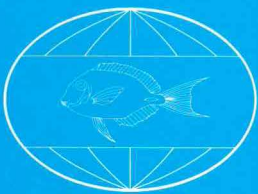


## **Patterns of coral reef degradation along the west coast of Sumatra, Indonesia**

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## Abstract

*Multivariate non-parametric characterisation of coral reef communities was used to compare reef sites under different environmental impact regimes in West Sumatra, Indonesia. The study was based on the assessment of (a) differences in abundance, size frequency relationships and spatial arrangement of dominant benthic organisms and (b) differences in abundance of selected reef fish families. Sampling based on video-belt transects and visual fish counts was carried out along permanent transects in 5 and 10 m depth. Transects were established at six selected reef sites under three different environmental impact regimes, characterised by high terrigenous sedimentation at inner shelf reef sites, fisheries with explosives at outer shelf reef sites and a comparatively low impact of both factors on mid shelf reefs.*

*The multivariate approach quantified and underlined the distinct differences among the studied reef communities. The results provided insights into the role of community patchiness patterns and question the value of general estimates of live coral percentage cover in initial reef assessments and comparisons among reef sites. The sampling of morphological lifeforms by video belt transects in combination with a visual fish family census proved to be a time and cost efficient tool to gain needed information for the sustainable management of coral reef resources.*