

(107)

Density of Critically Endangered Mangrove *Lumnitzera littorea* (Jack) Voigt in Newly Recorded Locality of Bentota Estuary, Southwestern Sri Lanka

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Abstract

Lumnitzera littorea (Jack) Voigt (E: Red Teruntum, S: Rathamilla) is a true mangrove species recorded in Sri Lanka which belongs to the family Combretaceae. Even though it has a wide distribution in tropical Asia, Northern Australia, and Polynesia, it's a very rare species in Sri Lanka with restricted distribution to a few locations. Hence, this species has been categorized under the critically endangered category in 2007, 2012, and 2020 national red lists. Before this new record, it is only recorded from the Balapitiya Maduganga estuary that was discovered in 1983. The objective of this study was to assess the density of *L. littorea* population in the Bentota estuary. A quadrat survey was carried out to investigate the density of *L. littorea* within this location. The random quadrat method was carried out to obtain the necessary data for the calculation of the species density in the selected area of Bentota estuary. Five 10 m×10 m quadrats were randomly demarcated in selected area of the estuary. The individual of all mangrove species and mangrove associates were recorded. A total of 1,277 individual mangrove trees were enumerated during the study. Of the recorded species, 258 *L. littorea* trees and saplings (20.2%) have been recorded. The *L. littorea* tree density is 0.516 individuals/m² and the mean tree height of them is 3.44±1.4 m. Five true mangrove species including *Excoecaria agallocha* (27.3%), *Bruguiera sexangula* (13.3%), *Rhizophora apicalata* (1.9%), *Sonneratia caseolaris* (0.2%), and *Heritiera littoralis* (0.15%) were recorded from the sampling plots. Mangrove associates namely *Cerbera manghas*, *Anona glabra*, *Acrostichum aureum*, and *Acanthus ilicifolius* were also recorded from the sampling plots. A total of four (4) dead and 56 destroyed *L. littorea* trees and saplings were recorded from the plots. This finding is very significant for the conservation of *L. littorea* plant in Sri Lanka as the population in the Maduganga estuary is limited to a few aged individuals with low regeneration potential. In contrast, we have recorded more than 200 young individuals that are between 5-20 years. Hence this new population would be the key to the future conservation of *L. littorea* in Sri Lanka. However, this population is presently facing numerous human threats viz. cutting for poles, clearing to assess inside. Therefore, immediate conservation measures are pragmatic to protect this newly found *L. littorea* population.

Keywords: Bentota estuary, Critically-endangered, Diversity, Maduganga, *Lumnitzera littorea*