

Chompoonuch Sanpop 2011: Carbon Storage in Biomass of Trees Planted in Santiphap Park, Bangkok. Master of Science (Forest Resource and Environmental Administration), Major Field: Forest Resource and Environmental Administration, Interdisciplinary Graduate Program. Thesis Advisor: Ms. Sapit Diloksumpun, Ph.D. 94 pages.

A study on carbon storage in biomass of trees planted in Santiphap Park, Bangkok, was undertaken by identifying species and number of all trees. Tree dimension was also measured to estimate aboveground and belowground tree biomass using allometric equation and the carbon storage was estimated accordingly. In addition, guideline for the park management to increase the carbon storage was recommended.

It was found that there were 58 tree species belonging to 23 families with a total number of 720 trees. The highest tree density was found in the family Annonaceae with 356 trees of 2 tree species while the lowest density in the family Rutaceae, Labiatae and Euphorbiaceae with only one tree each. *Samanea saman* (Jacq.) Merr. had the highest average diameter at breast height (DBH) and crown cover of 84.5 cm and 287.7 m<sup>2</sup>, respectively. *Peltophorum pterocarpum* (DC.) Backer ex K. Heyne was found with the highest average height of 16.7 m. The results also indicated a similar trend of aboveground and belowground tree biomass and the carbon stored in the tree biomass. *Peltophorum pterocarpum* (DC.) Backer ex K. Heyne had the greatest tree biomass and the carbon storage of 31.03 and 14.58 tonne, respectively due to their larger size and greater density. Overall, the total tree biomass and the carbon storage in the park were as high as 137.75 and 64.74 tonne, respectively.

The result also revealed that, the tree density was 333.3 trees per ha where only planting area was taken into account. According to the public park management of the Bangkok Metropolitan Administration with a spacing for tree planting of 4–8 m (390.6 trees per ha), planting of an additional 124 trees is, therefore, recommended to increase the carbon storage. Furthermore, the findings suggested that fast growing or long lifespan tree species appropriate to urban environments could rather be planted adjacent to the playground (zone C) where the tree density was minimal.

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Thesis Advisor's signature