

## Fish faunal diversity and occurrence from lakes of Kolhapur district

Londhe Sheetal D<sup>1</sup>. and T. V. Sathe<sup>2\*</sup>

<sup>1-2</sup> Department of Zoology, Shivaji University, Kolhapur. 416004, India

E-mail: [profdrtvsathe@rediffmail.com](mailto:profdrtvsathe@rediffmail.com)

### ABSTRACT

The present study deals with fish diversity of lake ecosystems in Kolhapur district, Maharashtra, India. During study 28 species were recorded belonging to 3 orders and 17 genera. During investigation it was revealed that, Cypriniformes was dominant at all lakes of Kolhapur District. All the species recorded were found throughout year.

**Keywords-** Fish diversity, Lake Ecosystem, Kolhapur district.

### INTRODUCTION

Pisces are the major group of vertebrates which shows an enormous diversity in shape, size, biology and habitat (Bobdey, 2014). Biodiversity is an important factor for the stability of an ecosystem (Shukla & Singh, 2013). India is one of the megadiversity countries in the world. There are 450 families of freshwater fishes globally, out of which 40 families are represented from India (Keshave *et al.*, 2013). Maharashtra is rich in freshwater reservoir fish diversity (Pawara *et al.*, 2014).

Review of literature indicates that most of the work is related to fish fauna available from riverine ecosystem. Very little attention is paid on freshwater fish diversity except the work of Shinde *et al.* (2009), Sarwade & Khillare (2010), Kharat *et al.* (2012), Patil *et al.* (2014<sup>a, b, c</sup>) etc.

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### MATERIALS AND METHOD

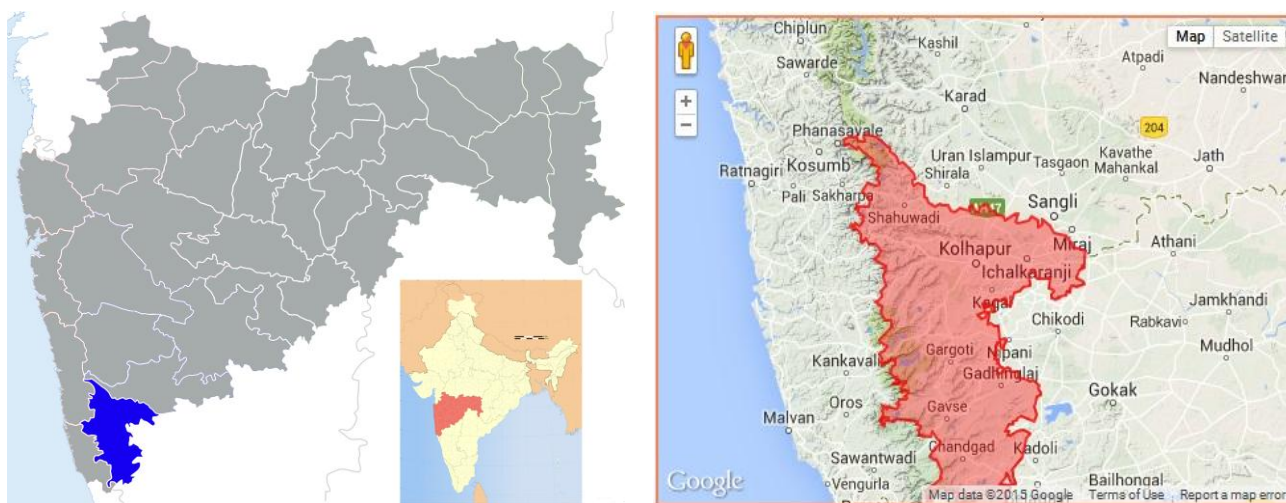
#### Study Area

Kolhapur district is located at N 16° 69'1" and E 74° 23'3" with an average temperature 36°C, humidity 24%, average rainfall 600 mm at western region and 480mm at eastern region of the district. The present study deals with lakes from four tahsils of Kolhapur district containing one Lake Spot from each tahsil. The fish sampling and collection of fishes was made at four Lake Spot namely, Kalleshwar Lake, Vadanage Lake, Gavse Lake and Arjunwada Lake. Kalleshwar lake is present in the Shirol tahsil located at N 16°44'27" and E 74°35'59", Vadanage lake from Karveer tahsil located at N 16°44'03" and E 74°12'50", Ajara tahsil, Gavase lake is located at N 16°05'76" and E 74°07'59" and Arjunwada Lake from Radhanagari tahsil at longitude 16°28'24"N and latitude 74°08'52"E.

#### Fish Fauna and Occurrence

Fish samples were collected fort nightly during the study period with help of skilled fishermen by fishing craft and gears with mesh size 3/8". Collected fish species were preserved in 10% formalin in laboratory. The fishes were identified by referring standard literature (Day, 1958; Jhingran, 1992; Jayram, 2010).

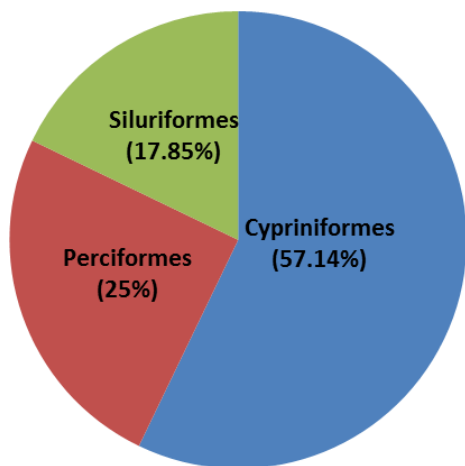
**Figure-1. Study area-Kolhapur District, Maharashtra State**



### RESULTS

Results recorded in tables 1 and figures 2-8 indicates that in all, 28 species of fishes belonging to orders Cypriniformes, Perciformes and Siluriformes were prevalent in Kolhapur region. The dominant species were scattered in the order Cypriniformes.

**Figure-2. Percentage occurrence of fish orders in lakes of Kolhapur district.**



The fish faunal diversity of Kolhapur district comprises 3 orders, 17genera and 28 species. Percentagewise distribution of the reported orders was Cypriniformes-57.142%, Perciformes-25% and Siluriformes-17.857%. Among three orders, order Cypriniformes was dominant over others. From this order Labeo and Puntius were found in large numbers. 7 species belonging to 4

genera were reported from order Perciformes. Siluriformes was the third order reported in Kolhapur district. This order was represented 5 species with 4 genera.

### DISCUSSION

In previous studies various workers have studied the taxonomical fish diversity from riverine system. Patil *et al.* (2014<sup>a</sup>) worked on preliminary analysis of diversity status with reference to Pisces from major wetlands of Ajara tahsil of Kolhapur district. They recorded a total of 19 species of fishes. Among these, 17 species were belonging to12 genera, 4 families, 3 orders from Gavase wetland, 14 species belonging to 11genera, 3 families and 2 orders from Dhangarmola wetland, 12 species of fishes belonging to 10 genera, 5 families and 3 orders from Yarnadol wetland. They also reported 6 species of fishes each belonging to 5 genera at Khanapur and 6 genera at Ningudage wetland , 2 families each and 2 orders each.

Pawara *et al.* (2014) and R.K Saronia (2014) reviewed the freshwater fish diversity of Maharashtra. They recorded and confirmed freshwater fish species by various authors refer to 165 species belonging 9 orders, 26 families and 82 genera in Maharashtra during 2000-2004. Bobdey (2014) studied Ichthyo diversity and conservation aspects in a lake and river ecosystems in Bhandara district of Maharashtra, India. He reported 63 species of 8 orders and 17 families. His harvested data indicated the dominance of

species, family, Cyprinidae>Ophiocephalidae>Bagridae>Siluridae>Notopteridae=Ambassidae=Clariidae=Anabantidae=Osphronemidae=Gobiidae=Chichlidae=Anguillidae=Saccobranchidae=Pangassidae=Sisoridae=Belontiidae. Parith Bhanu and Deepak (2015) concluded that, mainly human interference in lakes and rivers were responsible for the less distribution of fishes. Pollution and intense hot climatic conditions affected the growth and distribution of fishes. Pollution load during the month of summer turned the fish species to develop certain adaptations. The species having more adaptive capabilities showed more in quantities; however some fish fauna was

going on the way of scrub down from the study area. Careless management of some lakes and river basins polluted the water which created hazards for eggs and fries to grow up in the adult fishes. Use of certain manures and insecticides in the lake water harmed the fish fauna.

India's inland water resources are diversified as they are plentiful (Keshave *et al.* 2013). Reservoir contributed the single largest inland fishery resources both in terms of size and production potential (Kamble *et al.*, 2013). Fish species were the important indicator of ecological health. The abundance and health of fish showed the health of water bodies (Hamzah, 2007).

**Table .1- List of lake fish species of Kolhapur district.**

Sr. No.	Local Name	Common Name	Order	Scientific name
1	Ghogrya	Cat Fish	Siluriformes	<i>Eutropiichthys vacha</i> (Ham.)
2	Kaliwanz	Butter Cat Fish	Siluriformes	<i>Ompok pabdo</i> (Ham.)
3	Wanz	Cat Fish	Siluriformes	<i>Ompok binotatus</i> (Ng.)
4	Valshivada	-	Siluriformes	<i>Wallago attu</i> (Bl.)
5	Shingtya	Cat fish	Siluriformes	<i>Mystus seengtee</i> (Sykes.)
6	Khavalchor	-	Cypriniformes	<i>Puntius dorsalis</i> (Jer.)
7	Cyprinus	Cyprinus	Cypriniformes	<i>Cyprinus Carpio</i> (Linn.)
8	Mullya	-	Cypriniformes	<i>Gorya mullya</i> (Sykes.)
9	Rav	Rohu	Cypriniformes	<i>Labeo rohita</i> (Ham.)
10	Pungut	-	Cypriniformes	<i>Puntius aurilus</i> (Jer.)
11	Gavtya	Grass carp	Cypriniformes	<i>Ctenopharyngodon idella</i> (Val.)
12	Chandera	Silver carp	Cypriniformes	<i>Hypophthalmichthys molitrix</i> (val.)
13	Kolashi	Kolashi	Cypriniformes	<i>Puntius Kolus</i> (Sykes.)
14	Kanashi	Kalbasu	Cypriniformes	<i>Labeo Kalbasu</i> (Ham.)
15	Tambir	Carp	Cypriniformes	<i>Labeo fimbriatus</i> (Bl.)
16	Mrigal	Mrigal	Cypriniformes	<i>Cirrhinus mrigala</i> (Bl.)
17	Catla	Catla	Cypriniformes	<i>Catla catla</i> (Ham.)
18	Naktya	-	Cypriniformes	<i>Schizmatorhynchus nukta</i> (Sykes.)
19	Pital	-	Cypriniformes	<i>Labeo porcellus</i> (Heckel.)
20	Parag	-	Cypriniformes	<i>Puntius jerdoni</i> (Day.)
21	Bobri	Firefin barb	Cypriniformes	<i>Puntius ticto</i> (Ham.)
22	Maral	Murrel	Perciformes	<i>Channa marulius</i> (Ham.)
23	Dokarya	Dwarf murrel	Perciformes	<i>Channa orientalis</i> (Jer.)
24	Tilap	Tilapia	Perciformes	<i>Oreochromis mossambicus</i> (Peter.)
25	Kharpya	Gobi	Perciformes	<i>Glossogobius giuris</i> (Ham.)
26	Kachki	Glass fish	Perciformes	<i>Parambassis ranga</i> (Ham.)
27	Kala masa	Murrel	Perciformes	<i>Channa punctatus</i> (Sco.)
28	Mangsha	-	Perciformes	<i>Channa striata</i> (Bl.)

Figure-3. *M. singtee*



Figure-7. *L. fimbriatus*



Figure-4. *W. attu*



Figure-8. *O. mossambicus*



Figure-5. *C. catla*



Figure-6. *C. orientalis*



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### CONFLICT OF INTERESTS

The authors declare that there is no conflict of interests regarding the publication of this paper.

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