Eco. Env. & Cons. 29 (July Special Issue– Int. Seminar Env. Issues and Sustainable Development, Durg, 2–3, Feb., 2023): pp. (S9-S12)

ISSN 0971–765X

DOI No.: http://doi.org/10.53550/EEC.2023.v29isp1.003

Study of Ichthyofaunal Diversity of Murrum Silli Reservoir, Dhamtari District, India

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ABSTRACT

The present study was conducted in the Murrum Silli Dam to observe the biodiversity of fish in the Dhamtari District. Murrum Silli Dam is embanked on the Sillari River, located in the Dhamtari District, Chhattisgarh, India. The total capacity of the reservoir is 165,340,000 m^3 with a surface area of 25 km^2. The fish samples were collected by netting method for the biodiversity study of fish from Janurary 2022 to june 2022. In this study, a total of 42 species under 34 genera, 16 families, and 7 orders were recorded. The order Cypriniformes dominated with a total of 20 species, followed by Siluriformes (8 species), Perciformes (5 species), Anabantiformes (5 species), Synbranchiformes (2 species), Clupeiformes and Osteoglossiformes (1 species each). Fishes have been classified based on their conservation Status and commercial importance. Out of the total species recorded, 17 species were ornamental in nature and 3 species were in the vulnerable category.

Key words *: Ichthyofaunal diversity, Fish, Murrum Silli Dam, Sillari River, Dhamtari District.*

Introduction

Fish contributes to the biodiversity of India as an important group of the animal world. Fish constitute the recognizable part of all vertebrates present in the world. Studies in the field of ichthyofaunal diversity help us to the realization that fishes are the dominant species of many aquatic habitats. The understanding of ichthyofaunal diversity is a major aspect of the exploitation of freshwater reservoirs and sustainable as well as economical management. The rich biodiversity also indicates the great adaptability of fishes. Fish are also considered a palatable protein-rich food for the majority of people. The production in Chhattisgarh is about 591284.00 metric tons (2021-22) and 16395.29 metric tons of fish are produced from the reservoir. The total fish production from the Dhamtari district alone is 21519.39 metric tons.

Materials and Method

Study area

The present study was carried out at Murrum silli reservoir, which is situated in the dhamtari district of Chhattisgarh. It is also known as Madam silli and Mordem silli. Murum silli reservoir was constructed in the early 20th century (1914-1923) on sillari river. It is a tributary of Mahanadi in the Dhamtari district of Chattisgarh, situated near to the Ravishankar sagar jalashay. The coordinate lies between 20*32′17"N and 81*39′82"E. Murum silli is an embankment reservoir, it is the first reservoir in Asia to have siphon spillways. The total capacity of the reservoir has 165,340,000 m^3 and the surface area is 25km^2.

Methodology

The study was carried out for six months from January 2022 to June 2022. The fish was collected from

Murumsilli reservoir and other information were collected from the local fishermen and local fish market. Fishing for the study purpose was carried out with the help of local fishermen by use of gill net, cost net, drag net, and scoop net. Photographs were taken before the preservation of fish for the further identification purpose. Fishes were identified in the field and the unidentified fish specimen was preserved at 8-10% formalin and identified with help of book and key (Day, 1878, Datta and Shrivastava, 1988) (Jairam, 1961, 1981, 2011).fishes are classified with the help of (Day, 1889, 1958) Talwar and Jhingran (1999) Menon (1999) Jayaram (1991) Sunil mondal (2014). Identification of every species was done on basis of morph metric descriptive characters and the fin formula. Fish base website was also referred for find conformation (www.fishbase.org).

Results and Discussion

During the study, a total of 42 species under 34 genera 16 families, and 7 order was recorded. Cypriniformes was the most dominant group contributing 47.62% of the total species. According to studies 3 families and 18 genera under the order Cypriniformes, 5 families and 7 genera under the order Siluriformes, 1 family, and 1 genus were found under the order Osteoglossiformes and Clupeiformes, 3 families and 3 genera found in the order Perciformes, 1 family and 2 genera belong to order Synbranchiformes and 2 family and 2 genus belong to order Anabantiformes. We found out that Cyprinidae family was more dominant. Many researchers have reported the strong dominance of Cyprinidae family in their research work on ichthyofaunal diversity. Sahu Sachin *et al.*, (2013) reported 54 species in Kawardha Town of C.G. in India. Cyprinidae family is dominant and contributes 22 species. Sanjay *et al.* (2014) reported 25 species in pakhanjore dam Kanker district C.G. Cyprinidae were the dominant group representing 12 species. Sakhare (2001) reported 23 species belonging to 7 orders where the Cyprinidae family was dominant with 11 species from Jawalgaon reservoir. Narsimha *et al.*, (2013) reported 30 species in Nagaram Tank of Warangal, Andhra pradesh where order Cypriniformes were dominant by contributing 13 species. The present study also focuses on the commercial importance and conservation status of the fish in murrumsilli reservoir. According to commercial use, 24 species are food fish, 2 are ornamental fish and 16 species are both food fish and ornamental fish.

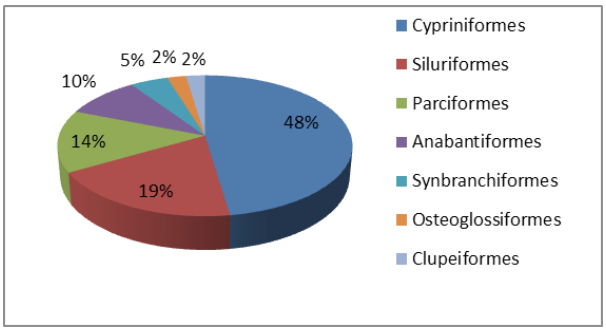

Fig. 3. Percentage distribution of total order of fishes.

Acknowledgement

The Authors are extremely grateful for Mr.Vikas Thakur (fisheries officer) and the local fisherman assistance during the study period.

References

Choubey, K. and Qureshi, Y. 2013. Study of Ichthyofaunal Biodiversity of Rajnandgoan Town CG, India. *International Research Journal of Biological Science*. 2: 21-24.

Hora, S.L. 1940. On a collection of fish from the head waters of the Mahanadi River, Raipur district, C.P. record of Indian Museum. 42(2): 365-375.

Om Prakash 2004. Fish diversity in the water resources of Northern part of Raipur district of Chhattisgarh. M.F.Sc. Thesis. Deptt. of Fisheries, IGKV, Raipur.

Patel, G., Kumar, S., Bhakta, D., Behera, S., Kumar, N., Verma, R., Kumar, V. and Ahmad, T. 2016. Fish Fauna Diversity of Mahanadi River in Raigarh District, Chhattisgarh.

Sahu, K. R. 2015. Studies on Piscean Diversity of Mahanadi River Chandrapur,District Janjgir-Champa, Chhattisgarh. *IJMSET*. 2: 1-5.

Sakhare, V. B. 2001. Ichthyofauna of Jawalgaon reservoir in Sholapur district of Maharashtra. *Journal of Aquatic Biology*. 6(1 and 2): 31-33.

Singh, S. 2004. *Fish diversity in the water resources of Southern part of Raipur district of Chhattisgarh state*. M.F.Sc. Thesis. Dept. of Fisheries, IGKV, Raipur.

Swarnkar, S., Niyazi, A., Sahu, D. and Singh, J. 2020. Fish Biodiversity Study of Ghongha Dam In Bilaspur District, Chhattisgarh. *Experiment Zoological India*. 23(2): 1931-1936.

Sahu, S. and Datta, S. 2020. Study on Fish Diversity of Kawardha Town, Chhattisgarh, India. *International*

Table 1. Fish diversity survey of Murumsilli reservoir, Dhamtari district C.G. and their commercial importance

Family	Scientific Name	Common Name	Local Name	Conservation Status	Commercial Importance
1) Order- Clupeiformes					
Engraulididae	*Gonialosamanmina* (Hamilton,1822)		Chandaini	LC	FF
2) Order – osleoglossiformes					
Notopteridae	*Notopterus notopterus* (Pallas, 1769)	Bronze featherback	Chilal	LC	FF/OR
3) Order – Anabantiformes					
Channidae	*Channa gachua* (Ham. 1822)	Dwarf sneakhead	Bhunda	LC	FF
	Channa marulius (Ham. 1822)	Great snakehead	Bhunda	LC	FF/OR
	Channa punclate (Bloch, 1793)	Spotted snakehead	Bhunda	LC	FF/OR
	Channa striata (Bloch, 1793)	Striped snakehead	Bhunda/ Dermchul	LC	FF/OR
Anabantidae	*Anabas testudineus* (Bloch, 1792)	Climbing perch	Kevai	VU	FF
4) Order-Synbranchiformes					
Mastacembelidae	*Mastacembelus armatus* (Lacepede,1800)	Zig Zag eel	Bami	LC	FF
	Macrognathus pancalus (Ham. 1822)	Barred spiny eel	Bami	LC	FF/OR
5) Order – Parciformes					
Ambassidae	*Chanda nama* (Ham. 1822)	Ganga river sprat	Chandaini	LC	FF
	Chanda ranga (Ham. 1822)	elongaled glass	Chandaini	LC	FF/OR
Cichlidae	*Oreochromismossambicus* (Peters, 1852)	Tilapia	Tilafia	LC	FF/OR
	Oreochromis niloticus (Linnaeus, 1758)	Nile Tilapia	Tilafia	LC	FF/OR
Belonidae	*Xenentodon cancilae* (Ham.1822)	Fresh water garfish	Bama	VU	FF
6) Order – Cypriniformes					
Cyprinidae	*Amblypharyngodon mola* (Ham. 1822)	Molacarplet	Mohroli	LC	FF/OR
	Barilius bendelisis (Ham.1822)	Hamilton barila	Jori	LC	FF
	Catla catla(Ham. 1822)	Catla	Katla	LC	FF
	Cirrhinus mrigala(Ham.1822)	Mrigal	Mirgal	LC	FF
	Ctenopharyngodon idella (Valenciennes, 1844)	Grass carp	Ghaskat	NE	FF
	Cyprinus carpio (Linnaeus, 1758)	Common carp	Komalkar	VU	FF
	Danio rerio(Ham. 1822)	Zebra fish	Dadai	LC	FF/OR
	Garra mullya(Sykes,1839)	Sucker fish	Gadela	LC	FF
	Hypophthalmichthys molitrix (Valenciennes,1844)	Silver carp	Silver Kar	NT	FF
	Hypophthalmichthys nobilis (Richardson,1845)	Bighead carp	Bigrad		FF
	Labeo calbasu(Ham,1822)	Orange-finlabeo	Kalbaz	LC	FF/OR
	Labeo gonius(Ham.,1822)	KuriaLabeo	Roha	LC	FF
	Labeo rohita(Ham. 1822)	Rohu	Roha	LC	FF
	Ostreobrama cotio (Ham. 1822)	Cotio	Kotri	LC	FF/OR

Table 1. *Continued ...*

Family	Scientific Name	Common Name	Local Name	Conservation Status	Commercial Importance
	Systomus sarana(Ham. 1822)	Olive barb	Kotra	LC	FF/OR
	Puntius sophore(Ham. 1822)	Pool barb	Kotri	LC	OR
	Pethia ticto(Ham. 1822)	Ticto barb	Kotri	LC	OR
	Salmophasia bacaila (Ham.1822)	Large razor belly minnow	Sarangi	LC	FF
Balitoridae	*Acanthocobitis botia* (Ham. 1822)	MottledLoach	Rudwa	LC	FF
Cobitidae	*Lepidocephalichthys guntea* (Ham. 1822)	Guntea loach	Rudai	LC	OR/FF
7) Order- Siluriformes					
Siluridae	*Ompok pabda*(Ham. 1822)	Pabdah cat fish	Pabda	LC	FF
	Walla goattu (Bloch, 1801)	Wallago	Padhina	NT	FF
Bagridae	*Sperata aor*(Ham. 1822)	Long-whiskeredcat fish	Tengana	LC	FF
	Mystus cavasius (Ham. 1822)	Gangeticmystus	DesiTengna	LC	FF
	Mystus tengara (Ham. 1822) (Hamilton,1822)	Tengara catfish	Tengna	LC	FF
Pangasiidae	*Pangasius pangasius* (Ham. 1822)	Pangas catfish	Sawali	LC	FF
Heteropneustidae	*Heteropneustes fossilis* (Bloch,1794)	Stinging catfish	Singhi	LC	FF/OR
Clariidae	*Clarias batrachus* (Linnaeus,1758)	Walking catfish	Mongri	NT	FF/OR

Journal of Current Microbiology and Applied Sciences. (9): 9.

Patel, G., Chari, M.S., Kumar, S. Bhakta, D. and Behera, S. 2016. Status of ornamental fish diversity of Raigarh district, Chhattisgarh, India, *International Journal of Science and Nature.* 17 (3): 575-578.