

The Populations and Interactions of Different Fish Species of Karanja, Dist. Washim (M.S.) India

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ABSTRACT

The study was conducted to assess the ichthyofaunal (fish) diversity profile in Karanja, Washim District (M.S.), over a six-month period from June to November 2024. The population of the Cyprinidae family was found to be the most abundant and is commonly used for human consumption. Additionally, major carps, common carps, and catfishes were observed in satisfactory numbers. During this investigation, 24 fish species belonging to 6 orders and 9 families were recorded. The Cyprinidae family remained dominant, representing a successful example of fish conservation and sustainable management. However, area-specific conservation action plans are necessary to protect the threatened fish species in this region

Keywords: Cyprinidae Family, Ichthyodiversity, Threatened.

INTRODUCTION

Aquaculture has attained a specialized status globally, contributing significantly to food security and the provision of nutrient-dense diets. Fish serve as a primary source of animal protein and are deeply integrated into the socio-economic framework of South Asian nations. Natural aquatic systems provide stable evolutionary environments, making the study of biodiversity and its spatio-temporal distribution essential for understanding faunal variations and formulating effective conservation strategies (Paliwal et al., 2013).

India is recognized as one of the world's twelve mega-diversity nations, possessing a rich biological heritage. Its inland waters, including rivers, lakes, and ponds, host an expansive range of fish species. Of the approximately 24,600 known fish species—representing nearly half of all vertebrates—only 400 are of major commercial importance. However, at least 20% of global freshwater fish species are currently extinct or facing severe decline due to habitat degradation, resource mismanagement, and over-exploitation (Ramula & Benarjee, 2013).

In the Washim District, fisheries play a vital role in the local economy, with catches being sold in regional markets and neighboring states. Despite the potential for development in the Karanja (Lad) taluka, baseline data on ichthyofaunal diversity remains sparse. Genetic variations in local fish populations are currently threatened by unregulated fishing of juveniles, industrialization, urbanization, and the destruction of natural breeding habitats. Consequently, systematic surveys of various aquatic habitats are imperative to propose remedial measures for the sustainable development and conservation of fish resources in this region.

MATERIALS AND METHODS

The study area, Karanja (Lad) (20.48° N, 77.48° E), features diverse water bodies including ponds, lakes, tanks, and rivers used for local fishing. Fish specimens were collected over a six-month period from June to November 2024. Sampling was conducted using various nets with the assistance of local fishermen. To ensure accurate identification, specimens were photographed

immediately after collection and preserved in a 5–10% formalin solution, depending on specimen size. Large specimens were housed in specialized glass jars for long-term preservation. Identification was performed following established taxonomic procedures and keys by Day (1875, 1878) and Qureshi & Qureshi (1983). Diagnostic characters included color patterns, body spotting, fin structure, and mouth morphology.

RESULTS AND DISCUSSION

During the study period in the Karanja Tahsil area, a total of 24 fish species belonging to 06 orders and 09 families were recorded. The various fish varieties identified in the study area are detailed in **Table 1**, illustrating a rich profile of ichthyofaunal diversity. In comparison, Jaiswal & Ahirrao (2012) reported 28 fish species from 25 genera and 12 families across seven orders during their study of the Rangawali dam in the Nandurbar district.

Table 1 : Showing the Diversity of Fishes in Karanja Tahsil.

Order	Family	Species Name	Common Name	Local Name
Cypriniformes	Cyprinidae	<i>Catla catla</i> (Hamilton-Buchanan)	Catla	Catla
		<i>Labeo rohita</i> (Hamilton-Buchanan)	Rohu	Rohu
		<i>Labeo bata</i> (Hamilton-Buchanan)	Bata Labeo	Tembti
		<i>Labeo boga</i> (Hamilton-Buchanan)	Boga Labeo	Chankora
		<i>Labeo pangusia</i> (Hamilton-Buchanan)	Pangusia Labeo	Boharya
		<i>Cyprinus carpio</i> (Linnaeus)	Common carp	Cyprinus
		<i>Puntitus dorsalis</i> (Jerdon)	Long Snouted barb	Podshi
		<i>Puntitus chola</i> (Hamilton-Buchanan)	Swamp barb	Tepri
		<i>Puntitus ticto</i> (Hamilton-Buchanan)	Ticto barb	Tepdi
		<i>Tor khudree</i> (Sykes)	Yellow masheer	Temri
		<i>Gono praktopterus kolus</i> (Sykes)	Kolus	Kholsi
		<i>Osteobrama catio peninsularis</i> (Silas)	Penisular osteobrama	Kharpati
		<i>Hypothalmichthys molitrix</i> (Valenciennes)	Silver carp	Chandera
		<i>Salmostoma boopis</i> (Day)	Boopis razor	Chal/Udan
Perciformes	Chehlidae	<i>Lepidocephalus thermalis</i> (Valenciennes)	Malabar loach	Girgos
		<i>Thynrichthys sandkhol</i> (Sykes)	Sandkhol carp	Sandkoli
		<i>Tilapia mossambica</i> (Jhingran)	Tillapia	Talapia



		<i>Oreochromis mossambica</i> (peters)	Mozambique cichlid	Kombada
	Gobiidae	<i>Glossogobinus giuris</i> (Hamilton-Buchanan)	Tank goby	Dhangarya
Synbranchiformes	Mostacembelidae	<i>Macragnathus pancalus</i> (H & B)	Striped Spiny Eel	Bam
	Channidae	<i>Channa marulius</i> (H & B)	Giant Snakehead	Dokh
Siluriformes	Siluridae	<i>Ompok bimaculatus</i> (Bloch)	Indian butter catfish	Patola
Atheriniformes	Belonidae	<i>Xenentodon cancila</i> (H & B)	Fresh water gar fish	Chatarya
Osteoglossiformes	Notopteridae	<i>Notopterus notopterus</i> (Pallas)	Gray Feather back	Bhagad

The taxonomic distribution in the present investigation revealed that the family **Cyprinidae** was the most dominant, represented by 16 species. In contrast, families such as **Cichlidae**, **Gobiidae**, **Channidae**, and **Belonidae** were represented by only 01 species each. These findings can be compared to the work of Hiware & Pawar (2006), who recorded 07 species from 07 genera within the Cyprinidae family in the Solapur district of Maharashtra. Similar surveys of freshwater fish fauna have also been conducted by Ubharhande & Sonawane (2012) at the Paintakli dam in the Buldhana district.

Regarding population frequency, 16 out of the 24 species—including *Cyprinus carpio*, *Labeo rohita*, and *Labeo bata*—were classified as common, while the remaining 08 species were found moderately. Notably, *Notopterus notopterus* and *N. chitala* were identified as having a threatened status (IUCN, 1988). The study also recorded the presence of exotic fishes such as *Tilapia mossambica*, *Hypophthalmichthys molitrix*, and *Cyprinus carpio* (Jhingran, 1987). As noted by Paliwal et al. (2013), while the exotic *Tilapia mossambica* has not fully established itself, its increasing presence in catches may eventually impact the production of major carps. In conclusion, the observations made during the study period indicate that the diversity of the **Cyprinidae** family remains high. This provides an excellent baseline for establishing models of conservation and sustainable management for the fish and fisheries of this region.

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