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Avi-faunal biodiversity of Tadoba lake in Chandrapur District of Maharashtra, India.

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ABSTRACT

The avi-faunal biodiversity of Tadoba lake is an important aspect of study as the birds are most diverse and predominant form of life on the earth. The aim of the present study was to understand the avi-faunal biodiversity of the Tadoba lake and to create awareness about their conservation in the study. The present study was carried out on Tadoba lake. It is situated in the Tadoba National Park and studied for a period of three months (March, 2022 to May, 2022) as a project work of our M.Sc. degree student. The Tadoba lake is situated in the core zone of Tadoba National Park, Chandrapur. Nobody was undertaken such project in the past. Various species of birds were observed in the area of Tadoba lake during morning and evening time. For data collection, Nikon 5200 digital camera was used. Total 29 species of birds belonging to the 23 families were recorded during the study period. From this study, it may be conclude that the avi-faunal biodiversity of Tadoba lake is huge and suitable for the survival of all types birds.

Keywords: Avi-fauna, Biodiversity, Tadoba lake, Chandrapur.

INTRODUCTION

Birds are most diverse and predominant forms of life on the earth. They occupy in almost all kinds of habitats and biomes. They play an important role in controlling population of different pests. They are scavengers and pollinating agents and helps in dispersal of seeds on the earth. They provide food to the mankind for long-time. The birds serve as one of the best environmental indicators. Their population depends upon the composition of the ecosystem, environmental conditions and seasonal variations (Telkhade and Jambhule, 2017). According to Sanjay (1993) the changes in the environment like urbanization and industrialization disturbs the avian habitats. The Indian subcontinent is very rich in biodiversity. It contains about 1300 species of bird or over 13% of the world's birds (Grimmett *et al.,* 1998). The recent studies of freshwater biodiversity and wetlands shows that avi-fauna are major shares in them.

Tadoba lake is situated in the heart of Tadoba-Andhari Tiger reserve or you may call it as Tadoba National Park, Chandrapur. It is a famous tourist spot around the globe for tigers reserve. Tadoba lake is an ancient lake. According to Ali (2001), India is a mega biodiversity centre and harbours about 13018 species of birds. i.e., 13% of the total birds population of the world. Biodiversity has been studied by a number workers in Maharashtra. The birds are the essential group of an ecosystem. They also have good ecosystem for spreading seeds on the earth. They eates berries. When they dispose of their waste, the berry seeds also gets dispose along with waste. Thus, the birds are most important component of the ecosystem. The avi-faunal study is important to protect them. The birds which are ecologically depends on wetland. They are known as 'Water birds'. The global warming and changing climate is affecting on the activities of the avi-fauna. In the last century, over 50% wetlands in the world have been lost and remaining wet lands have been degraded at different degrees because of the adverse influence of many anthropogenic activites.

Telkhade and Jambhule (2017) was studied the avi-faunal diversity of Padmapur area in Chandrapur district of Maharashtra. Total 28 species of birds was recorded including black ibis, black shoulder kite, common coot, Asian Koel and Kingfisher. Bhattacharya *et al.,* (2020) had made a case study of Tadoba – Andhari Tiger reserve and reported 95 species of birds in this area. These 95 species of birds are belonged to 43 families. Bayani and Dandekar (2017) was revised the avian checklist of Tadoba-Andhari Tiger Reserve (TATR) in Chandrapur. Total 255 species were recorded during his study. 5 of which are endemic to India. This report provides a revised check-list of the birds of TATR along with their pattern of occurrence and their relative abundance. Shende and Patil (2017) was reported the richness of avi-fauna in Gorewada International Biodiversity Park, Nagpur, Central India. Deshmukh and Rudey (2019) had made a preliminary survey of avi-fauna of agro-forest system of Dev Talav near Nagbhid in the Chandrapur District of Maharashtra. Total 105 avian species, belonging to 48 families and 16 orders were recorded between January, 2015 to December, 2017. Puppalwar and Telkhade (2017) was observed birds biodiversity in and around Moharli lake of Chandrapur. They have recorded 65 species of birds. Of them, 48 species were resident, 12 species of resident migrant and 5 were migrant.

The study of avid-faunal diversity of Tadoba lake was not done was by anybody. Therefore, this project was under taken to understand the avi-faunal biodiversity of the Tadoba lake. This study will create awareness about the conservation of birds in nature in the society.

MATERIALS AND METHODS

Tadoba lake is situated in the core zone of Tadoba-Andhari Tiger reserve. Chandrapur. It is a famous National Park in India and abroad. The present work was carried out for a period of three months. (i.e., March, 2022 to May, 2022) as a project work of a M.Sc. student.

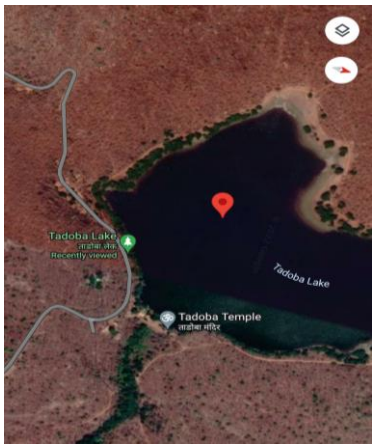

Plate1. Satellite view of Tadoba lake.

Plate 2. A view of Tadoba lake.

Plate 3. Birds watching at Tadoba lake.

The birds were observed and recorded at various locations of Tadoba lake during morning and evening time for 2-3 hours during the study period. Birds were observed by using binoculars. Photographs were taken by digital camera- Nikon 5200 and identification was done by Standard keys and literatures of Grimmett *et al,* 1998. (Plates 1 to 3).

The results of the present study are given in Table-1. During the study period of three months (March, 2022 to May, 2022), total 29 species of birds, belonging to 12 orders and 23 families were recorded from Tadoba lake.

RESULT AND DISCUSSION

Table-1: Avi-faunal diversity of Tadoba lake.

Sr. No.	Common name	Family	Order	Scientific name	Habits
1	Black winged slit	Recurvirostridae	Charadiiformes	*Himantopus himantopus*	**RM**
2	Little Cormorant	Phalacrocoracide	Suliformes	*Microcarbo niger*	**R**
3	Purple heron	Ardeidde	Pelacaniformes	*Ardea purpurea*	**RM**
4	Black headed ibis	Threskiornithidae	Pelacaniformes	*Threskiornis melanocephalus*	**R**
5	Lesser whistling duck	Anatidae	Anseriformes	*Dendrocygna javanica*	**R**
6	Little egret	Ardeidae	Pelacaniformes	*Egretta gazetta*	**RM**
7	House crow	Corvidae	Passeriformes	*Dicrurus macrocercus*	**R**
8	House sparrow	Passeridae	Passeriformes	*Passer domesticus*	**R**
9	Common myna	Sturnidae	Passeriformes	*Actidotheres*	**R**
10	Common hoopoe	Upupidae	Bucerotiformes	*Upupa epops*	**RM**
11	Alexandrine parrot	Psittaculidae	Psittaciformes	*Psittacula eupatrica*	**R**
12	Asian Koel	Cuculidae	Cuculiformes	*Eudanyms scolopaceus*	**R**
13	Indian Robin	Muscicapiddae	Passeriformes	*Saxicolodies*	**R**
14	Common moorhen	Rallidae	Gruiformes	*Gallinula chloropus*	**RM**
15	Paddy field pipit	Motacillidae	Passeriformes	*Anthus rufulus*	**R**
16	Common babler	Muscicapidae	Passeriformes	*Turdoides*	**R**
17	Common bulbul	Pycnonotidae	Passeriformes	*Pycnonotus barbatus*	**R**
18	Small bee-eater	Meropidae	Coraciiformes	*Merops orientalis*	**R**
19	Grey wagtail	Motacillidae	Passeriformes	*Motacilla cineria*	**R**
20	Ring dove	Columbidae	Columbiformes	*Streptopelia capicola*	**R**
21	White browed wagtail	Motacillidae	Passeriformes	*Motacilla maderaspatensis*	**R**
22	Indian roller	Coraciidae	Coraciiformes	*Coracias benghalensis*	**R**
23	Indian paradise fly catcher	Monarchidae	Passeriformes	*Terpsiphone paradise*	**RM**
24	River Kingfisher	Alcedinidae	Coraciiformes	*Alcedo atthis*	**RM**
25	Yellow wattled	Charadriidae	Charadriiformes	*Vanellus malabaricus*	**R**
26	Pied Kingfisher	Alcedinidae	Coraciiformes	*Ceryle rudis*	**R**
27	Malagasy Kingfisher	Alcedinidae	Coraciiformes	*Corythornis*	**RM**
28	Collard Kingfisher	Alcedinidae	Coraciiformes	*Todiramphus chloris*	**R**
29	Owlet	Strigidae	Strigiformes	*Athene blewitti*	**R**

RM: Resident migrant bird, **R:** Resident bird

DISCUSSION

The Tadoba lake is located in the Tadoba National Park, Chandrapur, Maharashtra, India. It has vast biodiversity of flora and fauna. Its avifauna is also rich. The project has been conceptudized for the conservation of lake, environmental up gradation and destination development. The conservation aspects included engineering solutions for strengthening the wall edges and provision for proper sewerage system around the lake.

During the study period of Tadoba lake, 29 species of birds belonging to 12 orders and 23 families have been identified. Out of which, some species are water birds and some are terrestrial birds. The Tadoba lake exhibits several quantitative variations in avi-fauna. Among the 12 Orders are Passeriformes, Charadriiformes, Suliformes, Pelacaniiformes, Anseriformes, Bucerotiformes, Psittaciformes, Cuculiformes, Gruiformes, Coraciformes, Columbiformes and Strigiformes. 23 families are Ardeidae, Recurvirosstridae, Phalacrocoracidae, Threskiornithidae, Anatidae, Motacillidae, Monarchidae, Corvidae, Passeridae, Sturnidae, Upupidae, Psittaculidae, Cuculidae, Muscicapidae, Rallidae, Pycnonotidae, Meropidae, Cocolumbidae and Stringidae, etc.

Khinchi *et al.,* (2009) were observed the avi-faunal diversity of Junona lake in Chandrapur District of Maharashtra during 2006 to 2007. Total 19 species of birds was observed. Among which 7 species were belongs to Order- Ciconiformes, 4 of Charadriiformes, 3 of Gruiformes, 2 of Falconiformes and 1 each of Pelicaniformes, Anseriformes and Cuculiformes. A good congregation of Black ibis, Little cormorant and Kingfisher was observed and regularly found in the surrounding of lake. Chilke (2012) studied the avian diversity in and around Bamanwada lake of Rajura in District-Chandrapur, Maharashtra. Total 58 birds species belonging to 9 Orders and 29 families was recorded. Passeriformes was the dominating order of birds, but, in future, this avian fauna is under danger due to the industrial progress of the city. Telkhade and Jambhule (2017) reported 28 species of birds in the Padmapur area of Chandrapur. Shende and Patil (2017) was found 190 species of birds belonging to 128 genera, 51 families and 17 orders in the Gorewada International Bio-park, Nagpur. Bayani and Dandekar (2017) was recorded 255 species of birds in the Tadoba-Andhari Tiger Reserve. This report provides a revised checklist of the birds of TATR (Tadoba-Andhari Tiger Reserve) along with their patterns of occurrence and relative abundance. (Shrinidhi *et al.* (2017) were observed the avi-faunal diversity in varying land use patterns of the semi-arid regions of Ramdurga Taluka in Belgaon District in Karnataka. They recorded 51 species of birds belonging to 11 orders and 31 families. They had suggested the steps taken towards the conservation of wetlands, wetland flora and natural vegetation indirectly leads to the conservation of avi-faunal population. Deshmukh and Rudey (2019) was studied the avi-fauna of Dev talav near Nagbhid in Chandrapur District and found them 105 species of birds, which belongs to 16 orders and 48 families. They suggested that the anthropogenic activities like live stock grazing, fishing, use of pesticides in agriculture and aforestation are posing threats to the birds diversity in the study area. Hence, needs conservation measures. Bhattacharya *et al.,* (2020) had made a case study of Tadoba-Andhari Tiger Reserve and reported 95 species of birds belonging to 43 families. The studied avian species were divided into 8 basic habitats. viz., aquatic, aquatic-terrestrial, terrestrial, arboreal, arboreal-terrestrial and arial-terrestrial. The species thus obtained based on 8 different habitat niches and broken down on the basis of their feeding preferences. According to Prajapati and Roy-Mahato (2018), among the micro-habitat, open water, muddy shoreline and tree's were the most preferred habitat or substratum for the birds species in the lake. Khattak *et al.,* (2019) had made an avifaunal inventory of Miangan Tarakai game reserve and suggested that the hunting practices of local birds should be strictly regulated and controlled according to Wildlife Protection Act, 2015. Patil et al. (2018) reported 134 species of birds belonging to 16 orders from Ajanti Dam area of Hinganghat (Wardha), Central India. Shelke (2020) was reported 77 species of birds including water and land birds belonging to 11 orders and 29 families from Nagad dam in Aurangabad district of Maharashtra. Parwate (2020) was observed the diversity of birds in local ecosystem in Lakhani, District-Bhandara, Maharashtra. He had found 51 kinds of birds have visited to the Lakhani local ecosystem for feeding and breeding activities during the year due to the abundant food available in the local ecosystem. Chandana *et al.,* (2008) had made studies on factor

affecting on the avi-faunal distribution in the three lagoons (Malala, Embillakala and Bundala Lewaya) of Bundela National Park (Ramsar wetland) in Srilanka. Their study revealed that salinity, aquatic macrophytes and lagoon area were the key determinants of aquatic birds abundance. Although, these lagoons are in the same landscape but they vary each other physically and chemically. So that different birds communities might be supported. The Bundala lagoon system changes continuously it habitat parameters and inhabiting aquatic fauna and flora also change. This might also influence the avi-fauna diversity and distribution. Continuous monitoring of aquatic birds population with habitat parameters highly recommended.

The present study will helps in designing conservation strategy for the agro-forest system posing threatened by forest grazing, forest fires during summer, poaching of birds and man-animal conflict and hence, requires immediate attention.

CONCLUSION

From this study it may be conclude that-

1. Tadoba lake has huge birds diversity.
2. Its weather, climate and surrounding are suitable for the survival of birds.
3. Tadoba lake is good for all types of birds survival, etc.

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Conflict of interest

The authors have no conflict of interest.

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