

DIVERSITY OF BRACHYURAN CRABS CAPTURED AND LANDED BY TRAWL AT AKKARAIPETTAI LANDING STATION, NAGAPATTINAM, TAMIL NADU, INDIA

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Abstract

Coastal environment provides greater range of habitats and thus potentially supports greater biodiversity. The present study was aimed to know the diversity of brachyuran crabs monthly and seasonal captured and landed by trawl at the Akkaraipettai landing station, Nagapattinam Fisheries Harbour, Tamil Nadu, India from December 2015 to February 2016 is discussed. The analysis gave a clear pattern highlighting the similarities in distribution and abundance during the study period of December 2015 and 2016. The crabs were registered from Akkaraipettai landing centres 03 families (Portunidae, Sesarmidae and Ocypodidae) 06 genera and 13 species. The number of species per family varies considerably (1 to 17 species). The most diverse families were Portunidae (11 species), followed by Ocypodidae (01 Species) and Sesarmidae (01 species). Among the 13 species, three species (*Charybdis lucifera*, *Liocarcinus vernails* and *Sesarma rediculatum*) were absent in December 2015, one species absent (*Liocarcinus vernails*) in January 2016 and two species (*Scylla tranquebarica* and *Portunus gladiator*) in February 2016.

Key words: Nagapattinam, Brachyuran, Diversity, Portunidae and Abundance.

1. Introduction

Brachyuran crabs are more diverse group of crustaceans alive today. They found at even 6000 m depths to seas shore and are dominant in many estuarine habitats where salinity and temperatures can fluctuate dramatically daily (Ng *et al.*, 2008). They are one of the important faunal communities serving as very good food source to human beings in the marine and brackish water ecosystems. Brachyuran crabs, comprise about 700 genera and 5000 to 10,000 species worldwide (Kaestner, 1970; Ng, 1998; Martin and Davis, 2001; Sternberg and Cumberlidge, 2001; Ng *et al.*, 2008; Yeo *et al.*, 2008), out of which 2,600 are

present in Indo-West Pacific (Serene, 1968). In Indian waters 990 species of marine brachyuran crabs belonging to 281 genera and 36 families are recorded (Myla Chakravarty *et al.*, 2015). Tamil Nadu coast, one of the state in India has 404 species of crabs belonging to 26 families and 152 genera (Kathirvel, 2008). There were number of studies about the diversity of brachyuran crabs near our study area reported. Maximum percentages of crab catches are landed from Gulf of Mannar, Palk Bay, Nagapattinam and Puducherry landings of Tamil Nadu coast in India (Rao *et al.*, 1973). Chennai coast has witnessed an annual crab landings were over 1500 (Thangaraj Subramanian, 1998).

In the present study, an attempt to survey of biodiversity of the brachyuran crabs made to list take over on marine captured and landed at

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Akkaraipettai landing area, Nagapattinam, Tamil Nadu, India. The main objectives of this study are to survey the biodiversity of Brachyuran crabs data and how very much useful for Human beings, to study the potential of commercially important brachyuran crab in this region, the economic value would bring out most captured and landed species of Brachyuran crab reports from this region, to relate the crab fishery resource study is essential to improve the population of the respective area.

2. Materials and Methods

Brachyuran crabs were collected at monthly intervals from the trawl by catch landed in Akkaraipettai, Nagapattinam landing centre (Lat 10°45'37.45"N Lon 79°51'09.07"E) during the December 2015 to February 2016. The collected crabs were then washed in sea water, photographed from the sites it and kept in ice boxes, packed and transported to laboratory. These were processed appropriately and samples were preserved. Specimens were identified up to the species level as far as possible. The species level identification was done using text books/monographs/reprints/CD ROMs & standard publications, keys (Sakai, 1976; Sethuramalingam and Ajmal Khan, 1991) and with the help of subject experts.

3. Results and Discussion

The diversity is an important tool to study a variety of species in a particular area and to evaluate the abundance of individuals within each species. In the present study, very high species diversity observed in the study area within may be due to stable environmental conditions (Venkataraman *et al.*, 2005; Soundarapandian, 2004). The crabs were registered from the landing centre 3 families, 6 genera and 13 species (Table 1). Among 13 species, one species (*Portunus sanguinolentus*) dominant, two species (*Scylla serrata*, *Ocupodepla tytarsis*) abundant, two species (*Charybdis natator*, *Charybdis feriatus*) co-abundant and one species (*Charybdis lophos*) present in the study period, one species (*Portunus pelagicus*) abundant and two species (*Scylla tranquebarica*, *Portunus hastatooides*) co-abundant

in month of December 2015 and January 2016, one species (*Charybdis lucifera*) in the month of January and February 2016, one species (*Portunus gladiator*) in the month of December 2016 and three species (*Portunus pelagicus*, *Sesarma rediculatum* and *Liocarcinus vernails*) in the month of February 2016, two species.

Table – 1: List of Brachiyuran crab captured and landed at Akkaraipettai, Nagapattinam

	SPECIES NAME	DEC - 2015	JAN - 2016	FEB - 2016
1.	<i>Portunus sanguinolentus</i>	++++	++++	++++
2.	<i>Portunus pelagicus</i>	+++	+++	++
3.	<i>Scylla serrata</i>	+++	+++	+++
4.	<i>Scylla tranquebarica</i>	++	++	–
5.	<i>Charybdis lucifera</i>	–	++	++
6.	<i>Charybdis natator</i>	++	++	++
7.	<i>Charybdis feriatus</i>	++	++	++
8.	<i>Charybdis lophos</i>	+	+	+
9.	<i>Portunus hastatooides</i>	++	++	+
10.	<i>Portunus gladiator</i>	++	+	–
11.	<i>Sesarma rediculatum</i>	–	+	++
12.	<i>Liocarcinus vernails</i>	–	–	++
13	<i>Ocupode platytarsis</i>	+++	+++	+++

++++:-Dominant , +++:-Abundant , ++:-Co abundant , +-:-Present , - :-Not recorded

(*Portunus gladiator*, *Sesarma rediculatum*) present in the month January 2016 and one species (*Portunus hastatooides*) in the month of February 2016, One species (*Liocarcinus vernails*) not



recorded in the month of December 2015 and January 2016, two species (*Charybdis lucifera*) in the month of December 2015 and two species (*Scylla tranquebarica*, *Portunus gladiator*) in month February 2016 in Akkaraipettai, landing station, Nagapattinam coastal area (Fig.1).

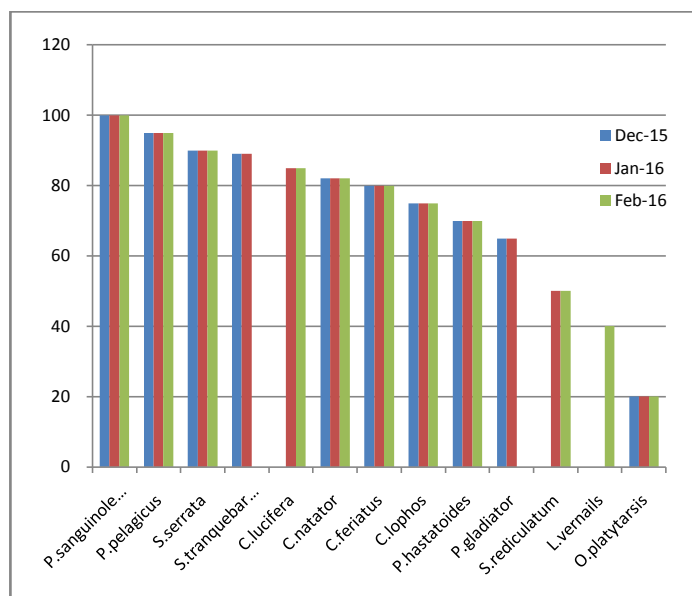


Fig – 1: List of Brachyuran crabs captured and landed during the study period at Akkaraipettai, Nagapattinam

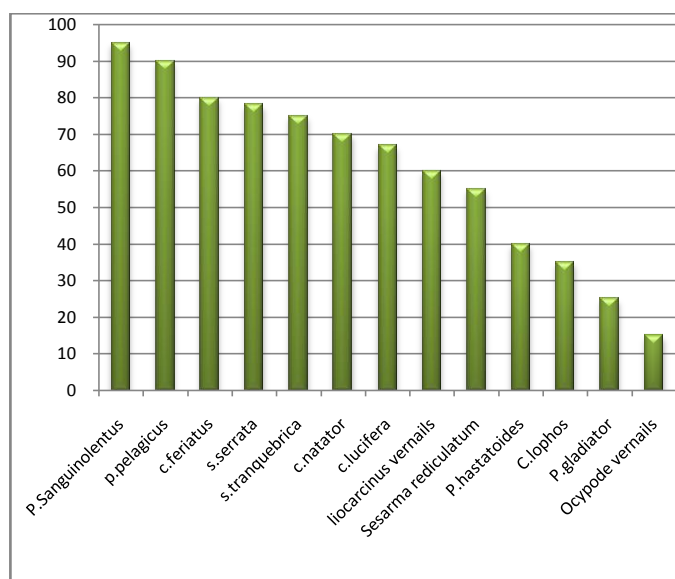


Fig – 2: List of Brachyuran crabs most consumed (%) as Human foods

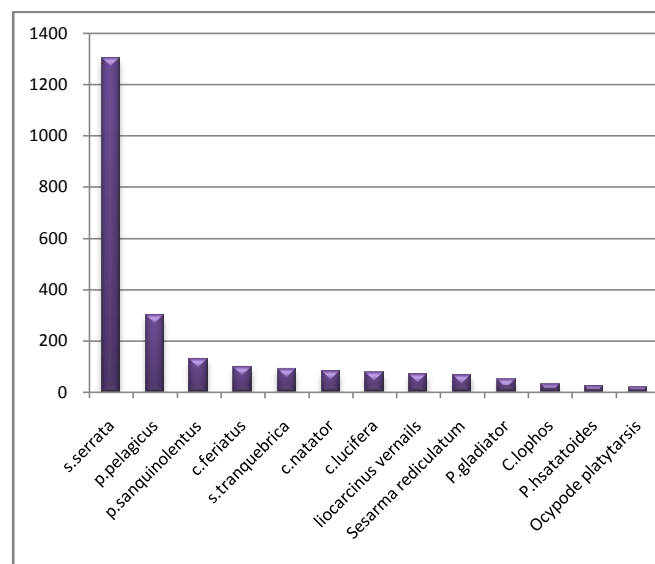


Fig - 3: Economic value (@ Rs/kg) of Brachyuran crabs

Crustacean such as crabs are very important for human beings, it has a significant quantity of protein, vitamins and other nutrients. They are used for feed additive and extremely used in farm animal and making medically valuable products. The 09 species (*Portunus pelagicus*, *Portunus sanguinolentus*, *Scylla serrata*, *Scylla tranquebarica*, *Charybdis lucifera*, *Charybdis feriatus*, *Liocarcinus vernails*, *Sesarma rediculatum* and *Charybdis natator*) out of 13 species more food value for human beings (Fig - 2). Among these, *Scylla serrata* is highly valuable for commercial. The *Ocypode platytarsis* has great medicinal value and *Portunus hastatoides*, *Portunus gladiator* and *Charybdis lophos* are used for animal feed especially Poultry industry (Fig - 3).

In recent years, the importance of crabs meat and other parts to the health and population longevity and good price of world market. The demand for sea food current exceeds, day by day increasing in population and occurs in over exploitation it is economically very important for the state or country, they are authorized to export developing and managements of future research.



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