

# Observations on the mass mortality of molluscs in Karapad Bay, Thoothukudi

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The western bank of the shallow Tuticorin Bay is deeply indented in two places one at Karapad and the other at Uppar. The Karapad Creek is situated 2 km south of Thoothukudi having an area of 0.29 km<sup>2</sup>. The shore is sandy and silty in nature and harbours variety of molluscan groups apart from other interstitial fauna. The bay area is devoid of any macro algal vegetation. On its north side, the bay is having a rock built wave breaker. The tidal amplitude of this area is 1 m and during low tide this small bay is extensively exposed. The bay has got its natural recruitment of diverse bivalves and gastropods. The bay is used for culture of edible oysters and clams. It also supports the livelihood for a group of fishers who, regularly collect live and dead shells for the lime industry. The average annual clam exploitation was estimated to be 50 tonnes per year.

Thoothukudi experienced an unprecedented heavy rainfall during the period of Northeast monsoon in 2015. Starting from the third week of November 2015 it continued till the end of December 2015 with the total rainfall recorded during the period being 370 mm. The incessant heavy rain fall in the catchment area lead to continual flushing of rain water into the drain channels that discharged into the Karapad Bay

resulting in heavy inundation of the Bay. The salinity profile monitored indicated a drop from 30.5 to 0 ppt (Fig. 1). The low salinity situation which persisted for a couple of weeks in the Bay resulted in the mortality of diverse molluscan groups.

In order to understand the extent of molluscan mortality in the Karapad Bay, sampling was carried out on 15<sup>th</sup> December 2015. Soil samples were collected at six different places in the Bay from 1 m<sup>2</sup> quadrates up to a depth of 30 cm. The soil samples were sun dried, washed thoroughly and sieved through a velonscreen of 2 mm mesh size. The shells retained were collected and sun dried for couple of days. The shells were segregated, identified and its percentage composition was calculated. The analysis revealed that a mass mortality of molluscs had taken place. The molluscs

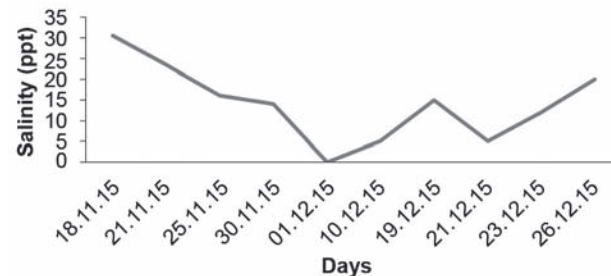


Fig. 1. Salinity fluctuation in the Karapad Bay

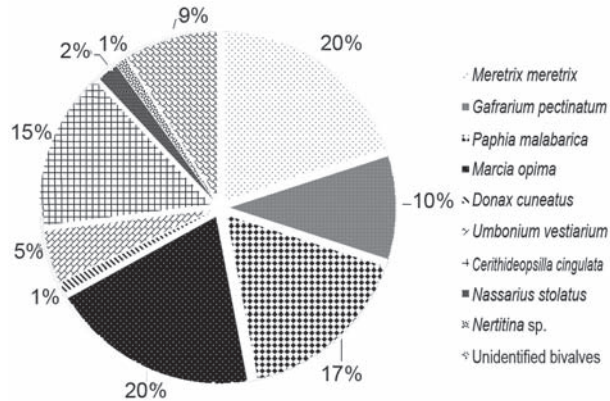


Fig. 2. Percentage composition of dead molluscs in Karapad Bay

comprised 8 species of bivalves such as *Meretrix meretrix*, *Gafrarium pectinatum*, *Paphia malabarica*, *Marcia opima*, *Donax cuneatus* and 3 species of unidentified bivalves along with gastropods such as *Umbonium vestiarium*, *Cerithidea cingulata*, *Nassarius stolatus* and *Neritina sp* (Fig. 2). Out of the 12 species recorded, 4 species such as *M. meretrix*, *P. malabarica*, *M. opima* and *C. cingulata* alone contributed 72%. The Bay is now continuously monitored every fortnight by obtaining soil samples to ascertain the recovery process and the time taken for re-establishment.