MAPPING AND PREDICTING THE SPREAD OF "*Myroxylon balsamum*" IN UDAWATTAKELE BIOSPHERE FOREST USING GIS AND RS

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Spread of Invasive Alien Plants cause significant negative impacts to ecological processes and functioning of ecosystems. Therefore research on Invasive Alien Species has been growing in the recent years. Identification of the spatial spread of invasive plants is very important to draw up management plants to control invaders. This study was focused on the spatial mapping and predicting the spread of *Myroxylon balsamum* at Udawattakele Forest Reserve for the future years.

The main objective of this study was to map the distribution of *Myroxylon balsamum* using geospatial technologies and develop a spatial dynamic model to identify their potential spread in the next fifteen years. In this study systematic sampling method was used to establish 22 field plots for obtaining floristic data. About 200 ground truths were collected and Landsat TM/ETM+, GeoEye1 and Google Earth Images were used to identify the distribution of plant from 1994 – 2013. All satellite images were classified using supervised and unsupervised classification methods. Five vegetation Indices were used under the unsupervised classification namely SR, VI, NDVI, TNDVI and SAVI. The study identified that this invader is a dominant among other species in the forest. The study also described the change in the spatial spread of *Myroxylon balsamum* for past ten years and predicted its spread for the next 15 years using dynamic PcRaster model. It was suggested that *Myroxylon balsamum* was a rapidly spreading invader at Udawattakele Forest Reserve and if not necessary action will be taken for its control, this invader will encroach almost all areas of the forest in the next fifteen years.