

O43.8**Characterizing and categorizing reef passages in the South Pacific**

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Abstract

The importance of coral reefs for Small Island States in the tropics has long been undisputed. Healthy and protected reefs help island systems (cultural, ecological, social, physical...) thrive and survive. Reef passages (RP) are home to an exceptionally diverse and abundant marine life, and they connect the open ocean to sheltered lagoon and coastal areas, with implications for ecosystems and human populations. The social and ecological roles of RPs provide multiple benefits for the islands and their peoples, but are so far poorly characterized and recognized in their own right for their multi-faceted significance. Every day, living and non-living, human and non-human objects 'pass' through these openings in various ways. This can be sediments from an island's hinterland, returning fish in spawning mode, predators such as sharks, or fishers. RPs are like 'communication zones' between inshore coastal and open waters and showcase a number of transboundary issues that need to be better understood, e.g. for conservation planning, supporting fisheries and/or protecting marine biodiversity. We used GIS-based visual interpretations of satellite imagery to find criteria for a first categorization of RPs, including parameters such as number of passages per island, passage width and depth, distance from coast or rivers. We provide a first definition of 'reef passage', and define three first categories, related mainly to their distance from the coast. For the seven selected islands in Fiji, New Caledonia and Vanuatu, a high abundance of 115 RPs was found, for which we look at some individual and overlapping characteristics and discuss how the categorization could evolve. Thereby, the study recognizes the incredible diversity of life that live from, live at, visit or just pass through RPs, highlighting the complex interactions and benefits they stand for/produce, being of ultimate relevance for local management perspectives, challenges and opportunities.

Keywords

reef passages, islands, South Pacific, marine biodiversity