



# International Journal of Fisheries and Aquatic Studies

ISSN: 2347-5129  
IJFAS 2015; 2(5): 250-252  
© 2015 IJFAS  
www.fisheriesjournal.com  
Received: 02-04-2015  
Accepted: 05-05-2015

## M. Murugan

Centre for Biological Sciences,  
Noorul Islam Centre for Higher  
Education, Kumaracoil- 629 180,  
Tamil Nadu.

## T. Murugan

Centre for Biological Sciences,  
Noorul Islam Centre for Higher  
Education, Kumaracoil- 629 180,  
Tamil Nadu.

## J. Albino Wins

Department of Biotechnology,  
Holy Cross College, Nagercoil –  
629 003, Tamil Nadu.

## Study of freshwater fish fauna in Periyakulam Riverine Wetland, Kanyakumari district, Tamilnadu

M. Murugan, T. Murugan, J. Albino Wins

### Abstract

The fresh water fish community of Periyakulam riverine wetland in Kanyakumari district, Tamil Nadu was studied for a period of one year (2013-2014). A total of 30 fish species were recorded during the study belongs to 13 families. Among these, Cyprinidae family dominated with a numerical strength of 13 species (43%), followed by Aplocheilidae with three species (10%). The fish fauna *Dawkinsia filamentosus* and *Dawkinsia rohani* were found highest distribution percentage 13.23 and 11.14% respectively. This clearly illustrates that Itchyfaunal diversity of Periyakulam riverine wetland, the richest fish diversity.

**Keywords:** Periyakulam riverine wetland, Kanyakumari district, *Dawkinsia rohani* & Itchyfaunal diversity.

### 1. Introduction

Kanyakumari District (8.17° N 77.43° E) is the southernmost district in Tamil Nadu, situated near southern most Western Ghats of peninsular India. The Western Ghats of India along with Sri Lanka is considered as one of the biodiversity hotspots of the world (Mittermeier *et al.*, 1998; Myers *et al.*, 2000) [1, 2]. Kanyakumari district endowed with vast and varied resources possessing pond and river ecological heritage also rich in biodiversity. The major river is Thamirabarani locally known as Kuzhithuraiar originates from Western Ghats. This river has two major tributaries such as Kodayar and Paralayar. There are many tributaries for the Kodayar River of which Chittar I and Chittar II, with their dams are the major ones. Valliar is a small River, along with its tributary Thoovalar, originates from the Velimalai Hills and confluences with the Arabian Sea near Kadiapattinam. The Pazhayar River and Pahrli River are other small rivers, flows through the district. The rivers harbour a rich and diversified fish fauna characterized by many rare and endemic fish species. A data base on fish biodiversity is essential as a decision making tool for conservation and management of fish germplasm, declaration of part of the rivers as aquatic sanctuaries, protection and preservation of endangered species (Kurup *et al.*, 2003) [3]. In the present study, an attempt is made to provide information about the freshwater fish species distribution in Periyakulam riverine wetland, Kanyakumari district.

### 2. Materials and Methods

#### 2.1. Study site

The study site of Periyakulam riverine wetland is situated at latitude 8°10'26"North and longitude 77°18'36"East in Udayar pallam, Kanyakumari District, Tamil Nadu. The average rainfall of that area is 145 cm. The water of the wetland is mainly used for drinking and irrigation purposes.

#### 2.2. Sampling

Fish collections were done in three seasons (Baby *et al.*, 2010) [4] (pre monsoon from February to May, monsoon from June to September and post monsoon from October to January) for a period of one year (2013-2014) with the help of local fishermen using a variety of gears including cast nets, gill nets, drag net, scoop nets and traps. The fishes were preserved in 10% formaldehyde solution for taxonomic analysis, identified by the method followed Day (1878) [5], Talwar & Jhingran (1991) [6] and Jayaram (2013) [7].

### Correspondence:

#### M. Murugan

Centre for Biological Sciences,  
Noorul Islam Centre for Higher  
Education, Kumaracoil- 629 180,  
Tamil Nadu.

### 3. Results and Discussion

#### 3.1. Fish fauna and distribution

A total of 30 fish species belonging to 13 families were recorded from study sites of Periyakulam riverine wetland. They are *Anguilla bicolor*, *Aplocheilus lineatus*, *Aplocheilus panchax*, *Aplocheilus parvus*, *Mesoemacheilus triangularis*, *Mystus bleekeri*, *Mystus malabaricus*, *Xenentodon cancila*, *Pseudosphromenus cupanus*, *Etroplus maculatus*, *Etroplus suratensis*, *Parambassis thomassi*, *Channa marulius*, *Channa*

*punctatus*, *Devario malabaricus*, *Rasbora daniconius*, *Hypselobarbus kurali*, *Puntius amphibious*, *Dawkinsia arulius*, *Puntius chola*, *Puntius dorsalis*, *Dawkinsia filamentosus*, *Puntius sophore*, *Pethia ticto*, *Puntius vittatus*, *Dawkinsia rohani*, *Garra mullya*, *Glossogobius giuris*, *Macrognathus malabaricus* and *Ompok malabaricus* (Table 1).

**Table 1:** Fish list in the study site

Fish family	Fish species	No. of collected fish	Relative abundance %
Anguillidae	<i>Anguilla bicolor</i> (McClelland)	11	1.09
Aplocheilidae	<i>Aplocheilus lineatus</i> (Valenciennes)	24	2.39
	<i>Aplocheilus panchax</i> (Hamilton)	11	1.09
	<i>Aplocheilus parvus</i> (Raj)	11	1.09
Balitoridae	<i>Mesoemacheilus triangularis</i> (Day)	18	1.79
Bagridae	<i>Mystus bleekeri</i> (Day)	5	0.50
	<i>Mystus malabaricus</i> (Jerdon)	26	2.59
Belontiidae	<i>Xenentodon cancila</i> (Hamilton)	48	4.78
Belontiidae	<i>Pseudosphromenus cupanus</i> (Cuvier)	11	1.09
Cichlidae	<i>Etroplus maculatus</i> (Bloch)	73	7.26
	<i>Etroplus suratensis</i> (Bloch)	9	0.90
Chandidae	<i>Parambassis thomassi</i> (Day)	19	1.89
Channidae	<i>Channa marulius</i> (Hamilton)	7	0.70
	<i>Channa punctatus</i> (Bloch)	9	0.90
Cyprinidae	<i>Devario malabaricus</i> (Jerdon)	72	7.16
	<i>Rasbora daniconius</i> (Hamilton)	106	10.55
	<i>Hypselobarbus kurali</i> (Menon & Rema Devi)	8	0.80
	<i>Puntius amphibius</i> (Valenciennes)	77	7.66
	<i>Dawkinsia arulius</i> (Jerdon)	36	3.58
	<i>Puntius chola</i> (Hamilton)	5	0.50
	<i>Puntius dorsalis</i> (Jerdon)	29	2.89
	<i>Dawkinsia filamentosus</i> (Valenciennes)	133	13.23
	<i>Puntius sophore</i> (Hamilton)	12	1.19
	<i>Pethia ticto</i> (Hamilton)	13	1.29
	<i>Puntius vittatus</i> (Day)	55	5.47
	<i>Dawkinsia rohani</i> (Rema Devi, Indra & Knight)	112	11.14
	<i>Garra mullya</i> (Sykes)	29	2.89
Gobiidae	<i>Glossogobius giuris</i> (Hamilton)	14	1.39
Mastacembelidae	<i>Macrognathus malabaricus</i> (Jerdon)	10	1.00
Siluridae	<i>Ompok malabaricus</i> (Valenciennes)	12	1.19

In this present study, the family Cyprinidae dominated with a numerical strength of 13 species (43%), followed by Aplocheilidae with three species (10%). The percentage of fish distribution was calculated. In this, the fish species *Dawkinsia filamentosus* and *Dawkinsia rohani* were found highest distribution percentage 13.23 and 11.14% respectively. Four species, viz. *Devario malabaricus*, *Rasbora daniconius*, *Puntius amphibious* and *Puntius vittatus* were found in between 5-10%. Other twenty four species found below 5%, of which six species were found less than 1% (Table 1).

From the Pantikal River in Kanyakumari District 16 fish species were recorded among these *Catla* sp. was recorded in very high numbers (Thampi Jeyaraj *et al.*, 2001) [8] and a total of 36 fish species were recorded in Tambaraparani river (Martin, 1994) [9]. The diversity of the fishes mainly depends upon the biotic and abiotic factors and type of the ecosystem, age of the water body, mean depth, water level fluctuations, morph-metric features and bottom have great implications (Senthil Murugan and Prabaharan, 2012) [10].

This present study clearly illustrates that Itchyfaunal diversity of Periyakulam riverine wetland in Kanyakumari district, the richest fish diversity zone was identified and the need of conservation to protect them for future research works like

aquaculture, ornamental fish production and ecotourism development.

#### 4. Acknowledgement

Authors are grateful to DBT (Sanction order No & Date: 102/IFD/SAN/2085/2012-13 Dated 13.08.201) & DST (SERB) (Sanction order No & Date: SB/YS/LS-344/2013 Dated.05.08.2014), New Delhi, for providing fund to this research and also thank to the Chairman, Noorul Islam Centre for Higher Education, Kumaracoil, Tamil Nadu, for providing necessary facilities to carry out this work.

#### 5. Reference

- Mittermeier RA, Myers N, Thomsen JB, Da Fonseca GAB Oliveri S. Biodiversity hotspots and major tropical wilderness areas: Approaches to setting conservation priorities. *Conservation Biology* 1998; 3:516-520.
- Myers N, Mittermeier RA, Mittermeier CG, Da Fonseca GAB, Kents J. Biodiversity hotspots for conservation priorities. *Nature* 2000; 403:853-858.
- Kurup BM, Radhakrishnan KV, Manojkumar TG. Biodiversity status of fishes inhabiting rivers of Kerala (S. India) with special reference to endemism, threats and

- conservation measures. In. Proceedings of the second international symposium on the management of large rivers for fisheries. Vol. II. Welcomme R and T. Petr, Eds. FAO, RAP Publication, 2003.
4. Baby F, Tharian J, Ali A, Raghavanl R. A checklist of freshwater fishes of the New Amarambalam Reserve Forest (NARF), Kerala, India. *Journal of Threatened Taxa* 2010; 2(112):1330-1333.
  5. Day F. *The fishes of India; Being a natural history of the fishes known to inhabit the seas and fresh waters of India, Burma and Ceylon.* William Dawson & Sons Ltd., London 1878, 778.
  6. Talwar PK, Jhingran AG. *Inland Fishes of India and Adjacent Countries,* Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi 1991; I(II):1158p.
  7. Jayaram KC. *The Freshwater Fishes of the Indian Region,* 2<sup>nd</sup> Edition (corrected). Narendra Publishing house, New Delhi, 2013, 616.
  8. Thampi Jeyaraj C, Selvaraj D, Stevens Jones RD, Chithra G. Coconut husk retting effluent and fish species diversity in the river Pantikal, Kanyakumari district. *Indian J. Fish* 2001; 48(3):249-254.
  9. Martin P. *Pollution studies in the perennial river, Tambaraparani.* Ph. D thesis, Manonmaniam Sundaranar University. Tirunelveli, 1994.
  10. Senthil Murugan A, Prabaharan C. Fish Diversity In Relation To Physico-Chemical Characteristics of Kamala Basin of Darbhanga District, Bihar, India. *International Journal of Pharmaceutical & Biological Archives* 2012; 3(1):211-217.