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## ICHTHYOFAUNAL DIVERSITY OF KANNADIPUZHA, PALAKKAD DISTRICT, KERALA, INDIA

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**Abstract:** The present study was conducted to document the diversity of fishes in Kannadipuzha River, Palakkad District, Kerala. It is a tributary of Bharathapuzha River, Kerala. The objective of the present study was to examine the Ichthyofaunal diversity of Kannadipuzha, Palakkad District, Kerala. The samples were collected from October 2020 to February 2021. A total of 19 fish species belonging to 9 orders, 13 families were collected and identified. Among the fishes Order Cypriniformes were dominated by 6 species, followed by Cichliformes (3 species); Siluriformes (3 species) and Anabantiformes (2 species). And the other 5 Orders were represented by 1 species each. Maximum percentage of fishes of this river belong to the family Cyprinidae. The results of the present study clearly showed that the fish fauna of the Kannadipuzha River is highly diverse and proper management is essential for the conservation of the fish biodiversity. The present study also highlights the rich diversity of fishes in this river; hence it is suggested that these rivers been protected to conserve for future generation.

**Keywords:** Fish Diversity, Kannadipuzha River, Morphometric and Meristic Characters.

### I. Introduction

Biodiversity is essential for stabilization of ecosystem protection of overall environmental quality for understanding intrinsic worth of all species on the earth [1]. Fish diversity of river essentially represents the fish faunal diversity and their abundance. River conserves a rich variety of fish species which support to the commercial fisheries. The total length of rivers in India is about 29,000 km [2]. Fish constitutes half of the total number of vertebrates in the world. India is one of the mega biodiversity countries in the world and occupies the ninth position in terms of freshwater mega biodiversity. India there are 2,500 species of fishes of which 930 live in freshwater and 1,570 are marine [3]. Fish account for the highest species diversity among all vertebrates and they live in almost all conceivable aquatic habitats [4]. Fisheries in India is a very important economic activity and a flourishing sector with varied resources and potentials. India is also an important country that produces fish through aquaculture in the world. India is shelter to more than 10 percent of the global fish diversity. The State of Kerala is geographically small in size, but its zoogeographic significance in perspective of fish faunal diversity is much greater. Kannadipuzha is one of the main tributaries of the Bharathapuzha River, the second largest river in Kerala, South India. It flows through the southern borders of Palakkad town before joining the Bharathapuzha. The Kannadipuzha along with the Kalpathipuzha and Gayathripuzha irrigate a major portion of the Palakkad district which is also called the 'rice bowl' of Kerala. It is also known as Shokanashini, Chitturpuzha Amaravathipuzha.

The study on fish diversity in Kannadipuzha in particular is not reported so far and therefore the present study is aimed to assess current status of fish biodiversity in Kannadipuzha. Kannadipuzha possesses an extensive system of aquatic ecosystem of aquatic ecosystem which supports multitude of species of plants, fish and other organisms. Of all these living organisms, fishes are most important element. In the present study is an attempt has been made to collect and identify the available fish species in Kannadipuzha. It also aiming to contribute to a better knowledge of the fish diversity.

### II. Materials and Methods

#### A. Study Area

Palakkad is the gateway to Kerala due to the presence of the Palakkad Gap in the Western Ghats. The district has many small and medium rivers, which are tributaries of the Bharathapuzha River. Bharathapuzha has four major tributaries, Gayathripuzha, Kannadipuzha, Kalpathipuzha and Thoothapuzha. The Kannadipuzha (called as Shokanashini) originates in the foothills of the Anamalai hills in the eastern fringes of Palakkad district of Kerala.



### B. Collection Site and Period

Fish specimens were collected from different regions of Kannadipuzha. Mostly the samples are collected from Thirunellai region, where Kannadipuzha flows. Fishes were collected from Kannadipuzha at weekly intervals for a period of 5 months October 2020 to February 2021.

### C. Collection Equipments

The sampling locations were determined purposively based on information from local fishermen at the sites where fishes usually seen. A cast net, also called a throw net, is a net used for fishing. It is a circular net with small weights distributed around its edge. Sizes vary up to about 4m in diameter. The net is cast or thrown by hand in such a manner that it spreads out while it's in the air before it sinks into the water. This technique is called net casting or net throwing. Fish are caught as the net is hauled back in.

### D. Preservation

The collected fish samples were preserved in 10% formalin. Formalin is a colorless solution of formaldehyde in water. Formalin was again diluted with water before it was used as preservative. A strength of 10% formalin was used for the purpose. That is, it was mixed at a ratio of nine parts water to one part formalin.

### III. Results

From the study of the diversity of fish fauna in the Kannadipuzha River, in Palakkad district for a period of 5 months (October 2020 to February 2021) a variety of fish species were identified. The ichthyofaunal diversity recorded is presented in the Table 1. species of fishes belonging to 9 orders and 13 families were found to occur in the study area. As per IUCN list, among the fishes 1 species belonged to Vulnerable (VU) category, 16 species belonged to Least Concern (LC) and 2 species were not evaluated.



Table 1:List of Fish Species Collected from Study Area

SI. No	ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME	IUCN CONSERVATION STATUS
1	Anabantiformes	Channidae	Channa punctata	Spotted snakehead	Least count(LC)
2	Cypriniformes	Cyprinidae	Rasbora dandia	Ray finned fishes	Least count
3	Cichliformes	Cichlidae	Oreochromis niloticus	Nile Tilapia	Least count
4	Siluriformes	Loricariidae	Pterigoplichthys disjunctivus	Vermiculated sailfin catfish	Not evaluated(NE)
5	Cypriniformes	Cyprinidae	Systomus sarana	Olive barb	Least count
6	Synbranchiformes	Mastacembelidae	Mastacembelus armatus	Zig-Zag eel	Least count
7	Beloniformes	Belonidae	Xenentodon cancila	Freshwater gar fish	Least count
8	Cyprinodontiformes	Aplocheilidae	Aplocheilus lineatus	Sparkling panchax	Least count
9	Siluriformes	Bagridae	Mystus bleekari	Cat fish	Least count
10	Perciformes	Ambassidae	Parambassis thomassi	Westernghat glassy perchlet	Least count
11	Cypriniformes	Cyprinidae	Dawkinsia filamentosa	Blackspot barb	Least count
12	Cichliformes	Cichlidae	Oreochromis mossambicus	Tilapia	Vulnerable(VU)
13	Cypriniformes	Cyprinidae	Garra mullya	Sucker fish	Least count
14	Cypriniformes	Cobitidae	Lepidocephalichthys thermalis	Common spiny loach	Least count
15	Cypriniformes	Cyprinidae	Rasbora caveri	Cauvery rasbora	Least count
16	Siluriformes	Heteropneustidae	Heteropneustes fossilis	Asian stinging catfish	Least count
17	Anabantiformes	Anabantidae	Anabas testudineus	Climbing perch	Least count
18	Cichliformes	Cichlidae	Pseudetroplus maculatus	Orange chromide	Least count
19	Characiformes	Serrasalmididae	Piaractus brachypomus	Red bellied pacu	Not evaluated(NE)

#### IV. Discussion

Fishes are the keystone species, which determine the distribution as well as an abundance of other organisms in the ecosystems they represent and are good indicators of the water quality and health of the ecosystem [3]. The aquatic biodiversity of the world is getting depleted alarmingly as a result of various factors like habitat loss, pollution, introduction of exotic species, overexploitation and other anthropogenic activities [4].

During the study period, a total of 19 species of fishes belonging to 9 orders, 13 families and 18 genera were recorded from the Kannadipuzha. The study area has an impressive species richness of fishes on Kannadipuzha, tributary of Bharathapuzha. Analysis of the results showed that the species assemblages in the study area are quite varied. The list of fishes was dominated by family Cyprinidae (5) followed by Cichlidae (3) Ambassidae (1), Belonidae (1), Channidae (1), Loricariidae (1), Mastacembelidae (1), Aplocheilidae (1), Bagridae (1), Cobitidae (1), Heteropneustidae (1), Anabantidae (1), Serrasalmididae (1). The results presented here is provided as an assessment of fish diversity of Kannadipuzha which not only largely supports commercially important fishes but also signifies a promising habitat of aquarium and highly valued fish fauna.

According to the local fishermen, many species of fishes, which were abundant in past years, showed a decline in recent catches, due to destruction and degradation of their habitat by ecological and manmade interventions.

T.S. Vijayasree, M.V. Radhakrishnan (2014) studied the Fish Diversity of Kuttanad River, Kerala State, India reported a total of 62 freshwater species from 17 families were found during our survey. The fishes were divided into three groups viz., cultivable fishes, food fishes and ornamental fishes. Among cultivable fishes' order Cypriniformes were dominated by 6 species, followed by Perciformes (3 species) and Siluriformes (2 species). The order Anguilliformes and Beloniformes were represented by 1 species each. A total of 11 species were identified as cultivable fishes. The number of food fishes identified were 22 species under investigation. The dominant group belong to the family was siluridae (7 species) followed by Cyprinidae (6 species). 5 species were identified under

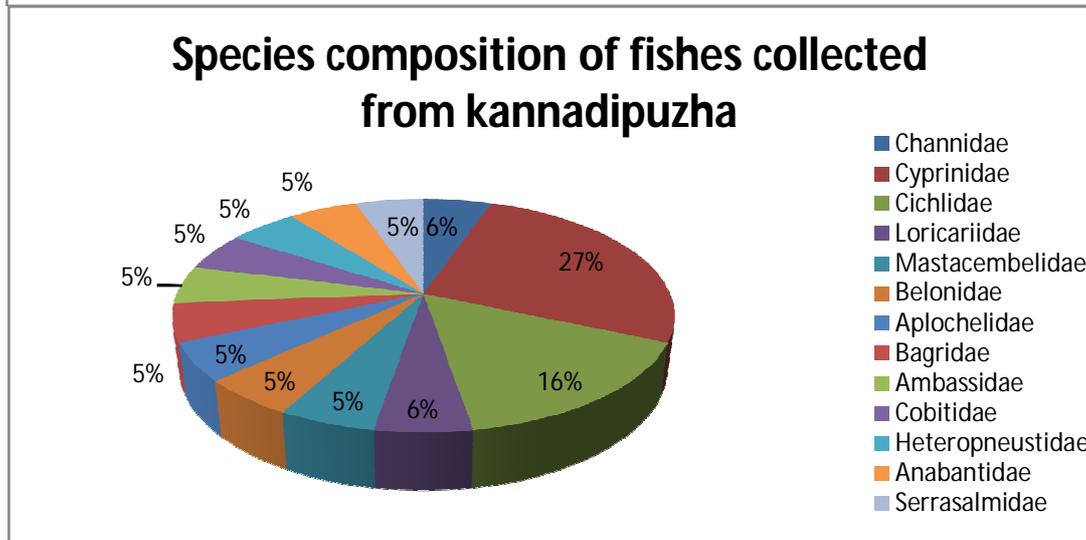
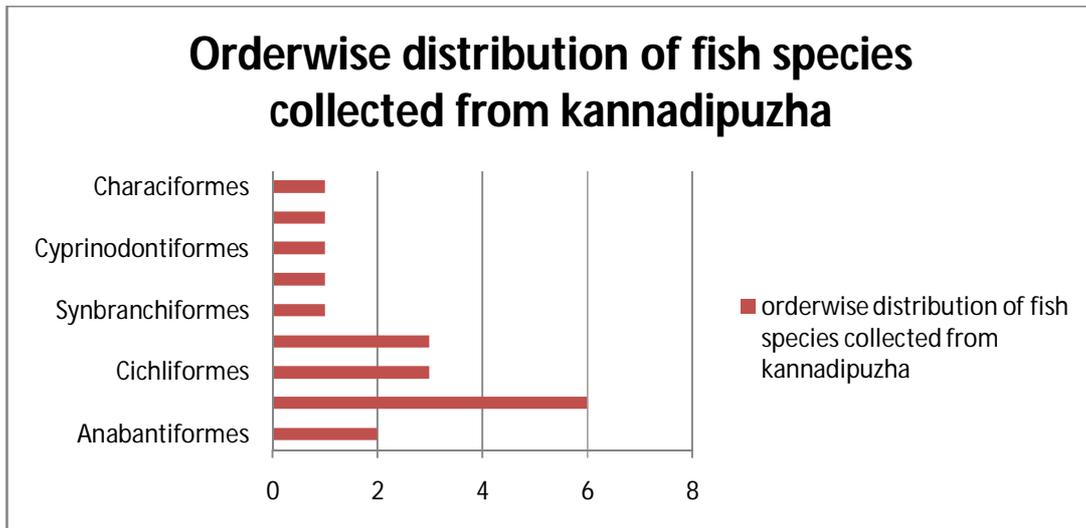


the order Perciformes, Synbranchiformes and Beloniformes by 3 and 1 species respectively. Maximum fish species identified were ornamental fishes (28 species). The order Cypriniformes alone represented 22 species. The identified fishes of the order Beloniformes were 3, Siluriformes by 2 and Tetraodontiformes by 1 species.

Kurup (1982) carried out a detailed investigation on the systematics, distribution and ecology of all fish species of the Vembanad lake during the period from October 1978 to September 1980. He has recorded 150 species of fishes belonging to 100 genera and 56 families from the Vembanad lake. Of these 43 species were found to be resident species and were available throughout the year, 74 species were classified as migrant species while 17 were vagrant species.

V. Conclusion

At present, biodiversity conservation is a very important task to sustain our life on the earth. More research efforts are needed in every water body of the country to find out the main causes of less species diversity. The information collected in the present investigation are expected to act as a baseline data for future studies on the impact of the various development projects planned to be set up in this part of the country, on the aquatic environment. The present study shows that the rivers and streams of Kerala have exceptional fish biodiversity with a high degree of endemism due to the presence of many rare and localised forms. Among the organisms, fishes are the best-known species of aquatic organisms and they are the only food source harvested from natural populations. Cyprinidae emerged as the most dominant group therefore, protection of these particular habitats is recommended for conservation and management of the fish biodiversity.





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## References

1. Ehrlich, P. R. (1991). Biodiversity studies: science and policy. *Science*, 253(5021), 758-762.
2. Pandey, K. and Shukla, J. P. (2007). *Fish and Fisheries II Edition*. pp. 328-329.
3. Kar, D. E. V. A. S. H. I. S. H., Kumar, C. B., & LK, S. (2003). Fishes of Barak drainage, mizoram and Tripura. Environment, pollution and management, APH publishing corporation, New Delhi, 604, 203-211.
4. Remadevi K. (2003) Freshwater fish biodiversity. In Venkataraman K (Ed) *Natural Aquatic ecosystems of India*, Zoological Survey of India, Chennai; 217-224.
5. Kumar, A. B. (2000). Exotic fishes and freshwater fish diversity. *Zoos' Print Journal*, 15(11), 363-367.
6. Moyle, P. B., & Moyle, P. R. (1995). Endangered fishes and economics: intergenerational obligations. *Environmental Biology of Fishes*, 43(1), 29-37.
7. Vijayasree, T. S., & Radhakrishnan, M. V. (2014). Fish Diversity of Kuttanad River, Kerala State, India. *Int. J. Fisheries. Aqua. Studies (IJFAS)*, 1(6), 55-58.
8. Kurup, B. M. (1982). *Studies on the Systematics and Biology of Fishes of the Vembanad Lake* (Doctoral dissertation, Ph. D. Thesis, University of Cochin).

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