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DYNAMIC CHANGE MONITORING OF MANGROVES IN QI'AO ISLAND AND ITS IMPACT ON CARBON SEQUESTRATION

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ABSTRACT

This study aims to realize the capacity of carbon storage and carbon sequestration by monitoring the temporal and spatial dynamics of mangrove wetlands for two decades, and discuss its impact on the ecological environment. Based on Remote Sensing (RS) images and Geographical Information System (GIS), this study used Object-Oriented Classification (OOC) to obtain the spatial distribution data of mangroves in Qi'ao Island, Zhuhai. The temporal and spatial dynamics and the correlation between mangrove area and carbon storage and sequestration capacity were analyzed by related formula. The results showed that the mangrove area increased significantly from 2000 to 2015, and gradually increased slightly from 2015 to 2020. In 2000, mangrove carbon sequestration was only 2077.928-3960.055 t and Carbon sequestration capacity was 386.705-690.195 t/a. Carbon sequestration in 2020is26446.35-50400.7t and Carbon sequestration capacity is 4921.7-8784.3t /a respectively. It is present that the carbon storage and carbon sequestration capacity of mangroves are linearly distributed with their area, and the increase of mangrove area in recent 20 years not only carbon sequestration and maintaining atmospheric carbon balance, but also bring good ecological benefits to Qi 'ao Island and even Zhuhai.

KEYWORDS: *Mangrove; Carbon Sequestration; Geographical Information System (GIS); Remote Sensing (RS); Qi'ao Island*