

**Is there a threat of *Alstonia macrophylla* on biological diversity in
the Kottawa forest reserve?**

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Alstonia macrophylla Wall. Ex G. Don is an alien tree species that has been introduced to Sri Lanka many years ago due to several reasons such as fast growth rate, rapid establishment, and timber value etc. At present, expansion of its distribution range has been observed. This situation could clearly be seen in Kottawa Forest Reserve in the Galle District. As there have been no detailed studies done on the spread of *Alstonia macrophylla* in Sri Lanka, this investigation was carried out and the Kottawa forest was selected as the study area. The primary objective of this study was to compare diversity indices and dominance value of the *Alstonia*-dominant areas with the control site consisting of undisturbed natural forest area. Nine plots were laid out within the forest; three plots in an area where *Alstonia* is dominant, three plots in natural forest area and three plots in the area where *Pinus* is dominant. Plots were laid out randomly within the study area with the size of 5 m X40 m. All individuals of the woody perennials which exceeded 5 cm diameter at breast height (DBH) in the plot were identified and their DBH were measured. Shannon Wiener Diversity, Dominance and Evenness values for disturbed and undisturbed areas were calculated. Importance Value Index (IVI) was calculated in order to estimate the influence of importance of a plant species in the community.

Diversity values obtained for natural and *Alstonia* dominance areas were relatively lower than the diversity value of Undisturbed Natural site. IVI of *Alstonia macrophylla*, which was >1.00 was significantly higher than the highest IVI value of the species in the natural area. The only other species which has an IVI value greater than 1.00 is *Pinus*. Therefore this study has shown that the *Alstonia macrophylla* plays a significant role in study area. Further studies are recommended to clearly identify the invasiveness of *Alstonia macrophylla* in the lowland wet zone forests in Sri Lanka.

Key words –*Alstonia macrophylla*, Kottawa forest reserve, Shannon Wiener diversity index, Importance Value Index