



Icthyofaunal Diversity Of Tunga River At Hansawadi, Shivamogga, Karnataka, India

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Abstract: The current work aims to explore the diversity and abundance of fishes in the selected sites of Tunga river at Hanswadi of Shivamogga district for a period of six months from March to August 2022. A total of 12 species of fishes belonging to 3 orders, 5 families and 9 genera were recorded. Five species sighted in family Cyprinidae, Channidae, Bagridae and Siluridae were represented by two species each. Family Schilbeidae is represented by a single species. This study indicates fairly rich fish diversity in Tunga river at Hansawadi village of Shivamogga. This result is expected to contribute skeletal information for the future studies in the studied area.

Keywords: Tunga river, fish diversity, Hansawadi, Shivamogga, Cyprinidae

1. Introduction

Fishes constitute almost half of the total number of vertebrates. Of the 39900 vertebrate species recognized the world over, 21723 are living species of fish of which 8411 are freshwater and 11650 are marine species. In the Indian region alone, of the 2500 species, 930 are freshwater inhabitants and 1570 are marine (Shendge, 2007). Study of biodiversity of fish fauna and their identification is one of the interesting fields of biological research, which give us an idea about the morphological variation and population diversity of fauna in polluted and non polluted site of any particular habitat (Nepit, 2013). Rich biodiversity of any ecosystem is absolutely essential to maintain their stability for proper function of their food chains (Siddiqui, 2014).

From time immemorial, fish has been recognized as an important source of nutritious food as it constitutes high quality, balanced and easily digestible proteins and the much needed amino acids by human beings. Fishes are used as indicators of pollution as their presence in large number and variety in lentic bodies is a good indication that water is virgin and suitable for human consumption and utility (Santhoshkumar et al. 2009). Wetlands in India support a rich variety of fish species, which inturn support the commercial potential of the fisheries (Krishna & Piska, 2009). There is great demand of fishes in India which is useful commercially for peoples and development of nations. India possesses vast inland fishery resources in the forms of rivers, lakes, canals, man-made impoundments, wetlands etc. There is great diversity of fishes in this aquatic ecosystem. Fishes form an important constituent of the aquatic ecosystem having various biogenic complexes and ecological features (Karttha and Rao, 1990). India is rich in diversity of fishes but there is need of survey of diversity of fishes in different types of habitats all over the country for extensive development of aquaculture, which inturn support the commercial potential of the fisheries. A number of workers have studied the fishes of Karnataka (Rahman and Raghavan, 1994; Arunachalam et al. 1997; Venkateswarlu et al. 2002; Sukumaran and Das, 2005; Punam and Limbu, 2019; Bhesh, 2022; Ashish and Rajendra, 2023; Patharde and

Telkhade, 2024). Considerable studies on fish diversity in different freshwater bodies of India have been carried out during the last few decades.

2. Materials and Methods

2.1. Study area

Hansawadi is a small village lies around 7 km from Shivamogga on the way to Hollehonnuru. The latitude and longitude of Hansawadi are 14° 03' 08.8" N and 75° 39' 03.8"E, respectively.

2.2. Fish sample collection

The fishes were collected with the help of local fisherman using different types of nets namely Cast nets, Gill nets and Drag nets from selected localities during the study period from March to August 2022. Fishes were photographed for documentation of the fresh color and then preserved in 10% formalin. Fishes brought to the laboratory were fixed in separate jars according to the size of fishes. Smaller fishes were directly placed in the formalin solution, while larger fishes were given an incision on the abdomen before they were fixed.

2.3. Fish identification

Systematic identification of fishes were carried out based on keys for fishes of the Indian subcontinent (Jayaram, 1999; Talwar and Jhingran, 1991, Dutta Munshi and Shrivastava, 1988).

2.4. Conservation status and relative abundance

Red list of Threatened fish species was made according to the report by IUCN (2014). The relative abundance of the fish was classified into three categories: Abundant (+++) constitute 71-100% of total catch, moderate (++) constitute 36-70% of the total catch, rare (+) constitute 1-35% of the total catch.

3. Result and Discussion

Ramanujan (1994) recorded 16 fish species belonging to five families in Kallar River in Kerala. Jadhav and Bhosale ((1996) recorded 13 fish species belonging to two orders in Bhima River at Pedgaon in Maharashtra. Sakhare (2001) recorded 23 fish species belonging to seven orders in Jawalgaon reservoir in Solapur district of Maharashtra. Sakhare and Joshi (2002) identified 28 fish species in Palas-Nilegaon reservoir in Osmanabad district of Maharashtra. Jayabhaye et al. (2006) recorded 11 species of fishes belonging to five orders in Parola dam, near Hingoli of Maharashtra. Sayeswara et al. (2011) identified 21 species of fishes belonging to 11 families in Barehalla tank of Shivamogga. Sayeswara (2017) identified 16 species of fishes belonging to 8 families in Tunga River at Mandagadde bird Sanctuary of Shivamogga, Tripathi and Indu (2023) recorded 14 species of fishes belonging to 9 families of Bariya Talab of district Balrampur of Uttar Pradesh. Bashemphang et al. (2023) identified 102 species of fishes in Meghalaya. Vishnu et al. (2023) recorded 35 species of fishes belonging to 13 families in Kallar Stream, Achankovil River, Western Ghats of Kerala. Wanjari (2023) reported 21 species of fishes belonging to 18 genera in Karanji Lake in the district of Yavatmal in Maharashtra. Sujata et al. (2023) recorded 60 fish species belonging to freshwater families in Hooghly district of West Bengal.

Results of fish diversity of Tunga river near Hansawadi are given in the Table 1. A total of 12 species of fishes belonging to 3 orders, 5 families and 9 genera were recorded. Species composition of different families is given the Figure 1.

The studied area supported 4 genera and 5 species of cypriniformes. If the diversity of Cyprinidae is considered, the genus *Puntius* was represented by 2 species. *Cirrhinnus*, *Osteobrama* and *Systemus* were represented by a single species. Channidae is represented by a single genus and two species. *Channa* was represented by two species. Bagridae is represented by a single genus and two species. *Mystus* is represented by 2 species. Schilbeidae is represented by a single genus and single species (*Silonia*).

4. Conclusion

The ecological status of the Tunga river near Hansawadi of Shivamogga was found to impoverish in terms of species composition. A rich fauna with 5 species of cypriniformes, 2 species of Perciformes, 4 species of Siluriformes and one species of Osteoglossiformes were reported. Further scientific research is better to be focused in this area by the future researchers.

Table 1. Diversity, Abundance and IUCN Status of fishes in Tunga river near Hansawadi

Order	Family	Scientific name	Common name	Abundance	ISUN Status
Cypriniformes	Cyprinidae	<i>Cirrhinnus reba</i> Hamilton, 1822	Reba carp	++	NE
		<i>Puntius chola</i> Hamilton, 1822	Swamp barb	++	LC
		<i>Puntius pulchellus</i> Day, 1870	----	+	NE
		<i>Osteobrama cotio</i> <i>cunma</i> Hamilton, 1822	Ray fined fish	++	NE
		<i>Systemus sarana</i> Hamilton, 1822	Olive barb	+++	LC
Perciformes	Channidae	<i>Channa marulius</i> Hamilton, 1922	Bulls eye snake head	++	NE
		<i>Channa striata</i> Bloch, 1793	Snake head fish	+++	LC
Siluriformes	Siluridae	<i>Ompok bimaculatus</i> Bloch, 1794	Butter cat fish	+	NT
		<i>Wallago attu</i> Bloch and Schneider, 1801	Wallago cat fish	+++	LC
	Bagridae	<i>Mystus vittatus</i> Bloch, 1794	Striped cat fish	++	LC
		<i>Mystus cavasius</i> Hamilton, 1822	Gangetic Mystus	++	LC
Osteoglossiformes	Schilbeidae	<i>Silonia children</i> Sykes, 1839	Schibid cat fish	+++	NE

NE-Not evaluated, LC-Least concern, NT-Near Threatened, +++: Abundant, ++: Moderate, +: Rare

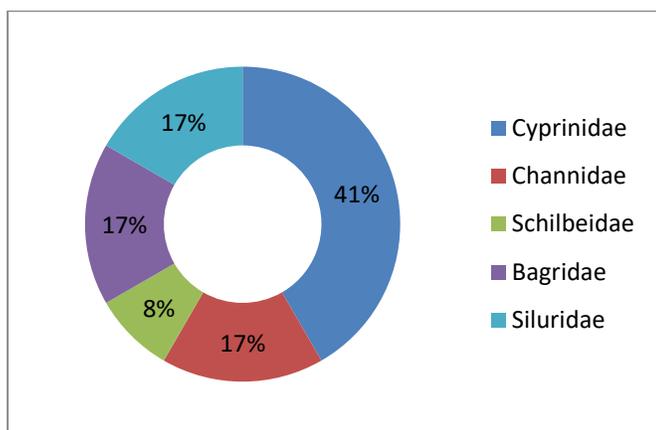


Figure 1: Species composition of different families

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6. References

- [1] Arunachalam, M., Johnson, J.A. and Shankaranarayanan, A. 1997. Fish diversity of rivers of northern Karnataka, Western Ghats. *International Journal of Ecology and Environmental Sciences*, 23: 327-333.
- [2] Ashish, S.G. and Rajendra, V.T. 2023. Assessment of Fish diversity of Keshori Lake, Deori, Gondia, Maharashtra, India. *Uttar Pradesh Journal of Zoology*, 44(4): 19-25.
- [3] Bashemphang Snaitang, Shiparna Sexena, Hameka Papang and Yadav, M.K. 2023. A Study on Fish Diversity of Meghalaya. *Biological Forum – An International Journal*, 15(10): 212-216.
- [4] Bhesh Raj Chaudhari. 2022. Status of Fish Diversity in Lower West Rapti River, Banke. *International Journal of Creative Research Thoughts*, 10(10): 427-433.
- [5] Datta Munshi, J.S. and Shrivastave, M.P. 1988. *Natural History of Fishes and Systematics of Freshwater Fishes of India*. Narendra Publishing House, New Delhi.
- [6] Jadhav, S. and Bhosale, B. 1996. Fish fauna of Bhima River at Pedgaon near Pune, India. *Journal of Ecobiology*, 8(1): 75-76.
- [7] Jayabhaye, U.M., Madlapure, V.R. and Malviya, M.K. 2006. Fish diversity in the Parola dam, near Hingoli district, Maharashtra. *Journal of Aquatic Biology*, 21(2): 65-66.
- [8] Jayram, K.C. 1999. *Freshwater Fishes of the Indian Region*, . Narendra Publishing House, New Delhi
- [9] Karttha, K.N. and Rao, K.S.1992. Environmental status of Govind Sagar reservoir. *Fishery Technology*, 29: 14-20.
- [10] Krishna, M. and Piska, R.S. 2006. Ichthyofaunal diversity in sacred lake Durgamcheruvu, Ranga Reddy District, Andra Pradesh, India. *Journal of Aquatic Biology*, 21: 77-79.
- [11] Mawhoub, A.N., Puttaiah, E.T. and Shahnawas, A. 2009. A Fish fauna of Lakkavalli Lake, Karnataka with respect to environmental variables. *Environment Conservation Journal*, 10: 21-24

- [12] Nepit, M.K. 2013. Study of fish fauna of Bundelkhand region with special reference to Damoh district. *International Journal of Advanced Research*, 1(4): 24-30.
- [13] Patharde Sandesh Baburao and Telkhade Pravin Madhukarrao. 2024. Preliminary study of fish diversity in Borda Dam, Taluka Wani, District Yavatmal (M.S.), India. *Environment Conservation Journal*, 25(2): 463-466.
- [14] Punam, G. and Limbu, J.H. 2019. Spatio-temporal variation of fish assemblages in Babai River of Dang district,, Nepal. *Our Nature*, 17(1): 19-30.
- [15] Rahman, M.F. and Raghavan, S.L. 1994. Ichthyofauna of tanks in Anekel taluk of Bangalore district, Karnataka. *Current Research*, 23: 54-55.
- [16] Ramanujan, N.1994. Fish fauna of Kallar River in Kerala. *Journal of Zoological Society*, 4(1&2): 45-49.
- [17] Sakhare, V.B. 2001. Ichthyofauna of Jawalgaon reservoir in Solapur district of Maharashtra. *Journal of Aquatic Biology*, 16(1): 31-33.
- [18] Sakhare, V.B. and Joshi, P.K. 2002. Ecology of Palas-Nilegaon reservoir in Osmanabad district, Maharashtra. *Journal of Aquatic Biology*, 18(2): 17-22.
- [19] Santhoshkumar Singh, A., Dakua, D. and Biswas, S.P. 2009. Physico-chemical parameters and fish enumeration of Maijan Beel (wetland) of Upper Assam. *Geobios*, 36: 184-188.
- [20] Sayeswara, H.A., Naik, K.L. and Goudar, M.A. 2011. Physico-chemical parameters and Ichthyofauna of Barehalla tank, Shivamogga, Karnataka, India. *Geobios*, 38(2-3): 187-191.
- [1] Sayeswara, H.A. 2017. Current status of Ichthyofaunal diversity of Tunga River at Mandagadde bird Sanctuary, Shivamogga, Karnataka, India. *Innovare Journal of Sciences*, 5(2): 1-5.
- [21] Shendge, A.N.2007. Study of fish diversity in Nira River. *Journal of fisheries Association*, 34: 15-19.
- [22]. Siddiqui, A., Meenakshi, C. and Shailendra, S. 2014. Biodiversity of Ichthyofauna of Narmada river of Mandleshwar region, Madhya Pradesh, India. *Journal of Environmental Biology*, 1(1): 21-25.
- [23] Sujata Roy Moulik, Aditi Mukherjee, Sayani Bose, Avijit Ghosh and Manabendra Mukherjee. 2023. Fish diversity in Hooghly district in respect to their economic importance. *International Journal of Research and Analytical Reviews*, 10(2): 234-242.
- [24] Sumumaran, P.K. and Das, A.K. 2005. Limnology and fish production efficiencies of selected reservoirs of Karnataka. *Indian Journal of Fisheries*, 52: 47-53.
- [25] Talwar, P.K. and Jhingran, A.G.K. 1991. *Inland Fishes of India and Adjacent Countries*. Oxford and IBH Publishing house Company Private Limited, New Delhi.
- [26] Tripathi, R.B. and Indu Sing. 2023. Fish diversity and occurrence from Bariya Talab of district Balrampur, Uttar Pradesh, India. *International Journal of Advanced Research in Biological Sciences*, 10(9): 105-118.
- [27] Venkateswarlu, M., Shanmugam, M. and Mallikarjun, H.R. 2002. The fish fauna of Bhadra reservoir, Western Ghats. *Journal of Aquatic Biology*, 17: 9-11.

[28] Vishnu, A.S., Melbin Lal, Josin, C.T., Prabhakaran, M.P. and Anvar Ali, P.H. 2023. Diversity, distribution and conservation status of fish species in Kallar Stream, Achankovil River, Western Ghats of Kerala, India. *Journal of Threatened Taxa*, 15(5): 23164-23189.

[29] Wanjari, A.J. 2023. Study of Fish Diversity of Karanji Lake, District Yavatmal, (M.S.) India. *International Journal of Research in Academic World*, 2(3): 1152-153.

