



Factors Influencing the Selective Cutting of *Lumnitzera racemosa* in Rekawa, Sri Lanka

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Mangrove forests play a vital role in maintaining coastal ecosystem functions and supporting the livelihoods of adjacent communities. *Lumnitzera racemosa* is a dominant mangrove species in tropical coastal and estuarine environments; however, its populations are increasingly threatened by overharvesting, coastal development, and aquaculture expansion. This study examined the influence of tree structural variables and accessibility on the selective cutting of *L. racemosa* in Rekawa Lagoon, Sri Lanka. Field surveys were conducted across three adjacent mangrove sites, where 100 cut and uncut individuals of this species were recorded. For each tree, diameter at breast height (DBH), tree height, stem diameter at 20 cm above ground level (D20), and distance to the nearest road were measured, while accessibility was assessed using four ordinal classes (low, moderate, high, and very high) based on field assessment of terrain conditions, ease of access, and proximity to human entry points. Because DBH and tree height could not be directly obtained from cut individuals, linear regression models were developed using D20 as a predictor variable to estimate missing structural parameters. Subsequently, binary logistic regression analysis was used to evaluate the influence of measured variables on the probability of cutting *L. racemosa*. The results indicated that accessibility significantly increased the likelihood of tree cutting ($p < 0.05$), suggesting that trees in more accessible areas were more likely to be harvested for fuelwood and other uses. In contrast, tree structural variables and distance to the nearest road showed no significant effect. Overall, these findings enhance understanding of anthropogenic pressures on mangrove species and highlight the importance of incorporating accessibility-based management strategies into the conservation of mangrove forests in Rekawa and other coastal regions of Sri Lanka.

Keywords: *Lumnitzera racemosa*, Diameter at breast height, Selective cutting, Accessibility, Rekawa, Sri Lanka, Mangrove conservation.