

ZONING OF POLHENA PUBLIC BATHING AREA ON THE BASIS OF THE DISTRIBUTION OF BENTHIC COMPONENTS IN ORDER TO ACHIEVE BETTER MANAGEMENT GOALS

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Polhena is a well-known fringing coral reef and reef lagoon located within 2 km from Matara city having high economic and ecological importance while heavily exploited by the holiday makers and fishermen on the other hand. Many of local and foreign visitors visit Polhena because the area is blessed with immaculate stretches of coral reef, enriched with high biodiversity. Over the past decades, the fringing reef cover of Polhena is being damaged by many tourists without any control. The whole reef area was selected for sampling and divided into three zones according to its geological location where zone number one on the most eastward side and number three on the most westward side of the reef. The Lowest tidal day of every month from February to December 2013 was selected as the sampling day and random sampling method was used using 30m×30m quadrat and line Intercept Transects (LIT) method for the assessment of benthic organism (Coral). Their population density and abundance estimations were calculated. GPS readings of every sampling location were recorded. The biodiversity was calculated using Shannon-Weiner index. Our results indicate that the Zone number 1 and 3 were high in biodiversity, Shannon-Weiner index values were 1.9 and 1.6 respectively while the zone number 2 was low in biodiversity. Therefore zone number 2 was selected to open for recreational activities such as swimming, snorkelling. Zone number 1 and 3 were selected to declare as restricted zones prohibiting any sort of activities including recreational and fisheries.

It was understood that zoning of a degraded reef is at its utmost importance to ensure this ecosystem sustainability while protecting its biological and ecological importance. However it is proposed that the importance of the in cooperation of Polhena reef zonation using its water quality parameters (including *E coli* levels) to the present reef zonation as it certainly assures the sustainability of the ecosystem while securing the sound health conditions of the reef users as well.

Key Words: *Benthic component, Biodiversity, Zoning*