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Influence of *Pinus caribaea* and *Alstonia macrophylla* invasion on floristic composition of the buffer zone in Kottawa forest

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Kottawa forest is an isolated patch of lowland rain forest and its buffer zone is threatened by invasive alien plants ((IAS). Among IAS, wind dispersed seeds of both *Alostonia macrophylla* and *Pinus caribaea* may invade the forest gaps in the core area of Kottawa forest. The present study aimed to assess the influence of IAS at the buffer zone of the Kottawa forest in relation to the floristic composition of the area. Vegetation sampling was done using randomly selected 11 plots (10 m x 20 m) representing the forest (0.14 km^2) buffer zone area. The girth at breast height (GBH), density, and frequency of plant species were enumerated. The species composition of the forest was completed by identifying the other species found outside the plots. The important value index (IVI = relative density + relative frequency + relative dominance) of species > 10 cm GBH was calculated. The percentage contribution of endemic, exotic and indigenous species to the floristic composition of the area was enumerated and it revealed that 55.1% endemic, 14.3% exotic and 30.6% native species. *Pinus caribaea*, *Gyrinops walla*, *Dillenia retusa*, *Artocarpus nobolis, Cinnamomum verum, Alstonia macrophylla* and *Carissa carandas* are the dominant plant species in the buffer zone. *Agrostistachys hookeri*, *Shorea congestiflora* and *Dipterocarpus hispidus* are the dominant endemic tree species found in the area. The most dominant species with highest relative basal area are *P. caribaea* and *Artocarpus nobolis.* the most abundant species with high relative density (11.8) is *G. walla* Both *P. caribaea* (IVI - 33.5*)* and *A. macrophylla* (IVI - 2.7) considered as IAS. The present study provides baseline information on the potential risk of *A. macrophylla* invasion and wide distribution of *P. caribaea* for native flora in Kottawa buffer zone. Therefore, the study suggests importance of managing further spread of *P. caribaea* and *A. macrophylla* in the buffer zone of the Kottawa forest with appropriate forest management practices such as assisted natural regeneration.

Keywords: Buffer zone, Floristic diversity, Kottawa forest, Vegetation sampling

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