
Ciconiaepiscopus	White-necked stork	WM	P
Rallidae			
Fulicaatra	Coot	R	O
Charadriidae			
Vanellusindicus	Red-wattled lapwing	R	I
Vanellusmalabaricus	Yellow-wattled lapwing	R	I
Columbidae			
Columba livia	Blue Rock Pigeon	R	G, F
Streptopeliadecaocto	Rufous Turtle Dove	R	G, F
Psittacidae			
Psittaculakrameri	Rose Ringed Parakeet	R	F
Meropidae			
Meropsorientalis	Bluecheeked Bee-Eater	R	I
Bucerotidae			
Tockusbirostris	Common Grey Hornbill	R	I
Corvidae			
Oriolusoriolus	Golden oriole	SM	O
Dicrurusparadiseus	Black Drongo	R	C
Corvussplendens	House Crow	R	O
Sturnidae			
Sturnusroseus	Rosy starling	SM	C
Ploceidae			
Passer domesticus	House Sparrow	R	G, I

Ploceusphilippinus	Baya Weaver Bird	R	G

***R**: Residential, **WM**: Winter Migrant, **SM**: Summer Migrant, **O**: Omnivorous, **C**: Carnivorous, **I**: Insectivorous, **P**: Piscivorous, **F**: Frugivorous, **G**: Granivorous.*

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