

Original Article

SYSTEMATIC ENUMERATION OF ICHTHYOFAUNA FROM ZARI DAM, TQ. PATHRI, PARBHANI (M.S.), INDIA

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ABSTRACT

The Zari Dam, located in Tq. Pathri, Parbhani district, Maharashtra, represents a critical irrigation-fishery system in the Godavari basin, supporting Indian Major Carp (IMC) stocking and local livelihoods. This study systematically enumerates the ichthyofaunal diversity, quantifies species abundance, assesses ecological guilds, and evaluates conservation status through comprehensive surveys conducted from July 2022 to June 2024. Experimental gill netting, cast netting, and hook-and-line sampling across three littoral-pelagic stations documented dominant family Cyprinidae noted 5 species, 2 species from family Channidae, Cichlidae and Siluridae, 1 species of Notopteridae, Bagridae and Mastacembelidae. Present investigation from Zari dam, Prbhani district, Maharashtra, total 14 species of ichthyofauna noted.

Keywords: Zari Dam, Irrigation- Fishery, Ecological Guilds and Ichthyofauna

INTRODUCTION

The inland freshwater reservoirs of Maharashtra are important ecological and economic resources that support Indian Major Carp (IMC) fisheries, store water to use in irrigation and hydropower, and offer a source of livelihood to the rural communities. Since fisheries has long-term importance in terms of employment and nutrition, the environmental responsible utilization of fish resources should be given one of the first priorities by the management of this industry. Radhakrishnan and Sugumaran (2012) argue that the most notable problem being experienced is the general and unsustainable exploitation of fishes by means that lead to fish depletion, interruption of ecological balance as well as loss of fish species diversity.

The current research is filling this knowledge gap as a comprehensive ichthyofaunal census on a multi-gear sampling (gill net, cast net, hooks) in littoral-pelagic stations as well as in the measurement of species richness length-weight relationships and IUCN status and physico-chemical correlations. Fishing and fish consumption have been treated as healthy sources of protein. It gives a livelihood to millions of individuals across the globe in the process of fish farming and fishing. The fish species are about 25,000, with 10,000 of them being observed in the freshwater environment and 11.7 percent of the total biodiversity values of conservation importance Sutar et al. (2024). The world has now acknowledged the diversity of fish. Fishing industry in India is one of the product sectors which is not only relevant to the economy but also expanding rapidly and causing a tremendous impact to the economy of the country and to an extensive portion of the country, the primary work of this business is to offer food, nutrition, social economic growth, and livelihoods Pangul et al. (2025).

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MATERIALS AND METHODS

Sampling locations were chosen in four separate sections of the Zari dam, which was easily accessible for gathering fishes were taken at various locations during the study period from Zari dam sampling stations are Z1, Z2, Z3, and Z4.

COLLECTION AND IDENTIFICATION OF FISH

The fish were collected during the study period (July 2022 to June 2024) with the help of local fishermen by using different types of fish collection nets like gill nets, cast nets, and traps from various sites of the reservoir. Fish from Zari dam were gathered from various locations with assistance from local fishermen and were classified. Some fishes identified with the help of local fisherman as they know the common name, from the common name it is easy from literature to know the scientific name personally. Species that fishermen could not identify were taken to the laboratory and stored in 10% formalin solution (neutral-buffered preferred to minimize tissue shrinkage/artifacts) standard protocol for ichthyological taxonomy and morphometric analysis in fishery research while identifying their morphological features we analyzed their natural color, pattern of scales, mouth pattern, identification marks like black or red spots, blotch on operculum, paired and unpaired fins and body parts with the help of standard literature [Jayaram \(1999\)](#), [Jayaram \(2008\)](#), [Jayaram and Sanyal \(2003\)](#) and [Jayaram \(2010\)](#).

RESULTS AND DISCUSSION

Present investigation from Zari dam, Tq. Pathri, Prbhani district, Maharashtra, total 14 species of ichthyofauna observed [Table 1](#) from which dominant family Cyprinidae noted 5 species, 2 species from family Channidae, Cichlidae and Siluridae, 1 species of Notopteridae, Bagridae and Mastacembelidae.

Fish species:- *Catla catla*, *Cirrhinus mrigla*, *Cyprinus carpio*, *Channa striata*, *Channa punctata*, *Chitala chitala*, *Labeo rohita*, *Labeo calbasu*, *Oreochromis niloticus*, *Oreochromis mossambicus*, *Ompok bimaculatus*, *Mystus cavasius*, *Mastacembelus armatus* and *Wallago attu*.

The freshwater fish that have been reported and verified by diverse species in Maharashtra belong to seven orders, nine families, and fifteen genera, according to [Waware and Kamdi \(2018\)](#), who presented the result of their current review. [Gorghate et al. \(2021\)](#) observed 31 fish species from 13 families where, Cyprinidae was the most dominant family during two years study 2017 to 2019 in Chichtola lake of Gondia district. The present finding showed that the lake is the habitat. The research conducted by [Patil and More \(2024\)](#) revealed that throughout the course of the investigation, eleven species belonging to three distinct families and six different genera were documented. The Cyprinidae family was the most prominent, followed by the Percidae and Siluridae families. In the Chankapur Dam, large numbers of the fishes that were reported were discovered to be present. The ichthyofauna is comprised of five orders, nine families, nineteen genera, and thirty-one species, according to the findings of [Sutar et al. \(2024\)](#). The family Cyprinidae was found to be the most abundant, with 17 species accounting for 54.83% of the total. This was followed by the families Bagridae and Siluridae, each of which contributed three species, with a contribution of 9.67%. Channidae contributed two species, accounting for 6.45% of the total, and the families Notopteridae, Botiidae, Clariidae, Heteropneustidae, Pangasidae, and Mastacembelidae each contributed one species, representing 3.22% of the total. There were 25 species that were considered to be of the least concern in terms of their conservation status, two species that were vulnerable, three species that were near threatened, and one species that was in the endangered stage in the year 2023 (IUCN). Using the ecosystem of the Salaimendha dam, [Pangul et al. \(2025\)](#) discovered thirteen different species of fish belonging to six different families. The Cyprinidae family was found to be the most prevalent. Two species belong to the family Siluridae, two to the family Channidae, one to the family Gobiidae, one to the family Anabantidae, and one to the family Clariidae.

CONCLUSION

Even though the existing level of diversity of the fish in the Zari dam can be considered satisfactory. The analysis of trophic structure shows that there is equal guild partitioning herbivorous/planktivorous, carnivorous air-breathing predators, omnivorous tilapias, bottom-dwelling detritivores suggests organic enrichment. This list is the catalyzing action when it comes to constructing sustainable reservoirs governance and ensuring aquatic heritage to the coming generations. The controlled survey of ichthyofauna of Zari Dam that defined the reservoir as oligo-mesotrophic fishery system.

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Table 1

Table 1 Fish Diversity of Zari Dam Tq. Pathri, District Parbhani Maharashtra During July 2022 to June 2024.					
Sr. no.	Genus	Common name	Family	Order	Fin Formulae
1	Catla catla	Catla	Cyprinidae	Cypriniformes	D. 18; P1. 20; P2. 9; A. 8
2	Cirrhinus mrigala	Mrigal	Cyprinidae	Cypriniformes	D. 16; P1. 17; P2. 9; A. 8
3	Cyprinus carpio	Super	Cyprinidae	Cypriniformes	D. 19; P1 17; P2. 9; A. 6
4	Labeo rohita	Rohu	Cyprinidae	Cypriniformes	D. 15-16; P1. 16-17; P2. 9; A. 7
5	Labeo calbasu	Kaloshai	Cyprinidae	Cypriniformes	D. 17-18 (3/14-15); P1. 16-18; P2. 9 (1/8); A. 7(2/5)
6	Channa striata	Marrul ka Patta	Channidae	Anabantiformes	D. 42-46; P1. 15-17; P2. 6; A. 24-27.
7	Channa punctata	Dok	Channidae	Anabantiformes	D. 45-55; P. 17-19; V. 6; A. 28-37; C. 14-16
8	Chitala chitala	Chitala	Notopteridae	Osteoglossiformes	D. 0-0; A. 117-127
9	Mystus cavasius	Kahana	Bagridae	Siluriformes	D. I/7; P1. I/8; P2. 6; A. 11
10	Mastacembelus armatus	Vam/Bam	Mastacembelidae	Synbranchiformes	D. 74; P1 23; A. 80
11	Oreochromis niloticus	Tilapi	Cichlidae	Cichliiformes	D XVI 12; A III 11; P 14; V I 5; C 16-22
12	Oreochromis mossambicus	Chilapi	Cichlidae	Cichliiformes	D. XV-XVI 10-12, P1. 14-15, P2. I 5 A. III 10-11
13	Ompak bimaculatus	Pabda	Siluridae	Siluriformes	D. 4; P1.12-15(1/11-14); P2. 8; A. 66-73
14	Wallago attu	Bhalu/Balu	Siluridae	Siluriformes	D. 5; P I 13-15; P2 7-9; A 74-93

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