

**SEASONAL VARIATION OF FISHES IN MAINPAT HILL, IN
SURGUJA DISTRICT, CHHATTISGARH, INDIA**

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ABSTRACT

In present, investigation has been made to investigate the seasonal variation of fishes in Mainpat hill in Surguja district, Chhattisgarh, three study site were selected Rend, Mand and Ghunghutta river. The study was carried out during October 2017 to September 2018. Fish sampling was carried out at all three site monthly all the year. Total 17 species studied of fishes belonging to 9 Families. Highest fish diversity was recorded at site I followed by site III and site II. The lowest diversity was at site II. The diversity of species was low during the winter relatively higher in Monsoon and moderate in the summer. It may be due to relationships between fish diversity, length and water quantity of river.

KEYWORD: Fish, Surguja, Mainpat, Seasonal variation.

INTRODUCTION

India is one of the mega biodiversity countries in the world and occupies the ninth position in terms of fresh water mega biodiversity (**Mittermeier *et al* 1997**). Surguja district is a district in the northern part of the state of Chhattisgarh in India. The district borders on the state of Uttar Pradesh, Jharkhand and overlaps of the Southeastern part of the Vindhya, Baghelkhand region of peninsular India. It lies between 23°37'25" to 24°06'17" north latitude and 81°34'40" to 84°04'40" East longitude. 244.62 kilometers along East to West and 67.37 kilometers broad North to South, this land has as area of about 16359 square kilometers. The high lands of Surguja district have peculiar pat formations-highlands with

small Tablelands. The Mainpat, the Jarangpat, the Jonkapat, the Jamirapat and the Lahsunpat are the major pat of the district. The average height of area is above 600 meters (2000 ft). The fish diversity, community, structure and species assemblages are interdependent on many abiotic and biotic factors (Negi *et al* 2013). Composition, distribution and abundance of fish species changed affected by rainfall fluctuation and floods. Mand river originate from north part of Mainpat plane of Surguja district. It runs about 155 km. It flows in the North in Surguja, Jashpur, Raigarh and Janjgir –Chmpa district. Ghunghutta river originate the Mainpat hill and and flows in the Darima region. The Ghunghutta reservoir is located in Surguja district (22⁰94 N latitude and 83⁰164E longitude) of northern Chhattisgarh in India. In Surguja no Fish diversity and seasonal variation of river was recorded. Hence I decided to study the seasonal variation of fishes in Mainpat, Surguja district, Chhattisgarh.

Methodology: Central Surguja is a low basin through which the Rendnadi and its tributaries flow. Rendnadi, rises in the region southwest of the Mainpat plateau, which is about 1100 meters above mean sea level, from Matiranga hills. The river flows north roughly through the central part of the district for 160 Km. The Rendnadi and its tributaries from a fertile plain in the central district stretching around Ambikapur, Lakhanpur and Pratappur. Mand river origin point Mainpat and distribution the Surguja, Jashpur, Raigarh and Janjgir Champa. A medium irrigation project is working on Gunghutta river, near Darima which is about 15 Km from Ambikapur. For the Fish distribution and seasonal variation studied mainly from river Rendnadi, Ghunghutta and Mand Nadi in Mainpat hills. The fishes will be collected by local fishermen, they generally use many types of nets like gill nets, cast nets, drag net *etc.* Fishes will be preserved in 10% formalin solution. Study period will be conducted from October 2017 to September 2018. Identification of fishes will be done on the basis of morphometric characters, descriptive characters and fin formula. A field kit measuring tape, rope, preservative, digital camera *etc.* will be prepared for regular use. Fishes will be classified and arranged based on standard key of Jhingran (1983), with slight modification as followed by Day's (1958) and Srivastava (1998).

Main Rivers in Surguja

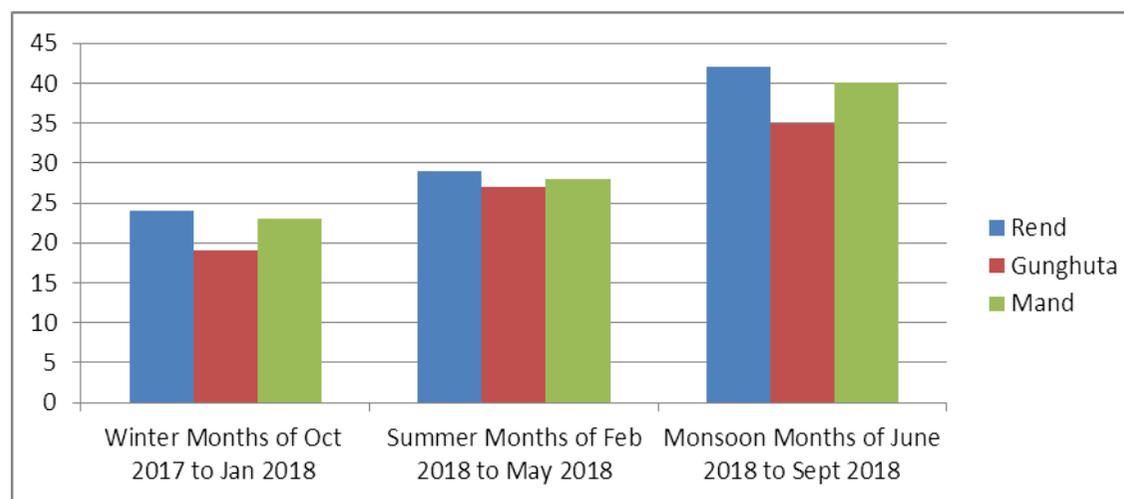
S N	Name of River	Origin	Length	Distribution Area
1	Rend River	Matiringa	160 Km	Ambikapur, Lakhanpur, Vishrampur, Surajpur, Pratappur
2	Gunghutta River	Mainpat	15 Km	Darima
3	Mand River	Mainpat	155 Km	Surguja, Sitapur, Dharamjaigarh, Kharsia, Raigarh, Janjgir Champa

Seasonal Variation of Fish Recorded in the River of Mainpat

(October 2017 to September 2018)

S.N.	Familae	Fish Species	Winter Months of Oct 2017 to Jan 2018			Summer Months of Feb 2018 to May 2018			Monsoon Months of June 2018 to Sept 2018		
			No of Fish Found			No of Fish Found			No of Fish Found		
			Rend site I	Gunghuta site II	Mand site III	Rend site I	Gunghuta site II	Mand site III	Rend site I	Gunghuta site II	Mand site III
1	Notopteridae	<i>1. Notpterus notopterus</i>	+++	-	++	++	+	+	+++	+++	++++
2	Cyprinidae	<i>1. Labeo bata</i>	+	+	++	+++	++	++	+++	++	+++
		<i>2. Labeo potal</i>	+	++	-	+	++	++	++	++	+++
		<i>3. Labeo rohita</i>	++	++++	++	++	+++	++	++++	+++	+++
		<i>4. Oxygaster gara</i>	++	++	-	++	+	++	+++	+++	++
		<i>5. Punctius phutunio</i>	++	-	+	++	++	+	+++	++	+++
		<i>6. Punctius ticto</i>	+	+	+	++	+	++	++	++	+++
3	Cobitidae	<i>1. Lepidocephalichthys guntia</i>	+	+	++	+	++	++	+++	+++	++
4	Siluridae	<i>1. Ompok bimaculatus</i>	+	-	+	++	++	+	+++	++	+
5	Bagridae	<i>1. Mystus tengara</i>	++	+	+	++	++	+++	+++	+++	+++
		<i>2. Mystus</i>	+	++	++	+	++	+	++	++	+

		<i>seenghala</i>									
6	Saccobranchi dae	1. <i>Heteropneustes fossilis</i>	+	++	++	+++	++	+	+++	+	++
7	Belonidae	1. <i>Xenentodon cancila</i>	++	-	+	++	+	+	++	+	++
8	Ophiocephali dae	1. <i>Channa stewartii</i>	+	-	+	++	+	++	+	++	+++
		2. <i>Channa gachua</i>	++	+	++	+	++	+	++	++	++
9	Mastacemphalidae	1. <i>Mastacembalus armatus</i>	-	+	+++	+	+	++	++	+	++
		2. <i>Macroganathus aculeatus</i>	+	+	-	-	-	++	+	+	+
Total			24	19	23	29	27	28	42	35	40



Graph showing seasonal variation of fish fauna in river of Surguja

*1. Notopterus notopterus**2. Labeo bata**3. Labeo potal**4. Labeo rohita**5. Oxygaster gara**6. Puntius phutunio**7. Puntius ticto**8. Lepidocephalichthys guntea**9. Ompok bimaculatus**10. Mystus tengara**11. Mystus seenghala**12. Heteropneustes fossilis**13. Xenentodon cancila**14. Channa stewartii**15. Channa gachua*



16. *Mastacembelus armatus*. 17. *Macrognathus aculeatus*.

RESULT AND DISCUSSION

The study was carried out during October 2017 to September 2018. Total 17 species belonging to nine Families were studied during the study period. Highest fish distribution was recorded at site-I followed III and II. The low fish followed by III and II. The low fish distribution at site-II, It may be due to low length and water quantity of river. *Notopterus notopterus*, *Labeo bata*, *Labeo potal*, *Labeo rohita*, *Oxygaster gara*, *Punctius phutunio*, *Punctius ticto*, *Lepidocephalichthys guntia*, *Ompok bimaculatus*, *Mystus tengara*, *Mystus seenghala*, *Hetropneustes fossilis*, *Xenentodon cancila*, *Channa stewartii*, *Channa gachua*, *Mastacembelus armatus*, *Macrognathus aculeatus* were the species collected from all the sampling sites throughout the year. Fish distribution patterns related to environmental factor, water quantity and length of river. The length of rivers and diversity of fishes are correlated at some extent. The Seasonal variations in fish distribution was observed. It was recorded maximum in monsoon and minimum in summer and winter.

CONCLUSION

The present study may prove seasonal variation of fish valuable as a reference for assessing the changes due to the environmental conditions in the locality.

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REFERENCES

1. Day F. "The Fishes of India" London William Dawson & sons LTD, 1958; Vol-I and Vol-II.
2. Jhingran V.G. (1991): "Fish and fisheries of India" Hindustan publishing corporation (India) Delhi. 2nd Edition.

3. Mittermeier, R.A. and C.G. Mittermeier: Megadiversity Earth's Biological Wealthiest Nation. In M. Allister, D.E.A. Lttamilton and B. Harvey (Eds). Global Fresh Water Biodiversity Sea Wind Cemex, Mexico City. 1997; 1-140.
4. Negi R.K. and Mamgain (2013): "Species diversity, abundance and distribution of fish community and conservation status of Tons river of Uttarakhand state, India" Science Alert.
5. Sahu K.R. (2015): "Studies on Piscean diversity of Mahanadi river Chandrapur district Janjgir Champa CG" Journal of Modern.
6. Shrivastava G. (1998): "Fishes of UP and Bihar" Vishwavidalaya Prakashan Chowk Varanasi India pub.
7. Tomboli R.K. and Jha Y.N. "Status of cat fish diversity of river Kelo and Mand In Raigarh district, CG India" ISCA journal of Biological science, 2012; 71-73.