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FRESHWATER FISH BIODIVERSITYOF BENITURA RESERVOIR, OSMANABAD (M.S.) INDIA

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ABSTRACT

The river Benitura is the medium river nearby Murum town in Osmanabad (M.S.). Fish biodiversityof reservoir essentially represents the fish faunal diversity. Reservoir conserves a rich variety of fish species which supports the commercial fisheries. The biodiversity of some fish fauna was observed from January 2013 to December 2014. A detailed account of status of fish biodiversity resources, the nature of fish fauna and capturing the method of fishes of Benitura reservoir was studied and assessed. Classified list of fish fauna has been given. Seventeen fish species under five order and eight families were collected and identified.

Figures : 02 References : 20 Tables : 02

KEY WORDS : Benitura reservoir, Biodiversity, Freshwater fishes, Osmanabad

Introduction

India has a long tradition of wide conservation strategies that are useful to people and society. Biodiversity is the most valuable but least appreciated resource and it can be a key to the maintenance of the world. In India there are 2500 species of fishes, out of 2500 species 930 live in freshwater and 1,570 are marine[16]. The important aquatic biodiversity hotspots of the country, having bestowed with a large number of water bodies both lotic and lentic of arich fish biodiversity. The richness of fish species has attracted the attention of eminent researchers and the state has a good contribution in enriching the data bank on the aquatic biodiversity of the nation.Some of the earliest studies on the aquatic biodiversity were carried out[10]. The country is rich in biodiversity of such important group of animals. A freshwater bioregion is a large area encompassing one or more freshwater system that contains a distinct assemblage of natural freshwater communities and species. The freshwater species, dynamics and environmental conditions within a given Ecoregion are more similar to each other than those of surrounding conservation unit. Freshwater system includes rivers, streams lakes, wetlands and reservoirs. Freshwater bioregions are derivers from terrestrial and aquatic Ecoregions, which identify biotic communities[4,5]. The freshwater fishes are mostly in the form of human interventions and habitat alteration and conservation plans for the protection and preservation of the fish biodiversity. Hence, the present investigation is an attempt to deal with the freshwater fish biodiversity of Benitura reservoirs, Murum.

Material and Methods

Benitura reservoir is constructed in a Benitura river, Osmanabad (M.S.). During the study period fishes were collected at seasonal interval.

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TABLE-1: Systematic position of classified list of freshwater fish fauna in Benitura reservoir

Sr. No	Order	Family	Name of the fish species
1	Cypriniformes	Cyprinidae	*Puntiusticto*
			Labeo bata
			Labeo calbasu
			Labeo rohita
			Cirrhinusmrigala
			Catlacatla
			Cyprinuscarpio (Exotic fish)
		Bagridae	*Mystusvitatus*
		Siluridae	*Wallogoattu*
2	Perciformes	Anabantidae	*Anabas testudineus*
		Gobiidae	*Glossogobiusgiuris*
3	Ophiocephaliformes	Channidae	*Channagachua*
			Channamarulius
			Channapunctatus
			Channastriatus
4	Beloniformes	Clariidae	*Clariasbatrachus*
5	Mastacembeleformes	Mastacembelidae	*Mastacembelusarmatus*

Collection of fishes was made with the assistance of local fishermen. The fishes were collected using monofilamentaous different mesh size gill nets (of all sizes). We also used cast nets, hook and line for fish collection in shallow areas. Gill netting was installed over nightand cast netting during the day time. Fish specimens were also collected from different sites. The entire specimen was preserved in 4% formaldehyde solution at the field time. Then fishes brought to laboratory were preserved in 10% formalin solution spearately. Fishes were identified[6,12,13,17,19,21]. Fish Base Website was also refereed for various aspects of fish fauna[27].

Results and Discussion

The result obtained indicates that seventeen fish species under five order and eight families were collected and identified from the Benitura reservoirs. The name of the species together with their commercial importance and their occurrence has been recorded (Table-1).

In recent investigation of freshwater fish biodiversity of Benitura reservoir (Figs.1 & 2), a total number of seventeen fish species were recorded fewer than five orders and eight families (Tables 1 & 2). Out of these seven species of Cypriniformes, four species of Ophiocephaliformes, two species of Perciformes and one species of Mastacembeliformes and one species for Beloniformes recorded. The Cyprinidae family is dominant and subdominant family is Ophiocephalidae. The members of family Cyprinidae were dominated by seven fish species,

TABLE - 2: Family wise Freshwater fish individual of Benitura reservoirs.

Sr.No	Name of the family	Number of individuals fish species	Total no. of fish species
1	Cyprinidae	07	17
2	Bagridae	01	
3	Siluridae	01	
4	Anabantidae	01	
5	Gobiidae	01	
6	Channidae	04	
7	Clariidae	01	
8	Mastacembelidae	01	

followed by Ophiocephalidae four species, Clariidae, Mastacembelidae, Gobiidae, Anabantidae one species each family. Family Cyprinidae was represented by the Puntiusticto, *Labeo bata, Labeo rohita, Labeo calbasu, Cirrhinus mrigala* and *Cyprinus carpio* was represented. Family Bagridae by *Mystus vitatus,* Mastacembelidae by *Mastacembelus armatus,*

Fig.1: Freshwater fish Benitura Reservoir, Murum and guidance of the student.

Gobiidae by *Glossogobiusgiuris.* Siluridae by *Wallago attu,* Anabantidae by *Anabas testubineus,* Clariidae by *Clarias batrachus* and Ophiocephalidae by *Channa marulius, Channa stiatus, Channa gachua* and *Channa punctatus.* Cyprinidae formed the largest dominant family contributing the seven fish species, Ophiocephalidae formed the subdominant family contributing four species and rest of the family followed the order. Among all these families Cyprinidae was most dominant family constituting, individuals which is followed by Ophiocephalidae, Gobiidae, Anabantidae, Clariidae, Siliuridae, Bagridae and Mastacembelidae is respectively (Table - 2).

Various workers have contributed on biodiversity of freshwater fauna. Much has been stated about declining fish biodiversity and its conservation issues in Indian River systems[7,14,15,20]. *In situ* conservation is one of the several prominent and suggestive measures for conservation of fish biodiversity. The similar results show both significant freshwater fish biodiversity, Workers[23] studied on Narmada River, which showed various environments aspects of the river. Declining trend of carp fisheries of Narmada River in the context of construction of dam on the river and tributaries[18] studied biodiversity and fisheries potential of Narmada basin with special reference to fish conservation and divided fish species of Narmada into five categories of which four categories containing 17 species might be adversely affected by dam whereas one category of fishes comprising 25 species were likely to be increased in the reservoir[1]. Worker[7] studied the fish biodiversity of river Narmada in relation to its physical, chemical and economic aspects. Forty seven fish species belonging to 29 genera, 15 families and six orders in river Narmada were reported[24].

Biodiversity is one of the most complicated aspects of organism[9]. Many indices of biodiversity have been created in an attempt to capture the

Fig.2: Using various nets for capturing the fish and local fishermen.

diversity of an ecosystem. These indices attempt to define biodiversity in many different ways though most indices use a combination of number those species[2,9]. It is absurd to expect on index to characterize the diversity of an entire ecosystem and said that the best way to characterize biodiversity is through the use of numerous biodiversity indices[11,22]. It is unlikely to ever discover the true biodiversity of an ecosystem. The goal of using multiple indices is to try to describe the diversity of an ecosystem as accurately as possible[8,9].

Very first record of fish diversity of Narmada was on hill stream of ranges[10] reported 41 species. Studied on fish fauna a tributaries and recorded 52 species belonging to 28 genera, 13 families and 7 orders. More recently on sip tributary of river Narmada which join Narmada river near the backwater of India Sagar reservoir and has recorded 29 fish species belonging to 17 genera, 8 families and 3 orders[26]. Workers[3] have reported 57 species, belonging to 35 genera, 13 families and 6 orders from middle stretch of river Tawa.

It is concluded that, documentation of biodiversity has become very much important aspects to understand different ecosystem and influences on them. The result of the present study reveals that Benitura reservoir harbours a rich and diversified fish fauna although it showed a record distribution of the Cyprinidae population. Total number of species recorded during this study period have shown a good indication of rich biodiversity in Benitura reservoirs.

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