

## **A tale of two winds: Species richness patterns of reef corals around the Semporna peninsula, Malaysia**

### **Abstract**

The highest concentration of Malaysian coral reefs is found in the coastal area of Semporna, eastern Sabah, which is located just within the boundaries of the Coral Triangle, the area of maximum marine species diversity. The Semporna reefs consist of five major geomorphological reef types, which include lagoonal reefs inside a proto-atoll, fringing reefs, continental patch reefs, a barrier reef and a reef capping an oceanic island. Surveys were carried out in this area to compare the species richness patterns of the scleractinian coral families Agariciidae, Euphylliidae, and Fungiidae from nearshore to offshore reefs. In total, 44 species of Fungiidae, 31 Agariciidae and 15 Euphylliidae have been observed, including 12 new records for Sabah and 4 records that are so far considered endemic to northeast Borneo. Based on coral species compositions for each site, multivariate analyses suggest the distinction of two main groups that reflect a difference in reef exposure, with a gradient in increasing coral diversity from the exposed barrier reef to the relatively sheltered nearshore reefs. Some reefs have been damaged by blast fishing, a threat still prevalent in the area. Nevertheless, the high coral species diversity is remarkable, and to date, Semporna holds the record for the highest species richness of Fungiidae, which surpasses records from other areas in the Coral Triangle.