

## **Mud crab (*Scylla serrata* and *Scylla olivacea*) fishery in Mannar District**

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### **Abstract**

Mud crab (*Scylla serrata* and *Scylla olivacea*) fishery is one of the most important livelihoods that provide number of employment in Mannar which not yet studied. Capture species, carapace width, weight of the crabs, capture method, mangrove density and number of fisherman engage in mud crab fishing were recorded in order to find out the size distribution, and the existing capture method. *S.serrata* and *S.olivacea* are the two mud crab species harvested in Mannar district while *S.serrata* influence the harvest with the carapace size of 13 cm to 16 cm and with the mean weight of 600.89 g. The methods used for harvesting the mud crabs are baited traps, nets and wooden sticks. Out of these the traps are preferred since they give the largest harvest. The knowledge of biology, development planning regarding crab fishery and culture is needed to maintain the sustainability of the stock.

**Keywords:** Mud crab, Fishery, Sustainability, Resources

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### **Introduction**

Mannar district is situated between north latitude 8.8667<sup>0</sup> and east longitudes 80.0667<sup>0</sup>, along the west coast of Sri Lanka with the unique assemblage of marine, brackish and freshwater ecosystem. The widely distributed *Scylla serrata* (Forsk.) and *Scylla olivacea* (Herbst) popularly known as mud crab throughout the Indo-West Pacific region, is also found here. Mud crabs belong to the group of swimming crabs, from the family Portunidae. These crabs are locally known as *Kali nandu* (in Tamil) and *Kalapu kakuluwa* (in Sinhala). They are predominantly estuarine but move towards the offshore and mangrove habitats for spawning and early larval life. In recent years, mud crabs have become an important export commodity in Sri Lanka. This development has led to irresponsible exploitation of the species with a danger of extinction. The present study was undertaken to study the status of the mud crab fishery in the Mannar district.

### **Materials and Methods**

Considering the mangrove density and the mud crab availability, the study was carried out from May to August 2013, in four landing sites such as Southbar, Pallemunai,

Achankulam and Illuppakadavai followed by an analysis of literature. Live mud crab specimens were collected and the width of the carapace (CW) between the ninth teeth of left and right antero-lateral boarder was measured with a caliper and the body weight was recorded in grams with a digital weighing scale. Identification of mud crab species was performed following Keenan's (1998). Additional information regarding the capture method, capture time and number of fishermen were recorded by interviews.

### **Results and Discussion**

Two species of mud crabs; *S. serrata* and *S. olivacea* were found in Mannar Lagoons. *Scylla serrata* was found in all study sites but *S. olivacea* was only present in mangrove forests (Table 1). Baited traps, gill nets and hand picking from crab holes with a stick are practiced for catching, but baited traps are the most dominant gear in all sites. The size of the trap and the mesh size of the nets varied in each site.

*Table 1: Fishery data of study sites*

Site	Capture species	Capture method	Number of fishers
Southbar	<i>Scylla serrata</i>	Baited Trap, Manual collection	89
Pallimunai	<i>Scylla serrata</i>	Baited Trap	113
Achankulam	<i>Scylla serrata</i> <i>Scylla olivacea</i>	Baited Trap, Net, Manual collection	130
Illuppakadavai	<i>Scylla serrata</i> <i>Scylla olivacea</i>	Baited Trap, Net, Manual collection	48

Carapace width varied from 12 cm to 20 cm (Figure 1). The carapace of most of the crabs in Southbar and Pallimunai were in the range of 13-15 cm, while in Pallimunai, few males were larger than 17 cm. Narrow size variations could be seen in Achankulam as most of the crabs fell between 12 cm to 16 cm range. Both males and females in Illuppakadavai were bigger when compared with other sites. In 1991, Jayamanne recorded *S. serrata* with a 28 cm CW and 3 kg of weight from Mannar, but at present, size distribution of *S. serrata* showed a narrow range below 20 cm with a mean carapace width of 15.35 cm and a mean weight of 600.89 g.

Highest catch was in Achankulam where the highest number of fishermen was recorded. When catch per fisherman is considered, Illappakkadavai shows the highest. Military restrictions in Illippakkadavai during the years of the conflict restricted the mud crab fishing, thus the area has flourishing crab resources as well as a fishing effort.

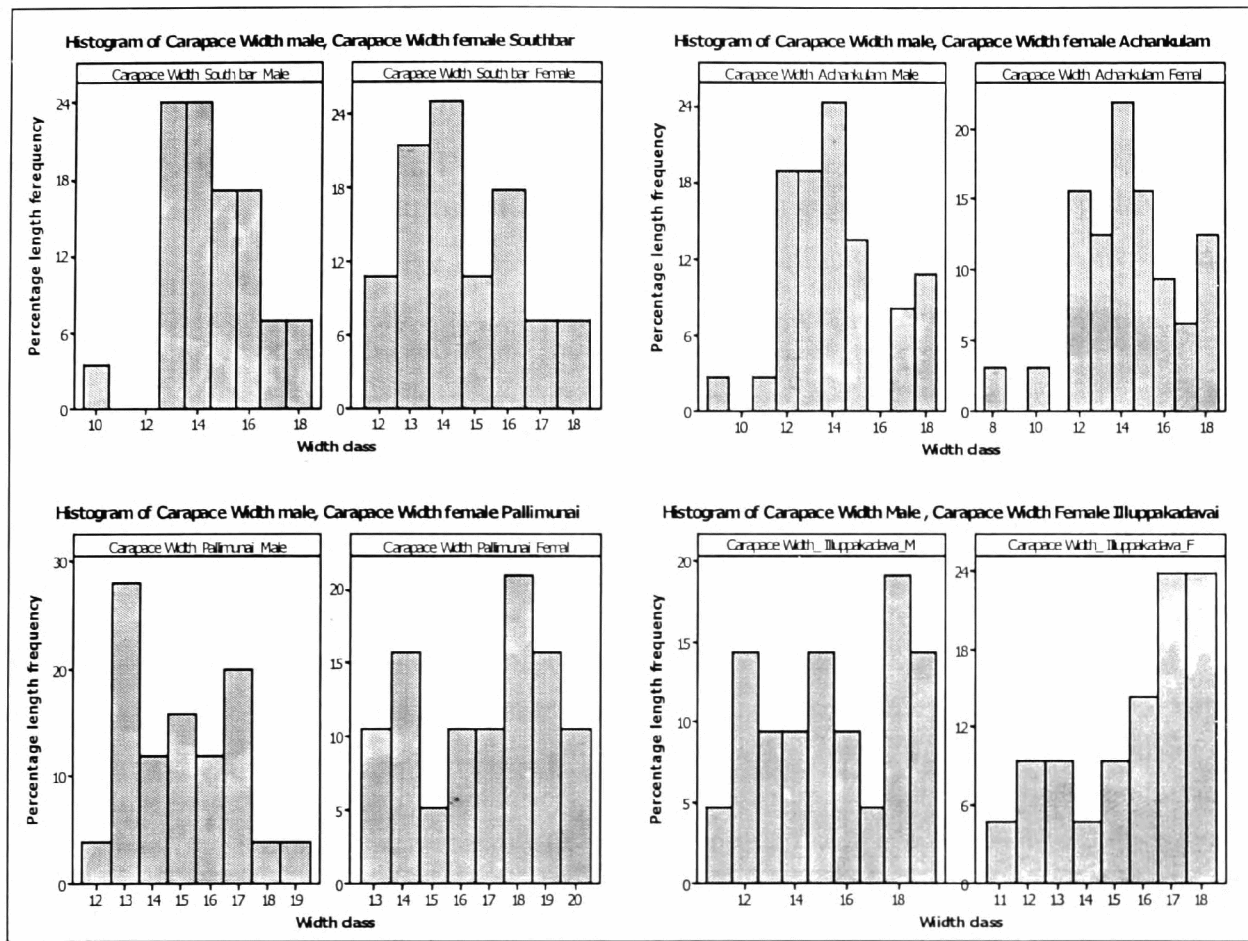


Figure 1: Size distribution of the crabs in the study area

## Conclusion

Mud crab fishery is a vital livelihood in the Mannar district and employs number of fisher families. Mud crabs; *S. serrata* and *S. olivacea* are expensive commodities exploited at alarming rate in recent years from Mannar. It is important to conduct an in-depth study of the fishery and methods that can be employed for sustaining the fishery resources in the district.

## References

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