



Pre and Post monsoon Piscine Diversity in Kelo River, Raigarh, (C.G.), India

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ABSTRACT

Ichthyofaunal survey was conducted in the Kelo River district Raigarh, Chhattisgarh to evaluate the pre and post-monsoon piscine diversity. The study was carried out from September 2018 to June 2019. The study area included from Kelo dam to Kaya ghat, about 11 km. A total of 36 species belonging to 25 genera, 13 families were recorded from the study area. The pre and post-monsoon fish diversity are compared and found that pre-monsoon diversity is very poor due to sewage discharge and other anthropogenic activities. City sewage is directly poured in Kelo River at many places without any pretreatment adversing the riverine ecosystem and the survival of fauna.

Keywords: Piscine diversity, Kelo River, Kelo dam, Panchdari, Chandmari, Kayaghat.

1. INTRODUCTION

Fish resource of India is one of the richest in the world. Chhattisgarh is blessed with a number of freshwater resources like rivers, ponds, reservoirs, and tanks etc. Raigarh district is glorified with two main rivers Kelo and Mand, are the left tributaries of Mahanadi River. Raigarh is located on the east border of Chhattisgarh state. Kelo river is the lifeline of Raigarh city passing through the middle of the city. It originated from the Gharghoda tehsil's Ludega hills located in Lailunga block of Raigarh district. The total length of Kelo River is 112.60 km., near Mahadevpali village it joins the Mahanadi river. River Kelo is a perennial river having a good number of aquatic biodiversity. City sewage water, factory effluents are continuously mixing at many places, changing the natural water quality of the river. The pre monsoon water quality was found turbid and loaded with a variety of pollutants while post monsoon is suitable for survival of fishes. Change in piscine diversity was observed during the course of study. The river supports a rich number of fish fauna during the post monsoon period. The study is carried out from September 2018 to June 2019.

2. MATERIALS AND METHOD

During the course of present study the fishes were collected from 4 sampling stations by netting operations, conducted by local fisherman and fishes were also collected from daily local fish markets established near the study area. The collected fishes were photographed and preserved in 10% formalin and brought into the lab for studies. The collected fishes were identified with the help of standard books i.e., Francis Day, K.C. Jayram, Gopalji Shrivastava and Qureshi & Qureshi. The taxonomic character, morphometric and meristic counts were studied and finalized the fish genera and species.

3. STUDY AREA AND SAMPLING SITES

For comparative study of pre and post monsoon piscine diversity four sampling stations were selected. Kelo dam area, Panchdhaari, Chandmari and Kaya ghat were the sampling stations of the study area. Fishes were collected from the right and left bank, middle stream of each sampling station during morning, noon and evening.

The comparative account of pre and post monsoon fish diversity is shown in the table.

Table 1: Fish diversity recorded in Kelo River from September 2018 to June 2019.

S no.	Family & Fish species	Pre Monsoon	Post Monsoon
1	Family-Clupeidae 1. Gudusia chapra (Ham.)	+	+
2	Family-Cyprinidae 2. Catla catla (Ham.) 3. Chela laubuca (Ham.)	- +	+ +

	4. Cirrhinus mrigala (Ham.)	-	+
	5. Garra gotyla (Gray)	+	+
	6. Labeo bata (Ham.)	+	+
	7. Labeo calbasu (Ham.)	-	+
	8. Labeo gonius (Ham.)	+	+
	9. Labeo rohita (Ham.)	-	+
	10. Oxygaster bacaila (Ham.)	+	+
	11.Puntius sophore (Ham.)	+	+
	12-Puntius ticto (Ham.)	+	+
	13.Rasbora daniconius (Ham.)	-	+
3	Family –Cobitidae 14. Lepidocephalichthys guntea (Ham.)	+	+
4	Family-Siluridae 15. Ompok bimaculatus (Bloch) 16. Wallago attu (Bl. & Schn.)	- -	+
5	Family-Bagridae 17. Mystus cavasius (Ham.) 18. Mystus aor (Ham.) 19. Mystus seenghala (sykes) 20. Rita rita (Ham.)	- - - +	+
6	Family-Schilbeidae 21.Ailia coila (Ham.) 22.Pangasius pangasius 23. Pseudotropius atherinoides (Bloch) 24. Silonia silondia (Ham.)	+	+
7	Family-Saccobranchidae 25. Heteropneustes fossilis (Bloch.)	+	+
8	Family-Clariidae 26. Clarias batrachus(Linn.)	+	+
9	Family-Belonidae 27. Xenentodon cancila (Ham.)	+	+
10	Family-Ophiocephalidae 28. Channa gachua (Ham.) 29. Channa marulius (Ham.) 30.Channa punctatus (Bl.) 31. Channa striatus (Bl.)	- - + +	+
11	Family- Centropomidae 32. Chanda nama (Ham.) 33.Chanda ranga (Ham.)	+	+
12	Family- Gobiidae 34. Glossogobius giuris (Ham.)	+	+
13	Family-Mastacembelidae 35.Mastacembelus armatus (Lacepede) 36.Mastacembelus pancalus (Ham.)	+	+
	Total 36	22	36.

+ Present, - Absent



Fig. 1: Chhattisgarh Drainage System



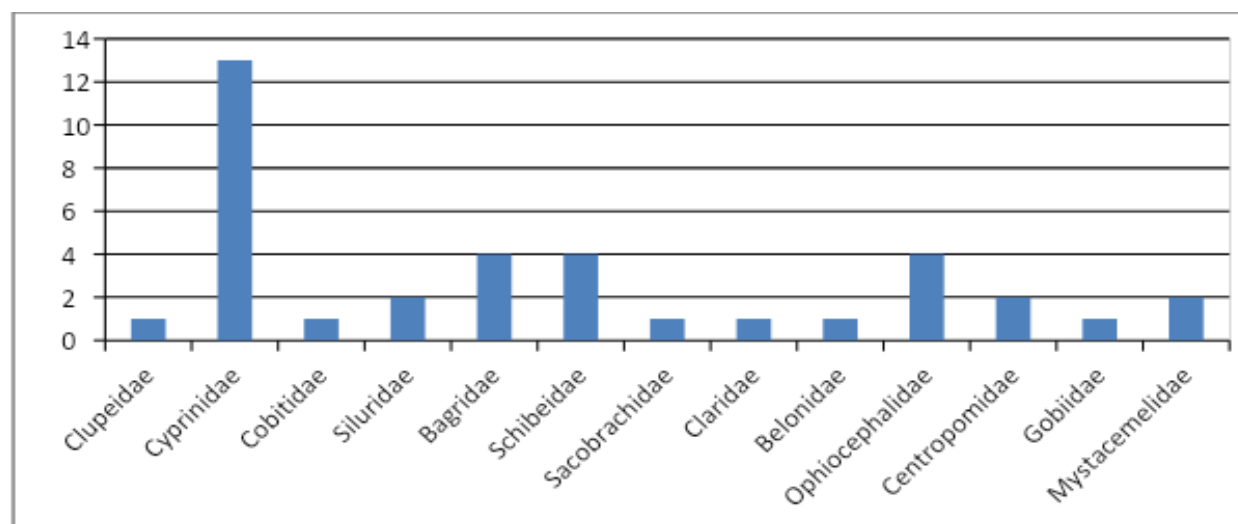
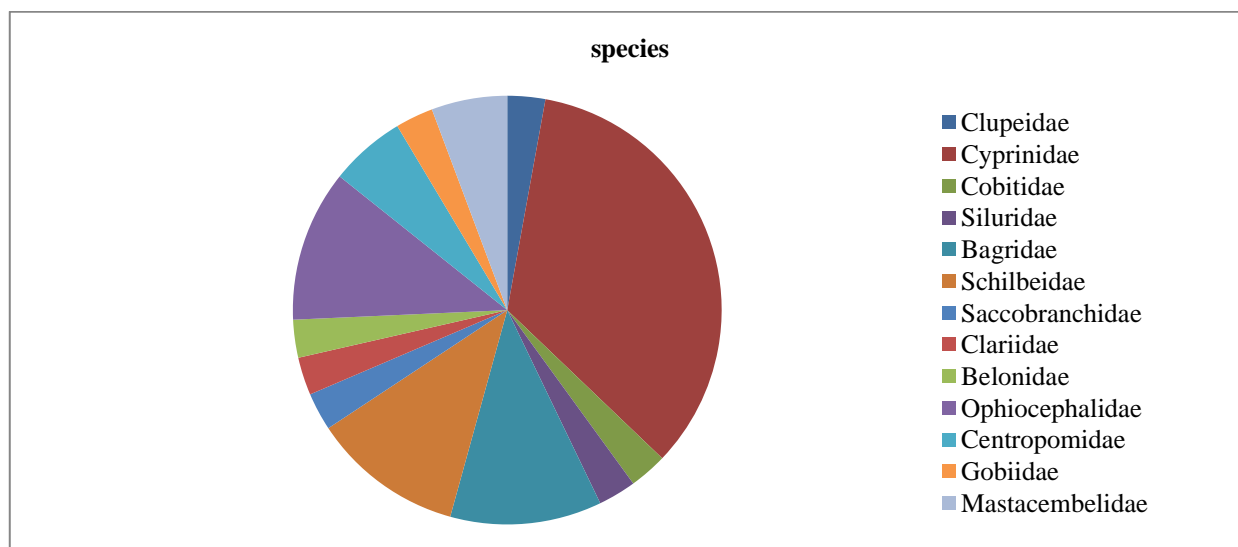
Fig. 2: Map indicating the sampling station In Kelo River

Table 2: Details of the study sites in Kelo River

Sites	GPS Coordinates
KeloDam	N 21.948195,E83.403103
Pachdhaari	N21.913226, E83.406182
Chandmari	N 21.902036, E83.407886
Kayaghat	N 21.882942, E 83.403974

4. RESULTS AND DISCUSSION

The fishes collected from the study area represent 13 families, 25 genera and 36 species. The fishes representing the families are Clupeidae, Cyprinidae, Cobitidae, Siluridae, Bagridae, Schilbeidae, Saccobranchidae, Clariidae, Belonidae, Ophiocephalidae, Centropomidae, Gobiidae, Mastacembelidae. The genus are Gudusia, Catla., Chela, Cirrhinus, Garra, Labeo, Oxygaster, Puntius, Rasbora Lepidocephalichthys, Ompok, Wallago, Rita, Mystus, Ailia, Pangasius, Pseudotropius, Silonia, Heteropneustes, Clarias, Xenentodon, Channa, Chanda, Glossogobius, Mastacembelus. The species are G. chapra, C. catla, C. laubuca, C. mrigala, G. gotyla, L. bata, L. calbasu, L. gonius, L. rohita, O. bacaila, P. ticto, P. sophore, R. daniconius, L. guntea, O. bimaculatus, W. attu, R.rita, M. cavasius, M seenghala, M. aor, A. coila, P. pangasius, P. atherinoides, S. silondia, H. fossilis, C. batrachus, X. cancila, C. gachua, C. punctatus, C. striatus, C. marulius, C.nama, C.ranga, G. giuris, M. armatus, M. pancalus. The fishes representing family Cyprinidae are the most abundant and contribute 33% of the total species of all the families.



Family wise fish species composition in Kelo River

5. CONCLUSION

The pre and post monsoon fish diversity is compared and found that the pre monsoon diversity is very poor due to increasing pollutant disturbing the physicochemical properties of riverine aquatic ecosystems. City sewage is directly poured in Kelo River at many places without any pretreatment adversely affecting the water quality and making it almost lifeless for micro fauna. 14 fish species migrate to Kelo River during the rainy season along with flood for feeding and breeding. Therefore, it is a need of the hour to conserve the Kelo ecosystem in a sustainable way.

6. REFERENCES

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