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BLUE CARBON QUANTIFICATION TO SIGNIFICANTLY REDUCE EMISSIONS

Abstract

Blue carbon, which refers to the carbon sequestered in coastal and marine ecosystems like mangroves, salt marshes, and seagrass meadows, plays a pivotal role in mitigating climate change and safeguarding marine biodiversity. This research advocates for the utilization of remote sensing analysis to assess the quantity of blue carbon stored within a specific geographical area. Remote sensing offers an efficient means of monitoring and evaluating the distribution and dynamics of blue carbon ecosystems on a large scale. By analyzing a time series of satellite images, it becomes possible to identify and map these ecosystems, with algorithms and models then applied to estimate the carbon content therein. The findings reveal a significant correlation between remote sensing parameters and blue carbon storage, thus affirming the viability of employing remote sensing techniques for estimating blue carbon on both regional and global scales.

This study underscores the critical importance of preserving and restoring blue carbon ecosystems as a central strategy for mitigating climate change and conserving marine biodiversity. It prompts deep reflection, particularly highlighting the opportunity for coastal developing countries worldwide to quantify their blue carbon reservoirs. This quantification can pave the way for the implementation of existing models, including ecosystem protection through habitat banks or the generation of blue carbon credits.