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Diversity of freshwater fish in Narmada River, Madhya Pradesh

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Abstract

Freshwater fishes are the most threatened group of vertebrates on earth after amphibians and the global extinction rate of fishes is believed to be more than higher vertebrates. The major forces behind the loss of biodiversity in freshwater are habitat degradation and fragmentation, increased sedimentation, exotic species introduction, water abstraction, over-harvesting, pollution, and global climate change impacts. The diversity of Freshwater fish in the River Narmada and its tributaries in the central state of Madhya Pradesh has been reviewed. A total of 176 species from fresh water habitats out of which 13 orders, 46 families, 107 genera, and 176 species. The order Cypriniformes represented the highest diversity with 79 species followed by Perciformes (35 species), Siluriformes (32 species), Clupeiformes (11 species), etc. This review presents up-to-date information on freshwater fish diversity of the River Narmada. Freshwater fish diversity information could also provide a baseline for future more complex ecological studies, and planning the conservation and sustainable use of inshore inland water resources.

Keywords: Freshwater diversity, Major issues, River Narmada

Introduction

All over India, freshwater fish diversity is on a decline. There is an increasing concern worldwide for the loss of aquatic ecosystems and associated biodiversity^[1], particularly for riverine landscapes^[2]. To save this freshwater fish diversity and to develop a sustainable fishery practice in the country proper documentation leading to Freshwater Fish Diversity Information System is an urgent need because Fisheries play an instrumental role in the socio-economic development of the country, as it is a valuable source of livelihood for a huge section of economically backward population, gainful employment, alternate income and stimulates the growth of new subsidiary industries.

Fish constitute almost half of the total number of vertebrates in the world 21,723 living species of fish out of 39,900 species of vertebrates Ichthyofaunal diversity display 8,411 are freshwater species and 11,650 are marine, which falls under 4044 genera, 445 families and 50 orders are so far recorded^[3].

India (08°04-37°06 N and 68°07-97°25'), is one of the 12-mega biodiversity countries in the world having two biodiversity hotspots, namely the Western Ghats and the Eastern Himalayas. India occupies the ninth position in having the largest and richest biodiversity. India has diverse water resources such as streams, rivers, reservoirs, sub-terrain aquatic ecosystems, irrigation canals, traditional lakes and domestic ponds that harbor a wide variety of freshwater fishes. The country is endowed with vast and varied resources possessing river ecological heritage and rich biodiversity.

The Indian fish fauna is an assemblage of about 2,500 species of fishes, of which 930 freshwater and 1,570 marines are estimated. There are about 450 families of freshwater fishes are present globally and roughly 40 are represented in India (warm freshwater species). About 25 of these families contain commercially important species. A number of endemic species in warm water is about 544. On the global scale, Indian fish represents 11% of species, 24% of genera, and 57% of families^[4]. The Indian fish fauna is divided into two classes, viz., Chondrichthyes (cartilage fishes) and Osteichthyes (bony fishes). The Chondrichthyes are represented by 131 species under 67 genera, 28 families and 10 Orders in the Indian region. The Indian Osteichthyes are represented by 2,415 species belonging to 902 genera, 226 families and 30 orders^[5].

Freshwater fishery sites are varied like 45,000 Km. of rivers, 1, 26,334 Km. of canals, ponds and tanks 2.36 million hectares and 2.05 million hectares of reservoirs^[6].

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The assessment of fresh water fishes is done mainly on the basis of 6 drainage systems in the country. These are the Indus river system, Upland cold-water bodies, Gangetic river system, Brahmaputra river system, east flowing river system and West flowing river system.

The state of Madhya Pradesh is the central state of India & one of the important aquatic biodiversity hotspots of the country, having bestowed with a large number of water bodies both lotic and lentic, the state boasts of rich fish biodiversity. The State of Madhya Pradesh with six major river basins, viz., Ganga, Narmada, Tapti, Mahanadi, Mahi and Godavari is one of the finest watersheds in the country. The richness of fish species has attracted the attention of eminent researchers and the state has a good contribution in enriching the data bank on the aquatic biodiversity of the nation. The total length of rivers, including the tributaries, rivulets and streams, has been estimated at 12,000 km, which accounts for more than 40% of the total length of rivers in India (29,000 km). Barring the fertile valleys of Narmada and Tapti, Madhya Pradesh is mainly a plateau, intercepted with mountains of the Vindhya and Satpura ranges, which makes the state highly diverse in terms of natural resources, including its aquatic biodiversity. In addition to various river systems, Madhya Pradesh also has a sizeable area under man-made reservoirs. The data generated at CIFRI, through remote sensing images, indicates the availability at 3.38 lakh hectare of total water area in Madhya Pradesh and reservoirs (small, medium and large) the area is estimated to be around 2.70 lakh hectare.

Materials and Methods

The Narmada River is the fifth largest river in India. River Narmada is considered as the ‘‘Lifeline’’ for the millions of people of Central India. The Narmada River is the longest westwardly flowing river of the country and total length of 1,312 kilometers flowing between the famous Vindhya and Satpura ranges that originates from Maikala highlands near Amarkantak under Shahdol district of Madhya Pradesh and culminates into the Arabian Sea in the Bharuch district of Gujarat. This is one of the rivers in peninsular India that run from east to west along with river Tapi and Mahi and flows to the states of Madhya Pradesh (1077 km), Maharashtra (74 km), and Gujarat (161 km). Barna, Dudhi, Tawa, Ganjal, Kolar, Sip and Jamner are the major tributaries of the river Narmada. The Narmada river extends over an area of 98,796 Square kilometers and lies between eastern (longitudes 72°32' to 81°45') and northern (latitudes 21°20' to 23°45').

Result and Discussion

Freshwater fish diversity of Narmada River in Madhya Pradesh

Several works being carried out on freshwater fish diversity patterns in river Narmada and its tributaries by various researchers. This review is based on the documents collected from websites; published papers in journals, textbooks, and reports. The species checklists reported in Tables 1 include reports from 1941 to 2018. While reporting the freshwater fish species in this review we checked the taxonomic classification of the species based on Talwar and Jhingran^[7], Nelson^[8], and FishBase (Froese and Pauly)^[9]. The updated checklist of the diversity of Freshwater fish in river Narmada and its tributaries in central state of Madhya Pradesh has been reviewed A total of 176 species from fresh water habitats out of which 13 orders, 46 families, 107

genera, and 176 species. The order Cypriniformes represented the highest diversity with 79 species followed by Perciformes (35 species), Siluriformes (32 species), Clupeiformes (11 species), etc.

Some of the earliest studies on the aquatic biodiversity of the state were carried out by Hora and Nair^[10] along the hill stream of Satpura ranges. Dubey and Verma^[11] studied the fish fauna of Madhya Pradesh with the representative of east coast system (River Mahanadi), Gangetic system (Chambal and Betwa) and of West Coast (Narmada) system. In their study of fish fauna of Madhya Pradesh they have reported 104 species and 22 families out of which 50% belonging to family cyprinidae. Karamchandani *et al.*^[12] also surveyed the fish and fisheries of Tapti River and reported 52 species belonging to 14 families. The study of fish fauna of The narmada River was made by fisheries department of Madhya Pradesh during 1967-1971 (Anon)^[13] and 46 species belonging to 14 families were recorded. Rao *et al.*^[14] surveyed Punasa, Omkareshwar, Mandleshwar and Barwani pertaining to the Narmada River and enlisted 84 fish species. Nath and Shrivastava^[15] reported a declining trend of carp fisheries of Narmada River in the context of the construction of a dam on the river and tributaries. Arya *et al.*^[16] studied biodiversity and fisheries potential of Narmada basin with special reference to fish conservation and divided fish species of Narmada into five categories of which four categories containing 17 species might be adversely affected by dam whereas one category containing fishes comprising 25 species were likely to be increased in the reservoir. Dubey^[17] studied the fish biodiversity of River Narmada in relation to its physical, chemical and economic aspects. Vyas *et al.*^[18] observed a total of 47 fish species. Sharma^[19] examined the freshwater fish fauna of Madhya Pradesh in detail taxonomy regarding their latest scientific names, latest reference, fin formula and diagnostic characters. The fish fauna included 172 species belonging to 68 genera, 27 families and 10 orders. Dubey^[20] reviewed the fish fauna of Madhya Pradesh (1956-2001) and reported 191 species. Vyas *et al.*^[21] reported the use of different fishing gears in River Narmada. Dutta and Kundu^[22] observed the alarming declining of mahaseer (*Tor tor*) population in Narmada River around Hoshangabad (M.P.). Vyas *et al.*^[23] worked on Ganjal River which joins Narmada River near the backwaters of Indira Sagar. Vyas *et al.*^[24] recently studied the aquatic biodiversity of ponds and Rivers of Madhya Pradesh and reported the presence of 86 fish species in different River basins of Madhya Pradesh. Vyas and Vishwakarma^[25] more recently worked on Sip a tributary, which joins Narmada River near the backwaters of Indira Sagar reservoir. Meenakshi *et al.*^[26] recorded a total of 59 fish species representing 34 genera, 7 orders and 17 families along with the Omkareshwar Region in Khandwa District, Madhya Pradesh. Sharma *et al.*^[27] could find 50 fish species belonging to 32 genera, 14 families, and 6 orders from the Hoshangabad region of river Narmada. Saini and dube^[28] carried out a study on fish diversity; they reported a total of 29 fish species belonging to the orders Cypriniformes, Beloniformes, Ophiocephaliformes, Perciformes and Siluriformes. Out of these Cypriniformes is the most dominant group with recorded 22 species of fishes along the Narmada river of Lamhetaghat and Bhedaghat region, Jabalpur. Shah *et al.*^[29] reported a total of 37 fish species along the Shahganj, Bandrabhan (Sangam), Budhni Ghat, Moukala, Holipur; M.P. Recently Bhakta *et al.*^[30]

documented a total of 85 finfish species from the 72 km estuarine zone of Narmada river from Bharuch to Ambetha. The freshwater fish documentation and information for Narmada river systems indicated that the narmada river is very rich in fish biodiversity. The systems also support many vulnerable and endangered species, so proper management strategies need to be formulated to save this freshwater fish

diversity and to develop a sustainable fishery practice in the country proper documentation leading to Freshwater Fish Diversity Information System is an urgent need. It is not only necessary to save freshwater resources but save the whole aquatic environment including fishes and other aquatic organisms to keep the ecosystem undisturbed as far as possible.

Table 1: List of fish species of Narmada river in Madhya Pradesh

Family	Genus	Species	Common name
Phyla- Chordata			
Order- Cypriniformes			
Cyprinidae	<i>Catla</i>	<i>catla</i> (Hamilton, 1822)	Catla
	<i>Labeo</i>	<i>bata</i> (Hamilton, 1822)	Bata
		<i>calbasu</i> (Hamilton, 1822)	Orange fin labeo
		<i>rohita</i> (Hamilton, 1822)	Roho labeo
		<i>gonius</i> (Hamilton, 1822)	Kuria labeo
		<i>angra</i> (Hamilton, 1822)	Mochhna
		<i>boga</i> (Hamilton, 1822)	Boga labeo
		<i>boggut</i> (Sykes, 1839)	Boggut labeo
		<i>Dussumieri</i> (Valenciennes, 1842)	-
		<i>Dyocheilus</i> (McClelland, 1839)	Dyocheilus labeo
		<i>fimbriatus</i> (Bloch, 1795)	Fringed-lipped peninsula carp
	<i>pangusia</i> (Hamilton, 1822)	Pangusia labeo	
		<i>Cirrhinus</i>	<i>cirrhusus</i> (Bloch, 1795)
<i>mrigala</i> (Hamilton, 1822)			Mrigal
<i>reba</i> (Hamilton, 1822)			Reba carp
<i>fulungee</i> (Sykes, 1839)			Deccan white carp
<i>Puntius</i>		<i>sarana</i> (Hamilton, 1822)	Olive barb
		<i>sophore</i> (Hamilton, 1822)	Pool barb
		<i>dorsalis</i> (Jerdon, 1849)	Long snouted barb
		<i>ambasis</i> (Day, 1869)	Ray finned fish
		<i>amphibious</i> (Valenciennes, 1842)	ScarletbandedBarb
		<i>pinnauratus</i> (Day, 1865)	-
		<i>chola</i> (Hamilton, 1822)	Swamp barb
		<i>neilli</i> (Day, 1865)	-
		<i>Barilius</i>	<i>bendelisis</i> (Hamilton, 1807)
<i>barila</i> (Hamilton, 1822)	Barali		
<i>evezardi</i> (Day, 1872)	-		
<i>radiolatus</i> (Gu'nther, 1868)	Gunther's baril		
<i>vagra</i> (Hamilton, 1822)	Korang		
<i>Cyprinus</i>	<i>carpio</i> (Linnaeus, 1758)	Common carp	
<i>Hypophthalmichthys</i>	<i>molitrix</i> (Valenciennes, 1844)	Silver carp	
	<i>nobilis</i> (Richardson, 1845)	Bighead carp	
	<i>Ctenopharyngodon</i>	<i>Idella</i> (Valenciennes, 1844)	Grass carp
	<i>Tor</i>	<i>Tor</i> (Hamilton, 1822)	Tor barb/Kajra
		<i>khudree</i> (Sykes, 1839)	Deccan mahseer
		<i>putitora</i> (Hamilton, 1822)	Putitor mahseer
	<i>Oxygaster</i>	<i>Bacaila</i> (Hamilton, 1822)	Large razorbelly minnow
		<i>gora</i> (Hamilton, 1822)	Chela gora
	<i>Rasbora</i>	<i>daniconius</i> (Hamilton, 1822)	Slender rasbora
		<i>rasbora</i> (Hamilton, 1822)	Gangetic scissortail rasbora
	<i>Danio</i>	<i>devario</i> (Hamilton, 1822)	Sind danio
		<i>rerio</i> (Hamilton, 1822)	Zebra danio
	<i>Crossocheilus</i>	<i>latius</i> (Hamilton, 1822)	Stone roller
	<i>Garra</i>	<i>mullya</i> (Sykes, 1839)	Sucker fish
		<i>Gotyala</i>	-
		<i>lamta</i> (Hamilton, 1822)	Sucker head
	<i>Amblypharyngodon</i>	<i>mola</i> (Hamilton, 1822)	Mola carplet
		<i>microlepis</i> (Bleeker, 1853)	Indian carplet
	<i>Aspidoparia</i>	<i>jaya</i> (Hamilton, 1822)	-
	<i>Bangana</i>	<i>dero</i> (Hamilton, 1822)	Kalabans
	<i>Cabdio</i>	<i>morar</i> (Hamilton, 1822)	Morari
	<i>Chagunius</i>	<i>chagunio</i> (Hamilton, 1822)	Keintah putti
	<i>Chela</i>	<i>laubuca</i> (Hamilton, 1822)	Indian glass barb
		<i>malabaricus</i> (Jerdon, 1849)	Malabar danio
	<i>Devario</i>	<i>aequipinnatus</i> (McClelland, 1839)	Giant danio

	<i>Esomus</i>	<i>danrica</i> (Hamilton, 1822)	Flying barb
	<i>Osteobrama</i>	<i>cotio</i> (Hamilton, 1822)	Cotio
		<i>vigorsii</i> (Sykes, 1839)	Godavari Osteobrama
	<i>Salmostoma</i>	<i>balookee</i> (Sykes, 1839)	Bloch razor belly Minnow
		<i>orissaensis</i> Ba'na' rescu 1968	Orissa razor belly Minnow
		<i>phulo</i> (Hamilton, 1822)	Fine scale razor belly minnow
	<i>Pethia</i>	<i>conchoni</i> (Hamilton, 1822)	Rosy barb
		<i>gelius</i> (Hamilton, 1822)	Golden barb
		<i>guganio</i> (Hamilton, 1822)	Glass barb
		<i>ticto</i> (Hamilton, 1822)	Ticto barb
	<i>Oreichthys</i>	<i>cosuatis</i> (Hamilton, 1822)	Cosuatis barb
	<i>Parapsilorhynchus</i>	<i>tentaculatus</i> (Annandale, 1919)	Khandalla Minnow
	<i>Salmophasia</i>	<i>bacaila</i> (Hamilton, 1822)	Large razor belly Minnow
		<i>boopis</i> (Day, 1874)	Boopis razor belly Minnow
	<i>Systemus</i>	<i>sarana</i> (Hamilton, 1822)	Olive barb
		<i>chrysopoma</i> (Valenciennes, 1842)	Olive barb
	<i>Dawkinsia</i>	<i>filamentosa</i> (Valenciennes, 1844)	Blackspot barb
Cobitidae	<i>Lepidocephalichthys</i>	<i>guntea</i> (Hamilton, 1822)	Guntea loach
Botiidae	<i>Botia</i>	<i>dario</i> (Hamilton, 1822)	Bengal loach
Nemacheilidae	<i>Acanthocobitis</i>	<i>botia</i> (Hamilton, 1822)	Mottled loach
	<i>Schistura</i>	<i>beavani</i> (Günther, 1868)	Creek loach
		<i>dayi</i> (Hora, 1935)	Stone loach
	<i>Indoreonectes</i>	<i>evezardi</i> (Day, 1872)	-
	<i>Paraschistura</i>	<i>montana</i> (McClelland, 1838)	-
Order- Clupeiformes			
Clupeidae	<i>Anodontostoma</i>	<i>chacunda</i> (Hamilton, 1822)	Chacunda gizzard Shad
	<i>Corica</i>	<i>soborna</i> Hamilton, 1822	Ganges river sprat
	<i>Escualosa</i>	<i>thoracata</i> (Valenciennes, 1847)	White sardine
	<i>Gonialosa</i>	<i>manmina</i> (Hamilton, 1822)	Ganges river gizzard shad
	<i>Gudusia</i>	<i>chakra</i> (Hamilton, 1822)	Indian river shad
	<i>Hilsa</i>	<i>kelee</i> (Cuvier, 1829)	Kelee shad
		<i>ilisha</i> (Hamilton, 1822)	Hilsa shad
Engraulidae	<i>Coilia</i>	<i>dussumieri</i> Valenciennes, 1848	Gold spotted grenadier anchovy
	<i>Setipinna</i>	<i>phasa</i> (Hamilton, 1822)	Gangetic hair fin Anchovy
Pristigasteridae	<i>Pellona</i>	<i>ditchela</i> (Valenciennes, 1847)	Indian pellona
Order- Anguilliformes			
Anguillidae	<i>Anguilla</i>	<i>bengalensis</i> (Gray, 1831)	Indian mottled eel
Order- Beloniformes			
Belonidae	<i>Xenentodon</i>	<i>cancila</i> (Hamilton, 1822)	Freshwater garfish
	<i>Strongylura</i>	<i>strongylura</i> (van Hasselt, 1823)	Spottail needlefish
Hemiramphidae	<i>Hyporhamphus</i>	<i>limbatus</i> Valenciennes, 1847	Congaturi halfbeak
		<i>quoyi</i> (Valenciennes, 1847)	Quoy's garfish
Order- Perciformes			
Centropomidae	<i>Chanda</i>	<i>nama</i> (Hamilton, 1822)	Chanda
		<i>ranga</i> (Hamilton, 1822)	Parambassis ranga
Anabantidae	<i>Anabas</i>	<i>testudineus</i> (Bloch, 1792)	Climbing perch
	<i>Colisa</i>	<i>fasciatus</i> (Bloch & Schneider, 1801)	Striped gourami
Nandidae	<i>Nandus</i>	<i>nandus</i> (Hamilton, 1822)	Gangetic leaf fish
Polynemidae	<i>Eleutheronema</i>	<i>tetradactylum</i> (Shaw, 1804)	Fourfinger threadfin
Scatophagidae	<i>Scatophagus</i>	<i>argus</i> (Linnaeus, 1766)	Spotted scat
Sciaenidae	<i>Otolithoides</i>	<i>pama</i> (Hamilton, 1822)	Pama croaker
Sparidae	<i>Acanthopagrus</i>	<i>latus</i> (Houttuyn, 1782)	Yellowfin seabream
Teraponidae	<i>Therapon</i>	<i>jarbua</i> (Forsskal, 1775)	Jarbua terapon
Gobiidae	<i>Glossogobius</i>	<i>giuris</i> (Hamilton, 1822)	Tank goby/Gulah
	<i>Awaous</i>	<i>ocellaris</i> (Broussonet, 1782)	-
	<i>Boleophthalmus</i>	<i>dussumieri</i> (Valenciennes, 1837)	Mudskipper
	<i>Periophthalmodon</i>	<i>schlosseri</i> (Pallas, 1770)	Giant mudskipper
	<i>Pseudapocrypte</i>	<i>sangasius</i> (Cuvier, 1816)	-
	<i>Taenioides</i>	<i>anguillaris</i> (Linnaeus, 1758)	Eel worm goby
Ambassidae	<i>Parambassis</i>	<i>baculis</i> (Hamilton, 1822)	Himalayan glassy Perchlet
		<i>ranga</i> (Hamilton, 1822)	Indian glassy fish
Badidae	<i>Badis</i>	<i>badis</i> (Hamilton, 1822)	Badis
Channidae	<i>Channa</i>	<i>gachua</i> (Hamilton, 1822)	Dwarf snakehead
		<i>marulius</i> (Hamilton, 1822)	Great snakehead
		<i>orientalis</i> (Bloch & Schneider, 1801)	Walkingsnakehead
		<i>punctata</i> (Bloch, 1793)	Spotted snakehead
		<i>striata</i> (Bloch, 1793)	Striped snakehead

Cichlidae	<i>Etoplus</i>	<i>maculatus</i> (Bloch, 1795)	Orangechromide
		<i>Orange chromide</i>	Pearlsport
	<i>Oreochromis</i>	<i>mossambicus</i> (Peters, 1852)	Mozambique tilapia
Eleotridae	<i>Eleotris</i>	<i>fusca</i> (Forster, 1801)	Dusky sleeper
Gerreidae	<i>Gerres</i>	<i>filamentosus</i> (Cuvier 1829)	Whipfinsilver Bidy
Latidae	<i>Lates</i>	<i>calcarifer</i> (Bloch, 1790)	Barramundi
Lutjanidae	<i>Lutjanus</i>	<i>Argentimaculatus</i> (Forsska ^o l, 1755)	Mangrovered snapper
Osphronemidae	<i>Ctenops</i>	<i>nobilis</i> (McClelland, 1845)	Frail gourami
		<i>chuna</i> (Hamilton, 1822)	Honey gourami
	<i>Trichogaster</i>	<i>fasciata</i> (Bloch & Schneider, 1801)	Banded gourami
		<i>lalius</i> (Hamilton, 1822)	Dwarf gourami
Order- Cyprinodontiformes			
Aplocheilidae	<i>Aplocheilus</i>	<i>panchax</i> (Hamilton, 1822)	Blue panchax
Poeciliidae	<i>Poecilia</i>	<i>reticulata</i> (Peters, 1859)	Guppy
Order- Elopiformes			
Megalopidae	<i>Megalops</i>	<i>cyprinoides</i> (Broussonet, 1782)	Indo-Pacific tarpon
Order: Gonorynchiformes			
Chanidae	<i>Chanos</i>	<i>chanos</i> (Forsska ^o l, 1775)	Milkfish
Order- Mugiliformes			
Mugilidae	<i>Planiliza</i>	<i>macrolepis</i> (Smith, 1846)	Large scale mullet
	<i>Chelon</i>	<i>parsia</i> (Hamilton, 1822)	Gold spot mullet
		<i>planiceps</i> (Valenciennes, 1836)	Tadegray mullet
	<i>Mugil</i>	<i>cephalus</i> (Linnaeus, 1758)	Flathead grey mullet
<i>Rhinomugil</i>	<i>corsula</i> (Hamilton, 1822)	Corsula	
Order- Osteoglossiformes			
Notopteridae	<i>Chitala</i>	<i>chitala</i> (Hamilton, 1822)	Clown knife fish
	<i>Notopterus</i>	<i>notopterus</i> (Pallas, 1769)	Bronzefather Back
Order- Siluriformes			
Amblycepidae	<i>Amblyceps</i>	<i>mangois</i> (Hamilton, 1822)	Indiantorrent Catfish
Ariidae	<i>Arius</i>	<i>gagora</i> (Hamilton, 1822)	Gagora catfish
	<i>Osteogeneiosus</i>	<i>militaris</i> (Linnaeus, 1758)	Soldier catfish
	<i>Ailia</i>	<i>coila</i> (Hamilton, 1822)	Gangetic ailia
Bagridae	<i>Mystus</i>	<i>bleekari</i> (Day, 1877)	Day's mystus
		<i>seenghala</i> (Sykes, 1839)	Gianriver Catfish
		<i>vittatus</i> (Bloch, 1794)	Kuntia
		<i>cavasius</i> (Hamilton, 1822)	Gangetic mystus
		<i>tengara</i> (Hamilton, 1822)	Tengara catfish
		<i>gulio</i> (Hamilton, 1822)	Kontia
	<i>Rita</i>	<i>rita</i> (Hamilton, 1822)	Rita
		<i>gogra</i> (Sykes, 1839)	Ray-finned fishes
	<i>Sperata</i>	<i>aor</i> (Hamilton, 1822)	Long-whiskered catfish
Claridae	<i>Clarias</i>	<i>magur</i> (Linnaeus, 1758)	Philippine catfish
		<i>garipepinus</i> (Burchell, 1822)	NorthAfrican catfish
		<i>batrachus</i> (Linnaeus, 1758)	Walking catfish
Erethistidae	<i>Pseudolaguvia</i>	<i>ribeiroi</i> (Hora, 1921)	Painted catfish
Heteropneustidae	<i>Heteropneustes</i>	<i>fossilis</i> (Bloch, 1794)	Singhi
Pangasiidae	<i>Pangasius</i>	<i>pangasius</i> (Hamilton, 1822)	Pangas catfish
Schilbeidae	<i>Chupisoma</i>	<i>garua</i> (Hamilton, 1822)	Garua bachcha
	<i>Eutropiichthys</i>	<i>vacha</i> (Hamilton, 1822)	Batchwa
		<i>murius</i> (Hamilton, 1822)	-
<i>Silonia</i>	<i>silondia</i> (Hamilton, 1822)	Silond catfish	
Siluridae	<i>Ompok</i>	<i>bimaculatus</i> (Bloch, 1794)	Butter catfish
		<i>pobda</i> (Hamilton, 1822)	Pabdah catfish
		<i>pabo</i> (Hamilton, 1822)	Pabo catfish
<i>Wallago</i>	<i>attu</i> (Bloch&Schneider, 1801)	Wallago/Ballai,	
Sisoridae	<i>Bagarius</i>	<i>bagarius</i> (Hamilton, 1822)	Goonch
	<i>Gagata</i>	<i>cenia</i> (Hamilton, 1822)	Indian gagata
		<i>itchkeea</i> (Sykes, 1839)	-
	<i>Glyptothorax</i>	<i>lonah</i> (Sykes, 1839)	-
		<i>telchitta</i> (Hamilton, 1822)	-
Order- Pleuronectiformes			
Soleidae	<i>Brachirus</i>	<i>orientalis</i> (Bloch & schneider, 1801)	Oriental sole
Order- Synbranchiformes			
Mastacembelidae	<i>Mastacembelus</i>	<i>pancalus</i> Hamilton, 1822	striped spiny eel
		<i>armatus</i> (Lacepe`de, 1800)	Zig-zag eel

Table 2: Freshwater fish diversity of river Narmada systems, Madhya Pradesh (M.P)

Sl. No.	Order	Family	Genus	Species
1	Cypriniformes	4	36	79
2	Clupeiformes	3	10	11
3	Anguilliformes	1	1	1
4	Beloniformes	2	3	4
5	Perciformes	18	26	35
6	Cyprinodontiformes	2	2	2
7	Elopiformes	1	1	1
8	Gonorynchiformes	1	1	1
9	Mugiliformes	1	4	5
10	Osteoglossiformes	1	2	2
11	Siluriformes	10	19	32
12	Pleuronectiformes	1	1	1
13	Synbranchiformes	1	1	2
	N=13	N=46	N=107	N=176

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