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***Research Article** (Open Access)*

ICTHYOFAUNAL DIVERSITY OF RIVER BETWA IN BUNDELKHAND REGION

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ABSTRACT
This current research investigation was conducted to explore the ichthyofaunal diversity of river Betwa in Bundelkhand region from January 2018 to December 2019. The study was conducted in four different sampling sites, which includes Knotghat, Kolwan, Baratha village and Parichha dam head. During the present study, 20 species of fishes were reported which were classified under seven orders and twelve families. Order Siluriformes (41.66%) contribute maximum number of fish family fallowed by Perciformes (16.66%), Beloniformes, Cypriniformes, Ophiocephaliformes, Osteoglossiformes and Synbranchiformes (8.33%) respectively. In the present study share percentage of species composition was dominant in order Cypriniformes and Siluriformes (35%) fallowed by Perciformes(10%), Beloniformes, Ophiocephaliformes, Osteoglossiformes and Synbranchiformes (5%) respectively.

Keywords: *Ichthyofaunal diversity, Betwa river, Bundelkhand region*

INTRODUCTION
Bundelkhand is the prestigious historical heritage region in the lap of central India. In this region river Betwa act as a boon, especially when major part of this region suffers from a phase of water crisis. This river provides water, for electricity generation from thermal power plant, irrigation purpose for agriculture sector, fisheries production and also utilized for drinking water supply. Biodiversity of aquatic ecosystem varied from microscopic planktonic organism to higher faunal vertebrates likes fishes, reptiles, amphibians and mammals. The diversity of piscian fauna has its own significance value because fisheries business plays a crucial role in their economic sector. Fishes are the most important valuable animal in terms of nutritional form, scientific studies form as well as medical point of view. In India there are 2,500 species of fishes, of which 930 live in freshwater and 1,570 are marine (Kar *et al.*, 2003). In India, 2,246 indigenous fin-fishes have been described of which 765 belongs to fresh water (Lakra et al, 2009). Recently but not least various ichthyologists in Bundelkhand region gave their remarkable contribution in the field of ichthyodiversity, Vyas *et al.* (2012), Napit (2013), Bhat and Rao (2018) etc.
Today various fisheries resources are wiped out across the India due to greater human invasion on one hand and huge pollution load on aquatic bodies on other hand. Ichthyodiversity is the most significant knowledgeable scientific field to assess the different kind of piscian species of any aquatic body. Therefore from author point of view, the main objective of this research work act as a baseline information window for different varieties and species composition of fishes of river Betwa in Bundelkhand region.

MATERIAL AND METHODS
An Outline of the Research Area- The research area is located about 13 km away from main Jhansi city, which cover from Notghat bridge to Parichha dam head. The four locations are spotted on Betwa river for analyzing the different varities of piscian species. These are Knotghat bridge region, Kolwan village, Baratha village and Parichha dam head.
Data Collection and Analysis- The fish samples were collected and identified from all four sampling sites with the help of local fish catchers**.** These fishermen use various kind of gill and cast nets of different mesh size for trapping the fishes. These nets were fixed at evening time and fishes were collected during morning time. Some local fishermen operated boat (kisti) also during day time for fishing activities. The collected fish samples were examined and identified with the help of standard authentic keys. The

literatures used for this research investigation such as Days (1958), Jhingaran (1985). Jayaram (1994), Talwar and Jhingran (1991) and Srivastava (1980).

RESULT AND DISCUSSION

During this current research investigation total twenty fish species were documented. These belong to seven order (Beloniformes, Cypriniformes, Ophiocephaliformes, Siluriformes, Osteoglosiformes and Synbranchiformes) and twelve families (Belonidae, Cyprinidae, Channidae, Centropomadae, Nandidae, Notopteridae, Bagridae, Clariidae, Siluridae Heteropneustedae, Pangasiidae, and Mastacembelidae). The identified fish species includes *Xenentodon cancila, Labeo rohita, Catla catla, Cirrhinus reba, Ctenopharyngodon idella, Pangasius bocourti, Cyprinus carpio, Puntius sophore, Bangna ariza, Channa striatus, Notopterus notopterus, Sperata aor, Rita rita, Clarius batrachus, Heteropneustes fossilis, Nandus nundus, Chanda nama, Ompok pabda, Wallago attu and Mastacembelus armatus.*

Table 1: Distribution of various species

Order	Families	Genera	Species	% Composition of families in order	% Composition of species in order
Beloniformes	1	1	1	8.33%	5%
Cypriniformes	1	7	7	8.33%	35%
Ophiocephaliformes	1	1	1	8.33%	5%
Osteoglossiformes	1	1	1	8.33%	5%
Perciformes	2	2	2	16.66%	10%
Siluriformes	5	7	7	41.66%	35%
Synbranchiformes	1	1	1	8.33%	5%

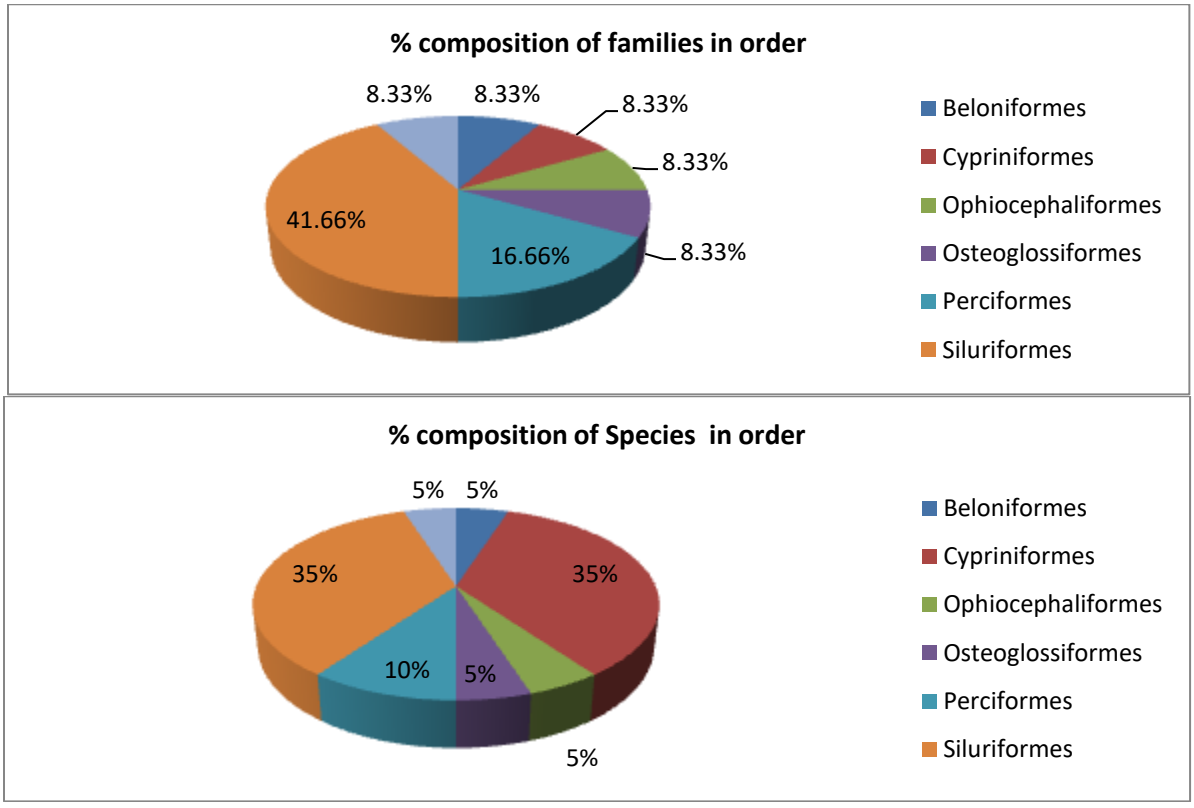

Figure 1: % Composition of families and species in order

Order Siluriformes consists of five families (41.66%) with seven genera and seven species (35%), order Cypriniformes contain one family (8.33%) with seven genera and seven species (35%), order Perciformes contain two family (16.66%) with two genera and two species (10%) while order Beloniformes, Ophiocephaliformes, Osteoglossiformes and Synbranchiformes each contain only one family (8.33%) with one genera and one species (5%) respectively.

Vyas *et al.* (2012) also reported total 60 species of fishes from river Betwa with family Cyprinidae contain maximum contributed number of piscian varities belonging to order Cypriniformes. Paunikar *et al.* (2012) also found 33 fish species belonging to 5 order Cypriniformes, Siliriformes, Synbranchiformes, Perciformes and Beloniformes with dominance of fish varieties belonging to order Cypriniformes.

Uchchariya *et al.* (2012) also reported 40 species of fishes from Tighra reservoir of Gwalior (M.P.) with 8 order, 12 families and 23 genera and found that order Cypriniformes was dominant order with maximum number of fish species. The family Belonidae, Clariidae and Heteropneustedae also represented the same contribution of one species each as found by Bhat and Rao (2018).

Table 2: An outline of Fishes Recorded in Betwa River

S. No.	Order	Family	Local (commom) name	Scientific zoological Name	Trophic Status	Feeding Habit
1.	Beloniformes	Belonidae	Suja	*Xenentodon cancilla* (Hamilton, 1822)	Surface feeder	Carnivorous
2.	Cypriniformes	Cyprinidae	Rohu	*Labeo rohita* (Hamilton, 1822)	Column feeder	Herbivorous
3.	Cypriniformes	Cyprinidae	Catla	*Catla catla* (Hamilton, 1822)	Surface feeder	Planktivorous
4.	Cypriniformes	Cyprinidae	Naren	*Cirrhinus reba* (Hamilton, 1822)	Bottom feeder	Omnivorous
5.	Cypriniformes	Cyprinidae	Grass carp	*Ctenopharyngodon idella* (Cuvier and Valenciennes,1844)	Column feeder	Herbivorous
6.	Cypriniformes	Cyprinidae	Common carp	*Cyprinus carpio* (Linnaeus,1758)	Bottom feeder	Omnivorous
7.	Cypriniformes	Cyprinidae	Khadiya	*Puntius sophore* (Hamilton,1822)	Surface feeder	Omnivorous
8.	Cypriniformes	Cyprinidae	Bhangna	*Bangna ariza* (Hamilton,1807)	Bottom feeder	Herbivorous
9.	Ophiocephaliformes	Channidae	Sour	*Channa striatus* (Bloch,1793)	Bottom feeder	Carnivorous
10.	Osteoglossiformes	Notoptridae	Patola	*Notopterus notopterus* (Lacepede,1800)	Bottom feeder	Carnivorous (predatory)
11.	Perciformes	Ambassidae	Chanda	*Chanda nama* (Hamilton,1822)	Surface feeder	Carnivorous
12.	Perciformes	Nandidae	Chameria	*Nandus nundus* (Hamilton,1822)	Surface feeder	Herbivorous
13.	Siluriformes	Bagridae	Tengra	*Sperata aor* (Hamilton,1822)	Bottom feeder	Carnivorous

14.	Siluriformes	Bagridae	Khagga	*Rita rita* (Hamilton,1822)	Column/ Bottom feeder	Omnivorous
15.	Siluriformes	Clariidae	Mangur	*Clarius batrachus* (Linnaeus,1758)	Bottom feeder	Omnivorous
16.	Siluriformes	Heteropneustidae	Singhi	*Heteropneustes fossilis* (Bloch,1794)	Bottom feeder	Omnivorous
17.	Siluriformes	Pangasiidae	Pangas/ pankaj	*Pangasius bocourtii* (Sauyage,1880)	Bottom feeder	Carnivorous
18.	Siluriformes	Siluridae	Pabdan	*Ompok pabda* (Lacepede,1803)	Bottom feeder	Carnivorous
19.	Siluriformes	Siluridae	Padhin	*Wallago attu* (Bloch and Schneider,1801)	Column/ Bottom feeder	Carnivorous (predatory)
20.	Symbranchiformes	Mastacembelidae	Baam	*Mastacembelus armatus* (Lacepede,1800)	Column/ Bottom feeder	Carnivorous

CONCLUSION

The various varieties of piscian species of any aquatic zone varied from region to region in every part of the world including India. The predominant and principal fundamental reason behind this argument is their different feeding habitat, diverse geographical distribution and different limno-ecological condition of every inland water bodies. Today a lot of overfishing operations are amplifying in all region of Bundekhand area. The key reason behind this negative impact is to overcome the economic pressure on human society. It is also observed during field visit illegal fishing activities are regularly accelerated even at breeding season of fishes too, which destabilizes our aquatic ecosystematic body. Due to which composition and varieties of piscian species are under alarming threats. So it is very essential to seek effective remedial steps and pro-active polices for awareness of local fishermen community.

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REFERENCES

Bhat H and Rao R J (2018). Studies on Fish diversity of Tighra reservoir Gwalior, Madhya Pradesh,
Days F (1958). Fresh water fish fauna of British India., *International Journal of Zoology Studies*, **3**(2) 68-73.
Jayaram K C (1999). The fresh water fishes of Indian region. Narendra Publishing House Delhi, 557.
Jhingran V G (1985). Fish and Fisheries of India, Hindustan Publishing Corporation Delhi.
Kar D A Bohra C K and Singh L K (2003). Fishes of Barak drainage, Mizoram and Tripura; In: *Environment, pollution and management*, APH Publishing Corporation, New Delhi, 604.
Lakra W S Singh A K Mahanta P C (2009). Fish Genetic Resources, Narendra Publication, New Delhi.
Paunikar S Tiple A Jadhav S S and Talmale S S (2012). Studies on Ichthyofaunal diversity of Gaur River, Jabalpur, Madhya Pradesh, Central India, *World Journal of Fish and Marine Science*, **4**(4), 356-359.

Srivastava G (1992). Fishes of U.P.and Bihar, Vishwavidalya Prakashan, *4th Edition*, Varanasi, 1-207.
Talwar P K Jhingran V G (1991). Inland Fishes of India and Adjacent Countries. Vol I and II. Oxford and IBH Publishing Corporation New Delhi, India, 1158.
Uchchariya D K Sexena M Saksena D N (2012). Fish Biodiversity of Tighra Reservoir of Gwalior, Madhya Pradesh, *India, Journal of Fisheries and Aquaculture*, **3**(1) 37-43.
Vyas V Damde D and Parashar V (2012). Fish Biodiversity of Betwa River in Madhya Pradesh, India with special reference to a sacred ghat, *International journal of biodiversity and conservation*, **4**(2) 71-77.