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NATURAL REGENERATION OF WOODY PERENNIAL SPECIES

UNDER *Pinus caribaea* PLANTATION

IN YAGIRALA FOREST RESERVE

BY

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ABSTRACT

The natural regeneration of woody perennial species under *Pinus caribaea* plantation in Yagirala Forest Reserve was studied. This Reserve is in the wet zone lowland evergreen forest type in Sri Lanka. In this study, naturally occurring woody perennials were observed in a 1.8 hectare permanent sample block of unthinned 22 year old pine plantation. A 10 by 10 metre grid system, which will also be used for management purposes and which will form the basis of a Geographic Information system (GIS) database, was in place. The natural forest was selectively logged and the area now plantation was clear felled before planting. This caused considerable change in the floristic composition of the surrounding forest. Each individual woody perennial on the 1.8 hectare block having $dbh \geq 1$ cm was entered into a database and its relative position recorded on a location map which also included all pine trees. 1206 stems of pine were found on the 1.8 ha block (670 stems per ha and 19.72 m^2 of basal area per ha).

Also, 51 species belong to 42 genera and 24 families were found giving a total of 1252 individual woody perennial observations (696 stems per ha and 5.07 m² of basal area per ha, excluding pine). Herbarium specimens were collected for all species using standard methods. Species composition analysis and Importance Value Index were determined. It was shown that there is very little correlation between the frequencies and basal area of pine and other species. The probable source of regeneration and seed dispersal methods of the species were studied. The most abundant tree species were dispersed by wind and birds. It is shown that this pine plantation has a diverse and dense floristic composition.

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