

**FACTORS EFFECTING ON CARBON SEQUESTRATION OF THE PARKS IN BANGKOK**

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**ABSTRACT**

The purpose of this study is to estimate carbon storage in above-ground biomass, litter and soil of the urban parks, Lumpini park and Vachirabenjatas park, in Bangkok, Thailand. The data collection was done in both tree-planting areas and turf. Above-ground biomass was estimated by allometric equation. The litter biomass was dried at 80 °C for 48 hours or until the weight became constant. The carbon storage in biomass was calculated by multiplying the biomass with conversion factor, 0.47 and 0.40 for tree biomass and grass litter biomass, respectively. Soil properties and soil organic carbon were studied. Moreover, the relationship between vegetation, soil properties and carbon storage was analyzed by multiple regression analysis.

The results of this study shows that tree-planting areas had the average total carbon storage of 72.62 t ha<sup>-1</sup>, consisting of carbon storage in above-ground biomass, litter fall, grass litter and soil were 48.48, 1.49, 0.20 and 23.53 t ha<sup>-1</sup>, respectively. The carbon storage in turf was 20.18 t ha<sup>-1</sup>, consisting of carbon storage in grass litter and soil were 0.30 and 19.70 t ha<sup>-1</sup>, respectively. The mixed plot of *Peltophorum pterocarpum* and *Samanea saman* and the plot of *Acacia auriculiformis* had the highest total carbon storage in Lumpini park and Vachirabenjatas park were 116.68 and 141.67 t ha<sup>-1</sup>, respectively. The analysis of the relationship between vegetation, soil properties and carbon storage revealed that vegetation had larger effect on total carbon storage than soil properties, whose total basal area plays the major role in tree-planting areas.

**KEY WORDS: CARBON SEQUESTRATION / PUBLIC PARK / BANGKOK**

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