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## RESEARCH ARTICLE

### ICTHYOFAUNAL DIVERSITY OF TENUGHAT RESERVIOR AT BOKARO DISTRICT JHARKHAND, INDIA

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#### ABSTRACT

Fish is very important part of our aquatic system. Present study was conducted on Tenughat Dam of Bokaro district, Jharkhand during the period of April 2016 to March 2017 and recorded 31 fish species belonging to the five order and eleven Families. Cyprinidae was the most diversified fish family among all the group. Among the 31 fish species 13 are under Cyprinidae, 04 species are under Channidae, 03 species are under Bagaridae, 02 species of each are under Cichlidae, Ambassidae, and Mastacembelidae where as 01 species of each are under Notopteridae, Anabantidae, Siluridae, Sisoridae and Claridae were found. Further, Study revealed that 01 species of each Cyprinidae, Siluridae, Sisoridae and 02 species of Cichlidae are under IUCN-NT category whereas 01 species of Anabantidae is in IUCN-VU category and rest are under IUCN-LC category. From investigation it is also found that biodiversity of dam decline day by day due to natural as well as anthropogenic activities.

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## INTRODUCTION

Tenughat dam is an earthfill dam with composite masonry cum concrete spillway across the Damodar river at Tenughat in Peterwar block of Bokaro district in the Indian state of Jharkhand. The latitude of dam is 23.7256° N and longitude of dam is 85.8361° E whereas height of dam is 55 m, length is 5000 m and spillways are 60ft. Clear width. The reservoirs play an important role in the development process of a nation an also have an integral role in fisheries and livelihood security of the local community (Uttam kumar Sarkar, 2015). Biodiversity is essential for stabilization of ecosystem, protection of overall environmental quality, for understanding intrinsic worth of all species on the earth (Ehrlich and Wilson, 1991). The species diversity of our earth is related to the living and non living organic material of our environment. Among the all vertebrates fishes are the most dominant species (Ataur Rahman et al., 2015) and major source of dietary protein for rural poor people. Fisheries sector provided employment opportunity that forms a life line for rural people. Due to the over exploitation and anthropogenic activity the number of fish species decline day by day. The primary reason for this is to destruction of the natural habitat of the fishes (Reis RE et al., 2016). According to fish Base 33100 species of fish had been described by April 2015 which is more than the

combined total of all other vertebrates. According to Nelson, 2006 the total number of all fish species is, 3,2500 considering that fresh water may constitute less than 0.3 % of available global water. Fresh water fish species diversity has been studied globally by different researcher time to time. A research of fresh water fish biodiversity in Bangladesh by Md. Ataur Rahman et al., 2015 reported 56 species of fish in Talma River at Northern part of Bangladesh. A total no. of 10 species were recorded by Hameed Ur Rahman et al., 2016 at Barganat dam north Waziristan agency, KPK, Pakistan. India is one of the mega biodiversity country in the world and occupies the 9<sup>th</sup> position in terms of fresh water mega biodiversity (Mittermeier and Mitemeir, 1997). Out of the 2500 species of freshwater fishes, which have been recognized in the Indian sub continent, 930 are categorized as fresh water species (Jayaram, 1999). In India there are 2500 species of fishes of which 930 live in fresh water and 1570 are marine (Kar et al., 2003). A survey of total 22 fish species by Seethal Lal et al., 2013 from Ashtamudi lake, Kerala. An Ornamental fish biodiversity studied by Daud Chandra Baro at Assam and reported 49 Ornamental fish species. Fish biodiversity of Western ghat region of India is 379 in which 30 new species also reported (Rajesh Dayal et al., 2014). The Doyang reservoir of Nagaland has 25 fish species diversity (Sarkar et al., 2015). 190 native freshwater species were recorded from the West Bengal (Mahapatra, et al., 2014). 55 fish species were studied by Amal Kumar Patra et al., 2011 at West Bengal. Paper published in Jharkhand prospective by Menson, 1950;

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Bose *et al.*, 1974-75; Mishra 1992; Singh *et al.*, 1998 who worked on the fish diversity at Subarnarekha estuary and also by Utpal Bhomik *et al.*, 2011. Srivastava 2003; Verma *et al.*, 2008; Verma and Murmu, 2010 and Satya Prakash and Raziuddin 2015 are the publications from the Jharkhand which are very less in context of Jharkhand and they are also restricted to particular rea. So it is an effort to know the fish biodiversity status in current scenario at Tenughat dam of Bokaro district, Jharkhand.

## MATERIAL AND METHODS

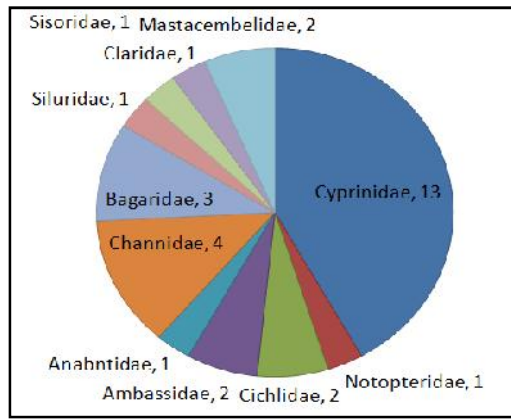
The study was conducted on Tenughat dam. Fishes were collected from various sampling site identified as Peterwar, Uttasara and Sadam with the help of local fisherman using different type of nets namely gill nets, cast nets and drag nets. After the collection fishes having major size were identified in the field and small speciemen were immediately preserved in 10% formalin solution and brought to laboratory.



## RESULTS

Table 1. Fish species their local name human use feeding habit and conservation status

Order	family	Sl. no	Scientific name	Local name	IUCN	Human use	Feeding habit
Cypriniformes	Cyprinidae	01	<i>Amblpharyngodon mola</i> (Hamilton-Buchanan)	Mola	LC	Ornamental Commercial	Herbivore
		02	<i>Catla catla</i> (Hamilton-Buchanan)	Katla	LC	Aquaculture Commercial	Herbivore
		03	<i>Cirrhinus Mrigala</i> (Hamilton-Buchanan)	Mrigal	LC	Aquaculture Commercial	Omnivore
		04	<i>Hypophthalmichthys molitrix</i> (Valenciennes)	Silver carp	NT	Commercial	Herbivore
		05	<i>Labeo bata</i> (Hamilton-Buchanan)	Bata	LC	Aquaculture Commercial	Herbivore
		06	<i>Labeo Calbasu</i> (Hamilton-Buchanan)	Kalbasu	LC	Ornamental Commercial	Herbivore
		07	<i>Labeo rohita</i> (Hamilton-Buchanan)	Rohu	LC	Aquaculture Commercial	Omnivore
		08	<i>Labeo boga</i> (Hamilton-Buchanan)	Boga	LC	Commercial Aquaculture	Herbivore
		09	<i>Puntius conchonius</i> (Hamilton-Buchanan)	Pothi	LC	Ornamental Commercial	Herbivore
		10	<i>Puntius sarana</i> (Hamilton-Buchanan)	Pothi	LC	Ornamental Commercial	Herbivore
		11	<i>Puntius sophore</i> (Hamilton-Buchanan)	Pothi	LC	Ornamental Commercial	Herbivore
		12	<i>Puntius ticto</i> (Hamilton-Buchanan)	Pothi	LC	Ornamental Commercial	Herbivore
		13	<i>Salmophasia bacaila</i> (Hamilton-Buchanan)	Chela	LC	Commercial	Herbivore
Osteoglossiformes preciformes	Notopteridae	14	<i>Notopterus notopterus</i> (pallas)	Phalat	LC	Ornamental Aquaculture	Carnivore
	Cichliade	15	<i>Oreochromis niloticus</i> (Peters)	Tilapia	NT	Aquaculture Ornamental	Carnivore
		16	<i>Oreochromis mozambiqueue</i> (Peters)	Tilapia	NT	Aquaculture Ornamental	Carnivore
	Ambassidae	17	<i>Chanda nama</i> (Hamilton-Buchanan)	Chanda	LC	Ornamental Commercial	Omnivore
		18	<i>Chanda ranga</i> (Hamilton-Buchanan)	Chanda	LC	Ornamental Commercial	Omnivore
	Anabantidae	19	<i>Anabas testudineus</i> (Bloch)	Kaji	VU	Ornamental Commercial	Carivore
		Channidae	20	<i>Channa marulius</i> (Hamilton-Buchanan)	Sal or shore	LC	Ornamental Aquaculture
	21		<i>Channa punctatus</i> (Bloch)	Garai	LC	Ornamental Aquaculture	Carnivore
	22		<i>Channa striatus</i> (Bloch)	Shol	LC	Ornamental Commercial	Carnivore
	23		<i>Channa gachua</i> (Bloch & Schneider)	Chang	LC	Ornamental Commercial	Carnivore
Siluriformes	Bagaridae	24	<i>Mystus cavasius</i> (Hamilton-Buchanan)	Tengra	LC	Commercial	Carnivore
		25	<i>Mystus vittatus</i> (Bloch)	Tengra	LC	Ornamental Commercial	Carnivore
	Siluridae	26	<i>Mystus seenghala</i> (Skyles)	Tengra	LC	Commercial Aquaculture	Carnivore
		27	<i>Wallgo attu</i> (Schneider)	Bowar	NT	Commercial	Carnivore
	sisoridae	28	<i>Bagarius bagarius</i> (Hamilton-Buchanan)	Kana	NT	Commercial	Herbivore
		29	<i>Clarius batrachus</i> (Linnaeus)	Mangur	LC	Ornamental Commercial	Carnivore
	Synbranchiformes	Mastacembelidae	30	<i>Macrognathus pancalus</i> (Hamilton-Buchanan)	Tur	LC	Ornamental Commercial
31			<i>Mastacembelus armatus</i> (Hamilton-Buchanan)	Bami	LC	Commercial Ornamental	Carnivore



Fishes were collected from study area and the morphometric and meristic characters were measured and fishes were identified upto the species level, with the help of standard keys given by Jayaram (1999), Day (1967) and Talwar and Jhingran (1991).

## DISCUSSION

A total 31 fish species were observed during the period of one year at Tenughat Dam, Bokaro, Jharkhand. Among these 13 species of Cyprinidae which show 42% of total, 04 species of Channidae show 12%, 03 species of Bagaridae which show 10%, 02 species of each Cichlidae, Ambassidae, Mastacembelidae which show 7% whereas 01 species of each Notopteridae, Anabantidae, Siluridae, Sisoridae and Claridae which show 3% of total fish species biodiversity. Further, Study revealed that 01 species of each Cyprinidae, Siluridae, Sisoridae and 02 species of Cichlidae are under IUCN-NT category whereas 01 species of Anabantidae is in IUCN-V category and rest are under IUCN-LC category. Further, study need to know that what are those factors due to that the number of fish species diversity declined day by day at Tenughat dam, Bokaro, Jharkhand.

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