

FISH DIVERSITY OF NIDEBAN RESERVOIR, UDGIR, DIST. LATUR (MH)

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Abstract

In the present study, 25 species of fishes belonging to 15 genera, 08 families and 04 orders were identified. The order Cypriniformes was found to be a major order with 50% contribution. Siluriformes order with 20%, perciformes with 15% and synbranchiformes with 5% contribution in the sequence. All 25 species are under lower risk. Even though conservation steps of fish found have been suggested in this reservoir to increase the fish population.

Keywords : Fish diversity, conservation, Nideban reservoir

Introduction

A fish is defined as any member of paraphyletic group of organism that consists of all gill bearing aquatic animals. They are the keystone species which control the distribution as well as richness of other organisms in the aquatic ecosystems. They are good indicator of the water quality and health of the ecosystems. Our country India has a very rich and diverse natural water resources in the form of rivers, streams, ponds, estuaries etc. The country is also gifted with a rich fish biodiversity with approximately 2,200 fish species and ranks 9th in terms of fresh water mega biodiversity. A significant portion of the freshwater fish production in India is still based on the harvest from wild population. About 21,730 species of fishes have been recorded in the world, about 11.7% are found in Indian waters. Fresh water fishes are a poorly studied group. There is no proper documentation and most of the information available is from a few well-studied locations only. Hence there is a fundamental need for taxonomists to describe unknown species in the study of biodiversity in these species rich areas. Latur district region has not been extensively surveyed for fish diversity. The review of literature indicates that very limited information is available. Studies of available literature show that no attempt has been made to document the fish diversity along with their habitat. Therefore, in the present study, a detailed survey was conducted in the Nideban reservoir, Udgir Dist. Latur.

Water storage capacity of this reservoir is 1356 million M³ and the total water area is 0.25 hector. Its water is used for irrigation purpose and fishing activities. The reservoir receives untreated municipal sewage of Udgir city.

Materials and Methods

Fish samples were collected randomly from the different regions of Nideban reservoir. Samples were collected August, 2016 to Jan. 2017 in the study area. After collection, all samples were preserved in ice and later transferred into the laboratory. In the laboratory the fishes were preserved in 10% formalin. Identification of fishes was done on the basis of morphometric characters includes total length of the body standard, length of the body, length and depth of the head, position and diameter of the eye, length of the snout, length of predorsal fin pre-pectoral fin, pre anal fin and pre-caudal fin. Descriptive characters includes profile and shape of the body, skin texture and colouration, position and shape of the mouth lips and snact, barbels and jaws, scales and lateral line system, origin, shape, size and type of median, paired and caudal fins. In fin rays and fin formula, tail and special marking etc. Fishes are classified and arranged based on the work of Mirza (1990), Jayaram (1999), Talwar and Jhingran (1981- 1999). Then each sample was placed in a separate labeled plastic jar and preserved in 10% formalin solution for long preservation. A field kit, containing measuring tape, buckets, preservative enamel trays, digital camera etc. A boat was engaged and the station was visited in the sequence, which was carefully followed throughout the investigation period.

Result and Discussion

The present study was carried out to determine fish diversity in Nideban reservoir I have reported 20 freshwater fish species. During the study, the fish diversity comprised of 13 genera with 07 different families. Check list of fishes with different genera and families given in table 1 and 2. Similarly Sakhare (2001) has reported 23 species from Jawalgaon reservoir Solapur district, Khedkar and Gynanth (2005) has reported 37 species from Issapur dam.

Table -1

Checklist of Fishes of Nideban Reservoir, Udgir, Dist.Latur

Class	Order	Family	Name of fishes	Local Name
Actinopterygii	Oesteoglossiformes	Notopteridae(1)	Notopterus no (1)	Patola

“ _ ”	<i>Cypriniformes</i>	<i>Cyprinidae</i> (2)	2) <i>Catla catla</i> 3) <i>Cirrhina mrigala</i> 4) <i>Cyprinus carpio</i> 5) <i>Labeo bata</i> 6) <i>L. Calbasu</i> 7) <i>L. rohita</i> 8) <i>L. goni</i> 9) <i>Puntius amphibious</i> 10) <i>P. sarana</i> 11) <i>P. ticto</i> 12) <i>Rasbora daniconius</i>	<i>Catla</i> <i>Mrigal</i> <i>Common carp</i> <i>Bata</i> <i>Kriya</i> <i>Rohu</i> <i>Kursi</i> <i>Khadia</i> <i>Puthia</i> <i>Khadia</i> <i>Zhanzara</i>
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	<i>Siluriforms</i>	(3) <i>Bagridae</i>	13) <i>Mystus seenghaa</i>	Singhar a
		(4) <i>Siluridae</i>	14) <i>M. blekeri</i>	Kirua
			15) <i>Ompak bimaculatus</i>	Pauda
			16) <i>Wallago attu</i>	Lonch
		(5) <i>Clardiæ</i>	17) <i>Clarias butrachus</i>	Mangur
		(6) <i>Channidae</i>	18) <i>Channa Punctatus</i>	
			19) <i>Oreochromis mossambicus</i>	Garae Kala Tilapia
	<i>Perciformes</i>	(7) <i>Cichlidae</i>	20) <i>Oreochromis niloticus</i>	Gora Tilapia

Table 2

Fish Diversity of Nideban Reservoir

Sr.No.	Order	Family	Genera	Species
1	<i>Osteoglossiforms</i>	01	01	01
2	<i>Cypriniformes</i>	01	06	11
3	<i>Siluriformes</i>	03	04	05
4	<i>Perciformes</i>	02	02	03
	Total 04	07	13	20

Percentage contribution of family, genera and species under 04 orders is given in the table 3. Among 4 orders, order osteoglossiformes consists of single genus under single family, cypriniformes of 6 genera under single family, siluriformes of 4 genera under 3 families and order perciformes consists of 2 genera under 2 families.

Order cypriniformes has been found to be a major order with 11 species and

percent contribution is of 55% (Graph 3). Siluriformes with 5 species and percent contribution of 25% siluriformes followed by perciformes with 3 species and percentage is about 15% osteoglossiformes with 1 species and percent contribution is of 05%.

Table 3

Percent contribution of families, Genera and species under different orders

Sr.No.	Order	Families (%)	Genera (%)	Species (%)
1	Osteoglossiforms	14.28	7.69	05
2	Cypriniformes	14.28	46.15	55
3	Siluriformes	42.85	30.76	25
4	Perciformes	28.57	15.38	15
	Total	99.98	99.98	100

Thus, the present study revealed that the large number of species in Nideban reservoir were belong to the cypriniformes followed by siluriformes and perciformes and the least number of species were belong to the osteoglossiformes. Such varied range distribution may be associated to substrate of the reservoir that could afford appropriate habitat for geological and glacial history of study area. Climatic factor such as droughts can also affect on the distribution of cyprinid fishes as described by Lachner and Jenkins (1971). According to Araoye (2009) some physical factors such as temp. flood during rainy season, change in water level, size of reservoir, and feeding habits of fish can also affect the species composition and their distribution. However, temp. is the main factor that may influence directly or indirectly on the species composition.

Other physical factors such as transparency, dissolved O₂, dissolved gases, pH, total dissolved solids and conductivity etc. are also very important parameters which provides the basis for fisheries and water resources management. The abundance cypriniformes and siluriformes species throughout the study period was indicating that the habitats and environmental condition of Nideban reservoir was more suitable for the growth of these species. Hence like many other fishes, these species have more ability to adapt themselves according to the environmental changes in which they lived. According to Rafique and Khan (2012), some species of fishes become decreased due to the pollution, habitat loss, changes in environment, illegal fishing and invasion of exotic species, over exploitation and over harvesting as fish food, ornamental trade and sports also. A rapid decline in the population of species may be expected due to its hybridization with closely related and rapidly spreading newly introduced species. All these factors can cause substantial declines in many fish species. As a result, the distributional ranges of some species have shrunk tremendously over the last decades and restricted only to

localized areas.

Fig. 1

Fish Diversity of Nideban Reservoir

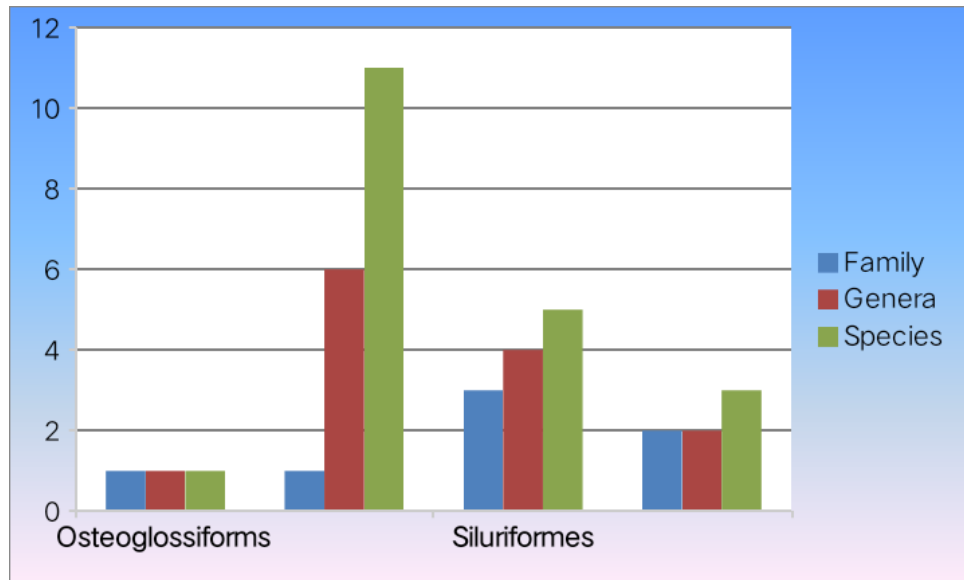
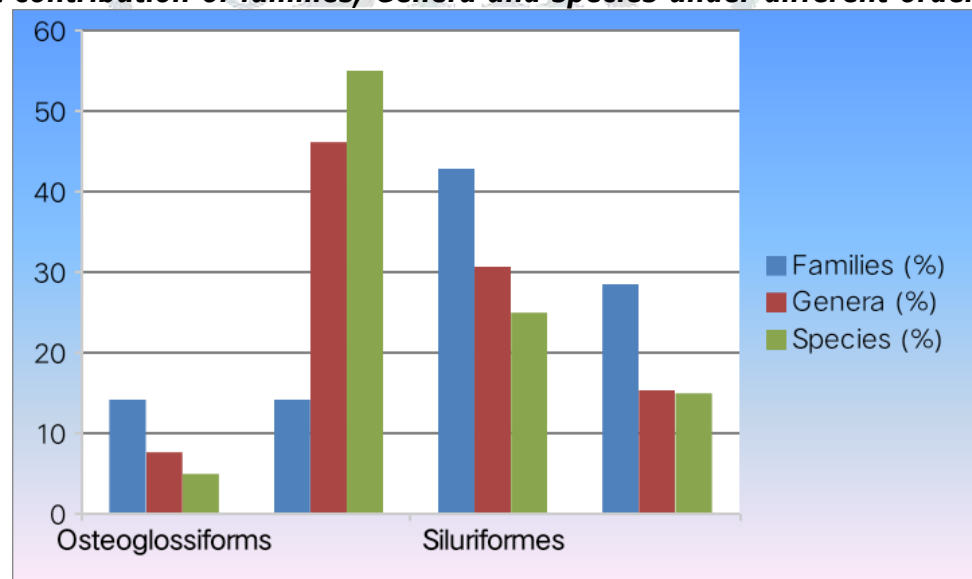


Fig.2

Percent contribution of families, Genera and species under different orders



Conclusion

During the study period (August 2016 to January 2017) 20 fish species belonging to 7 families and 13 general were recorded. The present study revealed that, Nideban reservoir is a fresh water resource with rich and variable fish fauna. However, fish diversity of this reservoir is in decline mode due to several anthropogenic threats, pollution, urbanization, scarcity of food, shelter and habitat destructions and progressive eutrophication of the water body. Hence to conserve this resource, a holistic approach, integrating the concept of sustainable development and conservation measures should be adopted. Present study provides a comprehensive data on biodiversity, conservation status of fish fauna of this reservoir.

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