

'Special note from editorial office': To avoid any future complications please restructure/ modify (take proper reference) these sentences while submitting the revised version.

Detailed Document Analysis: ?

Original Research Article Spectral Discrimination of Coral Reefs on the Small Islands, Spermonde Archipelago, Indonesia

ABSTRACT Coral reefs play important ecological services such as providing foods, biodiversity, nutrient recycling etc. for human society. On the other hand, they are threatened by human impacts such as illegal fishing and environmental changes such as a rise of sea water temperature and sea level due to global warming.

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Thus it is very important to monitor dynamic spatial distributions of coral reefs and related habitats such as coral rubble, dead coral, bleached corals, seagrass, etc. Hyperspectral data, in particular,

offer high potential for characterizing and mapping coral reefs because of their capability to identify individual reef components based on their detailed spectral response. We studied the optical properties by measuring in situ spectra of living corals, dead coral and coral

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rubber covered with algae. The study site was selected in Spermonde archipelago, South Sulawesi, Indonesia because this area is included in the highest diversity of corals in the world named as Coral Triangle, which is recognized as the global centre of marine biodiversity and a global priority for conservation . Spectra were collected under generally clear skies, between 9:00 a.m. and 15.00 p.m. Central Standard Time, using a LOT-2 Spectra Corpspectroradiometer. The samples comprised living and dead coral covered with alga and coral rubber covered with algae. A total of 90 representative samples of living coral and 26 of dead coral covered with algae and 106 of coral rubber were selected randomly. Correlation analysis and Cluster analysis support that distinct differences in

reflectance spectra among categories existed. Common spectral characteristic of living corals, dead corals and coral rubber covered with algae was a reflectance minimum at 674 nm. Healthy corals, dead coral covered with algae and coral rubber covered with algae showed high similarity of spectral reflectance . It is estimated that this is due to photosynthetic pigments.

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