

**DAY ROOSTING BEHAVIOR OF THE COMMON FLYING FOX,  
*PTEROPUS GIGANTEUS GIGANTEUS* (BRUNNICH)  
IN THE ROYAL BOTANIC GARDENS, PERADENIYA**

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The arboretum is one of the most important areas of the Royal Botanic Gardens at Peradeniya. It comprises more than 1000 trees belonging to different families. The arboretum has both scenic and educational value. However, certain trees in the arboretum were found to be under threat due to a recent invasion by one of the world's largest bat species, *Pteropus giganteus giganteus* (Pteropodidae). They are known to feed on fruits, flowers and leaves of most tropical trees. They are also known to act as pollinators, seed dispersers and even act as pests. Their day roosting camps are large tropical trees, reaching canopy and sub canopy levels.

Bat roosting and their impact on roosting trees were investigated in the Royal Botanic Gardens using a tree survey and a bat survey. In the tree survey, tree parameters such as tree height, dbh (diameter at the breast height), crown width, crown depth as well as the intensity of bats were measured in all the trees in Section B of the Royal Botanic Gardens. In the bat survey, two bat roosting trees were selected from each of *Dipterocarpus zeylanicus* (Dipterocarpaceae), *Acacia auriculiformis* (Fabaceae) and *Pometia pinnata* (Sapindaceae) in the arboretum. The number of bats and the percentage leaf cover per selected branches of the three different tree species were recorded at seven-day intervals. The data collected over a period of three months was analyzed using the statistical package SAS - 97.

The statistical analysis indicated that the roosting behavior of *Pteropus giganteus giganteus* is dependent on tree parameters such as dbh, crown width, crown depth and crown volume but not the tree height. The probability of roosting also depended on the tree species where trees with dense foliage cover were most preferred. A vertically stratified roosting pattern was seen with tree height and crown depth, where the middle areas of the crowns were preferred. The crowns of day roosting trees were damaged and defoliated by the bats. However, some crowns refoliated after the bats left the crowns.

According to the findings of this survey, *Pteropus giganteus giganteus* mostly prefer trees with large crowns for day roosting and they show temporal as well as spatial variation in roosting. The probability of roosting differed with the tree species. Bats mostly preferred the middle crown area of the three tree species for day roosting. Also, they showed a vertically stratified roosting pattern within the crowns of *Dipterocarpus zeylanicus*, *Acacia auriculiformis* and *Pometia pinnata*.