

Effect of the substrate characteristics on species diversity of marine angiosperms in Negombo Estuary

M D Amarasinghe* and W L De Silva

Department of Botany, University of Kelaniya, Kelaniya

Diversity of marine angiosperm species (seagrasses) at Kadolkele in Negombo estuary was determined with a view to understanding the effect of substrate characteristics on diversity. Seagrass samples were obtained randomly along the three strata, which have been laid parallel to the shoreline and 10 m apart from each other.

It was found that species richness of Kadolkele seagrass bed was 2 and they were *Halodule pinifolia* and *Halophila ovalis* belonging to family Potamogetonaceae and Hydrocharitaceae respectively. According to survey *Halodule pinifolia* was the most abundant species in Kadolkele seagrass beds and there was hardly any seagrasses found the near shoreline. Shannon-Wiener index was used to determine the species diversity of seagrasses at each stratum. The comparison of Shannon-Wiener indices indicated that the diversity of the stratum close to the shoreline was significantly different to that of the other two and there was no significant difference between diversities among others. Soil pH, conductivity, organic matter content and particle sizes were measured to analyzed the substrate characteristics. The pH was ranging from 3.92 to 6.82 and conductivity was around 1.9 ms/cm. Organic matter content of the study area was very low, with value less than 10 per cent. Soil particles constituted with gravel, high course sand, course sand and silt. Multivariate procedure was used to examine relationship between seagrass diversity and substrate characteristics. Results indicated a statistically significant effect between substrate characteristics and diversity of seagrass in Kadolkele area of Negombo estuary.

* mala@kln.ac.lk

Tel: 011 2914480