

Ichthyodiversity of the Rangavali Dam, Navapur, District Nandurbar, Maharashtra State.

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ABSTRACT:

The study area was Rangavali dam of Navapur, district Nandurbar (Maharashtra State) India. This dam has not received much attention by limnologist and this prompted us to sample the fishes throughout the year to assess the Ichthyodiversity. Fishes were collected from the catch of local fisherman at different stations of dam, from June 2007 to May 2009 on a monthly basis. Initially fishes were identified by local name and common name as named by local fishermen and then the scientific identification and classification were made. In the present study, 28 fish species were found, belonging to 25 genera and 12 families were grouped under seven orders. Among 28 fish species the order Cypriniformes was found to be dominant.

Keywords:

Freshwater Rangavali Dam, Ichthyodiversity.

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INTRODUCTION

The entire study area is declared as tribal area by the Central Government of India. The country is endowed with vast and varied water resources and rich biodiversity. Freshwater fishery sites are varied; like 45,000 Km of rivers, 1,26,334 Km. of canals, ponds and tanks 2.36 million hectares of reservoirs. The fish fauna is divided into two classes, viz., Chondrichthyes (cartilagenous fishes) and Osteichthyes (bony fishes). The endemic fish families form 2.21 percent of the total bony fish families of the Indian region. 223 endemic fish species are found in India, representing 8.75 percent of the total fish species known from the Indian region. There are about 450 families of freshwater fishes globally. Roughly 40 are represented in India. About 25 of these families contain commercially important species. Number of endemic species in warm water is about 544. Freshwater fishes are a poorly studied group since information regarding distribution, population dynamics and threats are incomplete, and most of the information available is from a few well-studied locations only. Biodiversity is essential for the stabilization of ecosystem, protection of overall environmental quality, for understanding intrinsic worth of all species on the earth. In India, there are 2,500 species of freshwater fishes that have been recognized in the Indian subcontinent out of which 930 are categorized as freshwater species by Day,(1878) Jayaram(1981), Talwar and Jhingran (1991) and Rao *et al.*,(1999), Sahare and Joshi(2002), Dutta *et al.*,(2003), Sakhare and Joshi(2004), Yadav (2005), Battul *et al.*,(2007), Ashashree *et al.* , (2008). In present study an attempt has been made to highlight the Ichthyofaunal diversity of Rangavali Dam. The work will provide future strategies for betterment of nearby village tribal's because many of the villages are surrounded to the said dam are exclusively from tribal category.

Studies of spatial and temporal pattern of diversity, distribution and species composition of

freshwater fishes are useful to examine factors influencing the structure of the fish community. The distribution and composition of the fish species in each habitat were closely associated with various factors such as the availability of food, breeding sites, water current, depth, topography and physico-chemical properties of water (Harris, 1995).

Biodiversity may be broadly defines as the variety and variability among living organisms and the ecological complexes in which they occur. Biodiversity can be considered at different scales ranging from the gene to ecosystem. The most commonly used meaning of biodiversity is at the level of species (Organismal biodiversity). Freshwater systems harbor a unique and diverse set of organisms. About 15 % of all animal species that have been described until today live in freshwater ecosystems. More than 70 thousand freshwater species from 570 families and 16 phyla have been describing so far (Strayer 2001).

MATERIALS AND METHOD

This study was conducted at in the Rangavali dam. Samples were collected from various stations between June 2007 and May 2009 on a monthly basis, using 1 to 2 mm pore size fish net, and with horizontal and vertical hauls. The samples were evaluated quantitatively, and the species were identified from collected samples. Initially fishes were identified by local name and common name as named by local fishermen. The scientific identification and classification were made by using the keys of Day (1878). Later specimens were preserved in 4 % formaldehyde.

Topography and Morphometry:

Rangavali Dam is known as Rangavali river project in government documents. In the year 1972, it is built over Rangavali river near Nagziri village, taluka Navapur, district Nandurbar, Maharashtra. The average annual rain fall in the surrounding area is 1227 mm, the catchment area of dam is 99.20 Sq. Km. The geographic



location of the dam is 73° 52' 0" longitudinal and 21° 0' latitude. The gross capacity of the dam is about 15.02 Mcum and capacity of the dead storage 2.13 Mcum Dam is earthen of rolled filled maximum height of the dam in the river is 25.63 meter and the length is 1878 meter. The earthwork of the dam is 1.042 Mcum, concrete 113.00 Mcum, masonry 7770 Mcum and excavation 327134 Mcum. The entire area is declared as a tribal area by the central government of India. This dam has not received much attention by limnologist and this prompted us to sample the fishes throughout the year to assess the diversity of fishes.

RESULTS

In the present study, 28 fish species were found. Among 28 fish species, 25 genera and 12 families were grouped under seven orders.

1. Order Clupeiformes contained a two species namely *Notopterus notopterus* and *Notopterus Chitla*.
2. Order Cypriniformes contained 10 species namely *Nemacheilus moreh*, *Catla catla*, *Cirrhinus mrigala*, *Labeo rohita*, *Cyprinus carpio*, *Rasbora daniconias*, *Puntius sophore*, *Thynichthys sandkhol*, *Salmostona novacula* and *Garra mullya*.
3. Order Siluriformes contained five species namely *Mystus aor*, *Mystus seenghala*, *Wallago attu*, *Ompak bimaculatus* and *Rita rita*.
4. Order Channiformes contained four species namely *Clarius batrachus*, *Channa gachua*, *Channa marulius* and *Channa punctatus*.
5. Order Synnbranchiforms contained a single species namely *Mastacembelus armatus*.
6. Order Perciformes contained a five species namely *Oriochromis mossambicus*, *Chanda nama*, *Glossogobius giuris giuris*, *Xentodon cancilla* and *Parambassis ranga*.
7. Order Mugiliformis consisted the only one species *Rhinomugly carsula*.

The order Cypriniformes was found to be

dominant by consisting ten species while order Mugiliformis and Synnbranchiforms consists single species only.

Table 1: List of fishes recorded from Rangavali Dam-for 2007-08 and 2008-09.

Sr. No.	Classification
	Class: Pisces
	Sub-Class Teleostei
	Order-I: Clupeiformes
	Family- I: Notopteridae
1	<i>Notopterus notopterus</i>
2	<i>Notopterus chital</i>
	Order-II: Cypriniformes
	Family-II: Balitoridae
3	<i>Nemacheilus moreh</i>
	Family-III: Cyprinidae
4	<i>Labeo rohita</i>
5	<i>Cyprinus carpio</i>
6	<i>Rasbora daniconias</i>
7	<i>Puntius sophore</i>
8	<i>Thynichthys sandkhol</i>
9	<i>Salmostoma novacula</i>
10	<i>Catla catla</i>
11	<i>Cirrhinus mrigala</i>
12	<i>Garra mullya</i>
	Order-III: Siluriformes
	Family-IV: Bagridae
13	<i>Mystus aor</i>
14	<i>Mystus seenghala</i>
15	<i>Rita rita</i>
	Family-V: Siluridae
16	<i>Wallago attu</i>
17	<i>Ompak bimaculatus</i>
	Order -IV: Mugiliformis
	Family-VI: Mugilidae
18	<i>Rhinomugil carsula</i>
	Order-V: Synnbranchiformes
	Family-VII: Mastacembelus
19	<i>Mastacembelus armatus</i>
	Order-VI: Channiformes
	Family-VIII: Channidae
20	<i>Clarius batrachus</i>
21	<i>Channa gachua</i>
22	<i>Channa marulius</i>
23	<i>Channa punctatus</i>
	Order-VII: Perciformes
	Family IX Chandidae
24	<i>Chanda nama</i>
25	<i>Parambassis ranga</i>
	Family X Cichlidae
26	<i>Oreochromis mossambicus</i>
	Family XI Gobidae
27	<i>Glossogobius giuris giuris</i>
	Family XII Belonidae
28	<i>Xenetodon cancilla</i>



DISCUSSION AND CONCLUSION

The fishes are the major component of an aquatic ecosystem having high economic value, as they provide the nutritious and delicious food for mankind. They also provide protein rich food and several economically important byproducts. The fish are also important to keep ecosystem in balance and enhances the beauty of the nature in different ways. About 30,000 to 40,000 species are reported differing widely from each other in shape, size habits and habitats. Some of the fishes are very small measuring not more than an inch in length, while a few species attend a length up to 18.50 meters. In the field of ichthyology valuable contribution were made by Rahimullah (1943), Chacko and Thyagarajan(1954), David(1963), Das(1966), Karamchandani and Pisolkar (1967) and Saha(1970) Rathod and Khedkar(2011).

As far as Rangavali Dam (Navapur, district Nandurbar, MS, India) is concerned poor attention has been paid towards systematic investigation on diversity of fish fauna. So it is felt that there is a need to generate information on diversity of fishes from Rangavali reservoir. Hence, the present investigation was undertaken to prepare a check list of fishes from Rangavali Dam and it is the first effort in this direction.

Babu Rao (1997) has studied the fish fauna in Himayatsagar lake in Hyderabad and recorded 32 fish species belonging to six order with 11 families. In recent years Rao *et al.*,(1999) has studied Ichthyofauna of river Nagavalli from A. P.; Ahirrao and Mane(2000)has studied Ichthyofauna from Parabhani District of Maharashtra State and Sakhare (2001) of Jawalgaon reservoir in Solapur District of Maharashtra. Very recently Walujkar (2005) reported 35 Species from Shirsathwadi reservoir, Mohari reservoir and Manikdaundi reservoir of Nagar District Maharashtra State. They further illustrated 18 species form order Cypriniformes, five species in order Siluriformes, four species in Preciformes, one species each for order Clupeiformes, Channiformes, Mastacemboeliformes,

Mugiliformes and Beloniformes. The order Cypriniformes was dominant.

The fish community in lakes include the native species and the introduced species for the purpose of fish production. Many of the fish species are endemic to this region. To conserve all endemic fish species and the total fish diversity, it is necessary to prevent drainage of pesticides and fertilizers from surrounding crop fields, heavy siltation during heavy rainfall, high density of fingerling stocking selected culture fishes, fish diseases. Sustainable fish production by taking appropriate steps for sustaining fish diversity is necessary to conserve these vulnerable resources.

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