



## ICTHYOFAUNAL DIVERSITY OF TILAIYA RESERVIOR AT KODERMA DISTRICT, JHARKAND, INDIA

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### ABSTRACT

*Fishes are the very good indicator of the aquatic habitat and also are the chief protein source. Present study was conducted to document the ichthyofaunal diversity of Tilaiya reservoir of Koderma district, Jharkhand during January 2018 to June 2018 and recorded 44 fish species belonging to the 05 orders and 16 families. Cyprinidae was the most diversified fish family. Among the 44 fish species 20 species are under the Cyprinidae family, 03 species of each are under Channidae and Chichilidae, 02 species of each fishes are under Belontiidae, Ambassidae, Notopteridae, Bagaridae and Mastacembelidae whereas 01 species of fishes are under Cobitidae, Anabantidae, Gobiidae, Belontiidae, Claridae, Heteropneustidae, Pangassidae and Siluridae. Further 37 fish species are under IUCN-LC category, 05 species are under IUCN-NT category, 01 species is in IUCN-DD category whereas 01 species is under IUCN-VU category.*

**Keywords-Biodiversity; Conservation; Fish; Tilaiya reservoir**

### INTRODUCTION

Tilaiya reservoir was the first of the four multipurpose dams included in the first phase of the Damodar Valley Corporation. It was constructed across the Barakar River at Tilaiya in Koderma district in the India state of Jharkhand and opened in 1953. The longitude and latitude of Tilaiya dam is 85.5211 and 24.3239 respectively. The Tilaiya reservoir is located is upper rachis of Barakar River, about 64.4 kilometers (40.0 mi) downstream of its source. The river at this site passes through a narrow range approximately 91.4 meters (300ft) wide with banks steeply rising about 45.7 meters (150ft) in either side. The reservoir has a catchment area of 984 square kilometer (380 sq mi) comprising mainly forest, pastures, cultivated land and waste land. The annual rainfall in the area is 127 centimeters (50in).

The Tilaiya reservoir is a concrete gravity dam with a maximum height of 30.2 meter (99ft) above the river bed. The spillway has 14 fainter type crest gates of 3.05mX9.1m with a maximum discharge capacity of 3852m<sup>3</sup>/s. Two modified butterfly type under sluice gate 1m high and 1.7m wide with a discharge capacity of 14.2m<sup>3</sup>/s are provided in the body of the dam mainly to supply irrigation water during the dry season<sup>(12)</sup>. At present based on the study of the fish biodiversity of Tilaiya reservoir to know the current status of diversity of fishes in the reservoir.

### MATERIALS AND METHODS

#### **Collection of samples**

Fish samples were collected from different regions of Tilaiya reservoir namely Tilaiya basti, Urmamore, Toofan Chowk, Jammukhandi, Kotwardih, Dharna, Bendli, Barhi and Ujaina.

By using small meshed cast, nets, scoop nets and hooks, samples were collected from January 2018 to June 2018 from the study area. After collection, all samples were preserved in ice and later transferred into the laboratory. Identification of the sample has done with the help of morpho metric and non morpho metric characters by using keys, available by different literatures time to time. Fishes are classified and arranged on the basis of Jayaram (2010) , Jhingran (2007) and from fish database

Then each sample was placed in a separate labeled plastic jar and deposit it into the university laboratory for long term after preserved in 10% formalin. We had a field kit containing measuring tape, buckets, preservative, digital camera, etc was prepared for regular use.

### RESULTS

Result of present study shows that during January 2018 to June 2018 a total no. of 44 fish species belonging to the 05 orders and 16 families .Cyprinidae was the most diversified fish family .Among the 44 fish species 20 species are under the Cyprinidae family,03 species of each are under Channidae and Chichilidae,02 species of each fishes are under Belitoridae,Ambassidae, Notopteridae,Bagaridae and Mastacembelidae whereas 01 species of fishes are under Cobitidae ,Anabantidae Gobiidae,Belontiidae,Claridae,Heteropneustidae,Pangassidae and Siluridae.Further 37 fish species are under IUCN-LC category,05 species are under IUCN-NT category,01 species is in IUCN-DD category whereas 01 species is under IUCN-VU category.

### DISCUSSION

During the study period 44 species of fishese were found in Teliya reservoir. Some of the work in the reservoir of India shows that there is variations in the species of fishes. .In India there are a series of work have been done by different researcher. Some of the research articles shows that in Anjanapuram reservoir, Karnataka has 25 species <sup>(2)</sup>, 27 fishes were collected from the Kalu Dam, Ahmednagar, Maharashtra <sup>(6)</sup>, 32 species reported from upper Mullamari Reservoir, Basavakalyan,Karnataka <sup>(1)</sup>, 40 species collected from Tighra reservoir from Gwalior, MP <sup>(10)</sup>,64 fish species has reported from the Karanja reservoir,Karnataka,India<sup>(7)</sup>. Further in Jharkhand prospective some work has been done in the Lake of East Singhbhum District<sup>(9)</sup> and Tenughat reservoir of Bokaro<sup>(7)</sup>.

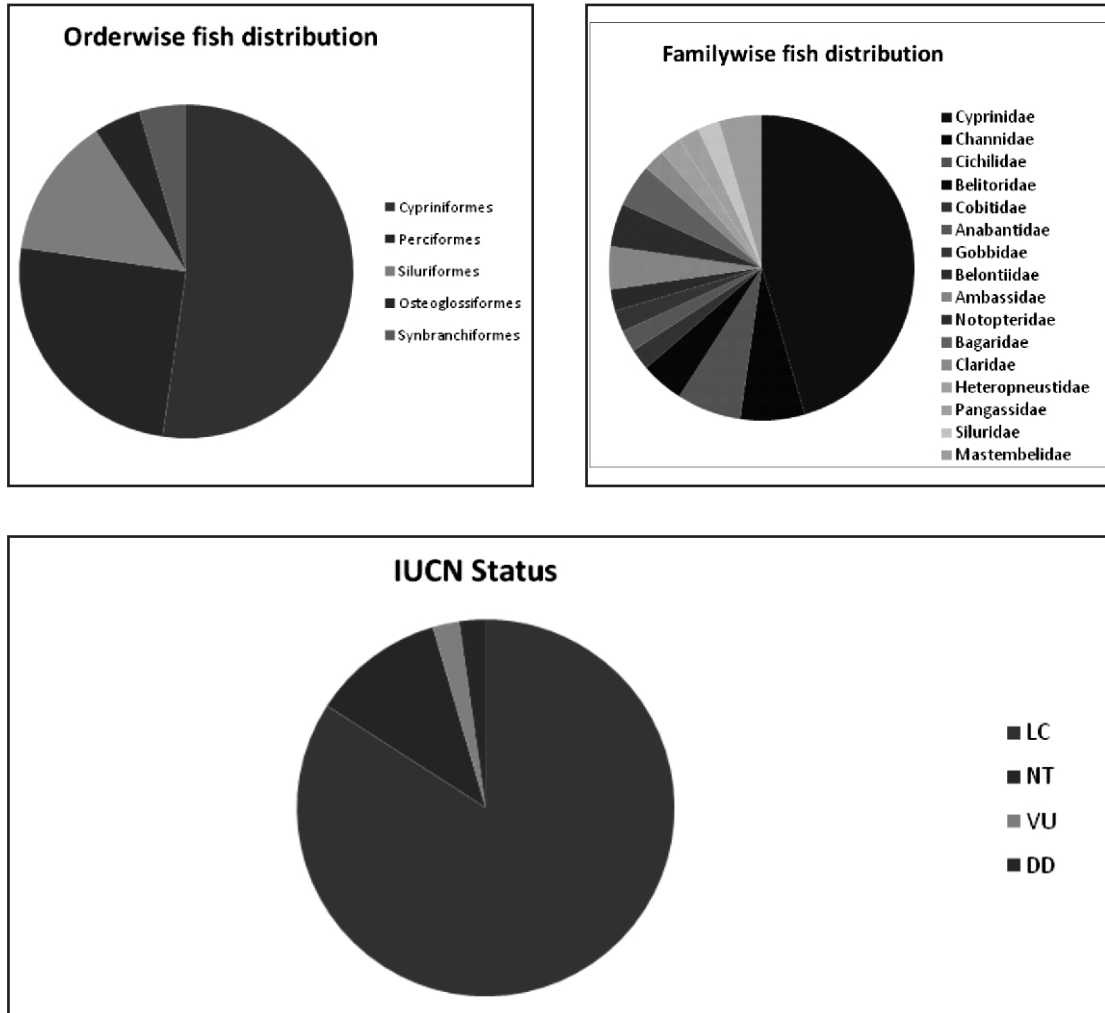


Satellite Picture of Tilaiya reservoir

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Table- Ichthyofaunal Diversity, Common name, Local name and Conservation Status

Order	Family	Scientific name	Common name	Local name	IUCN
		<i>Labeo angra</i>	Angra labeo	Musaina	LC
<b>Cypriniformes</b>	Cyprinidae	<i>Labeo bata</i>	Bata	Bata	LC
		<i>Labeo boga</i>	Boga labeo	Dudhela	LC
		<i>Labeo calbasu</i>	Black rohu	Kalabasu	LC
		<i>Labeo rohita</i>	Rohu	Rohu	LC
		<i>Catla catla</i>	Katla	Catla	LC
		<i>Cirrhina mrigala</i>	Mrigal	Mrigal	LC
		<i>Cirrhina reba</i>	Reba carp	Rewa	LC
		<i>Osteobrama cotio</i>	Cotio	Gulta	LC
		<i>Salmophasia bacaila</i>	Large scale razor belly minnows	Chalwa	LC
		<i>Salmophasia phulo</i>	Fine scale razor belly minnows	Malhi	LC
		<i>Amblyphargodon mola</i>	Mola carplet	Mola	LC
		<i>Securicula gora</i>	Gora chela	Chela	LC
		<i>Puntius ticto</i>	Ticto barb	Pothi	LC
		<i>Puntius sophore</i>	Spot fin swamp barb	Pothi	LC
		<i>Puntius sarana</i>	Olive barb	Darahi	LC
<i>Crossocheilus latius</i>	Stone roller	Pet phorni	LC		
<i>Barilius barna</i>	Boroli	Bhola	LC		
<i>Cyprinus carpio</i>	Common carp	Pahari	VU		
		<i>Hypophthalmichthys molitrix</i>	Silver carp	Bighead	NT
	Belontiidae	<i>Nemacheilus botia</i>	Sand loach	Natwa	LC
		<i>Nemacheilus aureus</i>	Not Known	Balwari	LC
	Cobitidae	<i>Lepidocephalus guntea</i>	Guntea loach	Netwa	LC
<b>Perciformes</b>	Anabantidae	<i>Anabas testideneus</i>	Climbing perch	Koi	DD
	Channidae	<i>Channa punctatus</i>	Spotted snakehead	Garai	LC
		<i>Channa striatus</i>	Banded snakehead	Shol	LC
		<i>Channa gachua</i>	Asiatic snakehead	Chang	LC
	Gobiidae	<i>Glossogobius giuris</i>	Tank goby	Bulla	LC
	Belontiidae	<i>Colisa fasciatus</i>	Dwarf gourami	Khamara	LC
	Ambassidae	<i>Chanda ranga</i>	Indian glass fish	Chanda	LC
		<i>Chanda nama</i>	Elongated glass perchlet	Chanda	LC
	Cichlidae	<i>Oreochromis mossambicus</i>	Mozambique tilapia	Tilapia	NT
		<i>Oreochromis aureus</i>	Blue tilapia	Tilapia	NT
		<i>Oreochromis niloticus</i>	Nile tilapia	Tilapia	NT
	<b>Osteoglossiformes</b>	Notopteridae	<i>Notopterus notopterus</i>	Grey featherback	Phalat
<i>Notopterus chitala</i>			Humped featherback	Chital	LC
<b>Siluriformes</b>	Bagaridae	<i>Mystus cavassius</i>	Gangatic Mystus	Tengra	LC
		<i>Mystus vittatus</i>	Stripped dwarf catfish	Tengra	LC
	Claridae	<i>Clarius batrachus</i>	Mangur	Mangur	LC
	Heteropneustidae	<i>Heteropneustus fossilis</i>	Stinging catfish	Singhi	LC
	Pangasiidae	<i>Pangasius pangasius</i>	Pangus catfish	Pangus	LC
	Siluridae	<i>Wallago attu</i>	Helicopter catfish	Buwar	NT
<b>Synbranchiformes</b>	Mastacembelidae	<i>Macrognathus pancalus</i>	Stripped Spinyeel	Pataya	LC
		<i>Mastacembelus armatus</i>	Tire trackeel	Bami	LC



**CONCLUSION**

On the basis of the above research it is concluded that the diversity of fishes in Tilaiya reservoir is declining day by day due to different type of anthropogenic activities, introduction of alien species, overfishing. . Now it became a need to develop a proper management so that the diversity of fish can be maintained.

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