



## Study of Ichthyofaunal Biodiversity of Rajnandgaon town, CG, India

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### Abstract

Freshwater fish biodiversity is poorly studied. There is no proper documentation on freshwater fish resources of Rajnandgaon. This study aims to prepare database of fishes found in Rajnandgaon town. Fishes are the unique creature of animal world. It is one of the good food source and is able to combat problem of malnutrition. Rajnandgaon district is basically a tribal district. This is the first study to catalogue species of fishes found in Rajnandgaon town. Rajnandgaon is centrally situated in Chhattisgarh state. Sheonath river is major river of Chhattisgarh having its origin in Rajnandgaon district. Total 45 species from different sampling station were recorded. Recorded fish species were classified in 6 order, 15 families and 32 Genera. Order Cypriniformes comprised of 5 families Cyprinidae, Siluridae, Bagridae, Saccobranchidae and Clariidae were found as a dominant group. The main fishes found are *Catla catla*, *Cirrhinus mrigala*, *Labeo rohita*, *Cyprinus carpio*, *Clarius batrachus* and *Oreochromis mossambicus*

**Keywords:** Biodiversity, sheonath river, malnutrition, freshwater.

### Introduction

Biodiversity is the degree of variation of life form within a given ecosystem. Biodiversity is essential for stabilization of ecosystem, protection of overall environmental quality for understanding intrinsic worth of all species on the earth<sup>1</sup>. India is very rich in Biodiversity India supports about 10 % of the world's biological diversity with just 2% of world land area.

Fishes are the important group of animals world contributing to the biodiversity of animals. Primarily fishes are used as a food source. Many vital vitamins and fatty acids are found in fishes so sometimes it is referred by doctors as a good food source.

Rajnandgaon district is situated between 20.07" North to 22.2"9 North latitude and 80.2 East to 81.2"4 East longitude. Sheonath river which is major river of Chhattisgarh is originated from Panabaras hills of Mohla tehsil of Rajnandgaon district. Major part of Rajnandgaon district is connected with Mahanadi river system flowing towards east to bay of Bengal. Sheonath river is major tributary of Mahanadi river. It is longest river of Chhattisgarh, total length is 290 K.M. It confluences with Mahanadi river at sonlaharsi of Distt Janjgir Champa.

### Material and Methods

The fishes were collected from Sheonath river at mohara station and from local fisherman and also from local cooperative societies operating in different ponds of Rajnandgaon town. Fisherman generally use many types of nets like gill nets, cast net, drag net etc.

Fishes were preserved in 10 % formalin solution and identified with the help of standard keys and books<sup>2-4</sup>.

Study period: This study was conducted between Oct. 2011 to Sep. 2012.

### Results and Discussion

As per the available records no scientific study on the Fish fauna availability has been conducted here so far. In India, few studies have been initiated to document the fish diversity and assemblage<sup>5</sup>. Much has been stated about declining fish biodiversity and its conservation issues in Indian River systems<sup>6-9</sup>. Fish fauna of Chhattisgarh is scarcely studied and needed to be thoroughly studied<sup>10-13</sup>.

During the entire study period, total of 45 fish species belonging to 15 families and 32 Genera were recorded, Cyprinidae was the largest dominant family contributing 20 species (44.44%); Bagridae formed the subdominant family contributing 5 species (11.11%) and the rest of the families followed order of abundance (table-1 and table-2).

As far as IUCN conservation status<sup>14</sup> is concerned 34 species (75.5 %) comes under least concern (LC) category, 6 species (13.33 %) are nearly threatened (NT), 2 species (4.44 %) are vulnerable (VU) and 2 species are (4.44 %) not evaluated (NE).

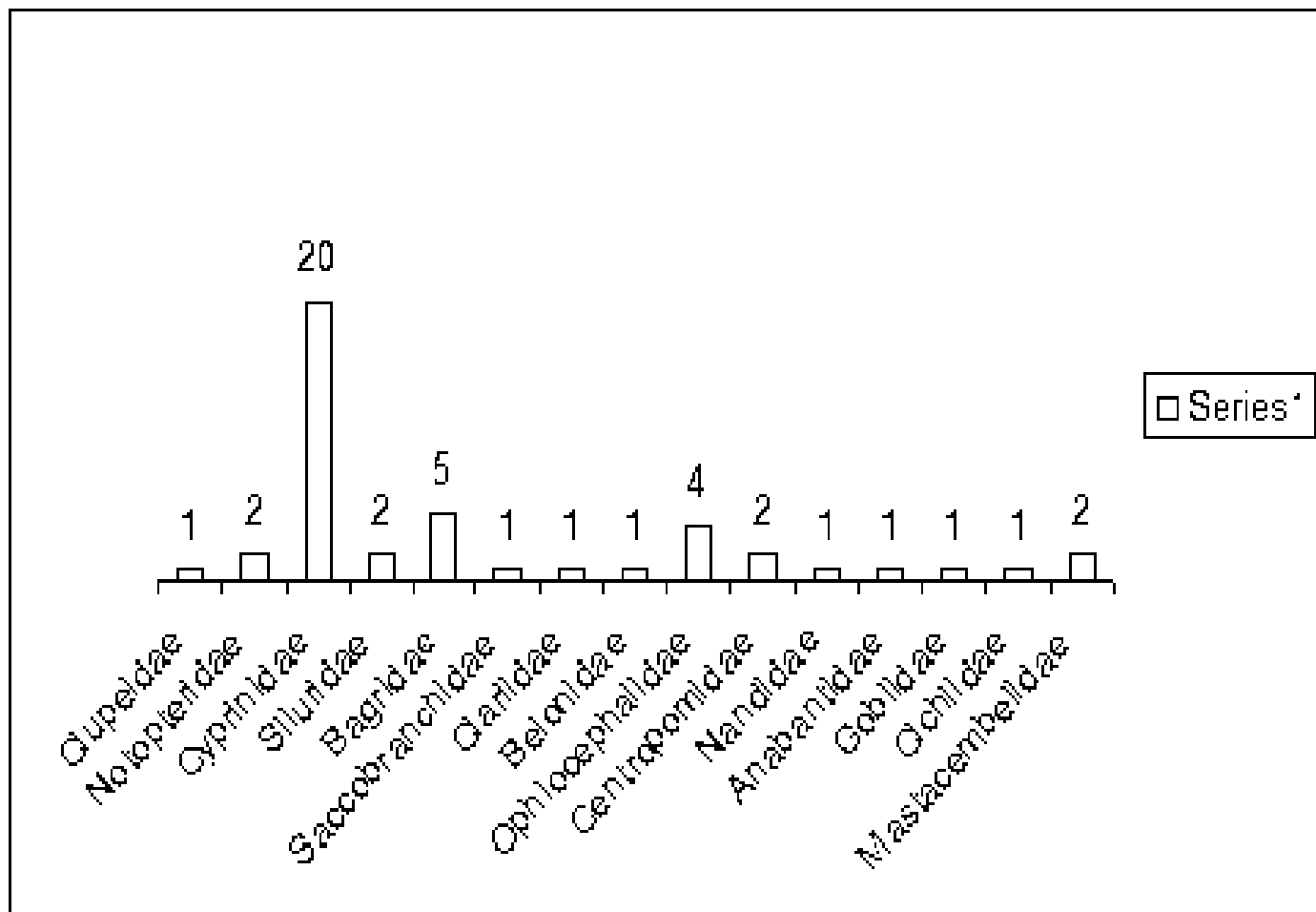
### Conclusion

The result of this study shows that Rajnandgaon town is prosperous in biodiversity of fishes. Fish culture is mainly carried out by the cooperative fisheries societies. Carps are the major group which is cultivated, practice of composite culture of *Labeo rohita*, *Cirrhinus mrigala* and *Catla catla* is generally followed. Fish culture is only source of income generation for

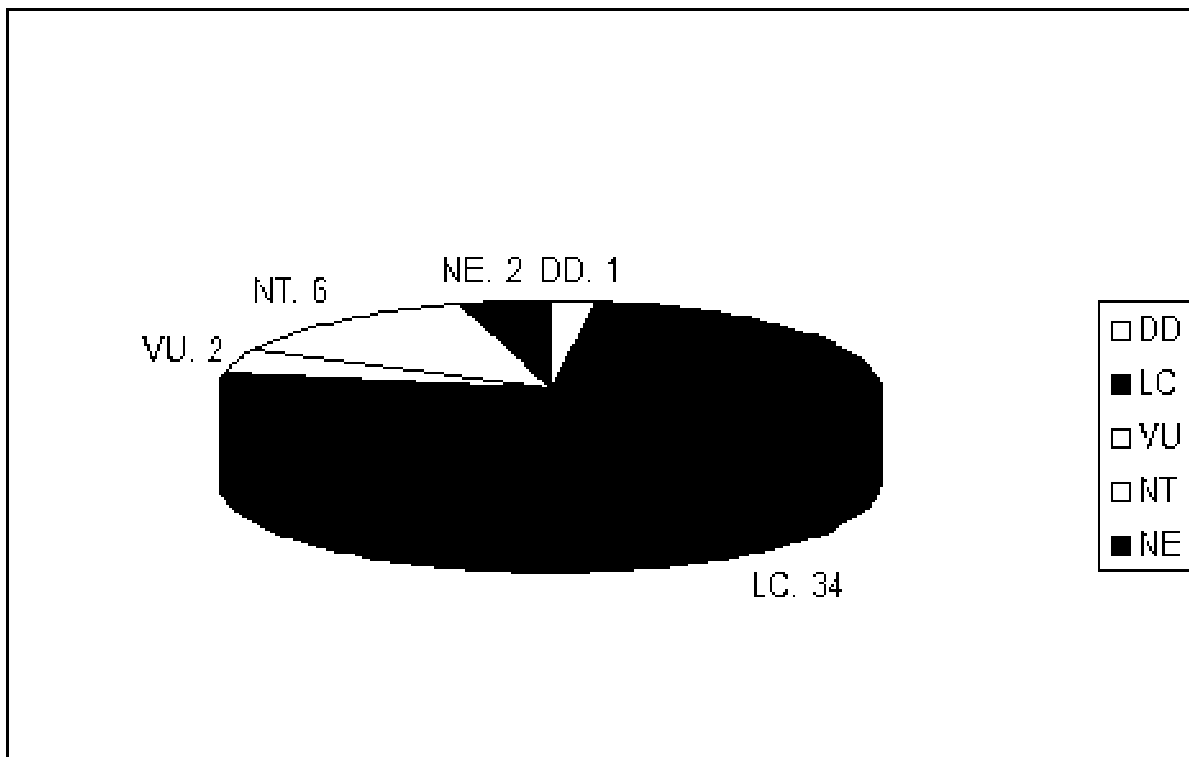
the local fisherman. They lack scientific knowledge of fish of unemployment and malnutrition will be eradicated from this culture. if proper scientific knowledge is implemented problem area.

**Table – 1**  
**Family wise species composition**

S. No.	Order	Family	No. of Fish Species	Species Composition %
1.	Clupeiformes	Clupeidae	1	2.22
		Notopteridae	2	4.44
2.	Cypriniformes	Cyprinidae	20	44.44
		Siluridae	2	4.44
		Bagridae	5	11.11
		Saccobranchidae	1	2.22
		Clariidae	1	2.22
3.	Beloniformes	Belonidae	1	2.22
4.	Ophiocephaliformes	Ophiocephalidae	4	8.88
5.	Perciformes	Centropomidae	2	4.44
		Nandidae	1	2.22
		Anabantidae	1	2.22
		Gobiidae	1	2.22
		Cichlidae	1	2.22
6.	Mastacembeleformes	Mastacembelidae	2	4.44



**Figure-1**  
 Family wise species diversity and abundance of fishes



**Figure-2**  
**Ecological Conservation Status of Fishes**

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**Table – 2**  
**Abundance of Fishes in Rajnandgaon Town**

S.No.	Family	Genus and Species	Local Name	IUCN Status
Order – Clupeiformes				
1.	Clupeidae	Gudusia chapra	Chhuria	LC
2.	Notopteridae	Notopterus notopterus	Patola	LC
3.	Notopteridae	Notopterus chitala	Patola	LC
Order – Cypriniformes				
4.	Cyprinidae	Aspidoparia morar	Baniyal	LC
5.	Cyprinidae	Catla catla	Katla	LC
6.	Cyprinidae	Cirrhinus mrigala	Mrigal	LC
7.	Cyprinidae	Cirrhinus reba	Borai	LC
8.	Cyprinidae	Danio devario	Dadhai	LC
9.	Cyprinidae	Garra gotyla	Butuwa	LC
10.	Cyprinidae	Labeo bata	Bata	LC
11.	Cyprinidae	Labeo calbasu	Kamach	LC
12.	Cyprinidae	Labeo rohita	Rohu	LC
13.	Cyprinidae	Osteobrama cotio	Chilati	LC
14.	Cyprinidae	Oxygaster bacaila	Sirangi	LC
15.	Cyprinidae	Puntius sarana	Kotra	LC
16.	Cyprinidae	Puntius sophore	Jarhi kotri	LC
17.	Cyprinidae	Puntius ticto	Jarhi kotri	LC
18.	Cyprinidae	Rasbora daniconius	Dadhai	LC
19.	Cyprinidae	Tor tor	Khusra	NT
20.	Cyprinidae	Hypophthalmichthys molitrix	Silver carp	NT
21.	Cyprinidae	Cyprinus carpio	Komal carp	VU
22.	Cyprinidae	Cyprinus specularis	Machii	VU
23.	Cyprinidae	Ctenopharungodon idella	Grass carp	NE
24.	Siluridae	Ompok bimaculatus	Botia	NT
25.	Siluridae	Wallago attu	Padhan	NT
26.	Bagridae	Mystus cavasius	Tengna	LC
27.	Bagridae	Mystus vittatus	Tengna	LC
28.	Bagridae	Mystus oar	Singi	LC
29.	Bagridae	Rita rita	Kotia	LC
30.	Bagridae	Bagarius bagarius	Bod	NT
31.	Saccobranhidae	Heteropneustes fossilis	Singhi	LC
32.	Clariidae	Clarias batrachus	Mongri	LC
Order – Beloniformes				
33.	Belonidae	Xenentodon cancila	Gunda	LC
Order – Ophiocephaliformes				
34.	Ophiocephalidae	Channa gachua	Bijalwa/Bijru	LC
35.	Ophiocephalidae	Channa marulius	Sanwal	LC
36.	Ophiocephalidae	Channa punctatus	Khoksi	LC
37.	Ophiocephalidae	Channa striatus	Bhunda	LC
Order – Perciformes				
38.	Centropomidae	Chanda nama	Chandeni	LC
39.	Centropomidae	Chanda ranga	Chandri	LC
40.	Nandidae	Nandus nandus	Bhedu	LC
41.	Anabantidae	Anabas testudineus	Koi	DD
42.	Gobiidae	Glossogobius giuris	Khasadda	LC
43.	Cichlidae	Oreochromis mossambicus	Tilapia	NT
Order – Mastacembeleformes				
44.	Mastacembelidae	Macrognathus aculeatus	Jat bami	NE
45.	Mastacembelidae	Mastacembelus pancalus	Bami	LC

Abbreviations: IUCN- International Union for Conservation of Nature, DD- Data Deficient, LC- Least Concern, VU- Vulnerable, NT- Nearly Threatened, NE- Not Evaluated.