

Spatial distribution of coral communities on fringing reefs at Tioman Island Marine Park, Malaysia

ABSTRACT

Monitoring coral health status is important for effective reef ecosystem management. The present study aimed to determine the coral condition and distribution at twenty sites around Tioman Island Marine Park (TIMP), Malaysia. The Coral Video Transect (CVT) method was used to survey coral, and the Coral Point Count with Excel extension (CPCe) software was used to analyse images for identification and coral coverage measurement. The findings indicate that TIMP reefs had a mean live coral cover of $48.0\% \pm 0.7$, suggesting they were in 'fair' coral condition. A total of 254 species, spanning 61 genera and 15 families of scleractinian coral were identified across all reef sites. Following the recent taxonomic classification, coral surveys and past studies revealed 355 species from 67 genera and 15 families of scleractinian coral with additional 30 new species records for TIMP, and 15 for the east coast of Peninsular Malaysia. Overall, 29 identified scleractinian species are considered rare, 86 vulnerable, and 3 are endangered. Current data also recorded 77 genera from 24 families of hard and soft corals with *Acropora*, *Montipora* and *Porites* predominantly found in reef assemblages. Overall, it can be concluded that the extensive coastal development and widespread tourism activities may have influenced the variations in coral condition and distribution in this Marine Park.