Paper ID: IRCUWU2023-399

Floristic features of plant associations harbouring S*temonoporu*s species in the peak wilderness conservation area

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The genus *Stemonoporus* of the Family Dipterocarpaceae is the most speciose endemic genus in Sri Lanka, and its species are mainly confined to the wet zone of Sri Lanka. Knowing the floristic features of the vegetation with different *Stemonoporus* species is crucial in determining conservation measures for these threatened species. The present study aims to determine the floristic features of plant associations with *Stemonoporus* species in the Peak Wilderness Conservation Area (PWCA) and investigate the threat of invasion by alien exotic plant species on the site. Twenty two 10 x 15 m^2 experimental plots were established over a 72 km^2 area of PWCA at randomly chosen locations where *Stemonoporus* species were present. Vegetation taller than 1 m was recorded and enumerated if the diameter at breast height (dbh) of plants was ≥ 10 cm. Seedlings of *Stemonoporus* species (≤1 m tall) were recorded in 2 x 2 m^2 quadrats in each plot. Results of the Detrended Correspondence analysis of 133 plant species in 22 experimental plots revealed three major clusters. *Agrostistachys borneensis* and *S. rigidus* were among the most dominant species in both clusters 1 and 2, but other secondary forest species such as *Kendrickia walkeri* and *Pothos hookeri* were also abundant in the latter, indicating rather mild disturbances occurred in the same vegetation. Two *Stemonoporus* species, namely *S. oblongifolius* and *S. rigidus* were found to be grown in plots in Clusters 1 and 2. *Actinodaphne elegans*, *Lasianthus gardneri* and *Ardisia solanacea* were the dominant species in cluster 3, and *S. gardneri* and *S. rigidus* were found to be grown in this plant association. The stem density (≥ 5cm) (p=0.799) and species richness (p= 0.561) in the vegetation of these three clusters were not significantly different. Further, alien exotic *Clidemia hirta*, a plant species with weak invasive potential was reported in more than 50% of the established plots. Seedlings of all recorded *Stemonoporus* species except *S. gardneri* were found in the area. The distorted population structure of *S. gardneri* could be due to prevailing threats to its natural regeneration or to the seedling bank, and therefore, it is essential to implement appropriate conservation measures to protect this *Stemonoporus* species.

Keywords: Dominant species; Endemic plants; Invasive plants; Plant diversity; Stem Density; Threatened Species

Acknowledgement: Financial assistance provided by Botanic Gardens Conservation International, United Kingdom (Grant No: C9404347)