

ICHTHYOFAUNA OF WESTERN REGION OF NARMADA RIVER, MADHYA PRADESH

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ABSTRACT

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 ichthyofauna of Western region of the river Narmada. During the study period, 58 fish species have been identified belonging to 38 genera, 16 families and 6 orders. The fishes caught are divided into commercially important species like *Labeo rohita*, *Catla catla*, *Cirrhinus mrigala*; locally important species like *Tor spp.*, *Channa spp.*, *Mystus spp.* etc. and ornamental fishes like *Nandus nandus*, *Nemacheilus botia*, *Salmostoma bacaila*, *Colisa fasciatus* etc. *Tor tor* and *Chitala chitala*, once abundant in the river, now are registered under endangered condition. Varying distribution patterns of different species of fisher have been observed at various segments of the river. Therefore, the present study indicates towards the necessity of the study of fish diversity for conservation and management of fish germplasm.

KEYWORDS: Biodiversity, Germplasm, Ichthyofauna, Conservation, Ornamental

INTRODUCTION

Species diversity is a property of the population level while the functional diversity concept is more strongly related to ecosystem stability and stresses, physical and chemical factors for determining population dynamic in the lentic ecosystem (Kar and Barbhuiya, 2004). Looking into species diversity, among all the classes, Pisces are probably diverse class at all taxonomic level and have the maximum species which is equal to the other entire vertebrate combine together. In all types of water, fish population appears to fluctuate in abundance and in species composition from year to year (Starrett, 1951).

Altogether nearly 43,000 species of vertebrates are recognized worldwide, of which 22,000 are fish species. In India 2,163 species of finfish have been recorded from upland coldwater (157; 7.26%), warm water of the plain (454; 20.99%), brackish water (182; 8.41%) and marine environment (1,370; 63.34%), (Source: Annual report NBFGR, 2003-2004).

The Narmada is a river of Central India in Indian 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 Broach, Gujarat. It is one of the only two major rivers, in peninsular India that run from east to west, along with

the Tapti River. The River Narmada is fed by 41 major tributaries during its course, 22 from South bank (21 in Madhya Pradesh and 1 in Gujarat) and rest of North bank. The total catchments of river Narmada is about 94,235 km². Some work has been carried out by Hora and Nair (1941), Karamchandani *et al.* (1967), Govt. of M.P. Survey Report (1971), Rao *et al.* (1991) on Finfish diversity of river Narmada but the Western part of this river remained unexplored. Moreover, due to increasing anthropogenic activities, the ecology of river Narmada has changed drastically. Around 3,200 small, medium and large dams have already been built along the length of the river. The present study was undertaken to generate information on the species diversity of fish fauna of the portion.

MATERIALS AND METHODS

The present study was conducted in the Western segment of Narmada River which covers four districts i.e. Barwani, Dhar, Khargone and Khandwa of Madhya Pradesh in a stretched of about 125 km. Seven collection sites were fixed from above mentioned districts which are Omkareshwar in Khandwa district, Mandleshwar and Maheshwar in khargone district, Kapileshwar ghat or Loharaghat in Barwani district and the Khalghat, Chikhalda and Koteswar ghats in Dhar district. Sampling was always done early in the morning, at fortnight intervals from July 2012 to June 2013 with the help of local fishermen. For capturing fishes, fishermen used gill nets, cast nets, hook and line and some other local nets of different mesh sizes. These nets are operated with or without fishing crafts. Fish samples collected were preserved in 5-10% formalin depending on the size of fish. Fishes were identified by following the keys given by Qureshi and Qureshi (1983), Talwar and Jhingran (1991), Jayaram (1991), Srivastava (2007) etc.

RESULTS AND DISCUSSIONS

As an outcome of the present study, in all 58 fish species were collected and identified from Western segment of River Narmada (M.P.) which belongs to 38 genera, 16 families and 6 orders.

Table 1: The Ichthyofauna of Western Segment of River Narmada (M.P.) is Listed below

Order	Family	Species	Local Name
Osteoglossiformes	Notopteridae	<i>Notopterus notopterus</i>	Patola
		<i>Salmostoma bacaila</i>	Chal
Cypriniformes	Cyprinidae	<i>Chela labuca</i>	Chal
		<i>Danio devario</i>	
		<i>Rasbora daniconius</i>	
		<i>Rasbora rasbora</i>	
		<i>Amblypharyngodon mola</i>	
		<i>Cyprinus carpio communis</i>	Common carp
		<i>Tor tor</i>	Badas
		<i>Tor paitora</i>	Badas
		<i>Osteobrama cotio</i>	Moila /Kotri
		<i>Oreochthys cosuatis</i>	
		<i>Puntius sarana</i>	Dhodhra
		<i>Puntius chola</i>	Dhodhra
		<i>Puntius sophore</i>	Dhodhra
		<i>Puntius ticto</i>	Dhodhra
		<i>Cirrhinus mrigala</i>	Naren
		<i>Cirrhinus reba</i>	Reba / Naren
		<i>Catla catla</i>	Catla
		<i>Labeo rohita</i>	Rohu
		<i>Labeo bata</i>	Bata
		<i>Labeo fimbriatus</i>	Dumber
		<i>Labeo calbasu</i>	Kalvat /Kalot
		<i>Labeo gonius</i>	Mohni
		<i>Labeo dero</i>	Goli
		<i>Crossocheilus latius</i>	
		<i>Garra gotyla</i>	Patharchatta
		<i>Garra lamta</i>	Patharchatta
		<i>Nemacheilus botia</i>	Gurguch
		Cobitidae	<i>Botia dario</i>
	<i>Lepidocephalus guntea</i>		

Table 1: Contd.,

Siluriformes	Bagridae	<i>Rita rita</i>	Gegra
		<i>Rita pavementata</i>	Gegra
		<i>Mystus bleekeri</i>	Katera
		<i>Mystus cavasius</i>	
		<i>Mystus vittatus</i>	
	Siluridae	<i>Aorichthys seenghala</i>	Singharh
		<i>Aorichthys aor</i>	Tengra
		<i>Ompok bimaculatus</i>	Gangol
	Schilbeidae	<i>Ompok pabda</i>	Gangol
		<i>Wallago attu</i>	Padhin
<i>Clupisoma garua</i>		Bekdi	
<i>Sisoridae</i>		<i>Glyptothorax telchitta</i>	
Clariidae	<i>Clarias batrachus</i>	Magur	
	<i>Xenentodon cancila</i>	Sapalsuva/Suva	
Beloniformes	Mastacembelidae	<i>Macragnathus pancalus</i>	Bam
		<i>Mastacembelus armatus</i>	Bam
Perciformes	Chandidae	<i>Chanda nama</i>	
		<i>Chanda ranga</i>	
	Nandidae	<i>Badis badis</i>	
		<i>Nandus nandus</i>	Soidy/Suarfish
	Gobiidae	<i>Glossogobius giuris</i>	Upridola
	Anabantidae	<i>Anabas testudineus</i>	
	Belontiidae	<i>Colisa fasciatus</i>	
		<i>Channa gachua</i>	Doke
	Channidae	<i>Channa marulius</i>	Doke
		<i>Channa punctatus</i>	Doke
<i>Channa striatus</i>		Doke	

Table 2: Family Wise Fish Species Composition

S. No	Family	No. of Fish Species	Species Composition (%)
1	Notopteridae	1	1.7
2	Cyprinidae	27	46.8
3	Cobitidae	3	5.2
4	Bagridae	7	12.1
5	Siluridae	3	5.2
6	Schilbeidae	1	1.7
7	Sisoridae	1	1.7
8	Clariidae	1	1.7
9	Belonidae	1	1.7
10	Mastacembelidae	2	3.4
11	Chandidae	2	3.4
12	Nandidae	2	3.4
13	Gobiidae	1	1.7
14	Anabantidae	1	1.7
15	Belontiidae	1	1.7
16	Channidae	4	6.9

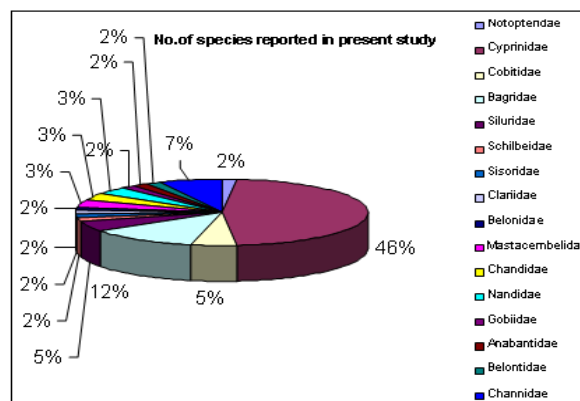


Figure 1: Family Wise Fish Species Composition

Rao *et al.* (1991) reported 84 fish species from their study area from Punasa to Barwani. In present survey 58 fish species are recorded from Western segment of the river. The declined in the number of fish species may be due to various reasons. Singh (1995) observed declined number of *Hilsa ilisha* coming into the river due to construction of Sardar

Sarovar Dam which has changed the ecology of entire stretch of this river. The dam become a barrier for migration of this fish which make them unable to reach their breeding, nursery and feeding ground.

The introduction of some exotic fishes like *Cyprinus carpio* may affect native species because they compete for food and space and may cause infection or some time mate with the native species.

CONCLUSIONS

On the basis of present investigation, the fishes are divided into commercially important species (*Labeo rohita*, *Catla catla*, *Cirrhinus mrigala*, *Cyprinus carpio communis*, *Labeo calbasu*, *Aorichthys seenghala*, *Aorichthys oar*, *Wallago attu*, *Channa marulius* etc.), locally important species (*Tor* spp., *Chanda* spp., *Puntius* spp., *Macrognathus armatus* etc.) and fishes having ornamental value like *Nandus nandus*, *Nemacheilus botia*, *Chela laubuca*, *Glossogobius giuris*, *Colisa fasciatus* and *Badis badis* etc.

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