



Ichthyofaunal Diversity of Ashti Lake, Tal. Mohol, Dist. Solapur (M.S.)

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ABSTRACT

The ichthyofaunal diversity is a good indicator of health of aquatic ecosystem. A good piscine diversity represents the balanced ecosystem. Taking this into consideration the ichthyofaunal diversity of Ashti Lake is studied during present investigation. The Ashti Lake is huge and spread over area about 1145 hectare area. The lake is old and was constructed in 1881. Total 23 species of fishes belonging to 21 genera, 12 families and 5 orders were identified from the lake. The order Cypriniformes was found to be dominant among fishes. The results were discussed with recent literature.

KEYWORDS : Ichthyofauna, Diversity, Ashti Lake, Solapur.

INTRODUCTION

Fishes are aquatic creatures, perfectly adapted for life in water. Freshwater bodies comprise variety of fishes. Fishes alone contribute about 2,546 species and the fishes of inland water bodies of Indian subcontinent have been subject of study since last century (Kalbande *et al.*, 2008). Human beings from time immemorial use fishes for various purposes. Millions of human are suffering from hunger and malnutrition while fishes form rich source of food and provide a meal to tide over a nutritional difficulties of man. Fishes have formed an important item of human diet from time immemorial use fishes are primarily caught for this purpose (Sarwade and Khillare, 2010). In order to maintain sustainable development and stability of ecosystem, surveillance of fish faunal diversity of water bodies is needed. The workers like Kamble and Reddi (2012), Kharat *et al.* (2012), Galib *et al.* (2013), Nagabhushana and Hosetti (2013), Chandrashekhar (2014), Biswas and Panigrahi (2014) have contributed in the field of study of fish faunal diversity. Present study is an attempt to study the ichthyofaunal diversity of Ashti Lake.

MATERIALS AND METHODS

The present investigation on ichthyofauna is carried out on the Ashti Lake from April 2011 to March 2014. The Ashti Lake is situated in the Madha Sub-division, twelve miles (22 km.) northeast of Pandharpur city in district Solapur (M.S.). It is located at 17° 48' 11.24" N latitude and 75° 25' 33.42" E longitudes and 458 m. above mean sea level. Average annual rainfall in this area is about 48 cm. The precipitation occurs in the months of July, August, and September. The Ashti lake is very big water reservoir and spread over an area about 1145 hectare (2830 acres) containing 15,500 million cubic feet of water. The fishes from the Lake were collected with the help of local fishermen. The collected fishes were brought to laboratory, fixed in 5% formalin, cleaned with rectified spirit and preserved in 10 % formalin. The fishes were identified by standard keys of Day (1878), Jayram (1981), Talwar and Jhingaran (1991) and Jhingaran (2005).

RESULTS AND DISCUSSION

During present investigation 23 species of fishes belonging to 5 orders and 12 families were identified (Table No. 1). The order Cypriniformes was found to be dominant among fishes. Total 9 species of fishes were observed belonging to order Cypriniformes and family Cyprinidae. The members of this family are distributed

in freshwater habitat all over the world. Freshwater carps are included in this order. The second largest order observed at Ashti Lake was Siluriformes. Total 7 species of fishes were observed from order Siluriformes. Generally cat fishes are included in this order of fishes. The common identification mark of these fishes is presence of one or two pairs of barbels. The four fish species belonging to order Perciformes, two species belonging to Ophiocephaliformes and one species belonging to Osteoglossiformes were also observed from the Ashti Lake. The economically important species of fishes like *Labeo rohita*, *Catla catla*, *Channa striatus*, *Channa marulius*, and *Tilapia mossambica* were found numerically more in Ashti Lake during the study period. This was due to the release of seedlings and fingerlings of these economically important fishes in lake for commercial fishery practices. During present study period the globally threatened species of fishes like *Tor khudree* and near threatened species like *Ompok bimaculatus* were observed (IUCN, 2011). The diversity and abundance in fishes of Ashti Lake is attributed to the availability of plenty of food material and healthy ecosystem developed over long period of time. It is also may be the result of controlled fishing practices at Ashti Lake. The fishes prefer the optimum ecological factors for their existence and proliferation.

Sakhare (2001) reported the occurrence of 23 species of fishes belonging to 7 orders at Jawalgaon reservoir, Dist. Solapur (M.S.). The order Cypriniformes was reported to be the dominant in terms of number of species.

Sarwade and Khillare (2010) reported the 60 species of fishes belonging to 15 families and 36 genera during their study on Ujani wetland (M.S.). Kamble and Reddi (2012) reported the occurrence of 10 species of fishes belonging to 5 orders and 6 families. Kharat *et al.* (2012) had recorded 51 species of fishes belonging to the 14 families and 35 genera during their study on Krishna River at Wai (M.S.). Jayabhaye and Lahane (2013) observed the 21 species of fishes belonging to 6 families and 13 genera during their study period on Pimpaldari tank, Dist. Hingoli (M.S.). Our findings are corroborating with observations of Sakhare (2001), Sarwade and Khillare (2010), Kharat *et al.* (2012) and Jayabhaye and Lahane (2013).

Table No. 1: Fishes Observed at Ashti Lake from April 2011 to March 2014

Sr. No	Order	Family	Scientific Name of Fish	Fin Formula
1.	Cypriniformes	Cyprinidae	<i>Catla catla</i> (Hamilton, 1822)	D. 18; P ₁ 20; P ₂ 9; A. 8
			<i>Cirrhina mrigala</i> (Hamilton, 1822)	D. 16; P ₁ 17; P ₂ 9; A. 8
			<i>Ctenopharyngodon idella</i> (Howes, 1981)	D. 3/7, P ₁ 1/17, P ₂ 1/8, A. 3/7-8
			<i>Cyprinus carpio</i> (Linnaeus, 1758)	D. 3-4/18-20, P ₁ 1/15, P ₂ 1/8, A. 3-5
			<i>Labeo rohita</i> (Hamilton, 1822)	D. 15-16; P ₁ 16-17; P ₂ 9; A. 7
			<i>Puntius sarana</i> (Hamilton, 1822)	D iii-iv 8; A iii 5; P i 14-16; V i 8
			<i>Puntius ticto</i> (Menon, 1974)	D iii-iv 8; A ii-iii 5; P i 12-14; V i 8
			<i>Rasbora daniconius</i> (Hamilton, 1822)	D ii 7; A ii 5; P i 14; V i 8
			<i>Tor khudree</i> (Hamilton, 1822)	D. 12(3/9); P. 19; V. 9; A. 7-8(2-3/5), C. 19; L. 1.
2.	Ophiocephaliformes	Channidae	<i>Channa marulius</i> (Hamilton, 1822)	D 45-55; A 28-36; P 16-18; V 6
			<i>Channa striatus</i> (Bloch, 1794)	D. 42-46; P ₁ 15-17; P ₂ 6; A. 24-27.
3.	Osteoglossiformes	Notopteridae	<i>Notopterus notopterus</i> (Pallas, 1769)	D. 7-8; P ₁ 15-17; P ₂ 5-6; A. 99-104.
4.	Perciformes	Centropomidae	<i>Ambassis ranga</i> (Day, 1878)	D. VII+I 11-14, P ₁ i 11-12, P ₂ i 5, A. III 13-15
		Gobiidae	<i>Glossogobius giurus</i> (Koumans, 1953)	D. VI 8-9, P ₁ i 16-21, A. 17-8
		Mastacembelidae	<i>Mastacembelus armatus</i> (Day, 1878)	D. XXXII-XL 64-92, P ₁ 17-19, A. III 31-46
		Cichlidae	<i>Tilapia mossambica</i> (Jones and Sarojini, 1952)	D. XV-XVI 10-12, P ₁ 14-15, P ₂ i 5 A. III 10-11
5.	Siluriformes	Bagridae	<i>Myxus seenghala</i> (Sykes, 1839)	D. I/7; P ₁ I/9; P ₂ I/5; A. 11-12.
		Clariidae	<i>Clarias batrachus</i> (Linnaeus, 1758)	D 70-76; A 45-58; P I 8-11; V i 5
		Heteropneustidae	<i>Heteropneustes fossilis</i> (Bloch, 1794)	D 6-7; A 60-70; P I 7; V i 5
		Siluridae	<i>Ompok pabda</i> (Hamilton, 1822)	D 4-5; A ii 48-54; P I 11-13; V i 6-7
			<i>Ompok bimaculatus</i> (Jayaram, 1977)	D 4; A ii-iii 57-58; P I 12-14; V i 7-8
			<i>Wallago attu</i> (Day, 1878)	D 5; A iii 74-93; P I 13-15; V i 7-9
			<i>Bagarius bagarius</i> (Hamilton, 1822)	D I 7; A iii 9-12; P I 9-12; V i 5

D- Dorsal, A-Anal, P₁ - Pectoral, P₂ - Pelvic and V- Ventral.

CONCLUSION

The Ashti Lake exhibit a good ichthyofaunal diversity represented by 23 species of fishes belonging to 21 genera, 12 families and 5 orders. The diversity and abundance of fishes in Ashti Lake represents the suitability of water of Ashti Lake for aquaculture practices. To maintain the richness of aquatic ecosystem continuous monitoring of Lake is needed.

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