



STUDIES ON DIVERSITY OF FRESHWATER FISHES FROM THE MASOLI RESERVOIR OF MAHARASHTRA, INDIA

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ABSTRACT

Fish is a significant source of nourishment for mankind. The primary goal of the study is to understand the area's fisheries potential and edible wild fishes. The information gleaned from the current study is valuable in a number of other ways, too, such as helping researchers and fishermen alike understand the tolerance and diversity of fish found in the Masoli Reservoir and selecting the precise mix of fish species for culture in order to maximize yield. For the purpose of the study, attempts were made to collect, classify and identify fish of Masoli Reservoir. Present study the Masoli Reservoir is home to Twelve species of freshwater fish that are represented by Four orders, Six families, and Nine genera in the current study. According to the study's findings, Cypriniformes, which include the fish species (*Labeo rohita*, *Catla catla*, *Cirrhinus mrigala* and *Cyprinus carpio*) and Perciformes (*Tilapia mosombica*, *Channa striata*, *Channa punctata*, *Channa gachua*) are the dominant group in the assemblage composition of all fish diversity.

Key words: Fish Diversity; Freshwater; Masoli; Maharashtra; India.

INTRODUCTION

Reservoir is a low line area of a river with surrounding earthen depression with constructed dam to develop surface water sheet. To provide irrigation to the croplands several such earthen depressions are converted in to major or minor irrigation tanks. With such an effort of water harvesting and storage the water scarcity problem has been solved to certain extent. The fresh water reservoirs made with this purpose are underutilized and except water utility management no further use of such water sheets is done. In India, there are 19,370 reservoirs spread over 15 states, covering 3.15 million ha. Reservoirs and lakes could be the main resources exploited for inland fisheries. The understanding of fish faunal diversity is a major aspect for the exploitation of fresh water reservoirs and the sustainable as well as economical management (Battul et.al., 2007). Lakes in India support rich variety of fish species, which, in turn, support the commercial exploitation of the fisheries potential (Krishna et.al., 2006).

Fish and fish related aquaculture research activities plays a major role in shaping the economic prosperity of India where a major part of the population is dependent on agriculture and farm based products for their livelihood. Fishes are an important resource for humans, especially for food. Fishes in India have very important economic activity and are a flourishing sector with varied recourses and potentials. India is an important country

that produces fish through aquaculture in the world. India is also the home to more than 10% of the global fish diversity. To carry out a fruitful aquaculture practice, maintenance of fish health is of prime concern as it has direct effect on the annual yield. Biodiversity and the environment that it supports are gifts from nature that are essential to the continuation of life as we know it. The diversity and variability of plants, animals, and microorganisms within an ecosystem is known as biodiversity. Ichthyodiversity is the diversity of fish species; depending on the setting and scale, it may also refer to alleles or genotypes within a population of fish, species within a fish community, and species across aquaregimes. India is blessed with a sizable area of undeveloped inland water. The resources of fresh water are extremely valuable to the life on our planet. In the past few years, there have been a lot more dams, reservoirs, tanks, etc. The aquatic ecosystem is crucial, and it is home to many economically significant creatures, particularly fish, which are a significant source of food.

MATERIALS AND METHODS

Masoli Dam, is an earthfill dam on Masoli river near Gangakhed, Parbhani district in the state of Maharashtra in India. The height of the dam above lowest foundation is 24.84 m (81.5 ft) while the length is 1,086 m (3,563 ft). The volume content is 626 km³ (150 cu mi) and gross storage capacity is 34,080.00 km³ (8,176.23 cu mi). The present study was undertaken in Gangakhed (TQ), the Masoli Reservoir is situated about 10 km's south of Gangakhed. The catchment area of reservoir is 277.81 sq. kms. The Masoli reservoir is medium sized reservoir constructed on the Masoli River, near village Ised Taluka Gangakhed, Dist. Parbhani. The reservoir is constructed in 1982. Lies in between 180 54'10" N latitude, 760 45'0" E longitudes.



The sampling of fishes was made from January to December 2018 twice in a week. Fishes were collected through landing site. The cast net and gill nets were operated with local crafts. Fishes were identified with the help of the keys of Day (1986), Datta munshi and Shrivastava (1988), Talwar and Jhingran (1991) and Jayaram (1994). Fishes were collected fresh and identification was done at the site itself. For taxonomic study and identification confirmation photographs were snapped and characters were noted along with fish formula and their morphometry. The samples were preserved in formalin.

RESULTS, DISCUSSION AND CONCLUSION

The Masoli Reservoir is home to Twelve species of freshwater fish that are represented by Four orders, Six families, and Nine genera in the current study. The table below shows the freshwater fishes identified during the current study.

Table 1: Diversity of Freshwater Fishes from Masoli Reservoir

S.N.	Order	Family	Fish Species
1.	Cypriniformes	Cyprinidae	<i>Labeo rohita</i>
2.	Cypriniformes	Cyprinidae	<i>Catla catla</i>
3.	Cypriniformes	Cyprinidae	<i>Cirrhinus mrigala</i>
4.	Cypriniformes	Cyprinidae	<i>Cyprinus carpio</i>
5.	Siluriformes	Bagridae	<i>Mystus bleekeri</i>
6.	Siluriformes	Bagridae	<i>Mystus seenghala</i>
7.	Siluriformes	Siluridae	<i>Wallago attu</i>
8.	Perciformes	Cichlidae	<i>Tilapia mosumbica</i>
9.	Perciformes	Channidae	<i>Channa striata</i>
10.	Perciformes	Channidae	<i>Channa punctata</i>
11.	Perciformes	Channidae	<i>Channa gachua</i>
12.	Synbranchiformes	Mastacembelidae	<i>Mastacemelus armatus</i>

According to the study's findings, Cypriniformes, which include the fish species (*Labeo rohita*, *Catla catla*, *Cirrhinus mrigala* and *Cyprinus carpio*) and Perciformes (*Tilapia mosombica*, *Channa striata*, *Channa punctata*, *Channa gachua*) are the dominant group in the assemblage composition of all fish diversity. Similar finding, 22 species of fishes belonging to 06 orders, 11 families and 19 genera from the study area. Cypriniformes like the *Labeo rohita*, *Catla catla*, *Cirrhinus mrigala*, *Cyprinus carpio*, *Labeo boggut*, *Garra mullya*, and *Puntius sophore*. Most prevalent species included *Cirrhinus reba*, *Rasbora daniconius* (Hamilton), *Crossocheilus latius* (Hamilton), and *Salmostoma sp* were reported by Nagmote et.al., 2023 from Khadakpura reservoir.

Raghav and Dixit, 2009 reported 39 fish species were observed in the reservoir, out of 39 species 2 belong to the order Osteoglossiformes (2 species of Notopteridae) 18 species belong to the order Cypriniformes (18 species of Cyprinidae), 13 species belong to the order Siluriformes (2 species of Siluridae, 6 species of Bagridae, 1 species of Schilbeidae, 1 species of Pangasiidae, 1 species of Saccobranchidae and 2 species of Claridae), 9 species belong to the order Perciformes (2 species of Centropomidae, 1 species of Nandidae, 2 species of Cichlidae, 3 species of Anabantidae and 1 species of Gobiidae) and 1 species belong to the order Mastacembeliformes (1 species of Mastacembelidae) from Kumhari reservoir, Chhattisgarh. Besides this in Chhattisgarh a total of 95 species were recorded by different scientists viz. Hora (1940), David (1959) Jayram and Majumdar (1976), Vardia (1991), Singh and Chari (2006), Omprakash (2004), Desai and Shrivastava (2004), Dev (2008), Dahire (2008).

Ubarhande and Sonwane, 2012 reported ichthyofauna belong to 07 order 10 families, 19 genus and 21 species, were Cyprinidae family is dominant with 10 (47.61%) species followed by Channidae and Mastacembelidae with 02 (9.52%) species, Balitoridae, Bagridae, Clariidae, Belonidae, Notopteridae, Cichlidae, and Poeciliidae contribute 01 (4.76%) species each from Paintakli Dam Buldhana. Kadam et.al., 2022 reported fish biodiversity, a total of 16 species of fishes were recorded from 04 families from Vishnupuri dam.

Mane and Pawar, 2007 reported 36 species under 19 genera under the family Cyprinidae from Nathasagar reservoir, Paithan. Hiware and Pawar, 2006 recorded 07 species under 07 genera under the family Cyprinidae from Thodga reservoir Ahmedpur district Latur, Maharashtra. Jadhav and Yadav, 2009 Reported 25 species under 11 genera under the family Cyprinidae from Solapur district Maharashtra. Vijayalaxmi et.al., 2008 Reported 06 species under 04 genera under the family Cyprinidae from Bheema river Gulbarga district, Karnataka. Muchlisim et.al., 2009 reported 26 species under 12 genera from fresh water of Northern – Sumatra, Indonesia. Sharma, 2008 reported 87 species under 36 genera under the Cyprinidae family from freshwater of Nepal. Shinde et.al., 2009 observed 11 species under 10 genera under the Cyprinidae family from Harsul Savangi dam dist Aurangabad (M.S).

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