

Fishery status of Perennial lake Ramala, Chandrapur (M.S) with reference to Physico-chemical properties.

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ABSTRACT

The main purpose of the present study was to investigate the species composition of freshwater fishes from Ramala lake, Chandrapur, Maharashtra. The limno-ichthyological survey was conducted during July 2015 to December 2015. The result of investigation of fish fauna showed 15 species of families. The investigation reported loss of sensitive species because of changes in physico-chemical status of water. All these fishes found important as they have economical, nutritional and medicinal values.

Keywords: Fish fauna, Ramala, physico-chemical.

INTRODUCTION

Fish constitute very important biotic community of lake. They not only harvest nutrients and live biomass but also provide much needed proteins. Fishery plays an important role in Indian economy. In India the human population is expanding rapidly, due to which there is a striking effect on the available resources, creating a number of problems regarding food supply. Government is providing lot of facilities to man for blue revolution by which problem of food supply will be solved little bit.

The fish fauna is an important aspect of fishery potential of the water body. Lot of work has been carried out to study Ichthyofaunal diversity of different water bodies. Fishes are most abundant vertebrates of aquatic ecosystem. The knowledge of fish diversity is essential not only for rational management of Ichthyofauna but also for their conservation strategies. The purpose of this study was to determine the current condition of fish population of Ramala lake.

The study included surveying site of previous studies, evaluating and quantification of abundance and impact of physico-chemical status of lake water on fish population.

METHODOLOGY

Present work is an attempt to study fish fauna of Ramala lake, Chandrapur during the study period July 2015 to December 2015. The fishes were collected with the help of local fishermen using different types of net and after noting down the colour and other morphological features photographs of the fishes were taken on a suitable background. The specimen were then preserved in 5% formalin. The identification of the fishes were done with the help of standard keys and books.[1-3]

For study of physio-chemical parameter, the water samples were conducted from the three different sites of the lake. The temperature and pH were recorded at the time of sampling on the spot. Other parameters were estimated by the procedures given in Trivedi and Goel [10], also from methodology by Kodarkar.[5]

RESULTS AND DISCUSSION

The fish fauna is an important aspect of fishery potential of water body. It is observed that distribution of fish species is quite variable because of different water conditions as well as geographical position. The changes in the composition of a fish assemblage often indicate a variation in the water

quality parameters such as pH, water temperature, dissolved oxygen etc.

Water quality is an important criteria for fish habitat hence the important physiochemical characters of water of Ramala lake were analysed during the study period. (Table 1.A)

Ramala lake is highly utilised for harvesting and marketing the fishes on the daily basis. All the fishing activities are controlled by Fisherman co-operative society. The fishes were collected from commercial catches of local fishermen and identified using standard keys as referred above. (Table 1.B)

Altogether 15 species of fishes were found which belong to five order and ten families were identified. Among them, Cypriniformes were dominant with six species, followed by Siluriformes with three species, Perciformes with three, Ophiocephaliformes with two and order Clupeiformes with one species only.

The change in the composition of fish assemblage often indicates a variation in the water quality. [3,11] Due to more fecundity of major carps and suitable environmental conditions, relatively higher population density of Cypriniformes were found in lake Similar observations were earlier made by Talwar and Jhingran [9], Sakhare and Joshi [8] confirmed the occurrence of 20 fish species belonging to four orders in Bori reservoir in Osmanabad district, Maharashtra. Pawar and Maldhure [7] recorded 11 fish species belonging to 5 orders in Sirur dam.

Table 1.A: Physico-chemical status pf Ramala Lake during July 2015 to December 2015

| Sr. No. | Parameters | Range | |
|---------|------------------------|--------|-------|
| | | Min | Max |
| 1 | Water temperature (°C) | 35° | 20° |
| 2 | Transparency (cm) | 47.4 | 10.25 |
| 3 | Total dissolved solids | 578.12 | 123.8 |
| 4 | pH | 8.75 | 7.12 |
| 5 | DO | 12.5 | 3.2 |
| 6 | Free carbon dioxide | 3.2 | 27.2 |
| 7 | Total hardness | 218 | 102 |
| 8 | Total alkalinity | 236 | 109 |
| 9 | Phosphate | 2.08 | 0.54 |
| 10 | Nitrate | 2.15 | 0.45 |

Note: All the parameters except temperature, transparency and pH are in mg/lit.

Table 1.B :Ichthyfaunal diversity of Ramala lake during study period July 2015 to December 2015

| Sr.NO. | Scientific name | Vernacular name | Order | Family | Economic importance | | |
|--------|--------------------------------|-----------------|---------------|------------------|---------------------|----|----|
| | | | | | CO | FF | CF |
| 1 | <i>Labeo rohita</i> | Rohu | Cypriniformes | Cyprinidae | ✓ | ✓ | |
| 2 | <i>Catla catla</i> | Catla | Cypriniformes | Cyprinidae | ✓ | ✓ | |
| 3 | <i>Cirrhina mrigala</i> | Mrigal | Cypriniformes | Cyprinidae | ✓ | ✓ | |
| 4 | <i>Cyprinus carpio</i> | Common carp | Cypriniformes | Cyprinidae | ✓ | ✓ | |
| 5 | <i>Ctenopharyngodon</i> | Idella carp | Cypriniformes | Cyprinidae | ✓ | ✓ | |
| 6 | <i>Heteropneustus fossilis</i> | Singhi | Cypriniformes | Heteropneustidae | | | |
| 7 | <i>Wallago attu</i> | Padan | Siluriformes | Siluridae | - | ✓ | |
| 8 | <i>Mystus Seenghala</i> | Shingala | Siluriformes | Bagridae | ✓ | ✓ | |
| 9 | <i>Clarius batraeus</i> | Magur | Siluriformes | Claridae | ✓ | ✓ | |
| 10 | <i>Anabas tastidunious</i> | Koi | Perciformes | Anabantidae | | | |
| 11 | <i>Tilapia mossambica</i> | Talaphi | Perciformes | Cichlidae | | | |
| 12 | <i>Channa marulius</i> | Murrel | Channiformes | Channidae | ✓ | ✓ | |
| 13 | <i>Channa puntatus</i> | Girau/sauri | Channiformes | Channidae | ✓ | ✓ | |
| 14 | <i>Channa nama</i> | Chandani | Perciformes | Centropomidae | | | |
| 15 | <i>Notopterus notopterus</i> | Patola | Clupeiformes | Notopteridae | | | ✓ |

CO = Commercial food FF = Fine food CF= Course food

The species were classified on the basis of commercial importance by following Lagler[6] such as commercially important, fishes having food value or as course food fishes for poor people of this region or other viz. larvivorous fishes, batfishes etc.

Ctenopharyngodon idella (Grass carp) is very useful fish for biological control of aquatic vegetation. The intergeneric breed between *Labeo rohita* and *Catla catla* was also found in lake water.

Conflicts of interest: The authors stated that no conflicts of interest.

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