



Identification and Distribution of Mangrove Species in Mannar, Sri Lanka

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Mangrove ecosystems are significant coastal zones that help deliver various ecological functions, which include shoreline stability, carbon capture, nutrient cycling, and marine biodiversity protection. Mangrove ecosystems of high extent and rich biodiversity have been observed in Mannar, which is in northwestern Sri Lanka. However, current scientific evidence about the identification of mangrove species through field-based research in this area has not been updated. The current study sought to find out which of the recorded mangrove species in the literature are found in Mannar using the field survey method. For this purpose, five sites, including Achankulam, Naruvilikulam, Vankalai, Pappamoodai, and Vidaltivu, were selected since these sites have rich biodiversity and mangrove ecosystems. In each site, a transect (200m) was set perpendicularly from the shoreline, and ten 10m x 10m (100m²) quadrats were randomly placed along the line transect in each site, amounting to fifty quadrats in total in March of 2026. Mangrove species were identified using morphological characteristics, and species richness, together with frequency of occurrence across sampling sites, was analyzed. Six species of mangroves were recorded in the study areas: *Rhizophora mucronata*, *Avicennia marina*, *Ceriops tagal*, *Lumnitzera racemosa*, *Excoecaria agallocha*, and *Pemphis acidula*. Two mangrove species, *R. mucronata* and *A. marina*, occurred in all five locations, suggesting that the two species have broad ecological ranges. *L. racemosa* was observed at four locations, and *C. tagal* at three locations. Two other species were found at two locations each: *E. agallocha* and *P. acidula*. The greatest diversity was recorded in Pappamoodai (5 species) and Vidaltivu (5 species), while the least diversity was recorded in Naruvilikulam (3 species) and Vankalai (2 species). The observed distribution generally agreed with previous literature, although *Bruguiera cylindrica*, previously reported from Mannar, was not identified during this study. The study was based on species occurrence rather than abundance, and it provides updated field-based evidence on mangrove distribution in Mannar.

Keywords: Mangrove ecosystems, Species heterogeneity, Mannar, Quadrat sampling,