A COMPARATIVE STUDY OF REGENERATION 0F PLANT SPECIES IN TWO DISTURBED AREAS AT SEETHA ELIYA PROPOSED FOREST RESERVE

DITHYA KUMARA ANGAMMANA

493086

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Abstract

Seetha Eliya is a montane forest patch situated near Hakgala Botanical garden with very limited literature. **Seven years** ago to errect a high tension line a strip of forest has been cut leaving stumps of about 1m height. A similar strip close to the above has been cut **three years** ago for the same purpose.

This project was carried out to find the plant species that can survive such disturbances and to see the changes that occur in nature. Since the affected area was in an undulating terrain the sampling was carried out at high (1820-1840 m), mid (1760-1780 m) and low (1700-1720 m) elevations. A total of 36 plots of 8 x 25 m have been demarcated and plants over 05 cm diameter at 01 m height were enumerated. Seedlings and saplings were also enumerated. Comparisons were made with the adjacent natural forest at the three elevations. Similar studies were carried out on *Pinus* and *Eucalyptus* plantations and natural gaps in the forest to find the seedlings and saplings establishment.

A total of 37 tree species including 20 endemic species were recorded in all the areas examined. Out of the tree species recorded, 36 species were found in natural forest where as only 22 and 18 species were recorded in 03 years and 07 years stands respectively.

The percentage of coppiced plants in the three years stand from high, mid and low altitudes were 43.3%, 50.8% & 52%. Although a similar pattern was seen in seven years stand the survival rate was not obtainable accurately due to decomposition of stumps. The study also revealed the inability to coppice in 11 tree species including 05 endemics namely, *Adinandra lasiopetala, Apodytes gardneriana, Elaeocarpus montanus, Litsea ovalifolia* and *Semecarpus coriacea.*

In addition to regeneration from coppiced plants, in the seven years old stand 17 tree species were found established by seedlings. Saplings were represented by 27 tree species and the density of saplings in natural forest was higher than seven years old stand. Saplings were not found in three years old stand. Seedlings of 23 tree species were recorded and higher densities were found in three years stand and natural forest than seven years stand. The study area also comprised 17 shrub species and five of them were found only in three years stand.

The access provided by such disturbances show two environmental impacts. One is the easy pathway for the villagers, which increases the human activities in the forest. The other is the clearance provided for the establishment of invasive species such as *Cestrum aurantiacum.* However at present this was mainly found at the lower elevations of three years stand.

A total of 12 tree species and 06 shrub species were recorded in the 04 natural gaps. *Rhododendron arboreum* was the only tree species found in the *Pinus* and *Eucalyptus* plantations.

Further monitoring of the area will help to identify the long term effects of clearing and the species which can be used for restoration work.