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Diversity of understorey vegetation in lowland, sub montane and upper montane forests of Peak Wilderness sanctuary through the Hapugasthanne trail

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The study examined the diversity and composition of understorey vegetation of lowland, sub montane and upper montane forest formations in Peak Wilderness sanctuary. There were no quantitative studies of the understorey vegetation in the Peak Wilderness Sanctuary representing all these forest formations. The study lies on the southern fringe of the Peak Wilderness Sanctuary through the trail from Hapugasthanne to Sri Pada. Systematic sampling was carried out and 400 m distances kept in between two locations. Three sampling plots were laid out in one location from 50 m distance to each other. Fifteen, Nine and Nine sample plots were laid out in lowland, sub montane and upper montane forest formations, respectively. All the plants below 10 cm dbh (diameter at breast height) recorded in 5*5 m plots and 1*1m square plots were laid out to record the seedlings. Unknown species were identified comparing with the specimens at the National Herbarium of the Royal Botanic gardens, Peradeniya. Diversity indices and Important Value Index were calculated, to compare the diversity and to express the

dominance of particular species in different forest formations. A total of 617, 361 and 227 individuals and 104, 68 and 57 understorey species were found from lowland, sub montane and upper montane forests, respectively. There are 54 (52 %), 40 (59%) and 35 (62 %) endemic understorey species in lowland, sub montane and upper montane respectively. Of the total of species 50 (48%), 38 (56 %) and 26 (45%) were recorded as true understorey species in three topographic positions. It represents nearly 50% of the total number of species. It recorded 27, 26 and 15 endemic species as true understorey. The most common family in all three-forest formations was the family Euphorbiaceae. It represents 22 % of species in lowland, 40 % of species in sub montane and 36 % of species in upper montane forest formation. *Agrostistachys coriacea* was the dominant species in three forest formations. Results of this study showed that there were no significant difference between understorey diversity and seedling diversity in three forests but there are slight differences in diversity along the elevation. In this study, number of endemic species percentage increase with increasing elevation.