

## **Extraordinary diversity of reef corals in the South China Sea**

### **Abstract**

The South China Sea in the Central Indo-Pacific is a large marine region that spans an area of more than 3 million km<sup>2</sup> bounded by the coastlines of ten Asian nation states and contains numerous small islands. Although it abuts the western border of the Coral Triangle, the designated centre of maximum marine biodiversity, the South China Sea has received much less scientific and conservation attention. In particular, a consolidated estimate of the region's scleractinian reef coral diversity has yet to emerge. To address this issue, we assemble a comprehensive species distribution data set that comprises 16 reef areas spread across the entire South China Sea. Despite containing less than 17 % of the reef area as compared to the Coral Triangle, this region hosts 571 known species of reef corals, a richness that is comparable to the Coral Triangle's based on a standardised nomenclatural scheme. Similarity profile analysis and non-metric multidimensional scaling demonstrate that most areas are compositionally distinct from one another and are structured according to latitude but not longitude. More broadly, this study underscores the remarkable and unexpected diversity of reef corals in the South China Sea.