436/D

Diversity and conservation of endemic flora in Waturana fresh water swamp forest: a critically endangered habitat in Sri Lanka

Gothamie Weerakoon[1*] and H S Kathriarachchi [2]
[1]*Department of Zoology, University of Colombo, Colombo 3, Sri Lanka*
[2]*Department of Plant Sciences, University of Colombo, Colombo 3, Sri Lanka*

Waturana (6˚ 37'- 6˚ 38' N, 80˚ 11'- 80˚ 12' E), the last remaining fresh water swamp of 12 ha, is an abode for three site specific endemic species, *Mesua stylosa, Stemonoporus moonii* and *Areca concinna* and many globally and nationally endangered plant species. Comprehensive floristic survey was carried out to determine the floristic richness, species distribution, life form variations and the conservation status of endemic plants in this habitat. Quantitative vegetation sampling was performed by laying twelve quadrats, each 100 m^2, in a stratified random manner representing different micro-habitats.

The plant species in the total 12 ha enumerated 172 species of vascular plants represented in 74 families and 138 genera. Out of the total species, 75 species (44 %) were endemics and the density of the endemic species was 6.25 ha^{-1}. Endemic species were comprised by different life forms: 50.7% trees, 32.0% shrubs, 2.7 % lianas, 6.7 % orchids, 2.7 % ferns and 5.3 % aquatic plants. Highest number of endemic species were recorded for the family Dipterocacarpaceae having six endemic Dipterocarp species. At national level four critically endangered, ten endangered and eight vulnerable species were recorded. Most abundant endemic tree species was Macaranga digyna (Euphorbiaceae). Most dominant endemic sapling and seedling species were Stemonoporus moonii (Dipterocarpaceae) and *Calamus* radiatus (Arecaceae). Principal component analysis based on plant abundance data revealed the existence of three plant communities. Based on relative abundance Macaranga digyna was the most abundant endemic tree species in all three communities. Garcinia quaesita, *Mangifera* zeylanica and *Canthium campanulatum* were found to be the most abundant endemic saplings. The most abundant endemic seedling species were Macaranga digyna, Stemonoporus moonii and Calamus radiatus in three different communities.

The fate of these species in Waturana could be symptomatic of a large number of rare plant species distributed in small fragmented patch. Site specific endemics could be relict as last remnants of taxa whose distribution has shrunk and where the human - induced habitat destruction rendered the species critically endangered. High habitat specificity and small population sizes were two distinct biological features that complicate the conservation of these endemic plant species in Waturana fresh water swamp forest.

*gothamiew@sltnet.lk Tel: 071-5307797