

## **Coral reefs at the northernmost tip of Borneo: an assessment of scleractinian species richness patterns and benthic reef assemblages**

### **Abstract**

The coral reefs at the northernmost tip of Sabah, Borneo will be established under a marine protected area: the Tun Mustapha Park (TMP) by the end of 2015. This area is a passage where the Sulu Sea meets the South China Sea and it is situated at the border of the area of maximum marine biodiversity, the Coral Triangle. The TMP includes fringing and patch reefs established on a relatively shallow sea floor. Surveys were carried out to examine features of the coral reefs in terms of scleractinian species richness, and benthic reef assemblages following the Reef Check substrate categories, with emphasis on hard coral cover. Variation in scleractinian diversity was based on the species composition of coral families Fungiidae (n = 39), Agariciidae (n = 30) and Euphylliidae (n = 15). The number of coral species was highest at reefs with a larger depth gradient i.e. at the periphery of the study area and in the deep South Banggi Channel. Average live hard coral cover across the sites was 49%. Only 7% of the examined reefs had > 75% hard coral cover, while the majority of the reef sites were rated fair (51%) and good (38%). Sites with low coral cover and high rubble fragments are evidence of blast fishing, although the observed damage appeared old. Depth was a dominant factor in influencing the coral species composition and benthic reef communities in the TMP. Besides filling in the information gaps regarding species richness and benthic cover for reef areas that were previously without any data, the results of this study together with information that is already available on the coral reefs of TMP will be used to make informed decisions on zoning plans for conservation priorities in the proposed park.