

QUANTIFICATION OF HABITAT REGENERATION AFTER REMOVING INVASIVE PLANT *Ulex europaeus* IN HORTON PLAINS NATIONAL PARK

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Invasive alien species constitute a major threat to biodiversity, which includes incidents of species extinctions caused by invasive animals. However, while invasive plants are known to affect to ecosystems and their native biota, there exists a deficiency of studies demonstrating their long-term impacts and regeneration after eradication attempts. Horton Plains National Park (HPNP) is a hotspot of biological endemism in Sri Lanka. Central Highlands, including HPNP was declared as a UNESCO World Heritage, owing to the large number of endemic flora and fauna inhabits it. Invasive plants have rapidly spread in HPNP during the last few decades, *Ulex europaeus*, *Aristea ecklonii* and *Ageratina riparia* being the dominant. It has reduced the availability of grassland for sambar deer and other animals causing potentially significant threats to biodiversity. Present study focused on quantification of habitat regeneration after removing *Ulex* in 2016 through a project that attempted to eradicate *Ulex* from HPNP. A systemic ground survey following a quadrant design was carried out to quantify regeneration in *Ulex* removal area totaling to about 53.7 ha. Five out of eight cleared blocks were randomly selected to estimate the relative coverage of *Ulex* and other species regenerated. A total 133 plots (1 m x 1 m plot per ha) were surveyed using the visual encounter method to count all invasive and native plants regenerated. Known invasive plant *Aristea ecklonii* and *Pteridium revolutum* were heavily abundant in *Ulex* removal areas. *Garnotia exaristata*, *Pennisetum clandestinum* *Taraxacum javanicum* and *Emilia sonchifolia* were the most abundant among non-invasive native species found. *Ulex* regeneration was notably high in regeneration plots and there was significant difference in *Ulex* abundance between the plots that were cleared three months and six months ago respectively (paired t-test; $p = 0.034$), regeneration being rigorous in the latter. Cluster analysis also supported the above conclusion with dissimilar associations of regenerating species between two types of plots with different time since last removal. Therefore the study confirms the need for continued removal programs for the success of controlling *Ulex* in HPNP. This study facilitated to identify a proper management strategy for removal of IAS distribution and establishment of controlling mechanism for IAS in HPNP.

Keywords: *Invasive alien species, HPNP, Ulex europaeus*