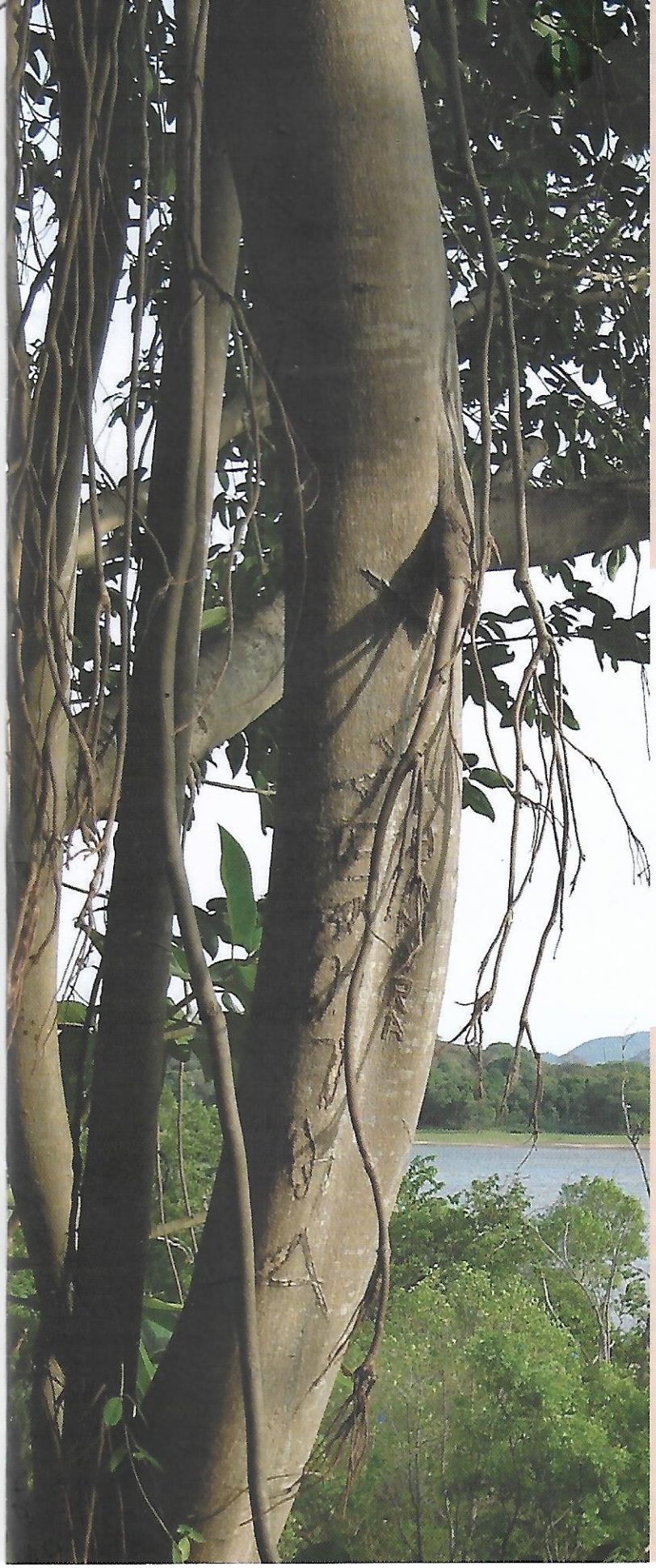

Research Symposium on Dry Zone Forests

24th October 2019
BMICH, Colombo

Proceedings
Abstracts of papers

Forest Department
Ministry of Mahaweli Development and Environment

Can Short Term Assisted Natural Regeneration initiate Restoration of Dry Forests ?

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Abstract

Anthropogenic disturbances have degraded vast areas of dry forests in Sri Lanka. Assisted Natural Regeneration (ANR) methods facilitate the emergence and growth of seedlings of forest tree species in degraded areas. However, the duration of ANR for restoration remains open. We evaluated long term and short term cycles of ANR to restore degraded forest land. The NIFS-Popham Arboretum located in Dambulla, (07°51'34"N, 80°40'28"E), Sri Lanka has 3.7 ha of restored forest land after 24 years of ANR (1962-1986), and 7.8 ha of woodlands managed by ANR from 1989 – 1994. In addition, a 3.1 ha of control area of non-managed shrubby land was kept for comparison. To determine the restoration potential of ANR over a short term, we determined the richness and diversity of tree species in the three vegetation types in the Arboretum: Restored forest land, Woodlands and the Control non-managed land. Nine 10 x 10 m plots were randomly placed in each vegetation type. Dominance of tree species within each vegetation was calculated using Importance Value Index (IVI). The forest tree species in the woodland showed a higher IVI than the non-managed areas. The shrubby pioneer species in the non-managed areas had a higher IVI than the similar species in the Woodland. The restored forest land and Woodlands showed higher diversity and species richness compared to the non-managed area. This indicates that light demanding scrubland species were dominant in non-managed area and significantly less in managed areas. The diversity and species richness values between the restored forest land and the woodlands did not show a significant difference. These results show that even a short term ANR process, can also initiate and accelerate natural restoration of degraded dry forests.

Key words: ANR; Dry forest; Dominance; Diversity; Richness; Restoration.