

Impacts of Recreation Activities on Growth and Physiological Characteristics of Upper Mountain Vegetation

ABSTRACT

This study examines the impacts of recreation activities on Mount Tahan (2187 m a.s.l); the highest mountain in Peninsular Malaysia by assessing tree diameter, height, leaf area, sapwood area, and chlorophyll fluorescence (CF) of selected species. Vegetation cover was also determined by counting the number of species. Two most dominant tree species in the study plots, i.e., *Tristania fruticosa* and *Baeckea frutescens* were selected as representative to assess the impacts on the vegetation growth. Both tree species dominated over 50% of total vegetation in both areas. Meanwhile, CF was determined on *T. fruticosa* since this species was the only broadleaf species found in both areas. Four plots sized 20 m X 20 m representing each disturbed and undisturbed were established in camping and trampling areas. The total number of plant species recorded was 29 in both camping and trampling areas but was found less in disturbed plots. Impacts of trampling and camping on all the parameters at higher altitude in disturbed plots were significantly different from those in the undisturbed plots. For trampling, all growth parameters taken in disturbed plots were found lower than in undisturbed plots. For camping, however, the mean values of vegetation cover were found lower in disturbed plots compared to undisturbed plots but the mean values of tree diameter, height, leaf area and sapwood area were found greater in disturbed than in undisturbed plots. In contrast, all CF parameters were found higher in disturbed plots for both trampling and camping areas.

Keyword: Recreation activities, Physiological characteristic, Chlorophyll fluorescence, Upper mountain