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PREDICTING THE SPREAD OF "*Myroxylon balsamum* (L.) Harms" IN UDAWATTAKELE FOREST RESERVE

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Spread of invasive alien plants cause significant negative impacts to ecological processes and functioning of ecosystems. Identification of their spatial spread is vital to draw up management plans in controlling invasive alien plants. This study was focused on spatial mapping of the current distribution of the invasive tree species *Myroxylon balsamum* (L.) Harms at Udawattakele Forest Reserve and tried to predict the spread of this plant for next fifteen years using a spatial dynamic model.

Hundred ground truths from 22 field plots (3 m × 6 m), systematically established along the main nature trail of the Forest Reserve were obtained. Landsat ETM+ and GeoEye1 satellite image data sets were used to identify the distribution of *M. balsamum* at present. All satellite images were classified using Supervised and Unsupervised classification methods. The Soil Adjusted Vegetation Index was used for unsupervised classification. Results indicated that *M. balsamum* has a scattered distribution within the forest at present, but more confined to the southern part of the forest. Probability of plant growing was identified as 0.15. According to these results, the best model was emphasized on the average distance between two trees which was about 5 m, because changes in the distance between two trees have clearly shown to effect the *M. balsamum* distribution in the study area as per the Dynamic PCRaster Model. *M. balsamum* has rapidly invaded the Udawattakele Forest Reserve over the recent past. If necessary action is not taken to control this invader, it will encroach almost all areas of the Forest Reserve in the next fifteen years.

Keywords: *Myroxylon balsamum* (L.) Harms, Udawattakele Forest Reserve, Alien plant invaders