



Ichthyofaunal Diversity in Kohargaddi dam of District Balrampur, Uttar Pradesh State, India

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Abstract

Fish constitute an important group of Superclass-Pisces, subphylum-Vertebrata, division-Gnathostomata and are very useful in biological researches. The present study on Ichthyofaunal diversity in Kohargaddi dam of district Balrampur was carried out from July 2022 to May 2023 for a period of 11 months. Fishes are very important from biodiversity point of view. Therefore, during the present investigation, fishes were collected and identified. The aim of this study was to reveal the fish diversity of fish species in this dam. The various fishes collected from this dam are found to be very common in respect of other freshwater reservoir of Balrampur belt and represented 18 fish species, 12 genera, 5 order and 8 families. The family-Cyprinidae was observed as the most abundant: 9 species were recorded while second abundant family-Ophiocephalidae: 3 species were observed and other family-Bagridae: 2 species, Centropomidae: 2 species, Clariidae: 1 species, Heteropneustidae: 1 species, Notopteridae: 2 species and Siluridae: 1 species were also recorded during in this survey. Genus Channa and Cyprinus were the abundant of other genera. There is no documentary record available of the present study area till the date regarding its freshwater fish fauna. In the present study freshwater fish diversity in Kohargaddi dam is documented.

Keywords: Fish diversity, freshwater and Kohargaddi dam.

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Introduction

Water is the most productive resource for Pisciculture. Fishes are the largest group of subphylum- Vertebrata and division Gnathostomata in the world. Around the world approximately 22,000 species of fishes have been recorded out of which 11% are found in India, that is about 2,500 species of fishes of which 930 live in freshwater and 1,570 are marine (Kar,2003 and Ubarhande et.al.2011). India is one of the mega biodiversity countries in the world and occupies the ninth position in terms of freshwater mega biodiversity (Shinde et.al., 2009). Studies on taxonomy (Ichthyofaunal diversity) have been immense interest to researchers of all times (Day,1878, Hamilton, 1922 and Menon,1992).

Many species of fishes are found in different ponds, lakes, dams and river. Many workers have worked on the fish species of different reservoirs of Uttar Pradesh State. Fish from Uttar Pradesh have been reported by Srivastava (2002) who listed 87 fish species. Hora(1949) made a detailed study on river Rihand fish fauna and recorded 42 species. Motwani and David(1957) reported 95 fish species from river Sone and Srivastava et.al.(1966) reported 55 species from river Ken, district Banda, Uttar Pradesh. Menon(1992) listed 141species occurring in Ganga river system. Joshi (1994) has given an account of the fish fauna of Kali river. Jitendra Kumar et.al. (2013) reported 62 fish species belonging to 41 genera from various water sources of district Faizabad, Uttar Pradesh. Nagma and Afzal Khan (2013)listed 36 fish species belonging to 23 genera from water bodies of district Bijnor, Uttar Pradesh. Shukla and Singh (2013) listed 18 fish species belonging 17 genera from Aami river Gorakhpur. Verma et.al.(2015) reported 83 fish species belonging to 58 genera from water sources of Lucknow district (Uttar Pradesh). Seema Jain (2017) listed 61 fish species belonging to 38 genera from various water sources of Western Uttar Pradesh, India. Verma et.al.(2018)listed 45 fish species belonging to 32 genera from Bakhira lake (U.P.),India.

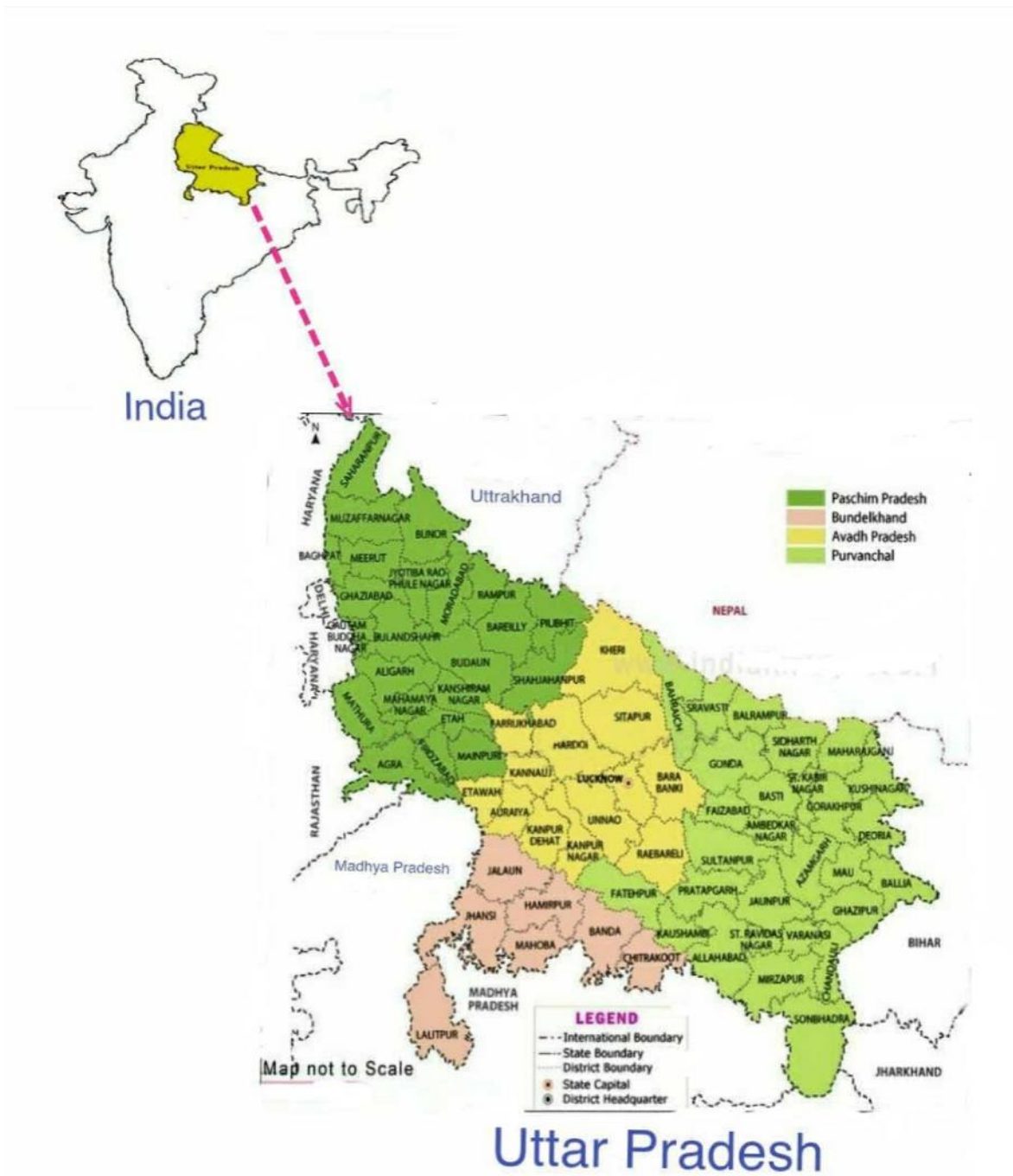
The species diversity of an ecosystem is often related to the amount of living, nonliving and organic matter present. In the field of fish fauna there is valuable an incision in their abdomen and preserved. As per economic importance, scope of fish and fisheries especially in Uttar Pradesh state but it is natural to study the distribution and availability of fish from fresh water. The objective of the present study was to documented freshwater fish diversity in Kohargaddi dam of district Balrampur, Uttar Pradesh state, India.

Location of Study area: Kohargaddi dam of district Balrampur which has a triangular shaped basin is located at Indo-Nepal border at Pachperwa town. It is 62 km away from district head quarter. The dam is situated at longitude 82°34' east and latitude 27°36' north (Map-1&2).Usually this dam is utilized to irrigate 50,342 acres land of district Balrampur. This dam is about 8 km in length ,having 120 metres water level. The height of dam is 36 metres, which will discharge about 24000 cumex minimum water every year. It covers about 126 km catchment area. It surrounded three side by bandha (east, west and south side) and the north side connected with Hagni nalah and south side connected with nahar.

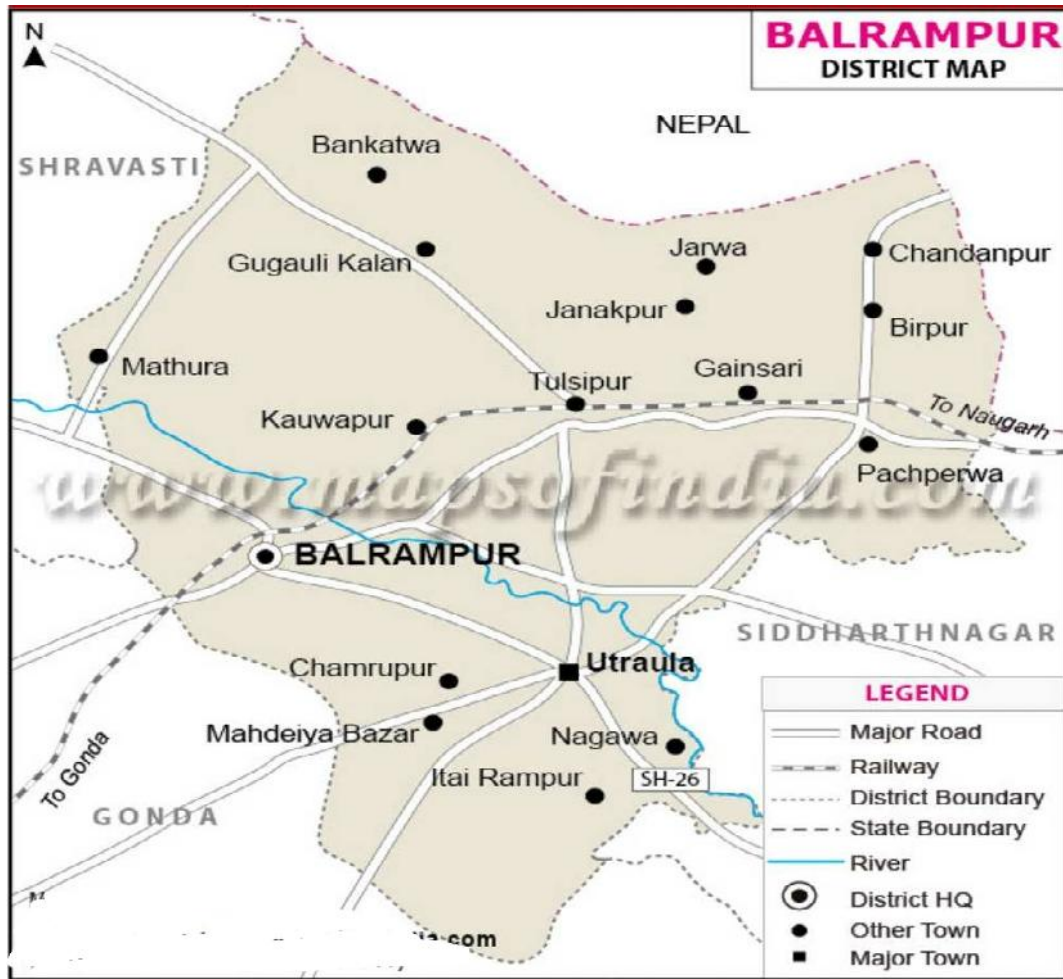
Materials and Methods

In Kohargaddi dam, fishes were caught and collected for the study from four sites of this dam by hand nets, gill nets, cast nets, hook and drag nets with the help of local people and fisherman mainly during the time of fishing. Investigation regarding fish capture and collection were conducted fortnightly that is three time in 11monthsfor the period from July 2022 to May 2023.

Fishes were identified by using the standard keys of Day (1978), Jhingram (1991), Jayram (1999) Srivastava (2002) and Vishwanath (2002). Interaction with local people also assisted the authors in various ways for data collection and identification.



Map-1: Location of study area in Uttar Pradesh



Map-2: Location of study area in district Balrampur

Results and Discussion

During present study, total of 21 fish species belonging to 12 genera, 5 order and 8 families were collected and identified. The details of these fishes are listed in (Table-1). Fish diversity comprised of 8 families namely Cyprinidae 37.06 %, Bagridae 13.81%, Ophiocephalidae 14.82 %, Centropomidae 12.71%, Notopteridae 7.45 %, Clariidae 6.72 %, Heteropneustidae 3.74% and Siluridae 3.69 % (Table-2).

The family- Cyprinidae (order-Cypriniformes) was observed as the most abundant contains 9 fish species, namely- *Catla catla*, *Cirrhinus mrigala*, *Cirrhinus reba*, *Cyprinus carpio communis*, *Cyprinus carpio nudus*, *Cyprinus carpio specularis*, *Labeo calbasu*, *Labeo rohita* and *Puntius chola* were recorded while second

abundant family- Ophiocephalidae (order-Ophiocephaliformes) contains three fish species *Channa marulius*, *Channa punctatus* and *Channa striatus* were observed. The above discussed fish species were the major composition of fish diversity in Kohargaddi dam. Other family- Bagridae (Order- Siluriformes) contains two fish species *Mystus seenghala* and *Mystus tengara*, family- Centropomidae (Order-Perciformes) contains two species *Chanda nama* and *Chanda ranga*, family-Clariidae (Order-Siluriformes) contains one species *Clarias batrachus*, family-Heteropneustidae (Order-Siluriformes) contains one species *Heteropneustes fossilis*, family-Notopteridae (order-Clupeiformes) contains two species *Notopterus chitala*, *Notopterus notopterus* and family-Siluridae (order-Siluriformes) contains one species *Wallago attu* were also found during our survey. In this way authors recorded 21 fish

species. *Heteropneustes fossilis* and *Mystus* species are economically important but these fish species are illegally exploited by the local peoples of this area. Several workers have works in various lentic and lotic water bodies regarding the distribution and abundance of fish species. Dubey (1959),

Singh (1994), Jayram (1999), Singh and Mishra (2001), Srivastava (2002), Tewari (2006), Regi and Kumar (2012), Shukla and Singh (2013), Wani and Gupta(2015), Seema Jain(2017), Verma (2018) and Tripathi (2020).

Table-1: Ichthyofaunal diversity in Kohargaddidam of district Balrampur, Uttar Pradesh State, India (Data of July 2022 to May 2023)

S.No.	Scientific name	Common name	Order	Family
1	<i>Catla catla</i>	Bhakur	Cypriniformes	Cyprinidae
2	<i>Cirrhinus mrigala</i>	Nain/Mrigal	Cypriniformes	Cyprinidae
3	<i>Cirrhinus reba</i>	Nain/Reba	Cypriniformes	Cyprinidae
4	<i>Cyprinus carpio communis</i>	Common carp	Cypriniformes	Cyprinidae
5	<i>Cyprinus carpio nudus</i>	Common carp	Cypriniformes	Cyprinidae
6	<i>Cyprinus carpio specularis</i>	Common carp	Cypriniformes	Cyprinidae
7	<i>Labeo calbasu</i>	Black rohu/Karonchh/Dini	Cypriniformes	Cyprinidae
8	<i>Labeo rohita</i>	Rohu	Cypriniformes	Cyprinidae
9	<i>Puntius chola</i>	Sidhari	Cypriniformes	Cyprinidae
10	<i>Notopterus chitala</i>	Chital/Moya	Clupeiformes	Notopteridae
11	<i>Notopterus notopterus</i>	Patra	Clupeiformes	Notopteridae
12	<i>Chanda nama</i>	Chanari	Perciformes	Centropomidae
13	<i>Chanda ranga</i>	Chanari	Perciformes	Centropomidae
14	<i>Channa marulius</i>	Saur	Ophiocephaliformes	Ophiocephalidae
15	<i>Channa punctatus</i>	Girai	Ophiocephaliformes	Ophiocephalidae
16	<i>Channa striatus</i>	Sauri	Ophiocephaliformes	Ophiocephalidae
17	<i>Mystus seenghala</i>	Dariai tengara	Siluriformes	Bagridae
18	<i>Mystus tengara</i>	Tengra	Siluriformes	Bagridae
19	<i>Clarias batrachus</i>	Mangur	Siluriformes	Clariidae
20	<i>Heteropneustes fossilis</i>	Singhi	Siluriformes	Heteropneustidae
21	<i>Wallago attu</i>	Padhni	Siluriformes	Siluridae

Table-2: Family wise percentage of Ichthyofaunal diversity in Kohargaddi dam of district Balrampur, Uttar Pradesh State, India (Data of July 2022 to May 2023)

S.No.	Family	Number of Genus	Number of species	% of Fish diversity
1	Bagridae	01	02	13.81
2	Centropomidae	01	02	12.71
3	Clariidae	01	01	6.72
4	Cyprinidae	05	09	37.06
5	Heteropneustidae	01	01	3.74
6	Notopteridae	01	02	7.45
7	Ophiocephalidae	01	03	14.82
8	Siluridae	01	01	3.69
	Total	12	21	100

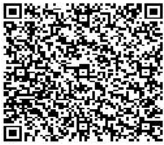
Conclusion

The result of this study shows that Kohargaddi dam is very rich in fish species diversity and sustains high productivity, this water body is most suitable for pisciculture. This observation can be utilized for decision making conservation and management in a scientific manner. There is an immediate need of more conservation programme in order to retain this freshwater body Kohargaddi dam of district Balrampur, Uttar Pradesh state.

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