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SPECIES COMPOSITION, BIOMASS AND CARBON STOCKS, ANTHROPOGENIC INFLUENCES OF PRISTINE MANGROVES IN URANI, KOTTUGAL MANGROVE RESERVE FOREST

B.W.M.E.B. Bajjala^a, A.M.R. Ahamed^{a*}, M. Dharmaretnam^b

^aDepartment of Biology, Faculty of Applied Sciences,
South Eastern University of Sri Lanka, Sammanthurai, Sri Lanka.

^bScience Navigators, Batticaloa, Sri Lanka.

*riyasahame@seu.ac.lk

Abstract

Mangroves are a group of plants that grow in the inter-tidal zones in tropical and subtropical latitudes. Most of mangroves are trees and shrubs which contain leathery and broad, evergreen leaves. About 15,670 ha of mangrove habitats which are scattered along the coastal zone of the Sri Lanka. From that Eastern province shares 28% of mangrove cover. Since they were highly isolated during the last three decades because of the civil war, there are limited research publications related to mangroves in this part of country, especially about mangrove habitats Ampara District. Present study was conducted at Urani Kottugal mangrove reserve forest in the Ampara district, eastern coast of Sri Lanka with the objectives of reporting the present Species composition and to estimate their capacity of the aboveground and belowground biomass with carbon stocks. This may be the first time specifically scientific record about Urani Kottugal mangrove reserve forest in the recent history. We used a belt transects in width laid perpendicular to the shoreline and across the water-land gradient for mangrove vegetation survey. True mangrove species in each transect was identified and counted. DBH (Diameter at Breast Height) and height were recorded and determined above and belowground biomass as well as carbon stock using published allometric equations and a conversion factor, respectively. Four true mangrove species were recorded in Urani Kottugal mangrove reserve forest. Out of that the highest species composition was recorded in *Excoecaria agallocha*. The species *Bruguiera gymnorhiza* was a critically endangered mangrove species recorded in study area. The results showed that the values of above-belowground biomass were 24.5072 Mg ha⁻¹ and 8.4854 Mg ha⁻¹. The above ground biomass stored more than the belowground pool. Infrastructure development and selected mangrove replanting programs directly influenced the biogeography of species in there. More researches are needed to understand about the ecological aspects of these mangroves. It is recommended that government should take immediate action to prevent distractive anthropogenic activities in this mangrove ecosystem.

Keywords: biomass, carbon stocks, species composition