

Diversity and abundance of Sea Urchins at selected locations of Wellamadama and Devinuwara coastal areas, Matara, Sri Lanka and their social impact

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Abstract

Sea urchins which belong to phylum Echinodermata can be found in all marine habitats including coastal rocky shores. They are covered with sharp, brittle spines. There were many reports of injuries caused by the accidental trampling of sea urchins in the Wellamadama and Dondra coastal areas. Therefore, this study was focused to find the abundance of Sea urchins and related social effect at selected locations of Wellamadama and Devinuwara coastal areas of Sri Lanka in order to make an awareness campaign among the public, especially university students. A survey was carried out to find out the opinion of coastal zone inhabitants regarding sea urchin distribution and their impact. Sea urchin distribution was studied and abundance was estimated by random sampling at the beginning of South West monsoon 2022. A quadrat of 0.5m x 0.5m was used to calculate the density. The abundance of the urchins of these selected plots was estimated and compared. Sea urchins were taxonomically identified by standard taxonomic keys. Inhabitants of the area indicated that visitors who are unfamiliar with the area are prone to injuries caused by sea urchins. There are six to ten cases reported every year. They indicated the importance of displaying safety guidelines in the area. This study also revealed the successful use of *Caloptropis gigantea* latex to treat wounds caused by sea urchin spines. As for the data collected in this study average, sea urchin density was 16.07 ± 5.02 at selected plots. Fishermen believed that the sea urchin abundance has increased when compared to the past two or three years. The results revealed that *Stomopneustes variolaris* was the most abundant urchin species in the area and *Tripneustes gratilla* species was also found. This study indicates the requirement for more studies on the nature of sea urchin dynamics as it is ecologically important. Safety guidelines should be issued or displayed in the area where visitors are vulnerable to injuries caused by sea urchins.

Keywords: *Sea Urchins, Injuries, Abundance, Wellamadama coastal areas*