



Studies on Ichthyofaunal diversity in Kallambella Tank, Tumkur District, Karnataka, India

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Abstract

The diversity of freshwater fish species of Kallambella Tank in Tumkur District was studied from January 2016 to December 2016. The survey was mainly focused on Ichthyofaunal diversity. A total of 11 fish species belonging to 3 orders and 4 families was recorded during the study. Order cypriniformes were most dominant group represent by 61 species followed by

Keywords: Kallambella Tank, Tumkur, ichthyofaunal diversity, species

Introduction

The hydrosphere is one of the major component of biosphere, which is the pioneer platform of life. The biotic community of aquatic ecosystem comprises various variety of producers, consumers and decomposers. Many studies have been made on Ichthyofaunal diversity of various freshwater bodies in India during the last few decades.

Reservoir fishery in India is also important from socio-economic point of view as it has the potential of providing employment to about 2 million people (Khan *et al.*, 1991) [6]. According to Sugunan (1995) [11] total area under the reservoir in India is 3:1 million hectares and it is expected to double by 2020. This includes 19,000 small reservoirs, 180 medium and 56 large reservoirs.

Fishes are one of the most important aquatic fauna which is directly related with human health and wealth. Hence, it is necessary to maintain their live-stock properly. As far as Tumkur district is concerned poor attention has been paid towards systematic investigation of diversity of fish fauna. So it is felt that there is a need to generate the information on diversity of fishes from Kallambella tank. Hence, to fill this gap, the present investigation was undertaken study area.

Materials and Methods

Study Area: The Kallambella tank a major perennial tank of the district and located at near Sira Town, Tumkur district, which is 38 km. away from Tumkur city, which falls under 13.5841 N latitude and 76.9737 E longitude. This tank is used for drinking water and irrigation purposes.

Fishes were collected from Teetha Dam with the help of local fishermen using different type of nets namely; gill nets, cast

nets, dragnets and Bhor-jal. Fishes were brought to laboratory and preserved in 4% formalin solution in separate specimen jars according to the size of species. Small fishes were directly placed in the 4% formalin solution. At the same time as large fishes were given an incision in their abdomen and preserved. The meristic and morphometric characters were measured and identified upto the species level, with the help of standard keys Day, 1994 [2]; Talwar and Jhingran, 1991 [12]; Jayaram, 1999 [4] and Rahman (2005) [7].

Results and Discussion

No information is available till now on the occurrence of fresh water fish diversity of Kallambella tank of Tumkur district in Karnataka and present work in the first attempt in this direction. The list of freshwater fish including their order, family name of the species and relative abundance are mentioned in Table 2.

In the present study a total of 11 species of primary fresh water fishes belonging to 4 families were recorded from study sites. On the basis of percentage composition and species richness order Cypriniformes was dominant (8 species) followed by Perciformes (2 species) and Siluriformes with one species.

11 fish species representing by 3 orders, Cypriniformes was dominant with 8 species was dominant in which Catla-catla, Labeo-rohita, Cyprinus carpio, Rasbora daniconius and Puntius ticto most abundant form. Puntius stigma, Chela bacailaand Garra lamta were found less abundant, followed by Perciformes in which Channa punctatus was found abundant, form Siluriformes in which one species reported that is Clarias batrachus found less abundant.

Table 1: Physical characteristics of Kallambella Tank, Tumkur District

Sl. No	Physical Characteristics	Value / Parameter
1	Location of the Reservoir	Kallambella Village
2	Nearest City	Sira
3	District	Tumkur
4	State	Karnataka
5	Size	Big Tank in Tumkur District
6	Purpose	Irrigation and Diversity
7	Water Source	Monsoon run-off and Hemavathi river
8	Soil type	Sand / gravel

Table 2: Monthly variation in Ichthyofauna of Kallambella Tank (January-Dec. 2016)

Family	Scientific Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cyprinidae	Catla-catla	4	8	6	4	10	4	2	2	5	3	6	4
	Labeo-rohita	4	4	8	10	6	1	4	5	2	4	4	3
	Cyprinus carpio	4	8	9	14	10	6	1	6	3	2	8	3
	Rasboradani conius	22	24	18	35	30	6	6	2	4	13	18	22
	Puntius ticto	10	14	12	26	18	2	1	0	0	0	0	1
	Puntius stigma	3	2	10	4	6	6	2	1	0	0	0	3
	Chela bacaila	1	2	3	3	4	1	1	0	0	0	2	3
	Garra lamta	1	5	7	14	2	2	0	0	0	1	0	1
Cha nniidae	Channa Punctatus	5	10	4	3	15	2	1	0	0	1	0	0
Cichlidae	Oreochromis Mossambica	1	4	1	1	2	1	0	0	0	0	1	1
Clariidae	Clarias batrachus	0	2	1	0	0	0	0	0	0	0	0	0

Secondary fishes showed its dominance during summer season followed by winter and monsoon season. During summer, the size in temperature enhances the rate of decomposition due to which the water becomes nutrient rich similarly due to concentration followed by evaporation in summer season the nutrient concentration increases and abundant food present in the form of phyto, zoo and micro-organism to fish, that's why high fish population density during the summer could be related to stable hydrological functions and low water level due to high catch, while low density during the monsoon season is attributed to heavy flood and fresh water inflow. Similar, results have been reported by Deshpande and Bhilave (2009) [3]; Kamble and Mudkhede (2009) [5]; Srikanth *et al.* (2009) [10]; Ashashree *et al.* (2008) [1]; Rathod *et al.* (2008) [2] and Sone and Malu (2000) [9] recorded dominance during summer season followed by winter and monsoon.

Conclusion

It concludes that further studies may carried out in connection with developed techniques regarding fish culturing. The use of illegal methods of catch fish should be banned in this area to prevent further depletion of fresh water fish resources.

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