

A Preliminary Study on the Status of the Valithondal Coral Reef in Northern Sri Lanka

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Coral reefs are one of the most important marine habitats in shallow tropical seas. However, there are no proper scientific records on the status of the Valithondal coral reef in Northern, Sri Lanka. Therefore, the present study was carried out to identify the abundance and diversity of Valithondal coral reef at Northern coastal waters of Sri Lanka from January 2021 to May 2021. Coral Video Transects (CVT) method was carried out for sampling at the selected location assigned by the criteria of the species abundance and water clearance where water depth less than 5m by snorkelling over 100m transect lines, which covered 10m x 100m area. Altogether 69 macro-species were recorded comprising twenty-three species of hard corals, seven species of soft corals, nine species of green seaweeds, seven species of brown seaweeds, five species of red seaweeds, thirteen species of fishes, and five species of molluscs. Species richness, Shannon-H index, and Simpson's diversity index were 29, 3.113, and 0.9428 respectively. Comparatively, a medium diversity of coral families were recorded. Families Faviidae, Merulinidae, Acroporidae, Montastraeidae, Pocilloporidae, Leptastrea, and Poritidae are the hard corals. There is one soft corals under the family Alcyonidae. Green, brown, and red seaweed species were identified under three, two, and three families respectively. The families of the green seaweeds were Caulerpaceae, Halimedaceae, and Ulvaceae, brown seaweeds were Dictyotacea and Sargassaceae, and red seaweeds were Liagoraceae, Gracilariaceae, and Halymeniaceae. Identified fishes were included under six families; Chaetodontidae, Lutjanidae, Pomacentridae, Serranidae, Acanthuridae, and Haemulidae while molluscs are included in five families which are Buccinidae, Terebridae, Mactridae, Trochidae, and Muricidae. The highest species diversity was observed in the family Merulinidae (12.72%), Caulerpaceae (10.90%), and Alcyonidae (7.27%) and followed by Chaetodontidae (5.45%). The most abundant species were *Acropora cytherea* and *Porites lobata* in hard coral species, which is contributed to reef recovery in Sri Lanka. The other high abundant species are *Lobopyton* sp. and *Sinularia* sp. in soft coral species, *Caulerpa imbricata*, *Caulerpa lentillifera*, *Caulerpa parvula*, *Canistrocarpus crispatus*, *Padina boergesenii* and *Halymenia durvillei* in seaweed species, Chaetodontidae and Pomacentridae in fish species. The results highlighted that the high biodiversity and abundance of macro-species recorded in the Valithondal coastal waters, which would be protected by forcing effective management practices. Further studies are also needed to the sustainability of the coral reef ecosystem.

Keywords: Corals; diversity indices; hard coral; macro-species; molluscs; seaweeds; soft coral