

Sea Urchin Abundance and Diversity at Selected Locations in Southern and Eastern Coasts of Sri Lanka

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Sea urchins are a vital group of herbivores in both temperate and tropical food webs because they control macroalgal cover, and consequently influence primary productivity and phase shifts on reefs. Sea urchin gonads is a delicacy in many countries. Due to the commercial value, sea urchin has identified as a cultivable marine invertebrate species. This study aims to identify the abundance and diversity of sea urchin at five selected sites in the southern (Midigama, Kottegoda, and Nilwella) and eastern coasts (Pulmudei and Trincomalee) of Sri Lanka. The study was carried out using Random transect sampling method and transects were vertical to shoreline with the length varying from 5m -20m at the selected sites to estimate the sea urchin abundance during January to August, 2018. At the field, a quadrat of 0.5m x 0.5m was laid along transects all the sea urchin species were counted within the plot. Density and diversity of Sea urchin in two regions were estimated, and their means were compared. According to the results, a total of 12 sea urchin species were detected among the five sampling sites. On the Southern and Eastern coast, sea urchin abundance is recorded as 18 individuals m⁻², and 10 individuals m⁻² respectively. Shannon Weiner index of diversity is highest in Midigama in Southern coast than other locations. Dominant species was *Stomopneustes variolaris* (Black sea Urchin) both in eastern and southern regional coasts. The abundance of *S. variolaris* was significantly higher in the Southern Coast compared to Eastern coast (P<0.05). If Sri Lanka initiated commercial catching of sea urchins, special management measures would be needed to prevent overexploitation of sea urchins. It is recommended to study other aspects of sea urchins including reproductive biology and stock size estimation. This study would provide some baseline information for the management of sea urchin population around Sri Lanka .

Keywords: Sea urchin, Abundance, Diversity, *Stomopneustes variolaris*