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Ichthyofaunal Diversity of the Mahi Bajaj Sagar Reservoir, District Banswara, Rajasthan, India

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Abstract: ***The survey was carried out for study of Ichthyofaunal diversity in the Mahi Bajaj Sagar Reservoir of District Banswara. The survey was focused on Ichthyofaunal diversity, 23 Species of fishes belongs to 7 orders and 11 family was recorded during the study period.***
Cyprinidae were most dominate group represented by 11 species, Siluridae with 2 species, Ambassidae with 1 species, Bagridae with 1 species, Belonidae with 1 species, Channidae with 3 species, Cichlidae, 1 species, Heteropneustidae, 1 species, Notopteridae, 1 species and Mastacembelidae, 1 specie.
In the present study on ichthyofaunal diversity of the Mahi Bajaj Sagar Reservoir suggest that Cyprinidae family exhibits the most abundant fish population among others family.
Keywords: Abundant, Ichthyofaunal Diversity, Species, Mahi Bajaj Sagar.

I. INTRODUCTION

Fishes are important protenious food for mankinds. Mahi Bajaj Sagar Reservoir is situated in district Banswara. The district has rich ichthyo fauna and need to observe. Study has been considered to verify the fish resources in the fresh water bodies in Mahi Bajaj Sagar Reservoir of district Banswara. Ichthyofaunal diversity studies made so far on various fresh water bodies in India during last few decades [1]-[4]. Day [5], Mathew et al., [6], Jhingran [2], Talwar and Jhingran [7], Jayaram [8], Menon [9], Goswami [10], Muley et al., [11] have observed fish fauna in Pethwadaj Dam of Nanded. Kulkarni et al., [12] have suggested fish and fisheries of Derala Tank, Nanded (Maharashtra).

Ravindar [13] has reported the biodiversity of fishes in Dharmasagar Dam, Warangar (AP). The aquatic eco systems have been subjected to various forms of environmental stress, during the past few decades. Most of such environmental problems are man-made and thus increased human activities in the catchment area of various aquatic systems have affected the natural processes of these systems adversely thereby threatening the survival and growth of biotic communities [14]. Keeping in view the above facts the present study portraits the Ichthyofaunal diversity of this reservoir. In the present study is calculated to evaluate the freshwater Ichthyo Fauna in Mahi Bajaj Sagar Reservoir, Banswara (Raj.).

II. MATERIALS AND METHOD

A. Study Area

The Mahi Bajaj Sagar Reservoir is a fresh water reservoir situated about 6149km^2 Banswara District of Rajasthan. Mahi Bajaj Sagar Reservoir is situated between latitude - 23°11'N - 23°56'N and longitude - 73°58'E - 74°49'N. The reservoir was surrounded by agricultural land.

Present work has been conducted on 3 sampling sites of this reservoir viz. Chacha Kota, Gamon Bridge and Dam site for the estimation of its diversity. Fishes were collected from Mahi Bajaj Sagar Reservoir from different catchment area during the study period of one year from Jan 2019 - Dec 2019. Fishes were collected by hand-net and cast nets with the help of local fisherman and local market. Collected fish samples were preserved in formalin and identified by the methodology of Day [15] and Talwar and Jhingran [7].

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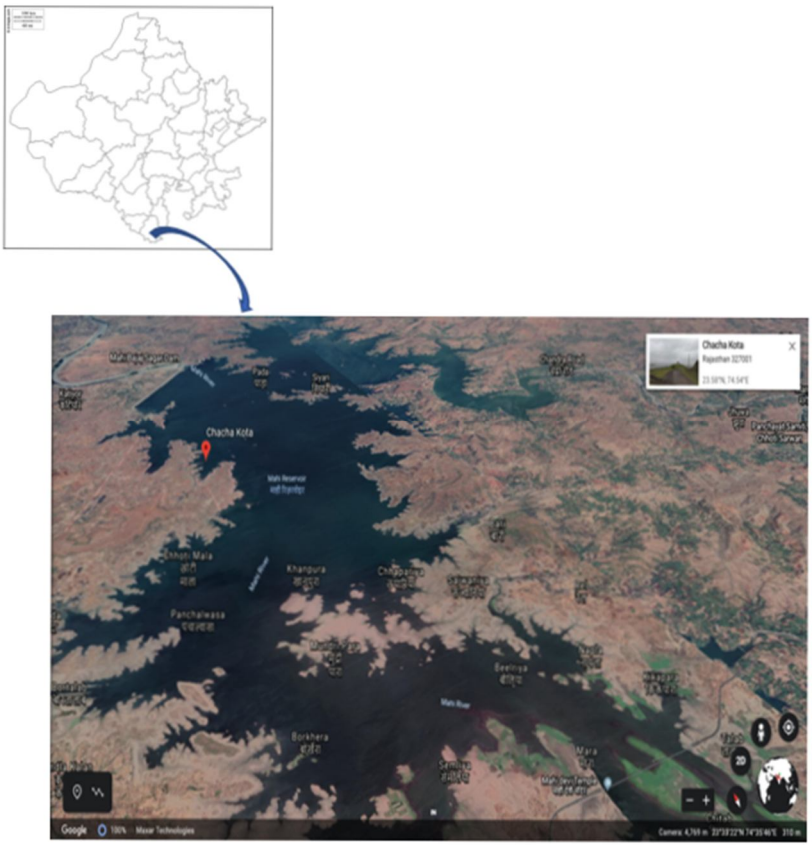

Figure 1 - Study area

III. RESULT AND DISCUSSION

In the present study a total of 23 species of freshwater fishes belonging to 11 Families and 7 orders were recorded from the 3 different sampling sites. Number of species, and their relative abundance is given in Table - 1. In the assemblage structure, Cyprinidae constituted the dominant group and the cyprinid *Labeo rohita*, *Catla catla* and *Cirrhinus mrigala* are represent in all study sites. The family Cyprinidae dominated with 11 species followed by Channidae with 3 species and Siluridae with 2 species, beside other family such as Ambassidae, Bagridae, Belonidae Mastacembelidae, Cichlidae, Heteropneustidae and Notopteridae (Table-1). In these studied fishes, Cyprinidae family was more dominant in the chacha kota area of Mahi Reservoir. Ichthyofaunal population in Gamon bridge and dam site area exhibit lesser number of species as compare to Chacha kota sampling site perhaps because of increased anthropogenic activities, that support the similar study performed in Udaisagar reservoir [14]. Many researchers have also reported the similar strong dominance of Cyprinidae family in their investigation on ichthyofaunal diversity. Perhaps rich availability of food results the maximum abundance of fish fauna in Chacha kota as compared to Gamon Bridge and Mahi dam site. In support to our observation Sakhare [16] reported 23 species belonging to 7 orders where Cyprinidae family was dominant with 11 species in Jawalgaon reservoir Solapur district Maharastra. Khedkar and Gynanath [17] documented 37 species from Issapur dam in district Yavatmal where Cyprinidae family was dominant with 20 species. Similar type of observation illustrated by Sharma [18] that 87 species under 36 genera belonging to Cyprinidae family from freshwater of Nepal. Afterwards Dongre et al., [19] reported 68 species of fishes in Tribal Distric Satpura valley, Betul of Madhya Pradesh in India where order Cypriniformes was dominated. These reports strongly support our present observation. Choube and Qureshi [20] recorded 45 species in Rajnandgaon town of CG, India where Cyprinidae was the largest dominant family contributing 20, species and Bagridae formed the sub dominant family. In the same year Narasimha and Benarjee [21] reported 30 species in Nagaram Tank of Warangal, Andhrapradesh where order Cypriniformes were dominant by contributing 13 species. Nagma and Khan [22] also studied the fresh water fish fauna of district Bijnour in Uttar Pradesh where order Cypriniformes was dominating with 18 species. In southern Rajasthan Rathore et al., [14] and Banyal and Kumar [23] observed that Cyprinidae family was most dominant with 13 species in Udaisagar and Mahi river that study support our present observation. Thus, our present observations concluded that Cyprinidae was largest dominant family followed by second dominant family Channidae in Mahi Bajaj Sagar Reservoir. [Fig. 2].

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Table- 1 Showing the diversity of fishes in Mahi Bajaj Sagar Dam during Jan 2019 to Dec 2019.

S. No.	Species	Local Name	Order	Family	Relative abundant
1.	*Chanda nama* (Hamilton, 1822)	Chalputhi	Perciformes	Ambassidae	C
2.	*Mystus seenghala* (Sykes, 1839)	Singhara	Siluriformes	Bagridae	C
3.	*Xenentodon cancila* (Hamilton, 1822)	Suhia	Beloniformes	Belonidae	R
4.	*Channa striata* (Hamilton, 1822)	Kabra	Anabantiformes	Channidae	C
5.	*Channa marulius* (Hamliton, 1822)	Sawal	Anabantiformes	Channidae	C
6.	*Channa punctatus* (Bloch, 1793)	Girhi	Perciformes	Channidae	C
7.	*Oreochromis mossambicus* (Peters, 1852)	Tiapia	Perciformes	Cichlidae	C
8.	*Catla catla* (Hamilton, 1822)	Catla	Cypriniformes	Cyprinidae	D
9.	*Cirrhinus Mrigala* (Hamilton, 1822)	Mrigal	Cypriniformes	Cyprinidae	D
10.	*Labeo rohita* (Hamilton, 1822)	Rohu	Cypriniformes	Cyprinidae	D
11.	*Labeo gonius* (Hamilton, 1822)	Sarsi	Cypriniformes	Cyprinidae	D
12.	*Labeo kalbasu* (Hamilton, 1822)	Kalaunt	Cypriniformes	Cyprinidae	D
13.	*Amblypharyngodon mola* (Hamilton, 1822)	Malwa	Cypriniformes	Cyprinidae	D
14.	*Puntius ticto* (Hamilton, 1822)	Puthi	Cypriniformes	Cyprinidae	D
15.	*Puntius sophore* (Hamilton, 1822)	Puthi	Cypriniformes	Cyprinidae	D
16.	*Puntius sarana* (Hamilton, 1822)	Puthi	Cypriniformes	Cyprinidae	D
17.	*Ctenopharyngodon Idella* (Cuvier & Valenciennes, 1844)	Grasp carp	Cypriniformes	Cyprinidae	D
18.	*Hypophthalmichthys molitrix* (Valenciennes, 1844)	Silver carp	Cypriniformes	Cyprinidae	D
19.	*Heteropneustes fossilis* (Bloch, 1794)	Singhi	Siluriformes	Heteropneustidae	C
20.	*Mastacembelus armatus* (Lacepede, 1800)	Bam	Synbranchiformes	Mastacembelidae	C
21.	*Notopterus notopterus* (Pallas, 1769)	Patola	Osteoglossiformes	Notopteridae	R
22.	*Ompok bimaculatus* (Bloch, 1794)	Pabda	Siluriformes	Siluridae	C
23.	*Wallago attu* (Bloch & Schneider, 1801)	Lanchi	Siluriformes	Siluridae	C

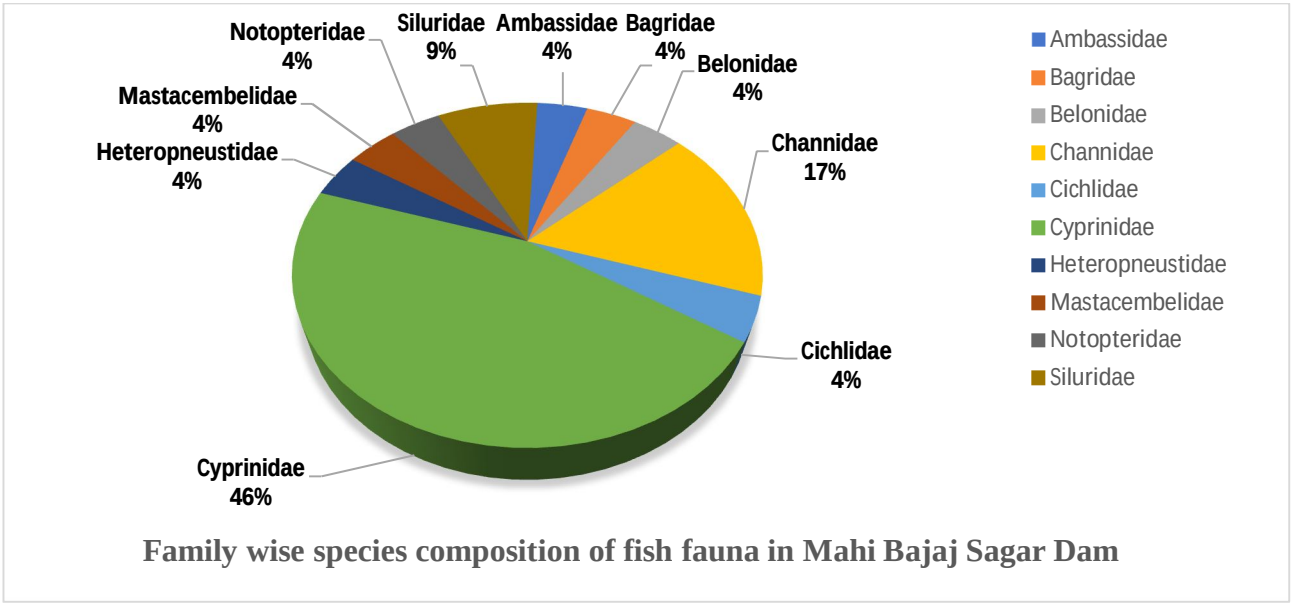

Figure - 2 Family wise spices composition of fish fauna in Mahi Bajaj Sagar Dam.

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IV. CONCLUSION

Based on these results, it can be suggested that some fish species are like *Xenentodon cancila* and *Notopterus notopterus* are rare in number. The present observation is the first ever documentation of Ichthyofaunal diversity in the Mahi Bajaj Sagar Reservoir in Banswara District recorded with 23 species of fish fauna where Cyprinidae occupying the dominant position. It may open a new arena towards Ichthyofaunal diversity researcher and fish farmers in developing pisciculture in Mahi Bajaj Sagar Reservoir.

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Channa striata (Hamilton, 1822)

Puntius sophore (Hamilton, 1822)

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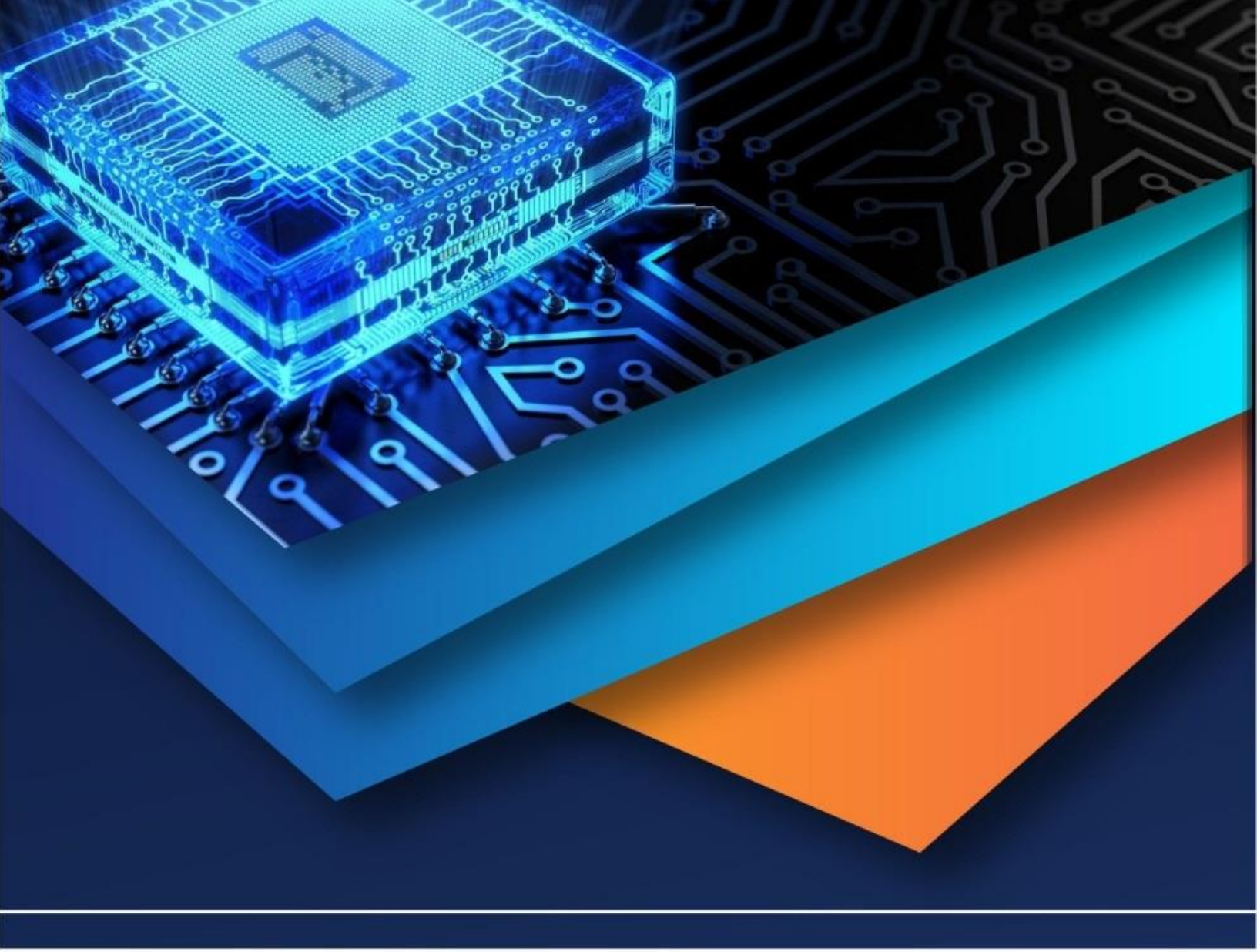

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