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FISH DIVERSITY OF NARMADA RIVER AT JABALPUR, MADHYA PRADESH

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Abstract: The fish community of the Narmada River at Jabalpur region was studied by monthly sample taken from Nov. 2014 to Oct. 2015. Narmada River is the largest Westward flowing river of India. It is also referred as the life line of Madhya Pradesh. Present study was aimed to generate information on the fishes of Jabalpur region of river Narmada. 49 fish species identified during the study period belong to Cyprinidae 24 Species of fishes followed by Bagridae 4 species, Siluridae and Ophiocephalidae with 3 species, Claridae, Notopteridae and Mastacembellidae with 2 species and Schielbeidae, Clupeidae, Belonidae, Centropomidae, Nandidae, Gobioidae and Anabantidae with 1 species of fish in each family.

Keywords: Fish diversity, River, Narmada.



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INTRODUCTION

Study of biodiversity of fish fauna and their identification is one of the interesting field of biological research, which gives us an idea about the morphological variations and population diversity of fauna in polluted and non polluted site of any particular habitat (**Mukesh kumar Napit 2013**). Rich biodiversity of any ecosystem is absolutely essential in order to maintain their stability for proper function of their food chains (**Siddiqui et,al. 2014**). The Narmada is a river in Central India and fifth largest river in subcontinent. It forms the traditional boundary between

North India and South India. Narmada “the backbone of Madhya Pradesh” is the largest westward flowing river of India. It is also referred as ‘lifeline of Madhya Pradesh’. It is considered holy by Hindus. It originates from Maikal Hill, Amarkantak in Shahdol district of Madhya Pradesh. It is situated at longitude 72 32’ and 81 45’E and latitude 21 20’ and 23 45’N. Total length of River Narmada is 1312 km which after traveling through three states namely Madhya Pradesh, Maharashtra and Gujarat for a distance of 1,077 km, 74 km and 161 km, respectively joins the Gulf of Cambay, near the District of Bharuch, Gujarat. (**Pathak T. et,al. 2014**). Fishes are the important element in the economy of many nations as they have been a staple in the diet of many people (**Shukla Pallavi et,al. 2013**). Ichthyofaunal documentation is important to analyze status of fish species and also helps us for future planning to improve and conserve the biodiversity (**Bose A.K. et, al. 2013**). Present study is based on the fish diversity of Narmada river at Jabalpur.

MATERIAL AND METHOD

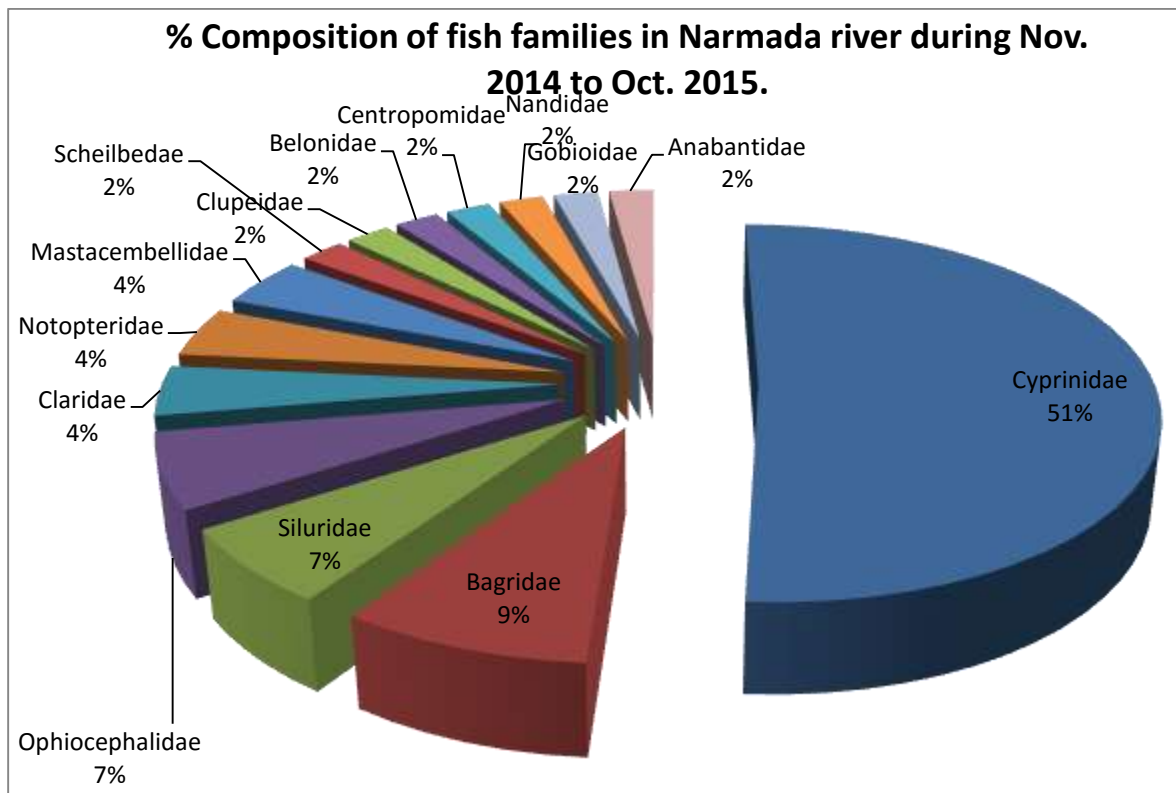
Present study conducted in selected sites of Narmada river at Jabalpur. Jabalpur is located at 23°10’N 79°57’E / 23.17°N 79.95°E. The central point of India is located in Jabalpur district. River Narmada is by far the most significant water resources of the state of Madhya Pradesh. The River is the most important ecological hub for aquatic biodiversity in central India and has therefore been the epicenter of the biodiversity studies. 4 sites were selected from Narmada river at Jabalpur district i.e. Jilehri ghat, Kali ghat, Tilwara ghat and Lamheta ghat. The study has been carried out over a period of Nov. 2014 to Oct. 2015. The sampling was carried out seasonally covering pre-monsoon, monsoon, post-monsoon and winter season. Experimental fishing was carried out with the help of local fishers. After obtaining the fish from the site photographs were taken. The specimens were taken to the laboratory for identification. Morphometric measurements were taken and meristic characters were observed and the fin formula was completed. The fish samples were preserved in 5-10% formalin according to the size of the fishes. Smaller fishes were directly placed in the formalin solution, while larger fishes were given an incision on the abdomen before they were fixed. Plastic jar were used for the collection and preservation. Fishes were labeled based on the serial number, common name,

scientific name, locality and date of collection. Fishes were identified with the help of taxonomic key, **Days fauna (1994)** and **Talwar and Jhingran 1991**. Fish Base website was also referred for various aspects of fish fauna (www.fishbase.org). Specific identifying characters on the body was observed and noted.

RESULTS AND DISCUSSION

A total 49 species of fishes recorded from selected sites of Narmada river at Jabalpur belonging to 7 orders and 14 families. Among species, family Cyprinidae was the most dominant with 24 species and the percentage composition is 51% of fishes followed by Bagridae 9% with 4 species, Siluridae and Ophiocephalidae 7% with 3 species, Claridae, Notopteridae and Mastacembellidae 4% with 2 species and Schielbeidae, Clupeidae, Belonidae, Centropomidae, Nandidae, Gobioidae and Anabantidae represented with single species of fish in each family with 2% of each. The species diversity peak in post monsoon, coinciding with favourable conditions such as sufficient water and ample food resources. The diversity was low in pre monsoon probably due to the shrinkage of water. Information collected from fisherman communities displayed high decline of fish diversity. Deforestation, water scarcity, pollution, introduction of exotic species, sand mining and excessive fishing are the biggest threats to fish population.

Various workers have done work on Narmada river. **Vishwakarma et,al. (2014)**, recorded 33 fish species belonging to 5 orders, 9 families and 21 genera. **Kumar et,al. (2014)** studied the fish species diversity of river Narmada In Khedighat, Warwaha, Madhya Pradesh, and recorded 21 species of fish belonging to 4 orders and 6 families. Family cypriniformes were dominated with 15 species of fish. **Pathak et,al. (2014)** recorded 58 species of fish from western region of Narmada river at Jabalpur. **Vyas et,al. (2013)** recorded 27 species of fish from Jamner river, a tributary of Narmada river. **Siddiqui et,al.(2014)** work done on Biodiversity of Ichthyofauna of Narmada river of Mandleshwar region, Madhya Pradesh, India and recorded 48 species of fish belonging to 7 orders and 17 families. **Bose at,al. (2013)** recorded 57 species, belonging to 35 genera , 13 families, and 6 orders from middle stretch of river Tawa. **Bakawale et, al. (2013)** worked on the fish Species diversity of the River Narmada in western zone, and recorded total 51 species of fish belonging to 7 orders and 15 families. In the present study 49 fish species, belonging to 7 orders and 14 families were recorded. Present investigation revealed that, Narmada river is a healthy water body providing a habitat for freshwater fishes of diverse type. However, there is constant threat to fish population due to eutrophication and illegal fishing activities. The illegal fishing activities should be banned to prevent depletion of fresh water fish resources and further studies should be conducted to generate more details regarding seasonal production and ecology of fishes. In situ conservation is one of the several prominent and suggestive measures for the conservation of fish biodiversity.



Cyprinidae (51%) > Bagridae (9%) > Siluridae(7%) > Ophiocephalidae(7%) > Claridae (4%) > Notopteridae (4%) > Mastacembelidae(4%) > Scheilbedae (2%) ,Clupiedae (2%), Belonidae (2%),Centropomidae (2%), Nandidae (2%), Gobioidae (2%), Anabantidae (2%).

Table 1 : List of fish species from Narmada river

ORDER	FAMILY	SPECIES
1	Cypriniformes	Cyprinidae
2		Labeo rohita
3		Catla catla
4		Aspidoparia jaya
5		Cirrihinus cirrihosa
6		Cirrihinus reba
7		Crossochelius latius
8		Discognathus lamta
9		Labeo calbasu
10		Labeo fimbriatus
11		Labeo bata
12		Labeo gonius
13		Nemacheilus botia
14		Oreichthys cosuatis
15		Osteobrama cotio

15			Puntius chola
16			Puntius sarana
17			Puntius sophore
18			Tor putitora
19			Tor tor
20			Ctenopharygdon idella
21			Hypothalmichthys molitrix
22			Cyprinus carpio
23			Oxygaster bacaila
24			Puntius ticto
25	Siluriformes	Claridae	Clarius batrachus
26			Heteropneustes fossilis
27		Siluridae	Ompok bimaculatus
28			Ompok pabo
29			Wallago attu
30		Bagridae	Mystus bleekeri
31			Mystus seenghala
32			Mystus cavasius
33			Mystus aor
34			Rita rita
35			Rita pavementata
36		Schielbeidae	Clupisoma garua
37	Clupiformes	Clupeidae	Gudusia chapra
38		Notopteridae	Notopterus notopterus
39			Notopterus chitala
40	Beloniformes	Belonidae	Xenentodon cancila
41	Perciformes	Centropomidae	Chanda nama
42		Nandidae	Nandus nandus
43		Gobioidae	Glossogobius giuris
44		Anabantidae	Anabas testudinus
45	Ophiocephaliformes	Ophiocephalidae	Channa marulius
46			Channa punctatus
47			Channa striatus
48	Mastacembeliformes	Mastacembelidae	Mastacembelus armatus
49			Mastacembelus pancalus

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