

NATURAL REGENERATION IN KEKILLA FERNLANDS IN THE PERIPHERY OF SINHARAJA WORLD HERITAGE SITE

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In tropical moist climate *Dicranopteris linearis* (Kekilla) fernland can develop as a result of rain forest clearance followed by frequent burning. In Sri Lanka *D. linearis* fernlands are capable of suppressing the natural regeneration of rain forest. Sinharaja World Heritage Site is one of the least disturbed and biologically unique lowland rain forest now remaining in Sri Lanka. Some areas of the periphery of Sinharaja are covered with *D. linearis* fern. Natural regeneration dynamics of soil seed banks need to be studied as a possible source of regeneration for forest restoration in these fern lands.

This study was carried out to understand the natural regeneration of soil seed bank in Kekilla fernland with reference to surface soil disturbance and trophographic levels in the periphery of Sinharaja World Heritage Site.

Three sites of Kekilla fernlands were selected for the study. Two surface soil disturbance treatments were applied to each site. The first treatment (Root Removal) was applied at the beginning of the study. The next treatment (Till) was applied to each site after six months from the first treatment. Seeds in the soil were allowed to germinate and seedlings were counted once in two weeks during the first four months. After four months the seedlings were recorded once a month. Transects were laid out in each site to understand the floristic composition in surrounding vegetation of *D. linearis* fernlands.

Seedlings of 35 taxa were identified during the period of study. The study revealed that both soil disturbance treatments can facilitate the establishment of herbs, shrubs and trees in the fern land dominated by *D. linearis*. Results showed that herbs, shrubs, grasses represented the greater proportions of seedling recruitment than pioneer trees. Seedlings of primary forest species were not existent.

Species composition of soil seed bank in three-topographic positions was not significantly different. Numbers of species and seedling density were greatest in root removal treatment. Seedlings of primary forest species found in surrounding vegetation were not regenerating in the plots studied. Only few pioneer tree seedlings were found in the plots, representing surrounding vegetation of Kekilla fernland.