

BIODIVERSITY OF ICHTHYOFAUNAL RESOURCES IN CHINNANGUDI COASTAL WATERS MAYILADUTHURAI DISTRICT

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ABSTRACT

Present investigation was taken to assess the status of Ichthyofaunal diversity of Chinnangudi coastal waters, Mayiladuthurai District. The data for the present study was collected from the multiday trawlers operating from Chinnangudi fishing harbour over a period from November-2019 to February-2020 and sampling was done once in fortnight. A total 36 species belonging to 30 genera, 23 families and 12 orders were recorded during the study period. Therefore the survey to identify the finfish resources along the Chinnangudi coast is recommended. During the study period, the catches could be sorted very quickly and one or two specimens representing each species can be preserved for research purpose.

KEY WORDS: Ichthyofaunal resource, Fin fishes, Chinnangudi coastal waters.

INTRODUCTION

Fishes have formed an important item of human diet from time immemorial and are primarily caught for this purpose (Sarwade and khillare, 2010). Fish from a rich sources of food for mankind and provide protein and vitamins that are essential for the health of man. The importance of fish as food has resulted in the development of fisheries as an industry in several countries and considerable progress has been achieved in fishery science in India and also the export of fish and fish products during recent years has played an important role in the economy of the country.

India is being the mega diversity country has 8500km Coastal line which covers about 9 major states including Tamil Nadu and four union territories. India is now the seventh largest producer of fish in the world has per the record in 1995-96 (Shafi, 2003). The marine fish landing of Tamil Nadu from about 15% of total landings (Khanna and Singh, 2003). This is a boon of fisherman and small farmers. The Indian present annual percaput consumption of fish is 8 kilos per person. while the gobal average is 12 kilos (Venkataswarlu *et al.*, 2006). Biodiversity

of forms and function in living systems are nature's greatest gift for mankind. Marine and coastal biodiversity encompasses variety of marine species and their biological diversity is very great. All over the world at present biodiversity of the marine and coastal environment is facing a severe threat of destruction due to natural and over exploitation the workers like Singaraja , 2007., Muraliduaran ,1999 and Astalakshmi, 2001. This is primarily because of lack of information on the biodiversity of this region. Hence the present study has been made to determine the finfish resources occurring along the Nagapattinam coast and document particularly the biodiversity of the finfishes of Chinnangudi coastal area. It is believed that the present preliminary observation may stimulate better investigations in future for the thorough understanding of the particular ecosystem and the faunal diversity along the Chinnangudi coast.

The present study has been made to determine the finfish resources in Chinnangudi coastal area. Chinnangudi is a small fishing village located off the Coromandel Coast, under Pillaiperumal Nallur panchayat in Mayiladuthurai District. It is located 35 kilometres north of Karaikal (a part of the union territory of Pondicherry). The Chinnangudi beach also plays host to other fishing related activities like cleaning and repairing nets, drying fish and making catamarans.

MATERIALS AND METHODS

For the present study (November 2019 to February 2020) Fishes were collected from the fish Landing Centre of Chinnangudi coast. Then the collected fishes were washed, took photograph and preserved 10% neutralized formaldehyde solution for further analysis. Subsequently the preserved fishes were examined for the various morphological characters for identification. For the convenience and easy interpretation the collection period for month wise. The fisherman use different this is primarily because of lack of information on the biodiversity of this region hence the present study has been made to determine the finfish resources occurring along the Nagapattinam coast and document particularly the biodiversity of the finfishes of Chinnangudi coastal area. Types of gears (nets) and crafts (vessels) to catch different types of fishes. A total of 36 species were collected and identified from the study area for the period of four months. The collected fishes were identified with the help of standard keys, book and standard taxonomic references.

- The fishers of India (Francis Day, FLS and FZS)
- FAO catalogues(<http://www.fao.org/fishery/fishfinder/3,3/en>)

- Fin fishes of the Gulf of Mannar Biosphere Reserve, A field of identifications guide.
- ZSI (Zoological Survey of India)
- Fishbase (<http;www,fishbase-org/search.php>)
- WORMS (<http//www.marinespecies.org>).

RESULTS

As a result the preliminary observation over a period of four months (November 2019 - February 2020). 36 species of finfish were collected identified and classified based on the material collected from the study area. The finfishes belonging to the families **Hemiscyllidae, Myliobatidae, Narcinidae, Dasyatidae, Nardinidae, Dasyatidae, Carangidae, Clupeidae, Chirocentridae, Engraulidae, Trichiuridae, Sciaenidae, Siganiidae, Terapontidae, Leiognathidae, Sillaginidae, Stromateidae, Mullidae, Scombridae, Arridae, Synodontidae, Cynoglossidae and Psettodidae.**

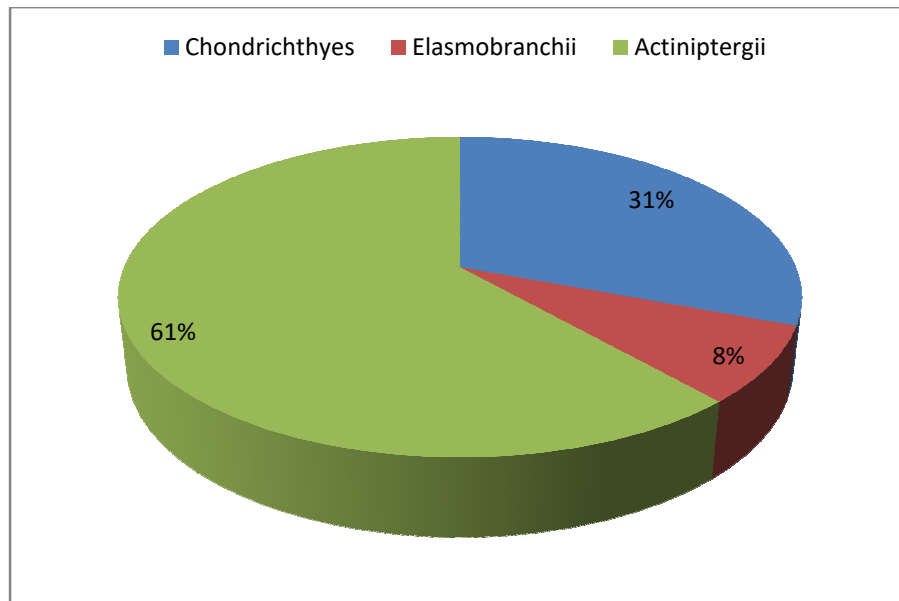
Table 1. Classified on the Fish from the study area

Class	Order	Family	Genus	Species	Common name	Availability
Chondrichthyes	Orectolobiformes	Hemiscylliidae	<i>Chiloscyllium</i>	<i>C. griseum</i>	Gray bamboo shark	+
	Myliobatiformes	Myliobatidae	<i>Rhinoptera</i>	<i>R. javanica</i>	Flapnose ray fish	+
	Torpediniformes	Narcinidae	<i>Narcine</i>	<i>N. timlei</i>	Black spotted numbfish	+
Elasmobranchii	Myliobatiformes	Dasyatidae	<i>Trygon</i>	<i>T. walga</i>	Scaly whipray fish	++
Actinopterygii	Carangiformes	Caragidae	<i>Selaroides</i>	<i>S. leptolepis</i>	Yellow stripe scad	+++
			<i>Alectis</i>	<i>A. ciliaris</i>	African pompano	++
	Clupeiformes	Clupeidae	<i>Sardinella</i>	<i>S. longiceps</i>	Indian oil dardine	++
				<i>S. melanura</i>	Ray finned fish	+++
			<i>Dussumieria</i>	<i>D. acuta</i>	Rainbow sardine fish	+++

		Chirocentridae	<i>Chirocentrus</i>	<i>C.dorab</i>	Knife fish/ ribbon fish	++
		Engraulidae	<i>Thryssa</i>	<i>T. vitriristris</i>	Poruva fish	+++
			<i>Coilia</i>	<i>C.dussu mieri</i>	Gold spotted grenadier anchovy	++
			<i>Stolephorus</i>	<i>S. commersonii</i>	Devis's anchovy	++
	Perciformes	Trichiuridae	<i>Trichiurus</i>	<i>T. lepturus</i>	Hair tail fish	+++
		Sciaenidae	<i>Johnius</i>	<i>J. axillaris</i>	Black spot jewfish	++
		Sganidae	<i>singanus</i>	<i>S. oramin</i>	Rabbit fish	+++
	<i>S. vermiculatus</i>			Maze rabbit fish	+++	
	<i>S. javus</i>			Streaked spine foot	++	
			Terapontidae	<i>Terapon</i>	<i>T. puta</i>	Spiny checked grunter
Leioognathidae			<i>Secutor</i>	<i>S. insidiator</i>	Pug nose pony fish	+++
			<i>Leiognathus</i>	<i>L. lineolatus</i>	Pony fish	+++
				<i>L. daura</i>	Golden striped pony fish	+++
Carangidae			<i>Caranx</i>	<i>C. carangus</i>	Thengapp arai fish	++
Sillaginidae			<i>Sillago</i>	<i>S. vincenti</i>	Estuarine whiting	+++
Mullidae			<i>Uppeneus</i>	<i>U. sundaicus</i>	Ochre banded goat fish	+++
Scombriformes	Stromateidae	<i>Pampus</i>	<i>P. argenteus</i>	Silver pomfret	++	

				<i>P. chinensis</i>	Chinese silver pomfret karu vaval	++
		Scombridae	<i>Scomberomorus</i>	<i>S. commerson</i>	Narrow barred Spanish mackerel	++
				<i>S. guttatus</i>	Indo pacific king mackerel	++
			<i>Rastrelliger</i>	<i>R. kanagurta</i>	Indian Mackerel	+++
			<i>Euthynnus</i>	<i>E. affinis</i>	Mackerel tuna	+++
	Siluriformes	Ariidae	<i>Arius</i>	<i>A. jella</i>	Black fin sea catfish	+++
	Mugiliformes	Mugilidae	<i>Liza</i>	<i>L. parsia</i>	Gold spot mullet	+++
	Aulopiformes	Synodontidae	<i>Saurida</i>	<i>S. tumbil</i>	Greater lizardfish	++
	Pleuronectiformes	Cynoglossidae	<i>Cynoglossus</i>	<i>C. lingua</i>	Long tongue sole	++
		Psettodidae	<i>Psettodes</i>	<i>P. erumei</i>	Indian halibut	++

Abundance (+++); High (++) ; Low (+)

Figure 1. Order based fish diversity in the study area

DISCUSSION

According to the classification of finfishes are edible and also protein rich fishes (Singaraja, 2007). Muralidharan (1988) has recorded 213 species of reef fishes from the Gulf of Mannar which is considered National Biosphere Resource.

The distribution and complexity of fin fish resources were studied by several of finfish had been studied by several authors (Astalakshmi and Sundaramanickam, 2011 ; Kishore *et al.*, 2019; Rajesh *et al.*, 2017 ; Devashish kar *et al.*, 2006 ; George , 1998 ; Rajasekar, 2004 ; Vimal, 2009); Molly *et al.*, 2017 ; Arti *et al.*, 2018, Arockiamary *et al.*, 2018 ; Bharathi, 2004) on the various places of Indian coastal waters. However no attempts have so far been made to study the ichthyofaunal resources along the chinnangudi coast. Hence the present investigation of ichthyofaunal resource of chinnangudi coast will be very much useful to future on the same faunal studies. 36 species of finfish were recorded in Chinnangudi coast (Plate I, II, III and IV) during the study period November 2019 - February 2020. Among them *Trygon walga*, *Sardinella longiceps*, *S.melanura*, *Dussumieria acuta*, *Chirocentrus dorab*, *Cynoglossus lingua*, *Leiognathus daura*, *Secutor incidiator*, *Alectis ciliaris*, *Rastrelliger kanagaruta*, *Siganus oramin*, *Trichiurus lepturus*, *Johnius axillaries* were abundant in November 2019 to February 2020.

The species such as *Sardinella longiceps*, *Euthynnus affinis*, *Scomberomorus guttatus*, *Rastrelliger kanagartha* were more abundant only in November month. The availability of finfishes like *Trygon walga*, *Terapon puta* and *Leiognathus daura* were high in December month. Seasonal fishes like *Leiognathus lineolatus*, *Scomberomorus commerson*, *Caranx carangus*, *Pampus Chinensis*, *P.argenteus* were abundant during the month of January 2020 to February 2020. *Vanjaram*, *Kalinga* was recorded as rare fishes and *Ponnangi karai*, *Komban Kelluthi*, *Kora Kaala* were recorded as endangered species in Chinnangudi coast. The following fishes were exported from the study area, like *Euthynnusaffinis*, *Scomberomorus commerson*, *S. guttatus*. The rest of the species were recorded as few in number. Therefore the survey to identify the finfish resources along the Chinnangudi coast is recommended. During the study period, the catches could be sorted very quickly and one or two specimens representing each species can be preserved for research purpose.

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