

# Ichthyofaunal Diversity of Chachai Dam, Anuppur (M. P.) India

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**Abstract:** Fish is not only a source of good cheap protein food, but it is also used in medicines etc. At the same time, it provides employment and economic benefits to the rural and coastal people. At the same time, its export helps in increasing the foreign exchange reserves. The contribution of fish is also very high in the aquatic ecosystem, it provides its contribution at the second trophic level. At present, due to excessive use of water sources and pollutants used in industrial, agriculture chemicals, municipal waste etc., these sources are becoming polluted as well as drying, because all the above factors affect the aquatic ecosystem, so Aquatic flora and fauna are also greatly affected by this, so work should be done on their conservation and preservation. Many types of sweet water fish have been found in this dam. In this present study, a total of 22 species of fish are seen during the study period. 01 Family, 01 Genus and 01 species of order Cyprinodontiformes were found. Order Clupeiformes also found 01 Family, 01 Genus and 01 same species. 01 Family, 07 Genus and 12 Species of Order Cypriniformes were found. Order Perciformes 02 Family, 02 Genus and 02 Species found. 04 Family, 04 Genus and 06 Species of Order Siluriformes were found. The Cyprinidae family is the most common of all these fish species. Which takes 54.54% of the total species. Anuppur district is very rich in terms of biodiversity of fishes.

**Keywords:** Chachai Dam, Ichthyofaunal, Diversity, Ostichthyes, Chondrichthyes, Endemic, Physico - chemical, Topography

## 1. Introduction

Fish are found as primary, secondary and top consumers in the ecosystem. Water is the main requirement for fisheries. It has great importance as a productive medium. The life of living beings cannot develop in pure water, but if organic inorganic matter is found in a certain limit, then it greatly increases the growth of plants and animals.

Indian fishes are divided into two groups bony fishes (Ostichthyes) and cartilaginous fishes (Chondrichthyes). About 2415 species of bony fishes are found in India, which are within 902 genera and 226 families and 30 orders. Out of which fishes of Parapsilorhynchus family are found only in Western Ghats of India, Satpura mountain range of Madhya Pradesh and Bailadila ranges. Apart from this, many species of fish are found only in the Indian region (Endemic).

2.21% of the total endemic bony fishes are found in the Indian regions. A total of 223 endemic species are found in India, which is 8.75% of the total species density of India. At the same time, a total of 10 orders, 28 families and 67 genera of cartilaginous fishes are found in India.

About 24000 species of fish are found in the world, of which about 9.85% are found in the Indian region. So far, about 3231 species have been found in India, out of which 65.45% are found in marine, 24.73% in warm fresh water and 6.50% in brackish water and 3.32% in cold fresh water. There are about 450 families of pure water all over the world, out of which about 40 are found in Indian waters. Out of these, there are about 25 families that have commercial importance.

The Indian aquatic ecosystem is dominated by Cyprinidae. Their size ranges from a few millimeters to a meter. This accounts for about 24% of the total freshwater fish.

Due to human - caused pollutants and other factors on aquatic ecosystems, their conservation has become extremely necessary today. Therefore, it is necessary to pay utmost attention to this for the conservation of all species.

Distribution of Ichthyofaunal population in the ecosystem, their composition and their seasonal variation are essential prerequisite for any successful resources management. Species diversity is a property of the population level while the functional diversity concept is more strongly related to ecosystem stability and stress, physical and chemical factors for determining population dynamics in lentic ecosystem (Kar and Barbhuiya 2004)

The biodiversity classification and distribution of fish have been studied by many researchers. Little is known about fish diversity in lotic and lentic water sources. At present, many dams and reservoirs have been constructed whose purpose has been for irrigation and electricity generation as well as fisheries. There is a lot of potential for fish farming in these water sources.

The aim of the present study is to collect as much information as possible about the diversity of fishes of this region of North India. The present study work has been done in Chachai Dam District Anuppur, Madhya Pradesh, India. Chachai Dam is located about 7 kms from Anuppur district, at latitude 23°.16'N and Longitude 81°.65'E.

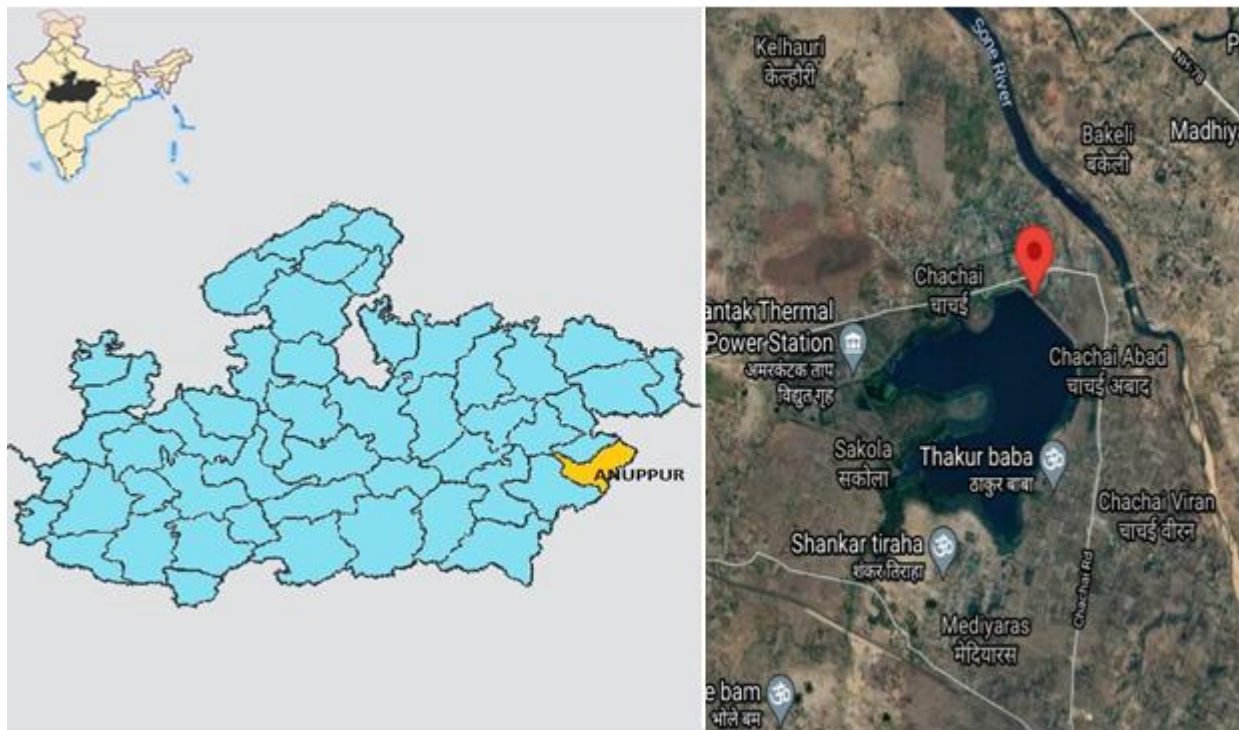


Figure 1: Map showing location of study area

## 2. Material and Methods

The fish were collected from several sites with the help of fishermen working in the dam. Various types of nets, gears and crafts etc. have been used for this. First the external appearance of the fish was noted, then they were preserved in 4% formalin solution. The present study has been edited from Oct 2020 to Sept 2021.

Standard identification keys and literature have been used to identify fishes to species. Like jhingram, VG 1982, Day Francis 1971 and agrwal SC.1994 (1 - 3) Classification of economically important fishes has been done with the help of the paper given by jhingram, VG (3) and Langler, KF (1956) (4).

## 3. Result and Discussion

As a result of the present study, we know that a total of 22 species are seen in this reservoir during this study. 01 Family, 01 Genus and 01 species of Order Cyprinodontiformes, 01 Family, 01 Genus and 01 species of the Order Clupeiformes, 07 Genus and 12 Species, 02 Family, 02 Genus and 02 Species of Order Perciformes and 04 Family, 04 Genus and 06 Species of Siluriformes are known. Cypriniformes show the most diversity of all the above orders. Geographic topography, geochemical organization and climate greatly affect the biodiversity of fish, so along with these changes, the distribution of fish also changes. The biodiversity found in Chachai Dam is displayed in detail in the table given below: -

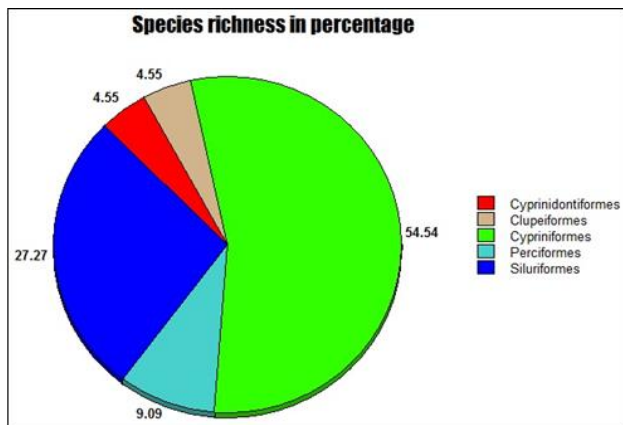
Table 1: List of different fish species found in Chachai dam during October 2020 to September 2021

S. N.	Order	Family	Species
1	Beloniformes / Cyprinodontiformes	Belontiidae	<i>Xenentodon cancila</i>
2	Clupeiformes	Notopteridae	<i>Notopterus notopterus</i>
3	Cypriniformes	Cyprinidae	<i>Amblypharyngodon mola</i> <i>Labeo rohita</i> <i>Labeo bata</i> <i>Labeo calbasu</i> <i>Catla catla</i> <i>Cirrhinus reba</i> <i>Cirrhinus mrigala</i> <i>Puntius ticto</i> <i>Puntius sarana</i> <i>Tor tor</i> <i>Rasbora daniconius</i> <i>Oxygaster bacaila</i>
4	Perciformes	Chandidae Channidae or ophiocephalidae Mastacembelidae	<i>Chanda nama</i> <i>Channa punctatus</i> <i>Mastacembelus armatus</i>
5	Siluriformes	Bagridae	<i>Mystus aor</i>

			<i>Mystus bleekeri</i>
			<i>Mystus cavasius</i>

**Table 2: Species richness observed during study period**

S. N.	Name of Order	No. of family	No. of genus	No. of species	%
1	Cyprinodontiformes	1	1	1	4.55
2	Clupeiformes	1	1	1	4.55
3	Cypriniformes	1	7	12	54.54
4	Perciformes	2	2	2	9.09
5	Siluriformes	4	4	6	27.27



#### 4. Conclusion

Fish are a very important part of the aquatic ecosystem, so there is a need to do a lot of work on their conservation. There is a need to know more about the relationship between physico - chemical and biotic factors for their management and conservation. At the same time, we need to stop the process of over - fishing and essential fishing etc. Many species of fish have already become extinct or are on the verge of extinction due to many man - made processes and pollution. Therefore, a lot of work should be done on the conservation of fish species. During this study, the species diversity of fish has been seen very high in Chachai Dam. For their protection, the government machinery, society, mainly the fishermen society, needs a lot of attention. Only then we will be able to maintain this rich fish fauna diversity.

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