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Crabs and Crab Fishery of the Mandapam Area

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In our country, crab fishery is mainly contributed by portunid crabs those which belong to three generae i.e., **Scylla, Portunus and Charybdis**. They have the typical portunid shape with carapace having 4-9 anterolateral teeth. Chelepeda are longer than all legs and last pair typically paddle shaped. Their systematic position is as follows:

Phylum	: Arthropoda
Class	: Crustacea
Sub-Class	: Malacostraca
Order	: Decapoda
Suborder	: Brachyura
Family	: Portunidae
Subfamily	: Portuninae

These are commonly referred to as edible crabs, inhabiting the coastal waters and adjoining brackish water environments support localised sustenance fishery of some importance. The commercially important crabs which are available in the seas around the Mandapam region are as follows:

<u>Scientific Name</u>	<u>Vernacular Name</u>
<i>Scylla serrate</i>	: Chambanandu
<i>Scylla tranquebarica</i>	: Kazhinandu
<i>Portunus pelagicus</i>	: Olakkalnandu or Kadal nandu
<i>Portunus sanquinolentus</i>	: Mookkannu Nandu
<i>Charybdis feriatu</i>	: Siluvai nandu
<i>Charybdis annulata</i>	
<i>Charybdis natator</i>	

Among these crabs, at Mandapam region a major fishery is existing for *Portunus pelagicus* only and for scylla spp. to a little extent.

Portunus pelagicus commonly known as blue swimmer crab, its distribution ranges from Red Sea, Mediterranean, east coast of Africa, Persian Gulf, Pakistan, India, Sri Lanka, Mergui Archipelago, Singapore and Philippines to Australia, New Zealand, Tahiti, China sea and Japan.

In India it is well distributed along the east and west coasts and fished from all the maritime states, some of the estuaries and brackish water areas. The major share comes from the Tamil Nadu that too from a small area along the Palk Bay and Gulf of Mannar.

Male crabs are characterised by the inverted 'T' shaped abdomen and female crabs with semicircular abdomen. In *P. pelagicus* one can easily distinguish the sex from its colour pattern. Males are more attractive, the carapace is light brown coloured with typical 'mosaic' markings and tips of legs are with bright blue colour, hence the name 'blue swimmer crabs'. The carapace of the female crab is dark brown, with comparatively smaller markings than the male crab and tips of the legs end in rust/brown colour.

A regular fishery of *Portunus pelagicus* exists in this region, though it is not at all commercially developed as in other countries. At Palk Bay side of Mandapam, fishing is a year round process and crab are landed as a bycatch in trawl nets. In the Gulf of Mannar, fishing is seasonal, for a period of six months, from

October to March. Majority of the trawlers go for night fishing and rest for day-night fishing. Trawlers operate upto a depth of 50m, generally operates below 25m of depth. Average annual crab landings from Palk Bay is about 178 t and catch per boat is 4.3 kg. In the overall catch *P. pelagicus* forms about 3.7%. At Gulf of Mannar average catch comes around 10 t/year, catch per boat is 1.2 kg and crab forms 4.5% of the overall catch. The maximum crab landings is recorded in the months of June and December at Palk Bay and Gulf of Mannar respectively.

In trawl catches females are dominating in most of the months. Major portion of the fishery is contributed by 100-160 mm (carapace width) size groups. *Portunus pelagicus* is a continuous breeder and berried crabs (crabs with eggs) are included in the catch throughout the year. A small percentage of parasite infected crabs also observed in the landings in most of the months.

The traditional gill net, locally known as "nanduvalai" is widely used for crab fishing in this region. Devipattinam (Palk Bay) and Thoppukkadu (Gulf of Mannar) are the two centres where 'nanduvalai' fishing is prevalent throughout the year. A group of 3-5 fishermen go for fishing in a vallam, locally known as "Vathai". Overall length of the craft is 7-8 m and a single craft carries 15-25 nets depending on the number of the crew. A single fisherman can carry five "nanduvalai" and hence the total number of nets depend on the crew. Each "nanduvalai" is about 200m in length and one metre in width or height. The body of the net is made of high density nylon monofilament rope with a square mesh of 80mm. The head rope is of thick nylon and small rubber pieces are tied to it as floats at regular intervals of one and half feet. The foot rope is made of cotton, which absorbs water and therefore no sinkers are necessary. This is the type of crabnet used at Devipattinam, however variations have been noticed in size and other aspects of crab nets

used in different localities.

"Nanduvalai" are used in fleets, several of them are tied end to end forming a long chain so that they cover a considerable area in the sea. The fishing grounds are restricted to shallow water regions of the coast at depths upto 15 metres, generally in the 4-5 m area. Fishermen go for fishing during evening hours, carrying the fleet of these nets. One person handles the "Vallam", while others lay the net which is always parallel to the coastal line. The crabs which cross the long chain of net get themselves entangled in the meshes and cling to the nets. The fishermen carefully remove the entangled crabs with much care without breaking its appendages.

At Devipattinam average crab catch is 36 t/year with an average boat catch of 16 kg and at Thoppukkadu total catch is 6t/year and boat catch is 2 kg. Males dominated the 'nanduvalai' catches and occurrence of berried crabs are less compared to the trawler catches. Crab catches are mainly composed of sizes ranging between 80 - 150 mm in carapace width. Parasite infected crabs are also caught in nanduvalai during certain months. At Thoppukkadu, apart from *P. pelagicus*, *Scylla tranquebarica* is also caught in 'nanduvalai' and average production is 2.6 t/year.

The catches are either sold in the markets or to the wholesale crab merchants, from there to processing units. There is a good demand for *P. pelagicus* and it fetches an average price Rs.35-45/Kg. and during certain season it has even gone upto Rs.75/Kg. The meat is very tasty, contains 16-20% protein and some believe that meat is good for curing asthmatic problems.

At present there is no fishing regulations for the crab fishery. If we observe the past few years data it is clear that catches are fluctuating and eventhough fishing effort has increased than the previous decades, total

landings has not increased in accord. It is high time to put some specific management regulations for minimum size at capture and protection for females bearing eggs. Moreover, awareness must be given to the fishermen to release back the berried females to the sea and there by ensure that females are not sold with their berries.

Seed production of *Portunus pelagicus* has been standardised by CMFRI recently. Some of the Government as well as public organisations must take up sea ranching programme to ensure the sustainability of the stock and also to augment the wild production.