IMPACT: International Journal of Research in Applied, Natural and Social Sciences (IMPACT: IJRANSS)
ISSN(E): 2321-8851; ISSN(P): 2347-4580
Vol. 2, Issue 5, May 2014, 241-246

ICHTHYOFAUNA OF WAINGANGA RIVER AT BALAGHAT, MADHYA PRADESH

HARIHAR SOLANKI, K. BORANA & T. ZAFAR

Department of Zoology and Applied Aquaculture, Barkatullah University, Bhopal, Madhya Pradesh, India

ABSTRACT

In the present ichthyofaunal study, a total of 29 fish species belonging to 10 families, 7 orders and 15 genera were recorded during Jan., 2013 to Dec., 2013 from the Wainganga River at Balaghat of Madhya Pradesh. On the basis of percentage composition and species richness, order Cypriniformes was dominant (18 species) followed by Ophiocephaliformes (4 species), Clupeiformes and Mastacembeliformes (2 species) and Beloniformes, Perciformes and Siluriformes (1 species each).

KEYWORDS: Ichthyofaunal, Wainganga, Balaghat, Richness, Cypriniformes

INTRODUCTION

Distribution of Icthyofaunal population in the ecosystem, their composition and seasonal variation are essential prerequisite for any successful resources management. Species diversity is a property of the population level while the functional diversity concept is more strongly related to ecosystem stability and stresses, physical and chemical factors for determining population dynamic in the lentic ecosystem (Kar and Barbhuiya, 2004). Fishes have a range of physiological tolerances that are dependent upon which species they belong to. They have different lethal temperature, dissolved oxygen requirements and spawning needs that are based on their activity levels and behaviors. Because fishes are highly mobile, they are able to deal with unsuitable abiotic factors in one zone by simply moving to another. Fishes exhibit enormous diversity in their morphology, in the habitats they occupy and in their biology. Unlike the other commonly recognized vertebrates, fishes are heterogeneous assemblage (Forese and Pauly, 1998). They can be used for ecological assessment (Harris, 1995). Besides, they are considered as important protein rich food source. Therefore, it is need of the hour to study fish diversity in order to conserve water bodies and increase our national economy by culturing them on scientific basis.

Many workers have studied Taxonomy, Biodiversity and Distribution of fishes found in freshwater bodies of various parts of India. David (1963) recorded fish fauna of Godavari and Krishna river. Very less information is available about ichthyofuana, present in lotic and lentic habitats of this tribal district Balaghat.

MATERIALS AND METHODS

The present study was conducted in the Wainganga River at Balaghat of Madhya Pradesh. The Wainganga river is the one of major tributary of Godavari river system. The total area of river is 58.22 ha. The flow of river water in this region is 7.6 km. The study was carried out at two sites in River Wainganga, at Balaghat. Two sites of river is surrounded by agricultural field and anthropogenic activities are observed on all sites. The climate of this area is of both warm and cool. River water is used for fishing, agriculture, irrigation and drinking purpose also Sampling was always done early in the morning, at fortnight intervals from Jan., 2013 to Dec.,2013 with the help of local fishermen. For capturing fishes, fishermen used gill nets, cast nets, hook and line and some other local nets of different mess sizes.

These nets are operated with or without fishing crafts. Fish samples collected were preserved in 5-10% formalin depending on the size of fish. Fishes were identified by following the keys given by Qureshi and Qureshi (1983), Talwar and Jhingran (1991), Jayaram (1991), Srivastava (2007).

RESULTS AND DISCUSSIONS

Wainganga River at Balaghat provides a habitat for fresh water fishes of diverse type. During the present investigation 29 fish species were recorded from the Wainganga River belonging to 7 orders, 10 families and 15 genera. The classification and systematic position of fish fauna is given below in Table 1.

Table 1: Systematic Position of Fish Fauna of Wainganga River at Balaghat of Madhya Pradesh

S. No	Order	Family	Species
1	Beloniformes	Belonidae	*Xenentodon cancila*
2	Clupeiformes	Notopteridae	*Notopterus notopterus*
3			*Notopterus chitala*
4	Cypriniformes	Cyprinidae	*Catla catla*
5			*Cirrihinus mrigala*
6			*Ctenopharyngdon idella*
7			*Labeo rohita*
8			*Labeo calbasu*
9			*Labeo gonius*
10			*Labeo bata*
11			*Labeo pangusia*
12			*Puntius sarana*
13			*Puntius ticto*
14			*Oxygaster bacaila*
15			*Oxygaster gora*
16		Bagridae	*Mystus cavasius*
17			*Mystus seenghala*
18		Siluridae	*Ompok pabo*
19			*Ompok bimaculatus*
20			*Ompok pabda*
21		Clariidae	*Clarias batrachus*
22	Mastacembeleformes	Mastacembelidae	*Mastacembelus armatus*
23			*Mastacembelus panculas*
24	Ophiocephaliformes	Ophiocephalidae	*Channa gachua*
25			*Channa marulius*
26			*Channa punctatus*
27			*Channa stratus*
28	Perciformes	Cichlidae	*Oreochromis mossambicus*
29	Siluriformes	Heteropneustidae	*Heteropneuteus fossilis*

Overall Family Wise Fish Species Percentage Composition of Wainganga River at Balaghat of Madhya Pradesh

Table 2 shows the overall family wise fish composition in Wainganga River at Balaghat. In the present ichthyofaunal study, a total of 29 fish species belonging to 10 families, 7 orders and 15 genera were recorded. On the basis of percentage composition and species richness, family Cyprinidae was dominant (12 species), followed by Ophiocephalidae (4 species) and Siluridae (3 species).

Table 2: Overall Family Wise Fish Species Composition of Wainganga River at Balaghat

S. No	Family	No. of Species	Composition (%)
1	Bagridae	2	6.89
2	Belonidae	1	3.44
3	Cichlidae	1	3.44
4	Clariidae	1	3.44
5	Cyprinidae	12	41.37
6	Heteropneustidae	1	3.44
7	Mastacembelidae	2	6.89
8	Notopteridae	2	6.89
9	Ophiocephalidae	4	13.79
10	Siluridae	3	10.34
	Total	**29**	**100**

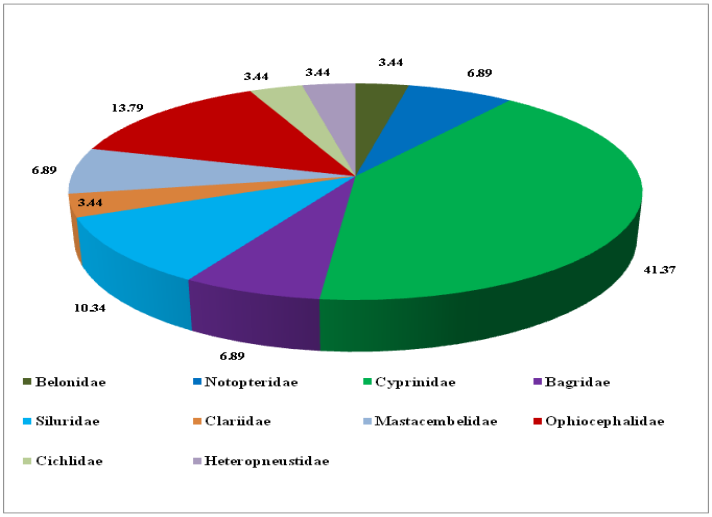

Figure 1: Overall Family Wise Fish Species Composition of Wainganga River at Balaghat

Family Wise Individual Percentage Composition of Wainganga River at Balaghat

Table 3 shows the family wise individual percentage. The family Cyprinidae was dominant with the highest percentage of 36.65%, followed by Notoptertidae 18.54% and Bagridae 14.93%.

Table 3: Family Wise Individual Percentage Composition Wainganga River at Balaghat

S. No	Family	No. of Individuals	Composition (%)
1	Bagridae	174	14.93
2	Belonidae	8	0.68
3	Cichlidae	76	6.52
4	Clariidae	10	0.85
5	Cyprinidae	427	36.65
6	Heteropneustidae	19	1.63
7	Mastacembelidae	92	7.89
8	Notopteridae	216	18.54
9	Ophiocephalidae	80	6.86
10	Siluridae	63	5.40
	Total	**1165**	**100**

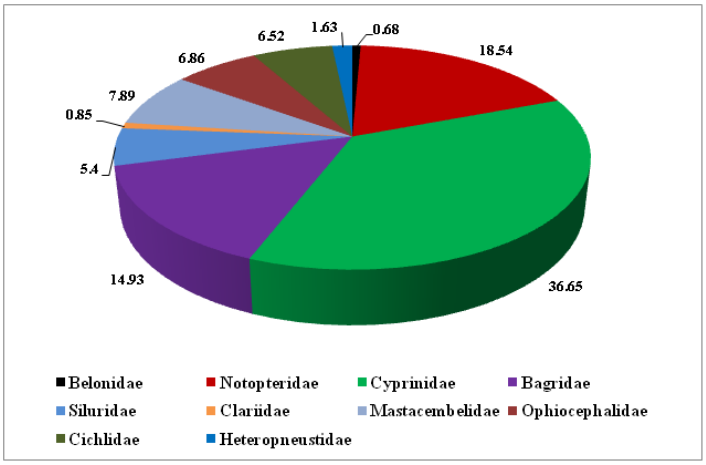

Figure 2: Family Wise Individual Percentage Composition of Wainganga River at Balaghat

In the present ichthyofaunal study, a total of 29 fish species belonging to 10 families, 7 orders and 15 genera were recorded from the Wainganga River at Balaghat. On the basis of percentage composition and species richness, order Cypriniformes was dominant (18 species) followed by Ophiocephaliformes (4 species), Clupeiformes and Mastacembeliformes (2 species) and Beloniformes, Perciformes and Siluriformes (1 species each). During the present investigation the order of dominance is as follows:

Cypriniformes > Ophiocephaliformes > Clupeiformes = Mastacembeliformes > Beloniformes = Perciformes = Siluriformes.

Gedekar and Tijare (2012) studied the fish diversity of Wainganga River at Markandadeo and revealed that 49 species of 33 different genera, 15 families and 7 orders were recorded. Rathod and Shinde (2012) studied the diversity of icthyofaunal of Wainganga River at Pauni, it revealed that 41 species of 28 different genera 15 families and 5 orders. The members of Order Cypriniformes were dominated by 17 species followed by Perciformes 7 species followed by Siluriformes with 4 species followed by Synbranchiformes two species and Beloniformes one species.

The work will provide future strategies for development and fish fauna conservation Wainganga River. To maintain Fish diversity has immense importance as it is not always possible to identify individual species critical to sustain aquatic ecosystem.

CONCLUSIONS

Out of 29 fish species found in the Wainganga River at Balaghat, 12 species belong to the carp group. The carps, *Catla catla*, *Cirrihinus mrigala*, *Ctenopharyngdon idella*, *Labeo rohita* have highly commercial as well as economical importance while the other carps, *Labeo calbasu*, *Labeo gonius*, *Labeo bata*, *Labeo pangusia*, *Puntius sarana*, *Puntius ticto*, *Oxygaster bacaila* and *Oxygaster gora* are economically important.

ACKNOWLEDGEMENTS

The authors are thankful to Head, Dept of Zoology and Applied Aquaculture, Barkatullah University (M.P.) India for providing laboratory and library Facilities

REFERENCES

1. Forese, R. and Pauly, D., (1998): Fish Base 98: Concepts, Design and Data sources, Manila: ICLARM. pp. 66-94.
2. Harris, J.H. (1995). The use of fish in ecological assessments. Australian Journal of Ecology, 20, 65-80.
3. Kar, D. and M.H. Barbhuiya (2004). Abundance and diversity of zooplankton in Chatla Haor, a floodplain wetland in Cachar district of Assam Environment and Ecology 22(1): 247-248.
4. David, A. (1963). Studies on fish and fisheries of the Godavari and Krishna river systems. Part 1. Proceedings of the National Academy of Science India, 33(2): 263-293.
5. Qureshi and Qureshi (1983): Indian fishes. Publisher: Brij Brothers Sultania Road, Bhopal. 1-150.
6. Talwar, P.K. and A.G. Jhingran. 1991: Inland fishes of India and adjacent countries. Vol. i&ii Oxford and IBH publishing company, New Delhi, India. Pp.1158.
7. Jayaram, K. C. (1999). The fresh water fishes of the Indian Region; narendra Publishing House, Delhi- 110006.
8. Srivastava Gopalji (2007). Fishes of UP& Bihar; Vishwavidhyalaya Prakasan, Varanasi- 221001.
9. S.G. Gedekar and R.V. Tijare. 2012 Study of Ichthyofauna of River Wainganga, Markandadeo region, tah. Chamorshi, dist.-Gadchiroli (M.S.) Bionano Frontier VOL. 5 (2 - I) 155-158.
10. Sandeep R. Rathod and Sunil E. Shinde (2012). Fish diversity status of Wainganga river at Pauni, dist. Bhandara (M.S.) India. Bionano Frontier Vol. 5 (2) 256-258.