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Contents

From the Desk of Chief Editor…

This volume has the following features. ***First****, it covers the regional diversity as it represents northern region (Delhi), central region (Madhya Pradesh and Chhattisgarh) and eastern region of India.* ***Second****, it caters the academic diversity by addressing the issues of Education, Health, Food & social Security, Tourism and Portrayal of Women in Indian TV Advertisements from the social science stream.* ***Third****, it also enhances the academic coverage by including paper on Fish Fauna Diversity from the natural science stream.*

Generous and timely contributions from the authors are greatly appreciated for regular publication of this journal which is fully financed by the autonomous cell of the college with the sole aim of enhancing research environment in the country.

Fish Fauna Diversity
A Case Study of Rajnandgaon District, Chhattisgarh (India)

Sanjay Thiske*

Abstract

Conservation of small and large animals in their natural habitat is extremely necessary to keep biodiversity and environment strong and healthy. Fish fauna is the most important Biotic factor in aquatic ecosystem.

Fish fauna diversity is one on which very little work has been done in Rajnandgaon district. A large number of people in the rural and urban areas of this region are associated with fisheries and fish sales. The farmer of district mainly produces common carp such as a rohu, catla, mrigal, silver carp and pangas fishes. But in the weekly markets of rural areas, apart from common carp, many such fishes are identified which neither the seller nor the buyer and the main purpose of this research work is to ensure identification of such rare fish which are on the verge of extinction also analyze their availability during the work.

For this work, a road map of the entire Rajnandgaon district from North to South and East to West was prepared. A weekly market was surveyed in selected villages and towns of all the 9 Tahsls where a rural fish seller comes to sell fish.

During the survey, some such species of fish were actually seen which were very less in number and the villagers said that now these fish look very less, such species were identified and they were abstracted.

In order to maintain biodiversity, promote fisheries in rural areas and provide employment opportunities in this area. It is very important to conserve the rare and extinct species which not only improves the economic and social status of rural fishermen. Definitely new doors of wide research will also open in future for new researchers.

Key words : Rajnandgaon, fish fauna diversity, village, weekly market

Introduction

The fishes of tropical land are quite distinct from that of the temperate and cold areas. The study area falls in the tropical monsoon climate. Its most of the rivers are seasonal excepting Sheonath River. Even the ponds and dams almost get dry during the summer season. The sheonath river presents small and big patches of pool of waters. Its bed is stony in nature. But it overflows during the rainy season. In this season variety of fishes

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from downstream riches not only to its source area includes tributaries, nalas, ponds and low lying fields. Thus both volume and varieties of fishes increased; the abundance of fishes in this period and its rareness during the summer season attracters the researchers to take up a thorough study as it not only provides livelihood to fish catchers and its sellers but also provides reach source of protein to its consumers. The area of research in this region is virgin. Keeping this in mind has been taken as a research work .

Objectives

The present study sets the following objectives to be investigated as a a case study in Rajnandgaon District Chhattisgarh.

4. To find out types of fishes and its abundance.
5. The Block wise distribution fish fauna according to its identification.
6. Status of fishes diversity in terms of its abundance , frequent, rare and Extinct

Data base and methodology:

The study would be based on both secondary and primary data. Secondary data will be collected from the fisheries department of District, whereas the primary data will be generated from the field work using structured questionnaires. By using random purposive Sampling method, persons associated with the activities of fish hatching , fish catching , fish selling and the persons related to its management will be ask to fill up the questionnaire. A sizable sample at least in double figure will be taken up from all nine Tahsils.

Fish sample will be collected and preserved in the lab (4% formalin) for its identifications.

Basic and advanced statistical methods will be used to analyze the average situation, deviation and coefficient of variation at the initial stage. Advance statistics like co-relation , regression and ANOVA will be applied to find out nature and degree of correlation between variables, changes in the dependent variable due to changes in the independent variable and variance analysis between and within the groups mean, where ever necessary.

Study Area

The study area- Rajandgaon district covers the western part of the Mahanadi basin. Its western part is hilly while the eastern part is almost plain. It extends between 20º15'north and 20º50' north latitude and 81º05' and 81º30' east of longitude. Its shape is rectangular. It is surrounded by Madhyapradesh and Maharashtra in the west, Kawardha district in the north, Bemetara , Durg and Balod district in the east and Kanker district in the south. It is a land locked country. The Bay of Bengal is the nearest vast water body about 550 km in the east.

It spreads over 8848.25 km^2 and includes 9 Tahsils namely, Chhuikhadan Khairagarh, Rajnandagaon, Dongargaon, Dongergarh, Churia, Ambagarh Chowky, Manpur, Mohla,). The last three tahsils are tribal due to high concentration of the Gonds and Halbas.

Table: 1- Order, Family and Genera wise Distribution Station Aundhi Southern Region 2017-18

Order -7	Family -19	Total Genera-31	Total Species-41
Osteoglossiformes	Notopteridae	Notopterus	*N. notopterus*
Cypriniformes	Cyprinidae	*Amblypharyngodon*	*A. mola*
		Catla	*C.catla*
		Cirrhinus	*C.mrigala*
			C.reba
		Garra	*G.gotyla*
		Labeo	*L. bata*
			L. Rohita
		Puntius	*P. Sarana*
			P. Ticto
			P. Sophor
		Rasbora	*R.daniconius*
		Hypophthalmichthys	*H.Molitrix*
		Ctenopharyngodon	*C. idella*
		Cyprinus	*C. Carpio*
		Crossocheilus	*C. oblongus*
		Salmostoma	*S. bacaila*
	Cobitidae	*Lepidcephalichthgy*	*L.guntea*
	Namacheilidae	*Nemacheilus*	*N.botia*
Siluriformes	Siluridae	*Ompak*	*O. pabda*
			O.bimaculatus
	Bagridae	Wallago	*W.attu*
		Mystus	*M.tengara*
			M.cavasius

			M.aor
		Rita	*R.rita*
	Heteropneustidae	Heteropneustes	*H. fossilis*
	Pangasiidae	Pangasius	*P.* Pangasius
	Clariidae	Clarias	*C.battrachus*
Perciformes	Channidae	Channa	*C.gachua*
			C.punctatus
			C.striata
	Anabantidae	Anabas	*A. testudineus*
	Gobiidae	Glossogobius	*G.giuris*
	Cichlidae	Oreochromis	*O.mossambicus*
	Ambassidaevassidae	Chanda	*C. Nama*
Synbranchiformes	Synbranchidae	Amphipnous	A.cuchia
	Mastacembelidae	Macrognathus	*M.aculeatus*
			M.armatus
Beloniformes	Belonidae	Xenethodo	*X. cancila*
Characiformes	Serrasalmidae	Pygocentrus	*P.natterei*

Table :2- Order, Family and Genera wise Distribution Station Manpur Southern Region 2017-18

Order -07	Family -16	Genera -27	Name of species-33
Osteoglossiformes	Notopteridae	Notopterus	*N. notopterus*
Cypriniformes	Cyprinidae	*Amblypharyngodon*	*A. mola*
		Catla	*C.catla*
		Cirrhinus	*C.mrigala*
			C.reba
		Garra	*G.gotyla*
		Labeo	*L. bata*
			L. Rohita
		Puntius	*P. Ticto*
		Rasbora	*R.daniconius*
		Hypophthalmichthys	*H.Molitrix*
		Ctenopharyngodon	*C. idella*
		Cyprinus	*C. Carpio*
	Namacheilidae	*Nemacheilus*	*N.botia*
Siluriformes	Siluridae	*Ompak*	*O. pabda*
		Wallago	*W.attu*
	Bagridae	Mystus	*M.tengara*
			M.cavasius
			M.aor

		Rita	*R.rita*
	Heteropneustidae	Heteropneustes	*H. fossilis*
	Pangasiidae	Pangasius	*P.* Pangasius
	Clariidae	Clarias	*C.battrachus*
Perciformes	Channidae	Channa	*C.gachua*
			C.punctatus
			C.striata
	Anabantidae	Anabas	*A. testudineus*
	Cichlidae	Oreochromis	*O.mossambicus*
	Ambassidaevassidae	Chanda	*C. Nama*
Synbranchiformes	Synbranchidae	Amphipnous	A.cuchia
	Mastacembelidae	Macrognathus	*M.aculeatus*
Beloniformes	Belonidae	Xenethodo	*X. cancila*
Characiformes	Serrasalmidae	Pygocentrus	*P.natterei*

Table: 3- Order, Family and Genera wise Distribution Station Ambagargh Chowky Southern Region 2017-18

Order -6	Family -16	Genera -28	Name of species-34
Osteoglossiformes	Notopteridae	Notopterus	*N. notopterus*
Cypriniformes	Cyprinidae	*Amblypharyngodon*	*A. mola*
		Catla	*C.catla*
		Cirrhinus	*C.mrigala*
		Garra	*G.gotyla*
		Labeo	*L. bata*
			L. Rohita
		Puntius	*P. Ticto*
			P. Sophor
		Rasbora	*R.daniconius*
		Hypophthalmichthys	*H.Molitrix*
		Ctenopharyngodon	*C. idella*
		Cyprinus	*C. Carpio*
		Salmostoma	*S. bacaila*
	Cobitidae	*Lepidcephalichthgy*	*L.guntea*
	Namacheilidae	*Nemacheilus*	*N.botia*
Siluriformes	Siluridae	*Ompak*	*O. pabda*
		Wallago	*W.attu*
	Bagridae	Mystus	*M.tengara*
			M.cavasius
		Rita	*R.rita*
	Heteropneustidae	Heteropneustes	*H. fossilis*
	Pangasiidae	Pangasius	*P.* Pangasius
	Clariidae	Clarias	*C.battrachus*

Perciformes	Channidae	Channa	*C.gachua*
			C.punctatus
			C.striata
	Gobiidae	Glossogobius	*G.giuris*
	Cichlidae	Oreochromis	*O.mossambicus*
	Ambassidaevassidae	Chanda	*C. Nama*
Synbranchiformes	Synbranchidae	Amphipnous	A.cuchia
	Mastacembelidae	Macrognathus	*M.armatus*
Beloniformes	Belonidae	Xenethodo	*X. cancila*

Table: 4- Order, Family and Genera wise Distribution Station Rajnandgaon Central Region 2017-18

Order -6	Family -13	Genera -23	Name of species-32
Osteoglossiformes	Notopteridae	Notopterus	*N. notopterus*
Cypriniformes	Cyprinidae	*Amblypharyngodon*	*A. mola*
		Catla	*C.catla*
		Cirrhinus	*C.mrigala*
			C.reba
		Garra	*G.gotyla*
		Labeo	*L. bata*
			L. Rohita
		Puntius	*P. Sarana*
			P. Ticto
			P. Sophor
		Hypophthalmichthys	*H.Molitrix*
		Ctenopharyngodon	*C. idella*
		Cyprinus	*C. Carpio*
	Cobitidae	*Lepidcephalichthgy*	*L.guntea*
Siluriformes	Siluridae	*Ompak*	*O. pabda*
			O.bimaculatus
		Wallago	*W.attu*
	Bagridae	Mystus	*M.tengara*
			M.cavasius
			M.aor
		Rita	*R.rita*
	Heteropneustidae	Heteropneustes	*H. fossilis*
	Pangasiidae	Pangasius	*P.* Pangasius
	Clariidae	Clarias	*C.battrachus*
Perciformes	Channidae	Channa	*C.gachua*
			C.punctatus
			C.striata
	Anabantidae	Anabas	*A. testudineus*
	Cichlidae	Oreochromis	*O.mossambicus*

	Ambassidaevassidae	Chanda	*C. Nama*
Synbranchiformes	Mastacembelidae	Macrognathus	*M.aculeatus*
Synbranchiformes			*M.armatus*

Table: 5- Order, Family and Genera wise Distribution Station Khairagarh Northern Region 2017-18

Order -4	Family -12	Genera -20	Species-24
Cypriniformes	Cyprinidae	*Amblypharyngodon*	*A. mola*
		Catla	*C.catla*
		Cirrhinus	*C.mrigala*
		Garra	*G.gotyla*
		Labeo	*L. Rohita*
		Rasbora	*R.daniconius*
		Hypophthalmichthys	*H.Molitrix*
		Ctenopharyngodon	*C. idella*
		Cyprinus	*C. Carpio*
	Namacheilidae	*Nemacheilus*	*N.botia*
Siluriformes	Siluridae	Wallago	*W.attu*
	Bagridae	Mystus	*M.tengara*
			M.cavasius
			M.aor
	Heteropneustidae	Heteropneustes	*H. fossilis*
	Pangasiidae	Pangasius	*P.* Pangasius
	Clariidae	Clarias	*C.battrachus*
Perciformes	Channidae	Channa	*C.gachua*
			C.punctatus
	Anabantidae	Anabas	*A. testudineus*
	Cichlidae	Oreochromis	*O.mossambicus*
	Ambassidaevassidae	Chanda	*C. Nama*
Synbranchiformes	Mastacembelidae	Macrognathus	*M.aculeatus*
			M.armatus

Table: 6- Order, Family and Genera wise Distribution Station Chhuikhadan Nouthern Region 2017-18

Order -6	Family -13	Genera -23	Name of species-30
Osteoglossiformes	Notopteridae	Notopterus	*N. notopterus*
Cypriniformes	Cyprinidae	*Amblypharyngodon*	*A. mola*
		Catla	*C.catla*
		Cirrhinus	*C.reba*

		Labeo	*L. Rohita*
		Puntius	*P. Sarana*
			P. Ticto
			P. Sophor
		Rasbora	*R.daniconius*
		Cyprinus	*C. Carpio*
		Crossocheilus	*C. oblongus*
		Salmostoma	*S. bacaila*
	Cobitidae	*Lepidcephalichthgy*	*L.guntea*
	Namacheilidae	*Nemacheilus*	*N.botia*
Siluriformes	Siluridae	*Ompak*	*O. pabda*
		Wallago	*W.attu*
	Bagridae	Mystus	*M.tengara*
			M.cavasius
			M.aor
		Rita	*R.rita*
	Heteropneustidae	Heteropneustes	*H. fossilis*
	Clariidae	Clarias	*C.battrachus*
Perciformes	Channidae	Channa	*C.gachua*
			C.punctatus
			C.striata
	Gobiidae	Glossogobius	*G.giuris*
	Ambassidaevassidae	Chanda	*C. Nama*
Synbranchiformes	Mastacembelidae	Macrognathus	*M.aculeatus*
			M.armatus
Beloniformes	Belonidae	Xenethodo	*X. cancila*

Table: 7- Order, Family and Genera wise Distribution Station Gandai Northern Region 2017-18

Order -6	Family -13	Genera -24	Name of species-29
Osteoglossiformes	Notopteridae	Notopterus	*N. notopterus*
Cypriniformes	Cyprinidae	*Amblypharyngodon*	*A. mola*
		Catla	*C.catla*
		Cirrhinus	*C.mrigala*
		Garra	*G.gotyla*
		Labeo	*L. Rohita*
		Puntius	*P. Sarana*
		Puntius	*P. Ticto*
		Rasbora	*R.daniconius*
		Hypophthalmichthys	*H.Molitrix*
		Ctenopharyngodon	*C. idella*
		Cyprinus	*C. Carpio*

	Namacheilidae	*Nemacheilus*	*N.botia*
Siluriformes	Siluridae	*Ompak*	*O. pabda*
			O.bimaculatus
		Wallago	*W.attu*
	Bagridae	Mystus	*M.tengara*
			M.cavasius
	Pangasiidae	Pangasius	*P.* Pangasius
	Clariidae	Clarias	*C.battrachus*
Perciformes	Channidae	Channa	*C.gachua*
			C.punctatus
			C.striata
	Anabantidae	Anabas	*A. testudineus*
	Gobiidae	Glossogobius	*G.giuris*
Synbranchiformes	Synbranchidae	Amphipnous	A.cuchia
	Mastacembelidae	Macrognathus	*M.aculeatus*
			M.armatus
Beloniformes	Belonidae	Xenethodo	*X. cancila*

Table: 8- Order, Family and Genera wise Distribution Station Dongargarh Western Region 2017-18

Order -5	Family -13	Genera-23	Species-27
Osteoglossiformes	Notopteridae	Notopterus	*N. notopterus*
Cypriniformes	Cyprinidae	Catla	*C.catla*
		Cirrhinus	*C.mrigala*
		Garra	*G.gotyla*
		Labeo	*L. bata*
			L. Rohita
		Puntius	*P. Sarana*
		Rasbora	*R.daniconius*
		Hypophthalmichthys	*H.Molitrix*
		Ctenopharyngodon	*C. idella*
		Salmostoma	*S. bacaila*
	Namacheilidae	*Nemacheilus*	*N.botia*
Siluriformes	Siluridae	*Ompak*	*O.bimaculatus*
		Wallago	*W.attu*
	Bagridae	Mystus	*M.tengara*
			M.cavasius
		Rita	*R.rita*
	Heteropneustidae	Heteropneustes	*H. fossilis*
	Pangasiidae	Pangasius	*P.* Pangasius
	Clariidae	Clarias	*C.battrachus*
Perciformes	Channidae	Channa	*C.punctatus*
			C.striata

	Anabantidae	Anabas	*A. testudineus*
	Ambassidaevassidae	Chanda	*C. Nama*
Synbranchiformes	Synbranchidae	Amphipnous	A.cuchia
	Mastacembelidae	Macrognathus	*M.aculeatus*
			M.armatus

Table: 9- Order, Family and Genera wise Distribution Station Rajnandgaon Central Region 2017-18

Order -6	Family -13	Genera -23	species-32
Osteoglossiformes	Notopteridae	Notopterus	*N. notopterus*
Cypriniformes	Cyprinidae	*Amblypharyngodon*	*A. mola*
		Catla	*C.catla*
		Cirrhinus	*C.mrigala*
			C.reba
		Garra	*G.gotyla*
		Labeo	*L. bata*
			L. Rohita
		Puntius	*P. Sarana*
			P. Ticto
			P. Sophor
		Hypophthalmichthys	*H.Molitrix*
		Ctenopharyngodon	*C. idella*
		Cyprinus	*C. Carpio*
	Cobitidae	*Lepidcephalichthgy*	*L.guntea*
Siluriformes	Siluridae	*Ompak*	*O. pabda*
			O.bimaculatus
		Wallago	*W.attu*
	Bagridae	Mystus	*M.tengara*
			M.cavasius
			M.aor
		Rita	*R.rita*
	Heteropneustidae	Heteropneustes	*H. fossilis*
	Pangasiidae	Pangasius	*P.* Pangasius
	Clariidae	Clarias	*C.battrachus*
Perciformes	Channidae	Channa	*C.gachua*
			C.punctatus
			C.striata
	Anabantidae	Anabas	*A. testudineus*
	Cichlidae	Oreochromis	*O.mossambicus*
	Ambassidaevassidae	Chanda	*C. Nama*
Synbranchiformes	Mastacembelidae	Macrognathus	*M.aculeatus*
			M.armatus

Table: 10- Order, Family and Genera wise Distribution Station Somni Eastern Region 2017-18

Order -4	Family-9	Genera-17	Species-20
Cypriniformes	Cyprinidae	Catla	*C.catla*
		Cirrhinus	*C.mrigala*
			C.reba
		Labeo	*L. Rohita*
		Puntius	*P. Sarana*
		Puntius	*P. Ticto*
		Hypophthalmichthys	*H.Molitrix*
		Ctenopharyngodon	*C. idella*
		Cyprinus	*C. Carpio*
Siluriformes	Siluridae	Wallago	*W.attu*
	Bagridae	Mystus	*M.tengara*
			M.cavasius
			M.aor
	Heteropneustidae	Heteropneustes	*H. fossilis*
	Pangasiidae	Pangasius	*P.* Pangasius
Perciformes	Channidae	Channa	*C.punctatus*
			C.striata
	Anabantidae	Anabas	*A. testudineus*
	Cichlidae	Oreochromis	*O.mossambicus*
Synbranchiformes	Mastacembelidae	Macrognathus	*M.aculeatus*

Table:11- Order, family, genera and species wise Diversity South To North direction Rajnandgaon District C.G.2017-18

STATION	ORDER	FAMILY	GENERA	SPECIES
Aundhi	7	19	31	41
Manpur	7	16	27	33
Ambagarh Chowky	6	16	28	34
Rajnandaon	6	13	23	32
Khairagarh	4	12	20	24
Chhukhadan	6	13	23	30
Gandai	6	13	24	29

Table :12-Order, family, genera and species wise Diversity West To East direction Rajnandgaon District C.G.2017-18.

Station	ORDER	FAMILY	GENERA	SPECIES
Dongarhgarh	6	13	23	27
Rajnandgaon	6	13	23	32
Somni	4	9	17	20

Discussion:

Rajnandgaon is a geographically diverse district. Where its northern and eastern part is plain and forest free, the same southern and western region consists of forest and hilly rivers. Apart from this, there is also abundance of seasonal streams, rivers and large water resources filled with water throughout the year. During the survey, most of the rare types and such fish which are on the verge of extinction were seen in the stations of South and West region of Aundhi, Manpur, Ambagarh Chowki and Dongargarh. Some rare fish of the order Osteoglossiformes, Cypriniformes, Siluriformes, Perciformes order in these areas came into focus in the weekly markets during the survey. ***N.notopteru , A. Mola, G.gotyla, P. Sarana , P. Ticto, P. Sophor, R.daniconius, L.guntea, N.botia , H.Molitrix, O. pabda , O.bimaculatus, W.attu, M.tengara, M.cavasius , M.aor, R.rita, H. fossilis, C.battrachus, C.gariepinus, C.gachua, C.punctatus, A.cuchia, A.testudineus G.giuris, O.mossambicus, M.aculeatus, M.armatus, C.oblongus, C.Nama*** **Plate -31** ***S. bacaila, X. cancila and P.natterei*** there are some fishes that can be classified as a rare. But in the area of north and east direction, this type of rare fish is very exceptional. Changes in the weather are a major reason for it because the river and nalas dry up in the summer days and the water gets reduced in large water bodies.

The highest fish diversity has been noted in Aundhi station . During the survey, recorded 7 orders , 19 families 31 genera and 41 fish species, surprisingly the chhuikhadan and Gandai statuib of north part showing moderate level of fish diversity along with average 6 orders, 13 familieis, 23 genera & 30 species, Due the abundance of Nalas and ponds and Somni station has showing very poor fish diversity with 4 orders ,9 family, 17 genera and 20 species.

Plate:1: ***N.notopterus***

Plate: 2 ***A. Mola***

Plate-3 ***G.gotyla***

Plate -4 ***P. Sarana***

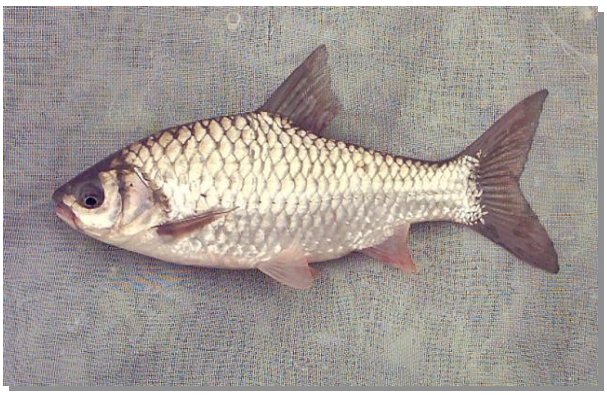

Plate -5 ***P. Ticto***

Plate -6 ***P. Sophor***

Plate -7 ***R.daniconius***

Plate- 8 ***L.guntea***

Plate -9 ***N.botia***

Plate -10 ***H.Molitrix***

Plate 11 ***O. pabda***

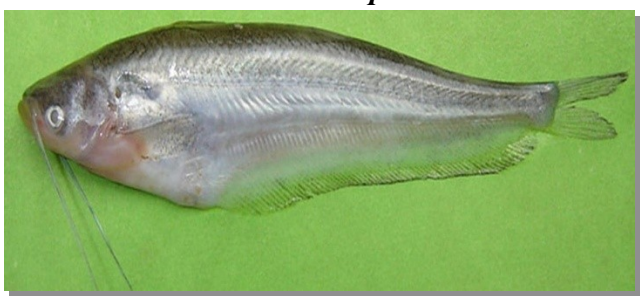

Plate -12 ***O.bimaculatus***

Plate -13 ***W.attu***

Plate -14 ***M.tengara***

Plate -15 ***M.cavasius***

Plate -16 ***M.aor***

Plate -17 ***R.rita***

Plate -18 ***H. fossilis***

Plate -18 *P.* Pangasius

Plate -19 *C.battrachus*

Plate -20 *C.gariepinus*

Plate -21 *C.gachua*

Plate -22 *C.punctatus*

Plate -23 A.cuchia

Plate -24 *A. testudineus*

Plate -25 *G.giuris*

Plate -26 *O.mossambicus*

Plate -27 *M.aculeatus*

Plate -28 *M.armatus*

Plate -29 *C. oblongus*

Plate -30 *C. Nama*

Plate -31 *S. bacaila*

Plate -32 *X. cancila*

Plate -33 *P.natterei*

Conclusion

During the survey, the main task was to collect fishes, record the fish diversity and indentify the rare fishes in the study area..prepare east , west and north south road map for survey. According to the road map, a few villages and small towns were selected where weekly markets are held and where villagers from remote areas bring fish caught from river and nalas. After processing of collected data and recorded field observations, as many as 41 species have been recorded in Aundhi. On the other end, fish species comes down to 20 in case of Somni region.

The main reason for finding more variety of fish species in Aundhdi - Manpur region is geographical one, as the area is characterized by dense forests, small rivers, nallahs and small natural lakes/ ponds. These natural features are comparatively more distinguished in southern Rajnandgaon district comprising of Manpur tahsil. Contrary to this, the Somni region is plain and extensively cultivated resulting in least spread of natural water bodies. In such a situation, it cannot give rise to rich fish diversity, i.e. it lacks high diversity of fishes in the region. Rest other stations of Traverse have recorded moderate fish diversity.

During the survey, the species that were rare were prominent among them ***N. Notopterus, H.Molitrix, S. Bacaila, L.guntea, W.attu, M.tengara, M.aor, C.battrachus, C.gachua, C. Nama,*** **A.cuchia,** ***M.aculeatus, M.armatus, X. Cancila, P. Sarana , P. Sophor , R.daniconius, S. Bacaila, N.botia , R.rita, A. testudineus and P.natterei in other hand Labio rohita , L. Bata, L. Calbassu, Catla catla, Cirrhinus mrigal, Cyprinus carpio, Grass carp , Silver carp and some cat fishe like C.gachua; C.punctatus, C.striata.*** Some such fish which were seen as normal during the survey were the common carp whose seeds are easily procured from the government and private Hatcheries, as transport routes have become easy to facilitate their transportation. And they also get good cost in the market.

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