

Seasonal variation of biodiversity and rock pool water quality in Wellamadama rocky intertidal zone of Matara, Sri Lanka

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Intertidal zones are considered as transitional zones that are generally occupied by organisms highly adapted for extremely fluctuating environmental conditions. Objective of current study was to determine whether there were any changes in the distribution of invertebrate macro-fauna and selected water quality parameters in rock pools of Wellamadama intertidal zone during the monsoon period and after monsoon period. The study was conducted in rocky intertidal zone of Wellamadama study area from June to November 2018. Sampling area from the study site was selected in order to represent low, mid and high intertidal zones. Fixed line transect method was applied across the sampling area, perpendicular to the rocky surface from highest high tide level to sea water margin. Four quadrats were randomly placed along the line transect in each zone to collect macro-invertebrates. Water samples were collected from selected rock pools in each zone along the line transect during the low tide. Approximately area of 1250m² in Wellamadama site was further observed for macro-algae present beyond the line transect representing intertidal zone. Sampling was done in both monsoon period (June-August) and post-monsoon (September-November). There is a significant difference in pH, conductivity, salinity, dissolved Oxygen (DO), NaCl% and macro-invertebrate species density ($P < 0.05$) between two sampling periods. About 13 species of macro-algae were also identified including *Ulva fasciata*, *Ulva lactuca*, *Sargassum sp.*, and *Padina antillarum*. Monsoonal effect on rain pattern and wave action changes cause significant impacts on DO, pH, salinity, conductivity, NaCl% in tidal pools and macro-invertebrate species density in Wellamadama rocky intertidal zone.

Keywords: Wellamadama, South-West monsoon, intertidal zone, water quality and rock pools

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