

Potential Contribution of Combined High-Resolution and Fluorescence Remote Sensing to Coastal Ecosystem Service Assessments

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Abstract : Although most studies have focused on assessing and mapping terrestrial ecosystem services, there is still a knowledge gap on coastal ecosystem services and an urgent need to assess them. Lau (2013) clearly defined five types of coastal ecosystem services: carbon sequestration, shoreline protection, fish nursery, biodiversity, and water quality. While high-resolution remote sensing can provide the more direct, spatially estimates of biophysical parameters, such as species distribution relating to biodiversity service, and Fluorescence information derived from remote sensing direct relate to photosynthesis, availing in estimation of carbon sequestration and the response to environmental changes in coastal wetland. Here, we review the capabilities of high-resolution and fluorescence remote sensing for describing biodiversity, vegetation condition, ecological processes and highlight how these products may contribute to coastal ecosystem service assessment. In so doing, we anticipate rapid progress to combine the high-resolution and fluorescence remote sensing to estimate the spatial pattern of coastal ecosystem services.

Keywords : ecosystem services, high resolution, remote sensing, chlorophyll fluorescence

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