Assessment of Floristic Diversity and Species Composition of Badagamuwa Conservation Forest

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Badagamuwa conservation forest is a semi natural forest located on the wayside of Kurunegala-Dambulla road (A6 road). The forest is resulted from forest regeneration followed by the abandonment of the plantation for several decades. The forest has been subjected to some studies especially identifications of species. However, interpretation of data is mainly limited to a list of species found in the forest. Quantification and calculation of indices of flora have been not developed in the past. As the forest cover has led to destruction by economic activities and development projects in the area, it is important to assess the biodiversity in the forest for the implementation of appropriate conservation management practices. Accordingly the objective of this study was to assess the floristic diversity and species composition of Badagamuwa conservation forest. The experiment was carried out in the forest by randomly allocated 20 sample plots of 20 m × 20 m. The number of seedlings, saplings and trees were identified and recorded to species level. Diameter at breast height of all plant species above 10 cm and height of all plant species above 1.3 m were measured along with their numbers. Shannon - Weiner index, Simpson diversity index and Important Value Index were calculated. The study plots were documented with 75 species belonging to 28 families. The most dominant tree species identified were *Swietenia macrophylla* (introduced), *Artocarpus hirsutus* (introduced), *Artocarpus heterophyllus* and *Tectona grandis* (introduced). According to the relative abundance, the most abundant plants species detected were *Polyalthia korinti* (12.1%), *Stachytarpheta urticifolia* (12.0%) and *Glycosmis angustifolia* (10.5 %) which all were native shrub layer species. Introduced species such as *Swietenia macrophylla, Tectona grandis, Artocarpus hirsutus* and *Berrya cordifolia* were dominant in saplings and trees compared to native/endemic species. Shannon-Weiner index and Simpson diversity index were 2.6±0.22 and 0.875±0.08 respectively.

Keywords: Badagamuwa, Diversity, Shannon-Weiner index, Simpson's index

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