# Study of the Diversity and Composition of Fresh Water Fishes of Indrayani River, Kamshet, India

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***Abstract-*** *The freshwater fish fauna of the Indrayani River of Kamshet village, a northern tributary of the Krishna River system in the Western Ghats of India was studied. A total of 14 species of freshwater fish belonging to 9 families and 4 order were recorded. However, based on the previous literature it is possible that the Indrayani River harbours around 67 species. The fish fauna of the Indrayani River is threatened due to some species and anthropogenic activities such as deforestation leading to siltation, tourism, sand mining, over fishing and organic and inorganic pollution .Site based conservation action plans are needed for conservation of rare and threatened fish in this area.*

***Keywords***- Indrayani river, Deforestation, Anthropogenic, Threat, Fish fauna.

## I. INTRODUCTION

The Indrayani river originates in Kurvande village near Lonavla, a hill station in the Sahyadri mountains of Maharashtra. Fed by rain, it flows east from there to meet the Bhima river, through the religious villages of Dehu and Alandi, and north of Pune. It is revered as a holy river and is associated with such great religious figures such as Saint Tukaram and Dnyaneshwar. A major study on the fish fauna of Indrayani River was carried out by Yazdani & Mahabal (1976), which resulted in the collection of 34 species belonging to 10 families and 19 genera. Maharashtra is one of the important states for fish production and natural water resources and there is great scope for developing fisheries in this state. Fish diversity is declining rapidly each day due to unending anthropogenic stress. This diversity is not only the wealth of our world but it also has some serious implications on fishery. Thus there is an urgent need for proper investigation and documentation of this fish diversity in order to develop a fresh water fish diversity information system having both bioinformatics and geo-referenced databases of fish and fish habitat .

## II. MATERIAL AND METHODS

As there were not many previous records available about the study at Indrayani river, a detailed survey of river site was conducted. Inputs were collected from the local fishermen and the fishing contractor at the river & market. The fish fauna identification was also carried out simultaneously. The fish fauna was identified and was further confirmed by experts of department of fisheries.

Fish sample was collected through experimental fishing using gill net and also used the local tires. Based on fish catch, richness of species and fish abundant data were generated for each site. Fishes has been preserved in 10% Formalin. For fish sampling four sites were selected and samples were collected 1-2 km away from each site .

I recorded a total of 14 species belonging to 9 families and 4 order . The list of species recorded by studies on the Indrayani River is given in Table 1.

Table 1. List of freshwater fish species recorded from Indrayani River in the present study.

| Sr.No | ORDER | FAMILY | SPECIES | ABUNDANCE | IUCN REDLIST STATUS |
|---|---|---|---|---|---|
| 1. | Cypriniformes | Cyprinidae | Catla catla | M | LC |
| 2. | Cypriniformes | Cyprinidae | Labeo rohita | M | |
| 3. | Cypriniformes | Cyprinidae | Rasbora danoconius | A | LC |

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| | | | | | |
|---|---|---|---|---|---|
| 4. | Cypriniformes | Cyprinidae | Puntius amphibious (Val.) | A | DD |
| 5. | Cypriniformes | Cyprinidae | Puntius sarana subnasutus(Val.) | M | NE |
| 6. | Cypriniformes | Cyprinidae | Cirrhinus reba(Hamilton) | C | LC |
| 7. | Cypriniformes | Balitoridae | Garra mullya(sykes) | A | LC |
| 8. | Siluriformes | Cobitidaae | Lepidocephalichthyes thermalis(Val.) | A | LC |
| 9. | Perciformes | Gobiidae | Glossogobius giuris(Hamilton) | C | NE |
| 10. | Perciformes | Cichlidae | Oreochromis mossambica (Peters) | A | |
| 11. | Perciformes | Channidae | Channa gachua(Hamilton) | M | |
| 12. | Siluriformes | Siluridae | Ompok bimaculatus (Bloch) | C | NT |
| 13. | Siluriformes | Bagridae | Mystus malabaricus (Jerdon) | M | NT |
| 14. | Synbranchiformes | Mastacembelidae | Mastacembelus armatus (Lacepede) | C | LC |

**Abundance categories:** A = abundant, C = common, M = moderate, R =rare .
**IUCN (2011):** NT = Near Threatened, LC = Least Concern, NE = Not Evaluated, DD = Data Deficient, EN = Endangered .

**Order: Cypriniformes**

**Photo Plate: 1**


Catla catla

Labeo rohita


Rasbora daniconius


Puntius amphibious

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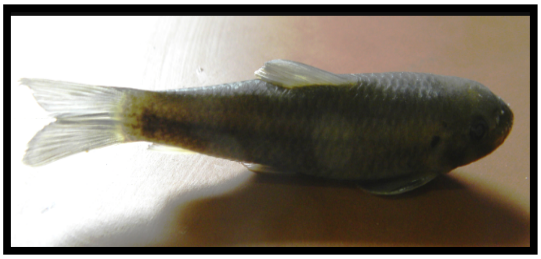
Puntius sarana


Cirrhinus reba


Garra mullya

**Order : Siluriformes**

**Photo Plate: 2**


Ompok bimaculatus


Lepidocephalichthys thermalis


Mystus malabaricus

**Order : Perciformes**

**Photo Plate: 3**


Glossogobius giuris


Oreochromis mossambica


Channa gachua

**Order : Synbranchiformes**

**Photo Plate: 4**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Mastacembelus armatus

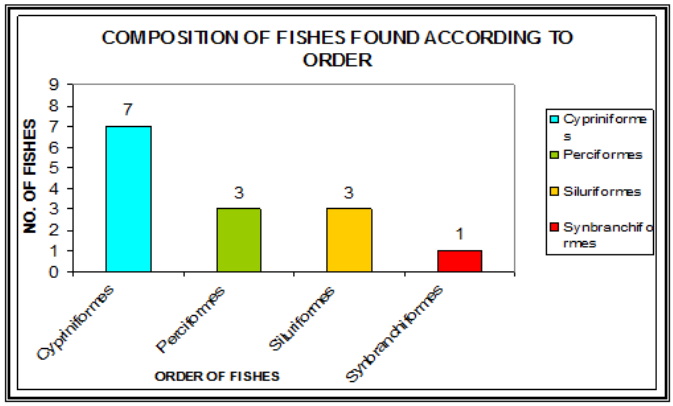
## III. RESULT

The present inventory fishes from class Actinopterygii comprising total 14 species belonging to 4 orders, 9 families. In the assemblage structure, Cyprinidae constitute the dominant group in found families . It is an urgent need to conserve the river,dam and natural resources by applying conservative measures.

Composition of fish species according to Order In INDRAYANI RIVER, KAMSHET, Pune, is given in Table 2.

Table 2. Composition of fish species according to Order In Indrayani river, Kamshet, Pune

| Cypriniformes | Perciformes | Siluriformes | Synbranchiformes |
|---|---|---|---|
| 7 | 3 | 3 | 1 |




**Discussion-**

In present study of Indrayani river 14 species under 3 orders, belonging to 9 families. The Icthyological fauna of Indrayani river is dominating by Famil Cyprinidae

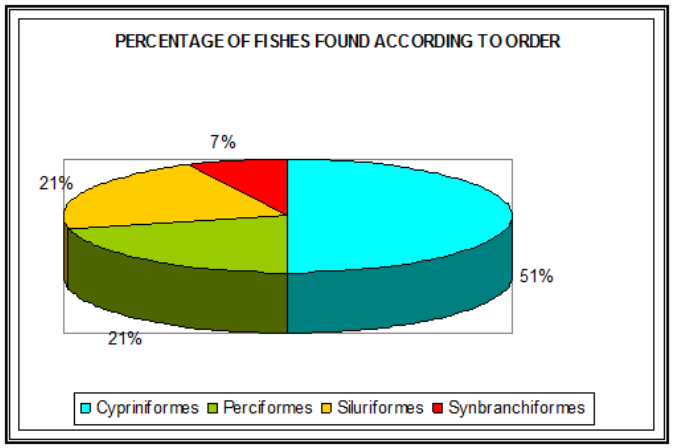
1. Order: Cypriniformes –
   Family: Cyprinidae – 6 Species,
   Family: Balitoridae – 1 Species.

2. Order: Perciformes –
   Family: Cichlidae – 1 Species,
   Family: Gobiidae – 1 Species.
   Family: Channidae – 1 Species

3. Order: Siluriforme
   Family: Cobitidae – 1 Species,s –
   Family: Bagridae – 1 Species,
   Family: Siluridae – 1 Species.

4. Order: Synbranchiformes –
   Family: Mastacembelsidae – 1 Species.

Order Cypriniformes forms predominant group with followed by 51 %, peciformes 21%, Suluriformes 21% and Synbranchiformes 07% in the Indrayani river, which is showing below by the pie chart:

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