



FISH DIVERSITY OF GODAVARI RIVER, NANDED, MAHARASHTRA. INDIA.

Zoology

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ABSTRACT

Godavari River is the very important river in Maharashtra and the source of capture fishery in this region. Godavari River is originated from Trimbakeshwar, Dist. Nasik. It flows 7 District in Maharashtra, one of the District is Nanded. Godavari River flow 10.5 Km. in Nanded. Fishes are used for major foods to human being. These are good source of Protein and vitamin D. The Godavari river is important source of water for Nanded City, water is used for water supply and irrigation purpose. Fishes were collected from Godavari river during 2015-2016 by different types of fishing nets. 15 species belonging to 4 order Cypriniformes, Osteoglossiformes, Siluriformes, Perciformes and 4 family were recorded from this region.

KEYWORDS

Fish Diversity, Godavari River.

INTRODUCTION

15 native fish species in 4 orders and 4 families inhabit the Godavari rivers, Nanded M.S.India. Godavari River has the most diverse freshwater fish fauna in India. Most of the Godavari River Fishes in Nanded region are in them in order (Cypriniformes), and some of them belongs to order Osteoglossiformes, Siluriformes and Perciformes. Godavari river have a remarkable fish fauna. It shows greatest diversity of fish. They serve us in many ways and deserve our protection. Fishes are an important ecological link in the food chain, feeding on insects and serving as prey for other fishes, birds, and other wildlife. They also are important indicators of water quality and ecosystem health. For example, fish kill or the disappearance of fishes from a stream can alert citizens to water pollution. Unfortunately, fishes have declined sharply in abundance and diversity in the last 20 years. Some species are now in endangered due to pollution climate change and other reasons.

Study Area : The Godavari river is the second largest river in India after Ganga, and is often referred as the Dakshin (South) Ganga. It rises near Nashik (Trimbakeshwar). It flows from 7 District in Maharashtra, one of the District is Nanded. Godavari River average flow distance 10.5 Km. in Nanded. It is most important source of water in Nanded region. This River covers different regions of Nanded district and finally transfer to Telangana state.

METHOD OF STUDY

Sampling: four sample point were chosen in order cover all area, sample range of habitat types and assess the impact of human interventions. Samples were collected seasonally from January 2015 to December 2016. For sampling Cast nets, gill nets baited hooks and locally available nets were used. The same mesh size was used for all net sampling. Collected sample were preserved in 5% formalin solution in plastic bottles. Different bottles were maintained for different sampling sites and events. Preserved fish were identified in the laboratory by identification keys given by Day (1875), Talwar and Jhingran (1991) and Daniels (2001). At each sampling points a long stretch was chosen which was sampled seasonally through 'random sampling' (Krebs, 1989, Muggurran, 1988, 2004). Cast netting was done without overlapping the previous casting.

Data analysis: It is not always possible to insure that all sample size is equal, and the number of species invariably increases with sample size and sampling efforts. To cope with this problem I used rarefaction technique of Sanders to calculate the number of species expected in each sample if all samples were of a standard size (Mugurran 1988; Bruce et al. 1998; Bhat 2002, 2003, 2004). The Jackknife -1 measure was used to calculate species richness based on the observed frequency of rare or unique species in the community. One problem associated with diversity measurement is determining what sample size to adopt. A practical approach to this problem is to use the concept of the species accumulations curve (Butler and Chazdon 1998), which gives an idea about the extent of sampling efficiency and rate of increase in the number of species per the effort (Christen & Nakamura 2000; Dahanukar et al. 2004; John et al. 2004; Mao et al. 2005). Estimates (Colwell 1997) and Biodiversity Pro (McAleece et al. 2006) software was used for calculation of richness estimates, diversity, indices and similarity

measures.

RESULT AND DISCUSSION

A total of 165 fish species have been recorded and confirmed by various authors in Maharashtra, belonging to 09 order, 26 families 82 genera. (Sakhare, 2001). Investigated the occurrence of 15 species belonging to 4 orders in Godavari River in Nanded region. The fishes belong to order Cypriniformes were dominant 08 species followed by order Siluriformes with 03 species, Osteoglossiformes and Perciformes were 02-02 species respectively. The species of the order Cypriniformes are more in number and Osteoglossiformes and Perciformes are less in number. Percentage of Siluriformes order is slightly moderate.

Order wise percentage	Family wise percentage	Total species
Cypriniformes (53.33%)	Cyprinidae (53.33%)	08
Siluriformes (20%)	Clariidae (20%)	03
Perciformes (13.33%)	Channdae (13.33%)	02
Osteoglossiformes (13.33%)	Notopteridae (13.33%)	02

Yazdani and Sing [34] have given an account of fish resources of Bhima river at Indapur and found 54 species belonging to 15 families. Wagh and Ghate [33] noticed 62 species from Mula and Mutha River in Pune. Pawar et al. [20] noticed 11 fish species belonging to 5 orders from Sirur dam of Nanded District. Khedkar [14] observed 67 fish species belonging to 7 orders and 19 families from Nathagar reservoir from Paithan, Dist. Aurangabad. of the total 58 species, 8 were abundant, 21 common, 19 moderate and 10

rare in the study area. 6 species are considered as threatened from the Koyna river by Menon [16]. Kalbande et al. [9] noticed 29 fish species from Rawanwadi Lake in Bhandara district. Shinde et al. [28] have recorded that the order Cypriniformes is found to be dominant with 11 species, followed by Perciformes 3 species and Siluriformes with 1 species from the Harsool-Savangi dam (Aurangabad) *Hypthalmichthys molitrix* and *Puntius ticto* were found in abundance. Shinde et al. [29] in Pravara river at Pravara Sangam (Ahmednagar) reported 41 fish species belonging to 7 orders, 14 families and 26 genera. Among the collected species, order Cypriniformes was the most dominant constituting 50% followed by order Siluriformes constituting 19%, Perciformes constituting 28%, Osteoglossiformes and Synbranchiformes constituting 4.76% and Mugiliformes and Belontiiformes constituting 2.38% of the total fish species. Shahnawaz et al. [25] recorded 56 species of fish representing 39 genera and 15 families from Bhadra river of Western Ghats. Sarwade and Khillare [24] the variety and abundance of fresh water fish from Indapur Dist. Pune. In this investigation the occurrence of 60 fish species belonging to 6 orders, 15 families and 36 genera was noted. The members of order Cypriniformes were most dominant constituting 66.66%, Perciformes constituting 11.66%, Siluriformes constituting 10%. The aim of review was to assess the variety and abundance of the important fish fauna inhabiting fresh water of Maharashtra.

CONCLUSION

There is a rich diversity of fish in Godavari river in Nanded Maharashtra which suggests that a major part of this is threatened by human activities. Fish fauna and distribution is useful for designing

and applying conservation strategies, to make fishermen aware of fishing, to give perfect scientific training, to provide facilities to the fish farmers and to avoid immature fishing as well as subsidies on loan may help in high yield as well as there is an urgent need to adopt legislative and other measures for conservation by Fishery and Department of Environment for minimizing anthropogenic activities. These activities controls prevent the fish diversity in Godavari River from endangered situations.

REFERENCE

1. Daniels,R.(2001). Freshwater fishes of Peninsular India.University press,288 pp
2. Day,F.(1875).The fishes of india:being a natural history of the fishes known to inhabit the seas and freshwater of india,Burma CeylonText and Atlas in 4 parts.London,xx+778:195 pp.
3. Krebs, C.J.(1965).Ecological Methodology .Herper and Row publisher, New York, 645 pp.
4. Magurran A.E.(1988).Ecological diversity and its measurement. Princeton University Press, Princeton, NJ, 179 pp.
5. Magurran,A.E.(2004). Measuring biological diversity .Blackwell publishing,248 pp.
6. Talwar,P.K. & A.G. Jhingran (1991). Inland fishes of India and Adjacent Countries (Vol.I &II). Oxford & IBH Pub. New Delhi,1097 pp.
7. Kalbande S, Telkhade P, Zade S. (2007). Fish diversity of Rawanwadi Lake of Bhandara District Maharashtra, India. of Research in Science and Technology; 2(2):30-33.
8. Khedkar GD. (2005). Studies on Fish diversity in relation to bird habitat from Nathasagar bird sanctuary area Nathasagar reservoir from Paithan Dist. Aurangabad (M.S.). J Aqua Biol; 20:231-238.
9. Menon AG. (2004). Threatened Fishes of India and Their Conservation. Zoological Survey of India, Kolkata, 170.
10. Pawar SK, Madlapure VR, Pulle JS.(2003);The study on fishdiversity in the Shirur dam near Mukhed, Nanded district (M.S.). India J Aqua Biol 18(2):69-70.
11. Sarwade JP, Khillare YK. 2010. Fish diversity of Ujani, Maharashtra, India. The Bioscan an Int Quart J Life Sciences; 1:173-179.
12. Shahmavaz A, Venkateshwarlu M, Somashekar DS,Santosh K. 2010. Fish diversity with relation to water quality of Bhadra River of Western Ghats (India) DOI 10. Environ Monit Assess; 161(1-4):83-91.
13. Shinde SE, Pathan TS, Bhandare RY, Sonawane DL.(2009a) Ichthyofaunal Diversity of Harsool Savangi Dam, District Aurangabad, (M.S.) India. World Journal of Fish and Marine Sciences 1(3):141-143.
14. Shinde SE, Pathan TS, Raut KS, Bhandare RY,Sonawane DL.(2009b). Fish Biodiversity of Pravara River at Pravara Sangam District Ahmednagar, (M.S.) India. World Journal of Zoology 4(3):176-179
15. Wagh GK, Ghate HV.(2003) ; Freshwater fish fauna of the riversMula and Mutha, Pune, Maharashtra. Zoos' Print Journal 18(1):977-981.
16. Yazdani GM, Singh DF.(2002). Zool survy India fauna of Ujani,143-156.