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Floristic diversity of three selected sites of Pidurutalagala Forest Reserve in Sri Lanka

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Pidurutalagala (Mount Pedro) is the highest mountain in Sri Lanka. However, its biodiversity value is being hidden due to lack of quantitative floristic data of the mountain. In the study a vegetation sampling was carried out in 25 randomly oriented plots (10 × 10 m²) on three different sites in two districts naming, Lover's Leap, camp road (Nuwara Eliya District) and Loolkandura (Kandy District). Within each plot, plant species and diameter at breast height (dbh) of all individual trees (dbh > 5 cm) were recorded, in order to enumerate the tree layer and the understory. In each plot, four 1 × 1 m² sub plots were demarcated to investigate the ground layer where the species and the number of individuals per sub plot were recorded. In all the three study sites, tree, understory and the ground layers were separately considered for their floristic diversity by means of species richness, relative density, relative abundance, relative basal area, important value index (IVI) and biodiversity indices: Menhinick's index, Shannon index, etc. Multivariate approach was used to identify the forest types and Sorensen similarity index was used to find the similarity of the three study sites. In the study, a total of, 2031 individuals was enumerated and 105 plant species belonging to 58 genera and 33 plant families were revealed. The Lover's leap area consisted of 44 species belonging to 29 genera and 17 families while the camp road recorded 47 species belonging to 26 genera and 18 families, whereas Loolkandura recorded 65 species belonging to 43 genera and 22 families. Of the total enumerated species, 57% were endemic to Sri Lanka. Based on IVI, *Acronychia pedunculata* (ankenda) was recorded as the most dominant plant in the tree layer. *Eurya ceylanica* and *Psychotria zeylanica* were the dominant species in the understory and ground layer respectively. The highest value for Menhinick's index was recorded in the tree layer. Loolkandura was recorded as the site with the highest plant diversity. Cluster analysis revealed two distinct forest types based on the species distribution. Supporting this, Loolkandura was distinct from camp road and Lover's leap by means of elevation, forest structure characteristics and climatic factors. Loolkandura site (1,000 – 1,500 m amsl) was identified as the sub-montane forest type and Lover's leap and camp road sites (above 2,000 m amsl) together were identified as the upper-montane forest type.

Keywords: Pidurutalagala, montane forests, floristic diversity