

Coral bleaching and mortalities in some fringing reefs in Southern Sri Lanka

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Coral bleaching is linked to environmental factors. Every reef in the world is experiencing coral bleaching and there are three types of bleaching status; viz. pale coloured, partially bleached and totally bleached corals. Studies on the prevalence of coral bleaching around Sri Lanka are sparse, so that a study was carried out in three coral reefs (Weligama, Polhena and Paraviwella) in the Southern coast to evaluate the prevalence of coral bleaching and mortalities by a survey from June to August 2012. A 20 m long line intercept transect (LIT) was established perpendicular to the shore in the same depth gradient at the reefs flats randomly and the coral cover along that transect was measured. Colonies of healthy, paled, partially bleached, totally bleached, partially dead and completely dead corals were counted placing a 1 m² quadrat on one side of the transect. The mean percentage and standard error of coral cover at Weligama (n=8), Polhena (n=8) and Paraviwella (n=4) reefs were 28.1±368, 17.41±4.73, and 9.0±1.9, respectively and those values were significantly different (Kruskal-Wallis test: $H(2, N=20) = 6.65, p = .036, p < 0.05$). Hard coral abundance at those reefs were 25.58±2.9, 22.88±1.20, and 20.83±3.44 colonies m⁻² respectively. The respective mean percentage prevalence values at those reefs were 0.39, 0.35 and 0.33 for paled corals, 0.24, 0.25 and 0.22 for partially bleached corals, 0.08, 0.13, and 0.07 for bleached corals, 0.15, 0.13, and 0.11 for partially dead corals, and 0.14, 0.10 and 0.08 for recently dead corals and differences were not significant, indicating that bleaching may have an impact on all three reefs. Pocilloporidae was the dominant coral family at the three reefs having respective prevalence for paled (8.89, 7.41, and 5.99), for partially bleached (5.22, 5.29, and 5.46), for bleached (2.40, 3.03, and 1.86), for partially dead (5.47, 3.98 and 0.48) and for dead (4.00, 3.25, and 2.47). Considerably higher prevalence of coral bleaching and mortalities at Weligama and Polhena could be due to the influence of freshwater from nearby Polathumodara and Nilwala Rivers respectively which needs further investigations.

Keywords: coral reefs of Southern Sri Lanka, bleaching, mortality, prevalence

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