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AVIFAUNAL DIVERSITY AND THEIR STATUS IN AND AROUND AMBAZARI LAKE 2 NAGPUR, CENTRAL INDIA

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ABSTRACT:

Avian fauna absorbs a special place in an aquatic ecosystem. Wetland is a special type of ecosystem that provides food for local and migratory bird species in the form of plants, vertebrates, and invertebrates. The present study of avian diversity and its status in and around Ambazari lake was carried out during March 2022 to April 2022, in the early morning and evening hours. The study revealed a total of 45 birds, 39 were Residents, 05 were Resident Migrant and 01 was Migrant. Passeriformes was recorded as the most dominating order representing 19 species. The report prevails the information regarding Resident, Resident Migrant and Migrant birds of Ambazari lake.

Keywords:- Avifauna diversity, Ambazari, Nagpur, status

INTRODUCTION :

Birds are observed throughout the world, at all altitudes and nearly in every climate. Small changes in habitat structure and composition are responded by many species of birds, and therefore serve as good indicators of changes in the environment (Robert et. al., 2001). Regarding the volumes of the environment whether all is well or amiss is only studied by the presence of aquatic birds. Out of more than 9,000 bird species of the world, the Indian subcontinent contains 1,300 species or over 13% of the world's bird species (Grimmett et.al., 2004). About 33% of bird species helps in seed dispersal through fruit consumption as well as scattering through nuts (Vander Wall, 2001; Sekercioglu, 2006; Martinez and Garcia, 2017). Birds are also good scavengers by removing carcasses and nutrient recycling (Devault et.al., 2003; Gangoso et. al., 2013; Inger et.al., 2016). These also plays an important role in controlling agricultural pests, like rodents and insects (Maas et. al., 2015; Maas et. al., 2016).

Avian diversity around the Nagpur city was studied by Kasambe and Sani (2009) and listed 280 bird species from the different types of habitats. The recent studies assess freshwater biodiversity as the most threatened of all types of diversity and wetlands are found to be the richest sites by holding the major share of the existing avifauna (Anon, 2000). Wetlands are seen as natural ecological islands of freshwater habitats which are surrounded by terrestrial habitats. Wetlands provide food for birds in the form of plants, vertebrates and invertebrates (Lameed, 2011). It is situated in Vidarbha region occupying south-west border of Central India, Maharashtra state.

The catchment area of the Ambazari lake is spreaded on 18 acres of land, built by the Bhosle Kings of Nagpur. It is one of the 11 lakes in Nagpur and is known to be the largest in the city. The lake is surrounded by the green spaces in cities including gardens, parks, forests and open spaces having abundance of trees, flowers and other natural elements.

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The Ambazari lake area has become the most attractive spot in Nagpur city. These green spaces have become important harbour for native and migrating bird species. Therefore, in order to assess the biodiversity of birds, the present investigation was undertaken to reveal the checklist of diversity and status of avifauna studied along with the vegetation, composition of habitat and foraging pattern among birds in and around Ambazari lake, Nagpur, Central India

MATERIALS AND METHODS

2.1 Study Area

Ambazari lake, the study area comes under the Vidarbha region of Maharashtra and is located about 21. 15° N at latitude and longitude about 79.04° E. The catchment area spreads over 24 hectares. As the climatic condition in Nagpur is extreme in all the seasons, during summer the temperature may rise to 48°C, while it falls up to 4°C during winter. However, the average temperature ranges up to 27°C. While the annual rainfall is about 1,205 mm. in Nagpur. Fig. 1 & Fig. 2

2.2 Method

The survey of avian biodiversity of Ambazari lake, Nagpur was conducted from the month of 85 March 2022 to April 2022 consecutively for 2 months. The study was conducted for two to three hours in the morning and in the evening time. The study area was visited in the morning and evening time when the birds are most active. Birds noticed were recorded by regular visits. The birds were observed and recorded in and around the Ambazari lake, as it is surrounded by the Botanical Garden, Nagpur university campus, L.I.T campus, Futala lake and Telangkhedi garden along the periphery.

Figure 1 - Location of Nagpur in Maharashtra

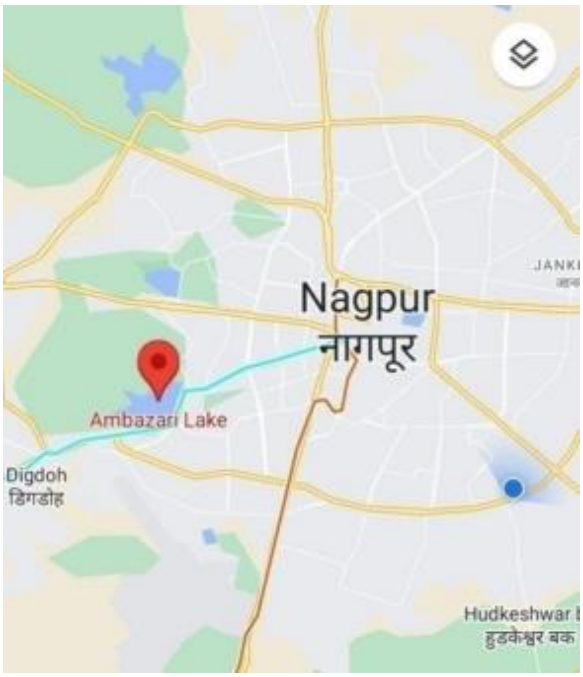

Figure 2 – Geographical Position of Ambazari Lake

The observation of birds was carried out from a safe distance using a field binocular (Olympus, 10 x 50). The birds were photographed using Cannon EOS 350 D camera with lens 100 to 300 mm. The birds inside the lake, on the bank of the lake as well as in the bushes and trees surrounding the lake were captured, with the help of the standard literature as suggested by Ali and Ripley, 1983; Ali, 2002; Grimmett et. al.,2006. The Ambazari lake harbours the aquatic vegetation as well as the periphery is covered with trees providing suitable habitats for the birds. Status of the birds was classified as R-Resident, RM- Resident migrant and M- Migrant. The

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checklist and catalogs of the avian species were prepared.

RESULTS AND DISCUSSION :

The common and scientific names were identified on the key of Manakadan and Pittie (2001). The status of the identified birds was investigated on the checklist of Birds of Maharashtra as per Abdulali (1972). Direct count method was used to note the avian diversity. Data was recorded based on their visit to the Ambazari lake as R-Resident, RM – Resident Migrant and M- Migrant. In the present study of Ambazari lake, Nagpur, total 45 species of birds belonging to 19 Passeriformes, 05 Coraciiformes, 04 Pelecaniformes, 03 Charadriiformes, 03 Columbiformes, 02 Acciptriformes, 02 Psittaciformes, 01 each from Anseriformes, Bucerotiformes, Cuculiformes, Strigiformes, Gruiformes, Ciconiiformes and Suliformes orders were recorded respectively. Analysis of data on residential status revealed that out of 45 species, 39 were resident, 05 were resident migrant and 01 was migrant species. The present work recorded 39 species as resident like Green bee eater, Pied stilt, Indian robin, Indian myna, Grey shrike, Black drongo, Red naped ibis, Greater coucal, Indian parakeet, Little egret, Open billed egret, Indian roller, Little ringed plover, Red vented bulbul, Black headed ibis, Asian pied starling, Richard's pipit, Long tail shrike, Cape wagtail, Paddyfield pipit, Pied bushchat, Blackwing kite, Indian spot billed duck, White throated kingfisher, Pied kingfisher, Common kingfisher, Spotted dove, Wood shrike, Scaly breasted munia, Rufous treepie, Red avadavat, Jungle owlet, Purple rumped sunbird, Tickels blue flycatcher, Oriental magpie robin, Red wattled lapwing, Plum headed parakeet, Grey headed swamphen, Little cormorant, etc. 05 species were resident migrant like Common hoopoe, Yellow wagtail, Laughing dove, Eurasian collared dove and crested serpent eagle. 01 species was migrant like Pond heron.

The maximum bird species are belonging to the order Passeriformes 42.22% followed by Coraciiformes 11.11%, Pelecaniformes 8.88%, Charadriiformes and Columbiformes 6.66%, Psittaciformes and Accipitriformes 4.44%, Anseriformes, Bucerotifortmes, Cuculiformes, Strigiformes, Gruiformes, Ciconiiformes and Suliformes 2.22%. Survey of birds in the area Ambazari lake studied during March 2022 to April 2022 and tabulated in Table-1.

CONCLUSION:

The present investigation recorded rich avian diversity of Ambazari lake which is attributed to its geographical location. This region appears to provide a big corridor for birds. As this lake is rich in aquatic fauna, it includes a majority number of micro and macro-organisms along with fishes, protein-rich invertebrates and other food. Therefore, this region is suitable for feeding, resting and
roosting due to the accessibility of abundant food, available exposed mudflats and lakeshore. Wetlands provides aquatic food sources, protection from predators and areas for courting, breeding and preening. Thus, all wetlands are very important in conservation of avian diversity. This indicates that there is a need to protect each, and every habitat present in and around the lake, as these are the nutritional niches of bird species. Ambazari lake is an important site for many resident and migratory species of birds which are the excellent indicators and acting as the key components of the ecosystem in nature. Therefore, it is very essential step for the conservation, management and sustainability of the resident and migratory bird's populations along with the threatened and vulnerable birds species of this area. This will be beneficial for the study of avifaunal diversity from their conservation as well as management point of

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view, to spread the knowledge among the students community and bird lovers.

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Table 1: Checklist of Avifaunal diversity of Ambazari lake, Nagpur.

Sr. No.	Common Name	Scientific Name	Order	Family	Status
1.	Indian robin	Copsychus fulicatus	Passeriformes	Muscicapidae	R
2.	Indian myna	Acridotheres tristis	Passeriformes	Starnidae	R
3.	Grey shrike	Lanais excubitor	Passeriformes	Lanniidae	R
4.	Black drongo	Dicrurus macrocerus	Passeriformes	Dicruridae	R
5.	Yelllow wagtail	Motacill flava	Passeriformes	Motacillidae	RM
6.	Red vented bulbul	Pycnonotuscafer	Passeriformes	Pucnonotidae	R
7.	Asian pied starling	Gracupica contra	Passeriformes	Sturidae	R
8.	Richard's pipit	Anthusrichardi	Passeriformes	Motacillidae	R
9.	Long tail shrike	Laniusschach	Passeriformes	Laniidae	R
10.	Cape wagtail	Motacilla capensis	Passeriformes	Motacillidae	R
11.	Paddyfield pipit	Anthusrufulus	Passeriformes	Motacillidae	R
12.	Pied bushchat	Saxicola caprata	Passeriformes	Muscicapidae	R
13.	Wood shrike	Tephrodornispondi cerianus	Passeriformes	Vangidae	R
14.	Scaly breasted Munia	Lonchurapuntulata	Passeriformes	Estrildidae	R
15.	Rufous treepie	Dendrocitta vagabunda	Passeriformes	Corvidae	R
16.	Red avadavat	Amandava	Passeriformes	Estrildidae	R
17.	Purple Rumped Sunbird	Leptocomazeyloni ca	Passeriformes	Nectariniidae	R
18.	Tickels Blue Flycatcher	Cyornistickelliae	Passeriformes	Nectariniidae	R
19.	Oriental magpie robin	Copsychussaularis	Passeriformes	Muscicapidae	R
20.	Green bee eater	Meropsorientalis	Coraciiformes	Meropidae	R

21.	Indian roller	Coracias benghalensis	Coraciiformes	Coraciidae	R
22.	White throated kingfisher	Halcyon smyrnensis	Coraciiformes	Alcedinidae	R
23.	Pied kingfisher	Cerylerudis	Coraciiformes	Alcedinidae	R
24.	Common kingfisher	Alcediatthis	Coraciiformes	Alcedinidae	R
25.	Pied stilt	Himantopous leucocephalus	Charadriiformes	Ecurvirostridae	R
26.	Little ringed plover	Charadriasdubius	Charadriiformes	Charadriidae	R
27.	Red wattled lapwing	Vanellus indicus	Charadriiformes	Charadriidae	R
28.	Common hoopoe	Upupepopsupupa	Bucerotiformes	Upupidae	RM
29.	Red naped ibis	Pseudibispapillosa	Pelecaniformes	Threskiornithidae	R
30.	Little egret	Egrettagarzetta	Pelecaniformes	Ardeidae	R
31.	Black headed ibis	Threskiornismelanocephalus	Pelecaniformes	ThreskiornithidE	R
32.	Pond heron	Ardeola	Pelecaniformes	Ardeidae	M
33.	Greater coucal	Centropus sinensis	Cuculiformes	Cuculidae	R
34.	Indian parakeet	Psittaculaeupatria	Psittaciformes	Pstittaculidae	R
35.	Plum headed parakeet	Psittaculacyanocephala	Psittaciformes	Psittaculidae	R
36.	Open billed egret	Anassto musoscitans	Ciconiiformes	Ciconiidae	R
37.	Laughing dove	Spilopelia senegalensis	Columbiformes	Columbidae	RM
38.	Eurasian collared dove	Streptopelia decaocta	Columbiformes	Columbidae	RM
39.	Spotted dove	Spilopelia chinensis	Columbiformes	Columbidae	R
40.	Black wing kite	Elands caeruleus	Accipitriformes	Accipitridae	R
41.	Crested serpent eagle	Spilornischeela	Accipitriformes	Accipitridae	RM
42.	Jungle owlet	Glaucidium radiatum	Strigiformes	Glaucidium	R
43.	Grey headed swamphen	Porphyria poliocephalus	Gruiformes	Rallidae	R
44.	Little cormorant	Microcarboniger	Suliformes	Phalacrocoracida	R
45.	Indian spot billed duck	Anas poecilorhyncha	Anseriformes	Anatidae	R

Table 2: Status of Avifaunal diversity of Ambazari Lake.

S.No.	Avian species	No. of Avian species	%Of Avian species
1.	Resident	39	86.66
2.	Resident Migrant	05	11.11
3.	Migrant	01	2.23
		45	**100.00**

Table 3 : Distribution of avifauna in respective orders and families.

S.No	Order	No. of Families	No. of Species
1.	Passeriformes	11	19
2.	Coraciiformes	03	05
3.	Pelecaniformes	02	04
4.	Charadriiformes	02	03
5.	Columbiformes	01	03
6.	Acciptriformes	01	02
7.	Psittaciformes	01	02
8.	Anseriformes	01	01
9.	Bucerotiformes	01	01
10.	Cuculiformes	01	01
11.	Strigiformes	01	01
12.	Gruiformes	01	01
13.	Ciconiiformes	01	01
14.	Suliformes	01	01
		28	**45**