

**Floristic Survey in Kekanadura Forest Reserve in Matara District of Southern Province of Sri Lanka****Palihawadana A.\* and Singhakumara B.M.P.**

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**Abstract**

Kekanadura Forest reserve, with an extent of 333 hectares is situated in Matara District of the southern region of Sri Lanka. This national Man and Biosphere forest reserve represents the lowland dipterocarp rain forest type. Being situated closer to the boundary of intermediate zone, it has unique edaphic conditions. Considering vegetation characteristics some researchers argue that this forest should be categorized under intermediate zone-low country forest. This area receives 1700 mm mean annual rain fall, and the mean temperature is 31°C.

The main purpose of conducting this baseline survey was get correct idea on existing flora which are threatened by the Southern Highway project, as its next stage up to Kataragama has been designed to run across one section of the forest reserve and presence of the plants which are subjected to high commercial exploitation like *Gyrinops walla*. Due to the reason of closer proximity to the University of Ruhuna, this type of baseline survey will be beneficial for the future academic works too.

The present analysis is based on data collected from 24 plots across 6 line transects. Height and DBH of all the plants above 5 cm DBH found within the plots were counted. Over all 182 plant species are recorded within this forest reserve. Most of them are common to other rain forests but some of the rare species like *Exacum trinervium* are also recorded from marginal areas where anthropogenic pressure is high. This forest surrounds a water reservoir and therefore it will be important to retain the forest cover as it is to prevent soil erosion and to minimize siltation of the tank. The forest area includes 62 ha of *Pinus* plantation which area is currently undergoing natural regeneration with native species.

The Shannon index of diversity is 1.61 in the natural forest area, while it is 1.35 for the *Pinus* plantation. Evenness of 0.77 is attributed to plants within the natural forest and 0.76 for trees found in the *Pinus* plantation area. The dominance of natural forest and *Pinus* plantations are 0.22 and 0.23 respectively. Highest Important Value Index (IVI) is marked for *Dipterocarpus zeylanicus*, while the dominant family found in the canopy layer is Euphorbiaceae, which represents 14 species of plants. Threatened species like *Gyrinops walla* and *Artocarpus gomezianus* were recorded lower number of individuals.

The natural forest area recorded 1,962 plants per hectare for the plants above 5 cm DBH, which belongs to 92 genera and 43 families. According to the analysis of diameter at breast height (DBH) and population density of the trees in general, it is recorded that all species with typically very large trees have few individuals. The average DBH is 11.6 cm. Smaller sized species have a large numerical representation. *Dichapetalum zeylanicum*, *Humboldtia laurifolia*, *Memecylon* sp., and *Dracaena thwaitesii* are the dominant undergrowth plants. In

natural forest area 9.35% of the plants were above 25 cm DBH while it was 19.2 for *Pinus* plantation. It was also revealed that 53% of the plants in *Pinus* plantation are found 10 cm dbh. That means the gradual replacement of *Pinus* plantation by native species, because juveniles of the *Pinus* plantation are not being found in below the sub canopy level.

Shape of this land area tended to apply a more edge effect on the forest reserve, while it also caused increased anthropogenic pressure. This is especially true regarding the fauna. However, the hermitage and influence of the Buddhist monks have helped to mitigate such harmful influences and has helped to protect the nature

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