



A STUDY ON FISH DIVERSITY OF UPPER KUTTANAD, KERALA

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Abstract: Kuttanad located in Alappuzha district of Kerala lies below the sea level. This paper documents 35 species of fish located in the upper Kuttanad region of Kerala.

Key words: Kuttanad, Pamba, Achenkovil, Manimala, *Clarius garipeneus*.

INTRODUCTION

Kuttanad is a part of Alappuzha district of Kerala, situated 2 to 4 feet below the sea level and the paddy fields in the region are about ten feet below sea level. Kuttanad is also the merging point of several rivers in Kerala such as Pamba, Achenkovil, Manimala and Meenachil. These rivers join to form a vast expanse of water called Vembanad Lake which encircles Kuttanad. It opens into the Indian Ocean at the port city of Kochi. The Kuttanad region is broadly classified into three geographical divisions: Upper Kuttanad, Lower Kuttanad and North Kuttanad. This paper provides information on the diversity of fishes in Upper Kuttanad area.

Eight areas of Upper Kuttanad were selected for the study, which include Chennithala, Parumala, Niranam, Edathua, Thalavady, Theveri, Veeyapuram and Muttar. Samples of fresh water fishes collected from the rivers flowing through the study area (Pamba, Manimala and Achenkovil) and also from the paddy field before starting paddy cultivation. Various types of traps, hook and nets are used as fishing gear. In Upper Kuttanad spear and harpoon, hook and line, small hand-drawn nets/towel, dip nets, cast nets, basket traps are used for fishing. Fishes are preserved in 10% formalin and identified using keys of Jayaram (2010) and Talwar and Jhingran, (1991).

All together 35 species were identified. Out of these 23 species are least concern, two near threatened, one vulnerable species as per IUCN list. In addition two data deficient species and three exotic species were also recorded during the study.



Fig. 1. Map of Kuttanad, Kerala, India

Table 1. List of fishes identified during study period

LC	DD	NT	V	NA	EXOTIC
<i>Dayella</i>	<i>Puntius</i>	<i>Ompok</i>	<i>Carinotetraodon</i>	<i>Anguilla</i>	<i>Clarius</i>
<i>malabarica</i>	<i>amphibius</i>	<i>bimaculatus</i>	<i>travancoricus</i>	<i>bengalensis</i>	<i>garipeneus</i>
<i>Labeo</i>	<i>Anabas</i>	<i>Wallago</i>		<i>Gonoproktopterus</i>	<i>Ctenopharyngo-</i>
<i>dussumieri</i>	<i>testudineus</i>	<i>attu</i>		<i>kurali</i>	<i>don idella</i>
<i>Labeo</i>				<i>Catla Catla</i>	<i>Hypophthalmi-</i>
<i>rohita</i>					<i>chthys molitrix</i>
<i>Puntius</i>				<i>Horabrgus</i>	
<i>filamentosus</i>				<i>brachysoma</i>	
<i>P. vittatus</i>					
<i>P. sarana</i>					
<i>Parluciosoma</i>					
<i>daniconius</i>					
<i>Hyporhamphus</i>					
<i>limbatus</i>					
<i>Xenentodon cancila</i>					
<i>Aplocheilus lineatus</i>					
<i>Parambasus dayi</i>					
<i>Nandus nandus</i>					
<i>Pristolepis marginata</i>					
<i>Etroplus maculatus</i>					
<i>E. suratensis</i>					
<i>Glossogobius giuris</i>					
<i>Macropodus cupanus</i>					
<i>Channa marulius</i>					
<i>C. micropeltes</i>					
<i>Mugil cephalus</i>					
<i>Mystus oculatus</i>					
<i>Heteropneustes fossilis</i>					
<i>Macrognathus</i>					
<i>guentheri</i>					

LC- Least Concern, DD- Data Deficient, NT- Near Threatened, V- Vulnerable, NA- Not Assessed

Fish diversity in Kuttanad is affected by many factors like water weeds, introduction of exotic species, water pollution etc. Water hyacinth, an introduced weed is reported affect the ecology and fish wealth of the region (Anon, 1989; Jayachandran and Zachariah, 1993; Balchand, 1983). The most commercially valuable species in the region are *Etroplus suratensis*, *Horabargus brachysoma*, *Channa striatus*, *Heteropneustes fossilis*, *Channa marulius* and *Glossogobius giuris*. There are three exotic species identified which include *Ctenopharyngodon idella*, *Hypophthalmichthys molitrix* and *Clarius gariepinus*, all of them introduced into this region for promoting aquaculture, the latter being illegally introduced. In the present study out of 35 fishes, 20 species are ornamental and most of the ornamental fishes belong to the genus *Puntius* (Raju Thomas and John George, 2009, 2010, 2011). Order Perciformes represents the order with most number of families followed by Cypriniformes. Maximum number of species was represented in the family Cyprinidae (Gopi and Radhakrishnan, 2001) followed by Nandidae. The most abundant genus was *Puntius*. There are 23 species of fishes coming under least concern category as per IUCN list and one vulnerable species (*Carinotetraodon travancoricus*), two near threatened species (*Ompok bimaculatus* and *Wallago attu*). The variations in the physico-chemical factors such as temperature, pH, salinity, dissolved oxygen and nutrients substantially influence the primary production, faunal and floral diversity and the successional pattern in aquatic ecosystems (Coble, 1982; Gilkuma and Hecky, 2005). According to Adoni (1985) the climate is the most important factor affecting a particular habitat. The regional difference in light, temperature, moisture etc. is factors of environmental significance, which not only affect the physico-chemical properties of water but also regulate the behaviour and activity of flora and fauna (Adoni, 1985; Pramod Babu, 2006).

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