

FOREST STRUCTURE AT DIFFERENT STAGES OF REGROWTH AT AIR HITAM FOREST RESERVE

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Introduction

Forests play important roles in maintaining the natural environment. Apart from its protective function in hydrology and maintenance of streams and river flow, they are important in the stabilization of carbon dioxide levels of the environment. In order to maintain the forests capacity to absorb carbon dioxide, we need to understand a number of aspects of the forest ecosystem. The structure of the forest will tell us which are the main stores of carbon, and which are actively turning over. The physical structure will also have to be understood in terms of diversity of species and life-forms and also in terms of processes. The project will determine the species composition of stands of different states of recovery after disturbance and also the physical structure of the stand in terms of biomass and the litter component of the system.

Materials and Methods

The study was conducted in Compartment 15 and 13 of the Air Hitam Forest Reserve, near Puchong, Selangor. Plots

between 0.1ha to 1.0 ha were established and all trees over 10 cm mapped, measured and identified. The crowns of the trees were also mapped. Biomass was estimated by a number of methods and litter accumulation and production were also monitored. The trees were re-enumerated after a year to estimate the growth and diameter increments. The plots will be continuously monitored.

Results and Discussion

The forest in Air Hitam comprises regenerated logged over forest at different stages of recovery. Some areas have trees that are well regenerated and have diameters over 50 cm while other areas are poorly regenerated and still dominated by pioneer species such as *Macaranga* and *Endospermum*. The regenerated forest has a complex structure with higher species diversity and vertical stratification while the *Macaranga* dominated stands which may be over 15 years, have a much lower diversity of plants and a simpler vertical structure. The five most common families of plants are the Myrtaceae, Burseraceae, Myristicaceae, Euphorbiaceae and Dipterocarpaceae. Litter production ranged from t 8.5 t/ha/year to over 15.0 t/ha/year which is considered high compared to previous studies conducted elsewhere in Malaysia.

Conclusions

The forest in Air Hitam Forest Reserve comprises forests stands at different stages of recovery after logging in the 60's and 70's. Some are fairly diverse in species composition whereas others are dominated by two or three pioneer species.