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Comparative study of Fresh water Fish fauna in some lentic and lotic ecosystem in Yavatmal and Chandrapur District of Maharashtra State in India

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Abstract

Evidence on fish variety and its dispersal is vigorous for ecological consumption of the capitals and its preservation. Current work was undertaken to study fish fauna and to present a comprehensive report on the comparative of lentic and lotic ecosystem of Yavatmal and Chandrapur district. The investigation and credentials was carried out during the period of February, 2022 to January, 2024. A total number of, 44 fish fauna under 8 orders, 16 families and 32 genera were recorded from the different sites of lentic and lotic ecosystems in Yavatmal and Chandrapur district of Maharashtra State. The fish fauna in Yavatmal and Chandrapur district is rich in fish biodiversity but, it is facing anthropogenic pressure. Fishery is the furthermost imperative movement accepted in the Vidarbha district of Maharashtra. So far as the fisheries incomes of these ecosystems have been one of the utmost imperative water assets on which rural people depend for their livelihood. These ecosystems have been used to store water not only for agricultural use but also catching the fishes in various villages of Vidarbha. Newly, the inhabitants now shift ended to use their water forms for aquaculture to fulfil the daily need of hunger and family requirements. The water biomes of the flora and fauna are essential aquatic means which reside an enormous quantity of carefully vital faunas particularly fish fauna is a

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commercially significant basis of sustenance to mankind last ancient period. The fish fauna of some lentic and lotic ecosystem characterises the fish faunal variety existing in that water bodies, which differs from territory towards territory.

Key words : Fauna, reservoir, anthropogenic, ecosystems, diversity.

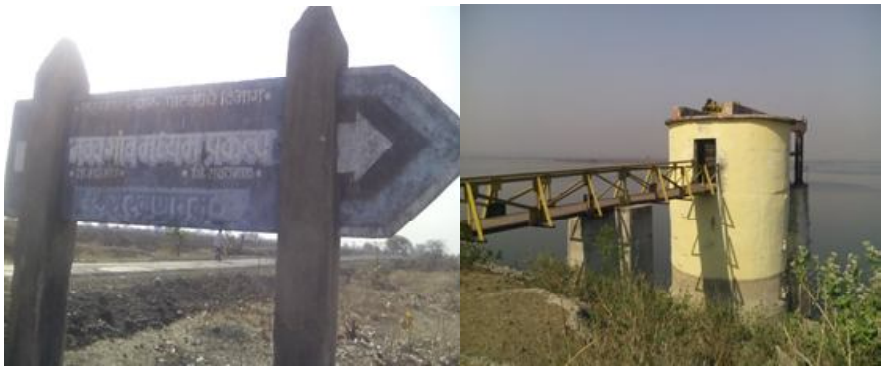
Diversity is crucial for equilibrium of ecology safeguard of generally eco-friendly value for appreciative fundamental rate of all sorts on the world. Lentic and lotic reservoirs from Vidarbha region which effectively subsidise the biotic variety of this region. The aquatic environment is main and it has huge quantity of carefully indispensable animals[17]. Fishes plays a significant role in struggling malnutrition and undernourishment. Fish is not only a basis of high-quality proteins and healthy fats but also a exclusive foundation of important nutrients, fatty acids, minerals, vitamins etc. At state level Maharashtra is rich in freshwater reservoirs and its fish diversity. Therefore, Maharashtra is one of the important states for fish[12]. Diversity of fish has been observed in various reservoirs in Chandrapur district of Maharashtra. Such as Naleshwar dam from Mul, Nawargaon Lake of Maregaon, Navegaon Dam of Wani, Irai river from Chandrapur etc. Therefore, the present investigation was undertaken to study fish diversity in Chandrapur and Yavatmal district reservoir in the months of Feb. 2023 to Jan. 2024. The impartial of the study was to measure the fish variety during this period along with which fish species majorly establish. From this we can study which fish species play a vital role in markets of pisciculture in Yavatmal and Chandrapur district and adjacent regions. The Vidarbha region is drained by the tributaries of Tapti River in the northern parts and rest by the Wainganga, Wardha and Penganga Rivers, which are tributaries of Pranhita sub basin under Godavari basin. The fish fauna of Vidarbha region is studied at few localities only at Wardha River basin, Pradhan[15], Pench National Park, Yadav[18], Melghat tiger reserve[19], Tabdoba National Park, [20] and Chandrapur district, Nagpur district and Akola district and Tadoba National Park[11]. There is no literature available on Wainganga River on which the Gosi Khurd dam is constructed. Heda[5] surveyed the River Kathani a tributary of Wainganga which lies more than 80Km south of Gosi Khurd dam and River Adan a tributary of River Painganga (Penganaga) in West Vidarbha region. The review of literature suggests that the River Godavari has not been surveyed extensively for its fish fauna and checklists for individual Rivers are not available[7]. The studies on Fish diversity in freshwater wetlands in India are made by Pawar et al.,[14], Kamble and Mudkhede[10]. Any alteration or disturbance of the wetlands can have adverse impact on the environment and fishery potential[13].

The present study is carried out during winter in the month of February, 2022 to January, 2024. In the year. Four sampling spots (collecting centres) were selected mainly viz. (Naleshwar dam from Mul, Nawargaon Lake of Maregaon, Navegaon Dam of Wani and Irai river from Chandrapur). Twice in a week the collecting centres were visited to study fish

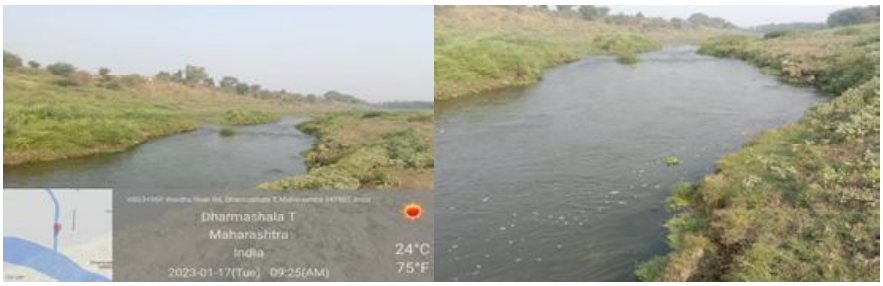
diversity during morning hours from 7 am to 10 am generally at weekends. Fishes were collected personally and with the help of local fishermen from the different Reservoirs from different collecting centres mentioned above. To take photographs, Nikon Coolpix P520 Point and Shoot Camera were used. Then the fishes were transferred to an ice box for further identification in the laboratory at the research centre. The fishes were identified and scientifically classified by referring to standard literature of Talwar and Jhingran[16], fish base database and Google like identification keys etc. Fishes are carried to research laboratory and well-maintained in 10% formalin solution in distinct sample jars. Minor fishes were straight sited in 10% formalin solution and big fishes were specified and cut in there belly and well-preserved. Fishes were recognized up to species level by means of standard keys and book[2,3,4,9].

In the present investigation, we have found 44 fish species recorded from the different sites of lentic and lotic ecosystems in Yavatmal and Chandrapur district of Maharashtra State. The Cyprinidae has the highest number of fish species (21) followed by Channidae (3), Bagridae (3), Siluridae, Schilbeidae, Ambassidae and Mastacembelidae were represented by two species each and 9 other families with one fish species each. were collected and observed during every visit from different collecting centres (Naleshwar dam from Mul, Nawargaon Lake of Maregaon, Navegaon Dam of Wani and Irai river from Chandrapur), with the help of fishermen. During the investigation, from order Cypriniformes in family Cyprinidae we have found 21 species such as *Catla catla*, *Cirrhina mrigala*, *Cyprinus carpio*, *Puntius sarana*, *Puntius ticto*, *Ctenopharyngodon idella Hypophthalmichthys nobilis*, *Hypophthalmichthys molitrix*, *Hypselobarbus kolus*, *Labeo rohita*, *Labeo boggut*, *Labeo calbasu*, *Osteobrama peninsularis*, *Osteobrama vigorsii, Puntius chola*, *Systomus sarana*, *Puntius sophore*, *Pethia ticto*, *Tor tor*, *Salmophasia balookee*, *Salmophasia boopis* etc. During the present investigation, from order Ophiocephaliformes in family Channidae, we have found 3 species such as *Channa marulius, Channa striatus* and *Channa gachua* respectively. During the present investigation, from order Osteoglossiformes in family Notopteridae , we have found 1 species such as *Notopterus notopterus* as well as from order Perciformes in family Centropomidae, Gobiidae, Cichlidae we have found 1 species each such as *Ambassis ranga, Glossogobius giuris* and *Tilapia mossambica* respectively. Similarly, we have found 2 species each from the order Perciformes in the family Mastacembelidae and Ambassidae, such as *Mastacembelus armatus, Macrognathus aral* and *Parambassis ranga, Chanda nama* respectively. However, in order Siluriformes includes 5 families such as Bagridae, found 3 species *Mystus seenghala, Mystus vittatus, Mystus cavasius,* and family Schilbeidae, Siluridae 2 species each *Eutropiichthys cf. goongwaree, Clupisoma bastari, and Ompok pabda, Wallago attu* respectively as well as 1 species each from the family Clariidae and Heteropneustidae such as *Clarias batrachus* and *Heteropneustes fossilis.* Similarly from order Gobiiformes, Cichliformes, Beloniformes in the family Gobiidae, Cichliadae and Belonidae we have found 1 species each such as *Glossogobius giuris, Oreochromis niloticus* and *Xenentodon cancila*.

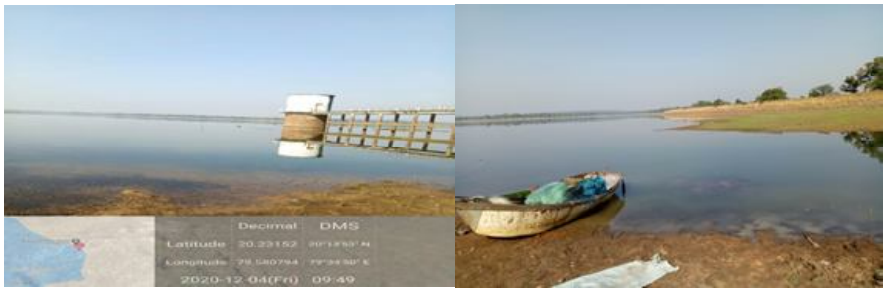
Photographs from different Study Sites during the period 2022-24



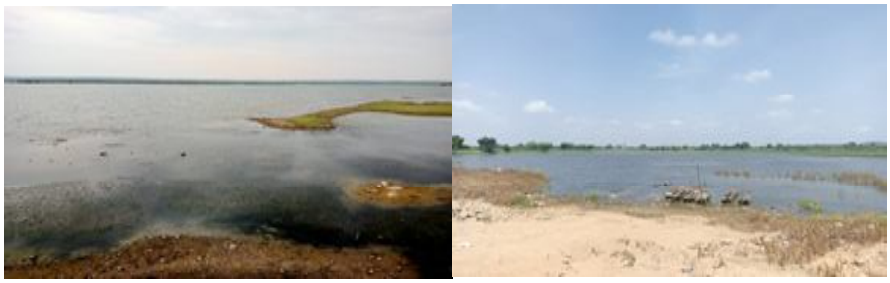
Nawargaon Lake, in Maregaon Taluka, Dist. Yavatmal.



Irai River in Chandrapur



Nalleshwar Dam in Mul, Dist. Chandrapur



Navegaon Dam in Wani Taluka, Dist. Yavatmal

Table-1. Fishes Observed during the period from Feb. 2022 to Jan.-2024

Sr. No.	Order	Family	Scientific name of fish
1	Cypriniformes	Cyprinidae	*Catla catla* (Hamilton,1822) *Cirrhina mrigala* (Hamilton,1822) *Cyprinus carpio* (Linnaeus,1758) *Puntius sarana* (Hamilton,1822) *Puntius ticto* (Menon,1974) *Ctenopharyngodon idella* (Valenciennes, 1844) *Hypophthalmichthys nobilis* (Richardson, 1845) *Hypophthalmichthys molitrix* (Valenciennes, 1844) *Hypselobarbus kolus* (Sykes, 1839) *Labeo rohita* (Hamilton,1822) *Labeo boggut* (Sykes, 1839) *Labeo calbasu* (Hamilton, 1822) *Osteobrama peninsularis* (Silas, 1952) *Osteobrama vigorsii* (Sykes, 1839) *Puntius chola* (Hamilton, 1822) *Systomus sarana* (Hamilton, 1822) *Puntius sophore* (Hamilton, 1822) *Pethia ticto* (Hamilton, 1822) *Tor tor* (Hamilton, 1822) *Salmophasia balookee* (Sykes, 1839) *Salmophasia boopis* (Day, 1874)
2	Ophioce-phaliformes	Channidae	*Channa marulius* (Hamilton,1822) *Channa striatus* (Bloch,1794) *Channa gachua* (Bloch & Schneider, 1801)
3	Osteoglo-ssiformes	Notopteridae	*Notopterus notopterus* (Pallas,1769)
4	Perciformes	Centropomidae Gobiidae Mastacem-belidae	*Ambassis ranga* (Day,1878) *Glossogobius giuris* (Koumans,1953) *Mastacembelus armatus* (Day,1878) *Macrognathus aral* (Bloch & Schneider, 1801)

		Cichlidae	*Tilapia mossambica* (Jones and Sarojini,1953)
		Ambassidae	*Parambassis ranga* (Hamilton, 1822)
			Chanda nama (Hamilton, 1822)
5	Siluriformes	Bagridae	*Mystus seenghala* (Sykes,1839)
			Mystus vittatus (Bloch, 1794)
			Mystus cavasius (Hamilton, 1822)
		Schilbeidae	*Eutropiichthys cf. goongwaree* (Sykes, 1839)
			Clupisoma bastari (Datta & Karmakar, 1980)
		Clariidae	*Clarias batrachus* (Linnaeus,1758)
		Heteropneustidae	*Heteropneustes fossilis* (Bloch,1794)
		Siluridae	*Ompok pabda* (Hamilton,1822)
			Wallago attu (Day,1878)
6	Gobiiformes	Gobiidae	*Glossogobius giuris* (Hamilton, 1822)
7	Cichliformes	Cichliadae	*Oreochromis niloticus* (Linnaeus, 1758)
8	Beloniformes	Belonidae	*Xenentodon cancila* (Hamilton, 1822)

The variety and richness of fishes in different reservoir denotes the appropriateness of water of Naleshwar dam from Mul, Nawargaon Lake of Maregaon, Navegaon Dam of Wani and Irai River from Chandrapur reservoir for aquaculture practices. To maintain the productivity of aquatic ecosystems non-stop observing of reservoirs is needed. The present study states that the, Naleshwar dam from Mul, Nawargaon Lake of Maregaon, Navegaon Dam of Wani and Irai river from Chandrapur reservoir hosts a number of freshwater fish species. From 4 main collecting centres such as Naleshwar dam from Mul, Nawargaon Lake of Maregaon, Navegaon Dam of Wani and Irai River from Chandrapur, the fishes are extracted in huge amounts in tons. It is to conclude that, the Naleshwar dam from Mul, Nawargaon Lake of Maregaon, Navegaon Dam of Wani and Irai River from Chandrapur is rich in fish diversity but, is facing anthropogenic burden. It ports a number of freshwater fish species as well as worldwide susceptible fish species. The native fish fauna which cares the occupation of indigenous casting public has to be sustainably spent by suitable development, preservation and local responsiveness on effects of overview of exotics, growth overfishing is needed. Investigation of fish diversity is significant for improvement of ecological fishery put into practise and appropriate records leading to diversity statistics classification is a crucial necessity.

We are greatful to the fishermen of Naleshwar dam from Mul, Nawargaon Lake of Maregaon, Navegaon Dam of Wani and Irai River from Chandrapur for their co-operation, support and healthy discussions

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