

STUDY OF ICHTHYOFAUNAL DIVERSITY OF TAPTI RIVER OF BURHANPUR DISTRICT (M.P.)

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ABSTRACT : Tapti river is one of the major rivers of India, with the total length of around 724 kilometres starting from Betul (M.P.) to Surat (Gujrat). In the present study the ichthyofaunal diversity of river Tapti in Burhanpur district was undertaken from December,2014 to August,2015. The present study showed 26 fish species belonging to 7 families, 6 orders were recorded in the 4 respective stations viz. Burhanpur (Station-1), Bhatkheda (Station-2), Dariyapur kalan (Station-3), Jainabad (Station-4). The total 26 fish species recorded at Station-1 (Burhanpur), 25 fish species recorded at Station-2 (Bhatkheda), 24 fish species recorded at Station-3 (Dariyapur kalan) 26 fish species recorded at Station-4 (Jainabad). The member of order Cypriniformes were dominated by 13 fish species followed by Siluriformes 6 species, Ophiocephaliformes 3 species, Mastacembeliformes 2 species, Clupeiforme 1 species, Beloniformes 1 species.

Key words : Fish biodiversity, Burhanpur district, Tapti river.

INTRODUCTION

Tapti is a major river in central India. It is one of the major river of peninsular India, with the length of around 724 kilometers. The river arises from a place called Multai of district Betul of the eastern Satpura range of southern Madhya Pradesh and flows Westward to Madhya Pradesh Nimar region, Maharashtra's Khandesh and East Viderbha regions in the North West corner of the Deccan plateau and South Gujarat, before emptying in to the gulf of Cambay of the Arabian sea, in the Surat district of Gujarat. The Tapti basin lies in the states of Maharashtra (51,504 sq/km), Madhya Pradesh (9,804 sq/km) and Gujarat (3,837 sq/km). The district Burhanpur is bounded by the Southwestern border of Madhya Pradesh near the north bank of the Tapti river. Biodiversity means the variation in the genetics and life forms of populations, species, communities and ecosystem. Biological diversity is important to the fulfillment of human needs. Fishes form highest species diversity among all vertebrate groups apart from its economic importance.

India has a vast range of ichthyofaunal diversity. Fishes are the important component in food chain of ecosystem. They serve as an ideal food for human and other wildlife also. Fish flesh is the richest source of proteins, vitamins and minerals. It is also an important indicator of water quality and health of ecosystem. Vyas *et al.* (2009) worked on the Ganjal river which joins Narmada river near the backwaters of Indira Sagar. Vyas *et al.* (2010) 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 *et al.* (2014) reported the 48 fish species at various Ghats on river Betwa. Zoological Survey of India, reported 172 different species fresh water fishes from rivers, ponds, lakes, streams, canals, reservoirs and rice field of Madhya Pradesh.

MATERIAL AND METHODS

The present study was deal with the Ichthyofaunal diversity of the Tapti river, Madhya Pradesh (Central India). The species diversity has been analyzed during study period from December,2014-August,2015. The present study has been conducted at four selected stations in the river Tapti in Burhanpur. The latitude and longitude of the first station is 21.3 N and Longitude 76.23 E, second station is 21.46 N and 76.40 E, third station is 21.30 N and 76.24 E and forth station is 21.3 N and 76.23 E. The present study covered four sampling station site are Burhanpur, Bhatkheda, Dariyapur Kalan and Jainabad. The fishes were collected from different fish landing sites. The net of different mesh sizes according to the size of the fishes were used. The fish specimens have been collected by using cast nets and gill nets of different mesh size 10, 20, 30, 40, 50, 60, 70, 80, 90, 100 mm at various locations and also we were taken help of local fishermen at the field. After the collection of fishes were identified by using the standard keys of Jayaram (1999).

RESULTS AND DISCUSSION

The present study showed 26 fish species, 13 genera, 7 families, 6 orders were recorded in the four stations respective viz. Burhanpur (Station-1), Bhatkheda (Station-2), Dariyapur kalan (Station-3) and Jainabad (Station-4).

Total twenty six species of fishes were recorded in the Station-1 (Burhanpur) : From the observed species *Labeo rohita*, *Catla catla*, *Cirrhinus mrigala*, *Laubuca laubuca* are the main fishes of Tapti in Burhanpur. The member of order Cypriniformes were found dominated. The most abundant family of fishes was Cyprinidae 85% then Ophicephalidae 5%, Siluridae 3%, Belonidae 3% and Notopteridae 2% while families like Mastacembelidae, Bagridae, Schiibeidae, Anguillidae together constituting nearly 1.01% each (Fig.1). The present investigation also reported some of the threatened fish species *Notopterus chitala*, *Tor tor*, *Tor khudree*, *Tor putitora*, *Tor mussulah*, *Garragotyla*, *Labeo dussumieri*, *Rajamus bola*, *Ompak bimaculatus*, *Ompak pabda*, *Rita pavementata*, *Rita chrysea*, *Mystus punctatus*, *Eutrophiichthys vacha*, *Clupisoma bastari*, *Anguilla bangalensis*.

Total twenty five fish species were recorded in the Station-2 (Bhatkheda) : The most abundant family of fishes was Cyprinidae 87%, Ophicephalidae 4%, Siluridae 3%, Notopteridae 3% each and other families Mastacembelidae, Bagridae, Belonidae, Schiibeidae, Anguillidae constituting 1.01% each (Fig.2).

Total twenty four fish species were recorded in the Station-3 (Dariyapur kalan) : The most abundant family of fishes was Cyprinidae 88%, Ophicephalidae 4%, Siluridae 3%, Mastacembelidae 2% each and other families Belonidae, Notopteridae, Bagridae, Schiibeidae, Anguillidae constituting 1.01% each (Fig.3).

Table. 1 List of fish species of Tapti river recorded during present study (from December,2014 to August,2015.)

Order	Family	Species	Local name	Threat status	Economic value	Stations			
						1	2	3	4
Clupeiformes Cypriniformes	Notopteridae	1. <i>Notopterus notopterus</i> (Pallas)	Patola	Lr-nt	Pf, Md				
		Cyprinidae	2. <i>Labeo rohita</i> (Ham)	Rohu	Lr-nt	Fd	+++	+++	+++
	3. <i>Labeo calbasu</i> (Ham-Buch)		Kalbos	Lr-nt	Fd	+++	+++	+++	+++
	4. <i>Labeo bata</i> (Ham)		Bata, Nawari	Lr-nt	Fd	+++	+++	+++	+++
	5. <i>Labeo fimbriatus</i> (Bloch)		Tambir	Lr-nt	Fd	+++	+++	+++	+++
	6. <i>Labeo boggut</i> (Sykes)		Nunia, Sandasi	Lr-nt	Fd	+++	++	+++	+++
	7. <i>Laubuca laubuca</i> (Ham-Buch)		Bhat, Chal	Lr-nt	Fd	+++	+++	+++	+++
	8. <i>Catla catla</i> (Ham)		Catla	Vu	Fd	+++	+++	+++	+++
	9. <i>Cirrhinus mrigala</i> (Ham)		Mrigal, Nalang	Lr-nt	Fd	+++	+++	+++	+++
	10. <i>Cirrhinus reba</i> (Ham-Buch)		Rewah	Vu	Fd	++	+++	+++	++
	11. <i>Cyprinus carpio</i> (Linn)		Soneri masha	Ex	Fd	+++	+++	++	+++
	12. <i>Puntius conchoni</i> (Ham-Buch)		Karita, Pothi	Lr-nt	Bt, Lv, Wf	+++	++	+++	+++
	13. <i>Puntius sophore</i> (Ham-Buch)		Karawa	Lr-nt	Bt, Lv, Wf	+++	+++	+++	+++
	14. <i>Puntius ticto</i> (Ham-Buch)		Kaoli	Lr-nt	Bt, Lv, Wf	+++	+++	+++	+++
Siluriformes	Siluridae	15. <i>Wallago attu</i> (Sch)	Lachi, Phadhan	Lr-nt	Pf	++	+	++	++
		16. <i>Ompak bimaculatus</i> (Bloch)	Chechera	En	Pf	-	+	-	-
		17. <i>Ompak pabda</i> (Bloch)	Kaliwanz	En	Pf	+	-	-	+
	Bagridae	18. <i>Mystus vittatus</i> (Ham-Buch)	Singhard	Vu	Pf	+	-	-	+
		19. <i>Mystus bleekeri</i> (Day)	Tengra, Katua	Vu	Pf	+	-	-	+
		20. <i>Mystus seenghala</i> (Sykes)	---	Lr-nt	Pf	-	+	-	-
Beloniformes	Belonidae	21. <i>Xenentodon cancila</i> (Ham-Buch)	Kawa, Takali	Lr-nt	Wf	++	+	++	++
		Ophiocephaliformes	Ophicephalidae	22. <i>Channa gachua</i> (Bloch)	Dheri dhok	Ne	Lv, Pf	+	++
23. <i>Channa punctata</i> (Bloch)	Samhal, Phool dhok			Lr-nt	Lv, Pf	++	++	-	++
24. <i>Channa marulius</i> (Ham-Buch)	Murrel, Kalamasa		Lr-nt	Lv, Pf	++	+	++	++	
Mastacembeliformes	Mastacembelidae		25. <i>Mastacembelus armatus</i> (Lecep)	Baam	Ne	Pf	++	++	++
		26. <i>Mastacembelus pancatus</i> (Ham-Buch)	Baam	Lr-nt	Pf	+	-	-	+++

+++ Most abundant, ++ Abundant, + Less abundant, - Rare. En=Endangered, Vu=Vulnerable, Lr-nt=Lower risk near threatened, Ne=Not evaluate, Ex=Exotic fish, Lv=Larvivoous fish, Bt=Bait, Pf=Predatory food fish, Wf=Weed fish, Md=Medicinal value, Fr=Forage fish, Fd=Food fish.

Table. 2 Family wise and percentage of fish species at four stations of Tapti river.

S. Family	Station-1	Station-2	Station-3	Station-4
1. Notopteridae	2%	3%	1%	1%
2. Cyprinidae	85%	87%	88%	87%
3. Siluridae	3%	3%	3%	3%
4. Bagridae	1%	1%	1%	1%
5. Belonidae	3%	1%	1%	1%
6. Ophiocephalidae	5%	4%	4%	4%
7. Mastacembelidae	1%	1%	2%	3%

Total twenty six fish species were recorded in the Station-4 (Jainabad) : The most abundant family of fishes was Cyprinidae 87%, Ophicephalidae 4%, Siluridae 3%, Mastacembelidae 3%, each and other families Bagridae, Belonidae, Schiibeidae, Notopteridae, Anguillidae constituting 1.01% each (Fig.4).

The total twenty six fish species recorded at Station-1 (Burhanpur), twenty five fish species recorded at Station-2 (Bhatkheda), twenty four fish species recorded at Station-3 (Dariyapur kalan) twenty six fish species recorded at Station-4 (Jainabad).

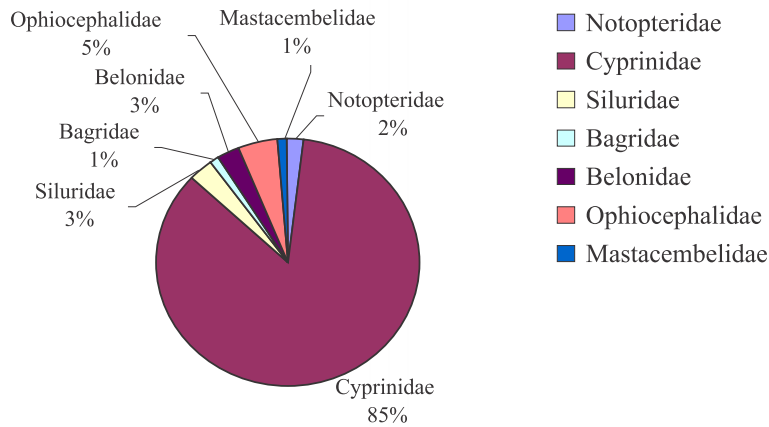


Fig. 1 Percentage of fish species were recorded from station-1.

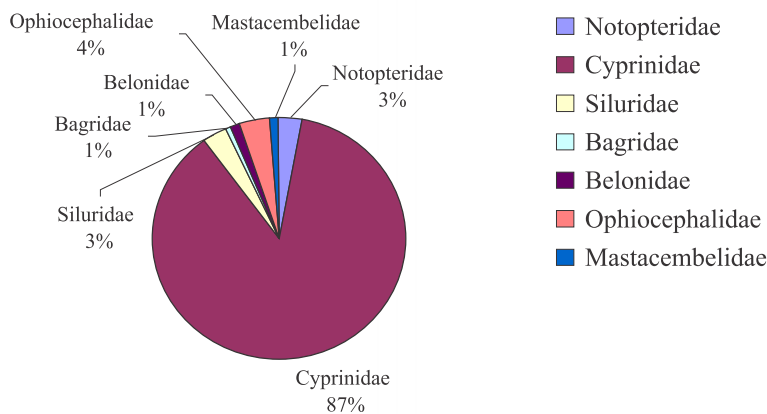


Fig. 2 Percentage of fish species were recorded from station-2.

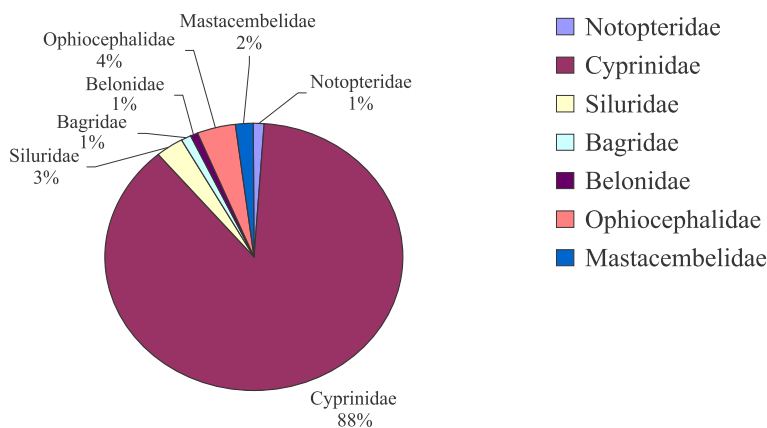


Fig. 3 Percentage of fish species were recorded from station-3.

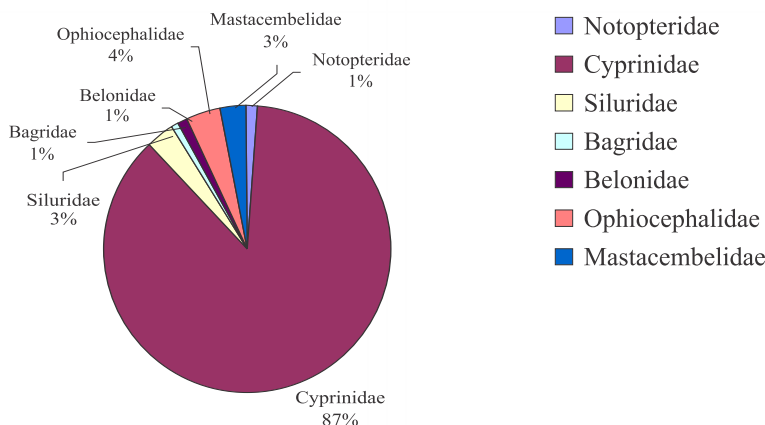


Fig. 4 Percentage of fish species were recorded from station-4.

Karamchandani *et al.* (1967) surveyed the fish and fisheries of Tapti river and reported 52 species belonging 14 families. Lohar and Borse (2003) reported 24 fish species belonging to 7 families in Tapi river (Maharashtra). Damde *et al.* (2010) also recorded highest diversity at sacred sites as compared to others sampling sites in Tapti river of Madhya Pradesh. Chaudhary and Patil (2010) reported Ichthyofauna of Tapti river (Bhusawal district) water listed 22 species under 15 genera belonging to 9 families and 6 orders. Total 32 fish species belonging to 5 orders, 9 families and 33 genera obtained in the Tighra reservoir. Furthermore, 20 fish species from Tapti river (Betul district) and 70 fish species from Chambal river (Western M.P.) have been obtained (Mahor, 2011). Sharma *et al.* (2011) have observed by survey of Narmada river and have reported 42 species belonging to 25 genera 7 order and 14 families. Chouhan *et al.* (2013) have observed by survey of Narmada river and have reported 59 fish species, 34 genera 7 order and 17 families. Pathak *et al.* (2014) reported 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. The present study mainly focuses on fish collection and distribution in Tapti river of Burhanpur Recent data regarding fish diversity, aiming to contribute a better knowledge of the fish diversity of Tapti river. To conserve fish biodiversity has an extensive importance as it is not always possible to identify individual species severely to assist aquatic ecosystem. The Tapti river of Burhanpur consist a number of fresh water species of fishes. The fish fauna of Burhanpur *Notopterus chitala*, *Tor tor*, *Tor khudree*, *Tor putitora*, *Tor mussulah*, *Garragotyla*, *Labeo dussumieri*, *Rajamus bola*, *Ompak bimaculatus*, *Ompak pabda*, *Rita pavementata*, *Rita chrysea*, *Mystus punctatus*, *Eutrophichthys vacha*, *Clupisoma bastari*, *Anguilla bangalensis* are threatened due to several anthropogenic activities like pollution, deforestation, over fishing. Fishery department of Burhanpur adopted legislative measures for conservation of commercially significant fishes. In the present era, day by day increasing global warming, pollution and other harmful toxin effect adversely to the growth of fish. Ichthyofaunal diversity has an endangered zone. We can't assume the estimated life cycle. Therefore it is an essential to the government of India to improve the life or ichthyofaunal diversity and to take the various steps to save life on the earth.

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