

Spatial distribution of macrobenthos in the Negombo estuary. Is it governed by the physico-chemical characteristics of water and sediment or by the sea grass cover?

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The present study was carried out to investigate whether the spatial variation of the macrobenthic community in Negombo estuary is governed by the physico-chemical parameters in the overlying water and sediment or by the density of seagrass cover. In this study, six study sites representing the mouth, body and the head of the estuary was selected and the physico-chemical parameters of the overlying water, i.e. salinity, pH, temperature, conductivity, DO and BOD₅ and the sediment salinity, temperature, pH, % of sand, silt, and clay and OMC were measured using standard methods. Further, the macrobenthic fauna and the flora inhabiting in each sample site were also sampled. The physico-chemical data and the abundance data between the six study sites were analysed using appropriate univariate and multivariate statistical tests.

Results revealed that the physico-chemical parameters of the overlying water and sediment varied significantly between the six sites with an increasing trend of salinity, and sand % and decreasing trend of OMC and silt % towards the mouth of the estuary. The macrobenthos were abundantly found in the sites where the bottom is devoid of seagrasses. Further, the macrobenthic community structure in the Negombo estuary appeared to be correlated with these physico-chemical parameters, but not with the density of seagrass cover. It is evident that the spatial distribution of macrobenthos in the Negombo estuary is governed by the physico-chemical parameters in the sediment and the overlying water but not by the density of seagrass cover.