



SPATIO-TEMPORAL MAPPING, BIOMASS AND CARBON STOCK ASSESSMENT OF MANGROVE FOREST IN ABORLAN, PALAWAN, PHILIPPINES

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ABSTRACT – Mangrove forests are one of the productive biological systems that play significant functions in the context of ecosystem services and climate change mitigation through carbon capture and storage. In this study, mangrove cover change, biomass, and carbon stock were assessed in Aborlan, Palawan. Spatial and temporal mangrove distribution map for 1992-2014 were generated at 30-m resolution using Landsat satellite images. Six nested-plots with a size of 20 m x 100 m were established to determine species diversity, biomass and carbon stock. Results show that the mangrove forest in the area had increased by 372.06 hectares for the period of 22 years, attributed to community mangrove protection program. The Shannon-Wiener diversity index ($H' = 1.8993$) was very low having a total of ten true mangrove species identified dominated by *Rhizophora mucronata* Lam. Among the mangrove stands, 74.46 % of the total biomass was credited to the above-ground (213.72 t ha⁻¹) while 25.54 % was attributed to the below-ground (73.72 t ha⁻¹). The total carbon stored were 129.39 t C ha⁻¹. These values reflect the fact that mangrove forest store a substantial amount of carbon, an essential information towards the formulation of evidence-based conservation programs.

Key words: Palawan mangrove, allometric equations, biomass, carbon content, change detection, Landsat



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