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## A checklist of freshwater fishes at Katphal Lake, Tal-Sangola, Dist- Solapur (M.S.) India

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### Abstract

The present investigation has been conducted to identify the fishes of the Katphal lake from January 2014 to December 2014. Samples were collected monthly with help the of local fishermen by using fishing nets. Total 21 species of fishes were collected and identified during the study period, which belongs to 6 orders, 12 families and 17 genera. The order Cypriniformes consist of two families *i.e.* Cyprinidae and Ambassidae. The Cyprinidae was the most dominant family having 7 species and the family Ambassidae with 1 species, the order Perciformes consist of 3 families *i.e.* family Channidae (2 species), Cichlidae (1 species), Gobiidae (1 species). The order Osteoglossiformes consist of 1 family *i.e.* Notopteridae (2 species). The order Siluriformes consist of 4 families *i.e.* family Bagridae (1 species), family Clariidae (1 species), family Heteropneustidae (1 species) and family Siluridae (1 species), while order Synbranchiformes consist of 1 family *i.e.* Mastacembelidae (2 species). It is confirmed that the Katphal lake is rich in fish population. There is necessary of proper management and utilization of this fish wealth and conservation of native fish fauna by the sustainable management steps.

**Keywords:** Checklist, Freshwater, Fish, Fish population, Fish wealth, Katphal Lake.

### 1. Introduction

Fish is the poikilothermic animal, which inhabit the aquatic mode of life. These are the first true vertebrates. Fish is one of the significant sources of food. Fish is responsive to alterations in water quality due to various anthropogenic processes from their catchment. It has been recognized as suitable for biological assessment due to its easy identification and economic value (Siligato & Bohmer, 2001) [15]. Fish assemblages have widely been used as ecological monitors to assess and determine the level of degradation and health of water bodies at different scales (Vijayalaxmi *et al.*, 2010) [18]. Plafkin *et al.*, (1989) [9]. monitored that there are many advantages of using fish diversity as biological indicator.

Earlier studies have been made on fish diversity of different freshwater resources in India (Jayram, 1981 & Mishra *et al.*, 2003) [3]. Pawar *et al.*, (2006) [7]. studied fish fauna of Pethwadaj dam, Nanded. Kulkarni *et al.*, (2008) studied fish and fisheries of Derala Tank, District Nanded, Maharashtra. Ravindar, (2010) [10]. studied biodiversity of fishes in Dharamsagar reservoir, Warangal District, Andhra Pradesh. Nikam *et al.*, (2014) [6]. Studied fish diversity at Asthi Lake, District Solapur. The objective of present study was to know recent information regarding abundance and diversity of ichthyo- fauna at Katphal lake, Dist. Solapur. This is also aimed to suggest remedial measures for the improvement of fisheries sector and also to recommend some conservative measures.

### 2. Materials and Methods

#### 2.1. Study Area

The fish samples were collected from Katphal lake monthly during January 2014 to December 2014. The Katphal lake is located near Katphal village, Tal – Sangola, District Solapur (M.S.) along the side major district road, Karad - Pandharpur State highway number 76. This lake is situated at 17°33'88" N latitude and 74°59'41.04" E longitude. The lake has an earthen dam and constructed in 1884. This lake is 1300 meter long and perennial. The gross capacity of lake is 36.04 meter mcft. The live storage of lake is 36.04 mcft. The average rain fall in this area is 533.40 mm.

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## 2.2. Satellite view of Katphal Lake



## 2.3. Methods

Fishes were collected from different selected locations during study period from January 2014 to December 2014 with the help of local fisherman using various kinds of nets namely gill nets, cast nets and drag nets. Quickly photographs were taken before to preservation. Fishes were brought to the laboratory for the identification and preserved in 10 % formalin solution for further study. The small sized fishes directly kept in the formalin solution while bigger fishes were given an incision on the abdomen before they were fixed. The fishes were identified with the help of standard keys of Day, (1878) [1], Jayaram, (1981) [3]. And Talwar & Jhingran, (1991) [17].

## 3. Results and Discussions

Fishes forms nearly half of the number of vertebrate fauna found in the world. Total 39900 vertebrate species are recognized all over the globe, over 21,723 are living species of fishes of which 930 are fresh water and 1570 are marine fishes (Jayaram, 1999)<sup>[4]</sup>. Fresh water total lakes and ponds will probably contribute a major role to fulfill the additional requirement of fish and to improve the socio –economic status of the rural areas of a particular region (Jayabhaye *et al.*, 2006)<sup>[2]</sup>.

In the present study, 21 species of fishes were recorded belonging to 6 orders, 12 families and 17 genera. Among all these orders Cypriniformes were dominant by contributing 8 species *viz.* *Catla catla*, *Cyprinus carpio*, *Cirrhinus mrigala*, *Labeo rohita*, *Labeo sp.*, *Puntius sp.* and *Salmostoma sp.*

belongs to family Cyprinidae and 1 species from family Ambassidae namely *Chanda nama* (Table 1, plate 1). The order Cypriniformes contributes 38% total fish composition (Fig. 1). The order Beloniformes consist of 1 species *viz* *Xenentodon cancila* belongs to family Belonidae (Table 1, plate 1). It contributes 4% of total fish composition (Fig.1). The order Perciformes consist of 4 species *viz* *Channa marulius*, *Channa punctata* belong to family Channidae, *Oreochromis mossambica* belongs to family Cichlidae and *Glossogobius giuris* belongs to family Gobiidae (Table-1). It contributes 19.04% of total fish composition (Fig.1). The order Osteoglossiformes consist of 2 species *viz* *Notopterus notopterus* and *Notopterus chitala* belongs to family Notopteridae (Table- 1). It contributes 9% of total fish composition (Fig. 1). The order Siluriformes consist of 4 species *viz* *Mystus cavasius* belongs to family Bagridae, *Clarias gariepinus* belongs to family Clariidae, *Heteropneustes fossilis* belongs to family Heteropneustidae and *Ompok bimaculatus* belongs to family Siluridae (Table 1). It contributes 19.04% of total fish composition (Fig.1). The order Synbranchiformes consist of 2 species *Macrornathus pancalus* and *Macrornathus sp.* belongs to family Mastacembelidae (Table-1). It contributes 9% of total fish composition (Fig. 1.)

In the present investigation order Cypriniformes was most dominant followed by order Perciformes and Siluriformes, then Osteoglossiformes and Synbranchiformes and then order Beloniformes (Table 2). Same result is noticed by Sakhare, (2001) [11]. Who has reported in his investigation from Jawalgaon reservoir in Solapur district of Maharashtra. The fishes belonging to order Cypriniformes were dominant with 11 species to be followed by fishes of order Siluriformes with 4 species, while orders like Osteoglossiformes, Perciformes and Channiformes were represented by 2 species and rest of orders by single species. Sharma *et al.*, (2007) [13]. reported 29 species of fishes belonging to 6 orders from Krishnapura lake, Indore and stated that Cypriniformes was dominant with 15 species. Similar observation has also prepared by Singh, (2001) [14], Pisca *et al.*, (2000) [8], Salaskar & Yeergi (2004) [12]. And Shrikanth *et al.*, (2009) [16].

**Table 1:** Fishes Observed at Katphal Lake from January 2014 to December 2014.

Order	Family	Genus	Species	Author	Fin formula
Beloniformes	Belonidae	1. <i>Xenentodon</i>	<i>cancila</i>	(Hamilton, 1822)	D. 15-16; P <sub>1</sub> 10-11; P <sub>2</sub> 6; A. 17-18
		2. <i>Catla</i>	<i>catla</i>	(Hamilton, 1822)	D. 17-18; P <sub>1</sub> 18-20; P <sub>2</sub> 9; A. 8
Cypriniformes	Cyprinidae	3. <i>Cyprinus</i>	<i>carpio</i>	(Linneus, 1758)	D. 3-4/ 18-20; P <sub>1</sub> 1/15; P <sub>2</sub> 1/8; A. 3-5.
		4. <i>Cirrhinus</i>	<i>mrigala</i>	(Hamilton, 1822)	D. 16, P <sub>1</sub> 17, P <sub>2</sub> 9, A. 8
		5. <i>Labeo</i>	<i>rohita</i>	(Hamilton, 1822)	D. 15-16; P <sub>1</sub> 16-17; P <sub>2</sub> 9; A. 7
		6. <i>Labeo</i>	<i>sp.</i>		
		7. <i>Puntius</i>	<i>sp.</i>		
		8. <i>Salmostoma</i>	<i>sp.</i>	(Hamilton, 1822)	D. 10, P <sub>1</sub> 12, P <sub>2</sub> 9, A. 14-15
		9. <i>Chanda</i>	<i>nama</i>	(Hamilton, 1822)	D1.7, D2. 15-18, P <sub>1</sub> 12, P <sub>2</sub> 6, A3/14-17
		Perciformes	Channidae	10. <i>Channa</i>	<i>marulius</i>
11. <i>Channa</i>	<i>punctata</i>			(Bloch, 1793)	D. 28-33; A. 20-23; P. 15-18; V. 6
Cichlidae	12. <i>Oreochromis</i>		<i>mossambica</i>	(Peters)	D. XV- XVI 10-12; P <sub>1</sub> 14-15; P <sub>2</sub> 1/5; A. III 10-11
Gobiidae	13. <i>Glossogobius</i>		<i>giuris</i>	(Koumans, 1953)	D. vi 8-9; P <sub>1</sub> 16-21; A. 7-8;
Osteoglossiformes	Notopteridae	14. <i>Notopterus</i>	<i>notopterus</i>	(Pallas, 1769)	D. 7-9; A+C. 100-110; V. 5-6
		15. <i>Notopterus</i>	<i>chitala</i>	(Hamilton, 1822)	
Siluriformes	Bagridae	16. <i>Mystus</i>	<i>cavasius</i>	(Hamilton, 1822)	D. 1/7; P <sub>1</sub> 1/8; P <sub>2</sub> 6; A. 11
	Clariidae	17. <i>Clarias</i>	<i>gariepinus</i>	(Burchell, 1822)	D. 61-80; P <sub>1</sub> 9-10; P <sub>2</sub> 6; A. 45-65.
	Heteropneustidae	18. <i>Heteropneustes</i>	<i>fossilis</i>	(Bloch, 1794)	D. 6-7; A. 60-70; P <sub>1</sub> 7; V. 5
	Siluridae	19. <i>Ompok</i>	<i>bimaculatus</i>	(Bloch, 1794)	D. 4, Aii-iii 57-58, P <sub>1</sub> 12-14, vi 7-8
Synbranchiformes	Mastacembelidae	20. <i>Macrornathus</i>	<i>pancalus</i>	(Hamilton, 1822)	D. 30-42, P <sub>1</sub> 17-19, A. III 31-46
		21. <i>Macrornathus</i>	<i>Sp.</i>		

**Suffix used in fin formula**

A- Anal, D- Dorsal, P1- Pectoral, P<sub>2</sub>- Pelvic and V-Ventral.



*Catla catla* (Hamilton)



*Labeo rohita* (Hamilton)



*Cyprinus carpio* (Linnaeus)



*Channa marulius* (Hamilton)



*Channa punctata* (Bloch)



*Clarias gariepinus* (Burchell)



*Glossogobius giuris* (Hamilton)



*Heteropneusts fossilis* (Bloch)



*Mystus cavasius* (Hamilton)



*Notopterus notopterus* (Pallas)



*Oreochromis mossambica* (Peters)



*Xenentodon cancila* (Hamilton)



*Macrognathus pancalus* (Hamilton)



*Macrognathus sp.*



*Puntius sp.*



*Chanda nama* (Hamilton)



*Salmostoma sp.*



*Ompok bimaculatus* (Bloch)



*Labeo sp.*



*Cirrhinus mrigala* (Hamilton)

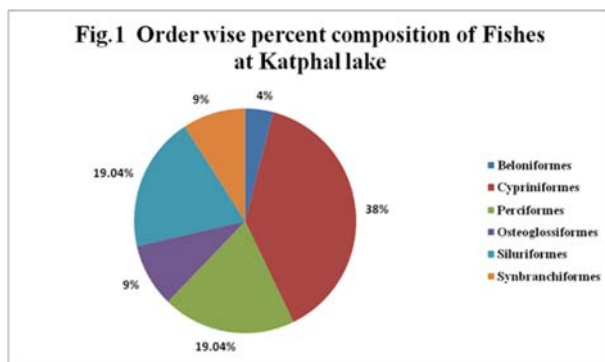


*Notopterus chitala* (Hamilton)

**Plate 1:** Fishes Observed at Katphal lake from January 2014 to December 2014.

**Table 2:** Order wise fish diversity of Katphal lake.

Sr. No.	Order	Number of available species of fish
1	Beloniformes	01
2	Cypriniformes	08
3	Perciformes	04
4	Osteoglossiformes	02
5	Siluriformes	04
6	Synbranchiformes	02
	Total	21



**4. Conclusion**

The study of fish fauna of Katphal Lake is rich in fish diversity. Fluctuations in fish community directly or indirectly affect other components of the Lake Ecosystem involving physico-chemical and biological features. Habitat thrashing and environmental degradation has sincerely affected the fish fauna. Conservation of fish diversity assumes first priority under altering situation of gradual habitat degradation. Therefore a sustainable strategies needs to search more fish species, employment and save fish community of this lake. The study will provide future strategies for development and fish management.

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