

Structure, Diversity, and Carbon Stock of Woody Plants after Agriculture Abandonment in Wetland

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Bang Kachao green space, the most important urban forest near Bangkok, the capital of Thailand, is the wetland on the alluvial plain of the Chao Phraya River. After the agriculture abandonment, various plants are succeeding and growing in Bang Kachao green space. This research aimed to assess the structure, diversity, and carbon stock of woody plants in three sub-districts –Bang Yo (BY), Bang Ko Bua (BKB), and Bang Krasop (BKS) sub-district. Four sample plots, 40 x 40 m-sizes, were established in each sub-district. The results found that vertical structure of woody plants had three layers in BY and BKB and two layers in BKS. The Shannon diversity index (H) of woody trees and saplings among BY, BKB, and BKS were non-significant different. The H and density of seedlings in BY and BKB were significantly ($p < 0.05$) higher than in BKS. The density of saplings in BY and BKB was significantly ($p < 0.05$) higher than in BKS, besides, height and diameter at 1.30 m above ground of saplings in BKS were significantly ($p < 0.05$) higher than in BY and BKB. Moreover, the biomass and carbon stock of woody plants in BY and BKB were significantly ($p < 0.05$) higher than in BKS. These may be caused by the different tidal current whereas the tidal current in BKS is following the tidal current of Chao Phraya River but the tidal current in BY and BKB are controlled by the floodgates. These can be the information of woody plant during succession following agriculture abandonment and can be used for further urban forest management in this wetland.

Keywords: Stand Structure, Plant Diversity, Carbon Stock, Woody Plant, Wetland, Agriculture Abandonment