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Ichthyofaunal Study of Shivajinagar Reservoir from Kadegaon Tahsil, Sangli District, Maharashtra, India

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Abstract: ***The study of ichthyofauna make an importance for aquatic ecosystem and is a good indicator of health of aquatic ecosystem. A good ichthyofaunal diversity represents the balanced ecosystem. Present study carried out from year 2014 to 2016. During this study total 22 species of fishes belonging to 21 genera, 12 families and 5 orders were identified from the Shivajinagar reservoir. This study reveales thatrich ichthyofaunal diversity and order Cypriniformes was found to be dominant among fishes.***

Keywords: Ichthyofauna, Diversity, reservoir

1. Introduction

Fishes are the keystone species and good indicators of the health and quality of the aquatic ecosystem. Fishes alone gives about 2,546 species and study of ichthyofauna of inland water bodies of Indian subcontinent have been studied since last century (Kalbande et al., 2008). Nearly 20% of the world's freshwater fish fauna is already extinct or is on the verge of extinction (Moyle and Leidy, 1992). There are 21, 723 species of fish which is about half of the total number of vertebrates in the world. The total number of fish specieshave been recorded out of 39, 900 species of vertebrates. Out of these 8, 411 are freshwater species and 11, 650 are marine. India occupies the ninth position in terms of freshwater mega biodiversity (Mittermeier and Mitemeir, 1997). Fishes have formed an important food source of human diet from time immemorial (Sarwade and Khillare, 2010).Study of ichthyofauna is needed to maintain sustainable development, stability of ecosystem and assessment of icthyofaunal diversity. Present study is an attempt to study the ichthyofauna of Shivajinagar reservoir of Kadegaon Tahsil, Sangli district, Maharashtra.

2. Materials and Methods:

2.1 Study Area

Shivajinagar reservoir is a major reservoir which provides all the needs of peoples, like domestic, agriculture and industries and for fisheries. It lies between North latitude17.31 N 170 18.81 and East longitude 74.29 E 740 17.84 (Fig-1). Kadegaon is one of the most important Tahsil in Sangli District of Maharashtra state. It belongs to Western Maharashtra region .It is located 17.150 N latitude and 74.150 E longitudes. It has an average elevation of 597 m. The total area is approximately 100 acre. The climatic condition of the study area was hot summer and cool winter and temperature range a minimum 28ºC and a maximum of 39ºC. The study area gets most of its rainfall from June to September during the monsoon.

2.2 Collection of Fish

The study was carried out for one year from April 2015 – March 2016. Fishes were collected monthly with the help of fishermen from different fishing centers around Shivajinagar reservoir. . The collected fish samples were preserved in 10% formalin. These fish samples were brought to Research laboratory of Department of Zoology, Yashwantrao Chavan college of science Karad. The detail examination and identification of species were carried out with the help standard keys of Day (1878), Jayram (1981), Talwar and Jhingaran (1991) and Jhingaran (2005).

Figure: Map of study area: Sattelite image of Shivajinagar reservoir of KadegaonTahsil, Sangli District, Maharashtra (India)

3. Results and Discussion

Present investigation reveals that 22 species of fishes belonging to 5 orders and 12 families were identified (Table No. 1).During this study Total 9 species of fishes were observed belonging to order Cypriniformes and family Cyprinidae. Hence order Cypriniformes was found to be dominant among fishes. The members of this family commonly called carp are distributedin freshwater habitat all over the world. Secondlytotal 7 species of fishes were observed from order Siluriformes which includes catfishes. The order Perciformes contains four species, two species belonging to Ophiocephaliformes and one species belonging to Osteoglossiformes were also observed from Shivajinagar reservoir. In Shivajinagar reservoir.

The species of fishes like Labeorohita, Catlacatla, Channastriatus, Channamarulius, and Tilapia mossambica were found abundantly in Shivajinagar reservoir during the study period.For commercial fishery practices seedlings and fingerlings of these economically important fishes were release in these reservoir.Globally threatened species of fishe like *Tor khudree* was observed during study period the (IUCN, 2011). The diversity and abundance in fishes and controlled fishing practices of Shivajinagar reservoir is attributed to the availability of plenty of food material and healthy ecosystem developed over long period of time.

Occurrences of 23 species of fishes belonging to 7 orders were reported at Jawalgaon reservoir, Dist. Solapur (M.S.) by Sakhare (2001). The order Cypriniformes was found to be the dominant in terms of number of species. Sarwade and Khillare (2010) reported the 60 species of fishes. He recorded 15 families and 36 genera during their study on Ujani wetland (M.S.).

Kamble and Reddi (2012) recorded 10 species of fishes belonging to 5 orders and 6 families. Kharat et al. (2012) reported 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) recorded the 21 species of fishes belonging to 6 families and 13 genera during their study period on Pimpaldari tank, Dist. Hingoli (M.S.).

Table 1: Fishes reported at Shivajingar reservoir from June 2014 to May 2016

Sr.No	Order	Family	Scientific Name of Fish	Fin Formula
1	Cypriniformes	Cyprinidae	*Catlacatla* (Hamilton, 1822)	D. 18; P1. 20; P2. 9; A. 8
			Cirrhinamrigala (Hamilton, 1822)	D. 16; P1. 17; P2. 9; A. 8
			Ctenopharyngodonidella (Howes, 1981)	D. 3/7, P1. 1/17, P2. 1/8, A. 3/7-8
			Cyprinuscarpio (Linnaeus, 1758)	D. 3-4/18-20, P1: 1/15, P2: 1/8, A. 3-5
			Labeorohita (Hamilton, 1822)	D. 15-16; P1. 16-17; P2. 9; A. 7
			Puntius sarana (Hamilton, 1822)	D iii-iv 8; A iii 5; P i 14-16; V i 8
			Puntius ticto (Menon, 1974)	D iii-iv 8; A ii-iii 5; P i 12-14; V i 8
			Rasboradaniconius (Hamilton, 1822)	D ii 7; A ii 5; P i 14; V i 8
			Tor khudree (Hamilton, 1822)	D. 12(3/9); P. 19; V. 9; A.7-8(2-3/5), C. 19; L. 1.
2	Ophiocephaliformes	Channidae	*Channamarulius*(Hamilton, 1822)	D 45-55; A 28-36; P 16-18; V 6
			Channastriatus (Bloch, 1794)	D. 42-46; P1. 15-17; P2. 6; A. 24-27.
3	Osteoglossiformes	Notopteridae	*Notopterusnotopterus* (Pallas, 1769)	D. 7-8; P1. 15-17; P2. 5-6; A. 99-104.
4	Perciformes	Centropomidae	*Ambassisranga* Day, 1878)	D. VII+I 11-14, P1. i 11-12, P2. I 5, A. III 13-15
		Gobiidae	*Glossogobiusgiuris* (Koumans, 1953)	D. VI 8-9, P1. i 16-21, A. I 7-8
		Mastacembelidae	*Mastacembelusarmatus* (Day, 1878)	D. XXXII-XL 64-92, P1. 17-19, A. III 31-46
		Cichlidae	*Tilapia mossambica* (Jones and Sarojini,1952)	D. XV-XVI 10-12, P1. 14-15, P2. I 5 A. III 10-11
5	Siluriformes	Bagridae	*Mystusseenghala* (Sykes, 1839)	D. I/7; P1.I/9; P2.I/5; A.11-12.
		Clariidae	*Clariasbatrachus* (Linnaeus, 1758)	D 70-76; A 45-58; P I 8-11; V i 5
		Heteropneustidae	*Heteropneustesfossilis* (Bloch, 1794)	D 6-7; A 60-70; P I 7; V i 5
		Siluridae	*Ompokpabda* (Hamilton, 1822)	D 4-5; A ii 48-54; P I 11-13; V i 6-7
			Wallagoattu (Day, 1878)	D 5; A iii 74-93; P I 13-15; V i 7-9
			Bagariusbagarius (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

4. Conclusion

The Shivajinagar reservoir exhibit rich ichthyofaunal diversity represented by 22 species of fishes belonging to 20 genera, 12 families and 5 orders. The ichthyofaunal diversity and abundance of fishes in Shivajinagar reservoirre presents the suitability of water of Shivajinagar reservoir for aquaculture practices.

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References

[1] Biswas, B.C. and Panigrahi, A.K (2014). Abundance of Pisces and Status of Water of mathabhanga- Churni

River in Indo-Bangla Border Region. Global J. Res. Ana. 3(7): 281-283.
[2] Chandrashekar, B.S. (2014). Fishery Co-operative Societies in India: Problems and Prospects. Global J. Res. Ana. 3(7):92-94.
[3] Day, F.S. (1878). "The Fishes of India" William and Sons Ltd., London.
[4] Galib, S.M., Abu Naser,S.M., Mohsin, A.B.M. Chaki,N. and Hassan Fahad,F. (2013). Fish Diversity of the River ChotoJamuna, Bangladesh: Present Status and Conservation Needs. Int. J. Biodiversity and Cons. 5(6): 389-395.
[5] IUCN (2011). IUCN Red List of Threatened Species. Version 2011.1 Downloaded from <www.iucnredlist.org>.
[6] Jayabhaye, U.M. and Lahane,L.D(2013). Studies on Ichthyofaunal Diversity of Pimpaldari Tank, Hingoli, Maharashtra, India. S.S.M. R.A.E., Jaipur 4(43-44). 54-55.
[7] Jayaram, K. C. (1981). "The Fresh Water Fishes of India, Pakistan, Bangladesh, Burma and Sri Lanka." A Handbook Zool. Survey India, Calcutta i-xxii:1-475.
[8] Jhingran, V.G. (2005). "Fish Relation to Water Quality, Limnology in the Indian Subcontinent." Ukaaz Publications, Hyderabad pp. 228-251. |
[9] Kalbande, S., P. Telkhade and S. Zade (2008). Fish Diversity of Rawanwadi Lake of Bhandara District Maharashtra, India. Abhinav 2(2): 30-33.
[10] Kamble, A.B. and K.R. Reddi (2012). Biodiversity of fishfauna at Mangi reservoir, Dist. Solapur with respect to physico-chemical parameters. Life science Bulletin, 9(1): 55-58.
[11] Kharat, S.S., Paingankar,M and Dahanukar,N. (2012). Freshwater Fish Fauna of Krishna River at Wai, Northern Western Ghats, India. J. Threatened Taxa 4(6): 2644-2652.
[12] Nagabhushana, C.M. and Hosetti,B.B (2013). Limnological Profile for the Sustained Fish Production in Tungabhadra Reservoir, Hospet. Global J. Res. Ana. 2(5):1-2.
[13] Sakhare, V.B. (2001). Ichthyofauna of Jawalgaon Reservoir, Maharashtra. Fishing chimes 19(8): 45-47.
[14] Sarwade, J.P. and Khillare,Y.K (2010). Fish Diversity of Ujani Wetland, Maharashtra, India. BioscanSpl. issue 1: 173-179.
[15] Talwar, P.K. and Jhingaran,A(1991). "Inland Fishes of India and Adjacent Countries." Oxford and IBH Publishing Co. New Delhi.