

Distribution and abundance of Black sea urchin (*Stomopneustes variolaris*) in the West coast of Sri Lanka

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Sea urchins (Phylum: Echinodermata) are considered a good source of protein and are found to be rich in bioactive compounds. This study aimed to investigate the distribution and abundance of Black sea urchin (*Stomopneustes variolaris*) in three selected locations in the West coast of Sri Lanka to develop the fishery as an export-oriented Industry. A preliminary survey was conducted from October-December 2021 along the West coast from Beruwala to Negombo-Pitipana fishery harbour for site selection for the detailed survey. Accordingly, Maggona Beach in Beruwala, Uswetakeiyawa Beach and Morawala Beach coastal rocky shore areas in Negombo-Pitipana were selected as the study sites. An underwater visual survey was conducted by snorkelling to quantify the abundance of Black sea urchin inhabiting the three locations. Three different habitats (sandy, sub-tidal rocky and intertidal rocky) where sea urchins live were identified and surveys were carried out in each habitat separately in order to estimate the area-wise and habitat-wise abundance. In each location, 20 x 5 m (100 m²) belt transects were laid to quantify the abundance of sea urchin. All transects were laid perpendicular to the shoreline, and all the sea urchins present within the belt transects area were counted and recorded for analysis. The lowest average density (0.18 individuals/m²) was estimated in sandy bottom habitats from all three locations whereas the highest average density (7.61 individuals/m²) was recorded in intertidal rocky habitats from all three habitats. The average density for subtidal rocky habitat was 4.96 individuals/m². The lowest average density (0.18 individuals/m²) was estimated in sandy bottom habitats whereas the highest average density (7.61 individuals/m²) was recorded in intertidal rocky habitats. The average density for subtidal rocky habitat was 4.96 individuals/m². The highest standing stock is estimated in Morawala site (217,800 individuals) while the lowest stock is recorded in Beruwala site (80,940 individuals). Forty percent of the standing stock is recommended as the total allowable catch and harvest needs to be taken once in every two years. Since the harvestable stock from the wild is limited, encouraging the commercial culture of sea urchins for export is recommended.

Keywords: Black sea urchin, export, standing stock, Sri Lanka

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