

Research Article

The status and diversity of mangroves on the south coast of Papua Island, Indonesia, and a strategy for sustainable mangrove management

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(Received: November 16, 2021; Revised: March 06, 2022; Accepted: April 11, 2022)

ABSTRACT

The south coast of Papua Island, Indonesia, has one of the largest mangrove areas in the world, comprising an estimated total of 1,267,449 ha stretching from Sorong Regency in West Papua Province to Merauke Regency in Papua Province. Based on the review, the sedimentation rate, total organic carbon, and carbon storage in this area are high compared to other mangrove forests across the world. The sedimentation rates exceed the current rate of relative sea-level rise. Concerning the diversity of mangrove vegetation, 43 plant species from 27 major components and 16 minor components and belonging to 17 families have been recorded. The most common and dominant species in the area are *Rhizophora apiculata* and *Bruguiera gymnorrhiza*, with mangrove heights varying from 2.7 m to 45 m, a mangrove tree density of 372 to 1,345 stems ha⁻¹, and a basal area ranging from 24 to 90 m² ha⁻¹. A total of 103 crab species, 6 bivalve species, and 17 gastropod species have been found to inhabit the mangrove estuary environment of this area. Sustainable mangrove management can be implemented through mangrove diversity preservation, rehabilitation and restoration, sustainable development, local culture, and effective participative governance.

Key words: mangrove; diversity; sustainable management; Papua

