

**SOIL CARBON STOCK OF MANGROVE FOREST IN SULAMAN LAKE FOREST  
RESERVE, TUARAN, SABAH**

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**ABSTRACT**

Mangroves can be found in 123 tropical and subtropical countries. Global warming is getting serious as there are forest continue being cut down and the greenhouse gases increases in an alarming rate. Studies have shown that mangrove forests are one of the most carbon-rich forest in the tropical. Ninety percent of the total carbon stocks in the mangrove forest are store in the soil. There are roughly 560,000 ha of mangrove forest left in Malaysia; which Peninsular Malaysia has about 100,000 ha and Sabah and Sarawak have about 460,000 ha of mangrove forest. Sulaman lake forest reserve is a class V forest reserve under the Forest Enactment 1968 which the area of 2635 Ha. The aim of this study is to find out the total soil carbon in the soil at Sulaman Lake Forest Reserve. The bulk density was collected from each each transect line as 5 transect lines were set up. Soil samples are collected from the transect lines too in order to undergo analysis by using Vario EL CHNS (Carbon-Hydrogen-Nitrogen-SULPHUR) auto analyzer to obtain the concentration of carbon. The soil carbon is then calculated by using the formulae of Soil Carbon ( $\text{Mg ha}^{-1}$ ) = Bulk Density ( $\text{g cm}^{-3}$ ) x Soil Depth (cm) x %Carbon. The soil carbon per hectare obtained is 380.5 Mg/ha and the total soil carbon of Sulaman Lake Forest Reserve was 899.8 Gigagram. This showed that mangrove had high conservation value due to the high soil carbon compared to a normal terrestrial forest.