

**A STUDY ON MANGROVE DIVERSITY IN
IRAKKANDY LAGOON, TRINCOMALEE,
SRI LANKA**

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by

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Abstract

Preliminary study on diversity of the mangrove stands at Irakkandy lagoon (Trincomalee) was investigated to document the status of the mangrove forest and the mangrove distribution in relation to the soil salinity variation. Fifteen transect lines were laid perpendicular to the shore in different sites of the lagoon. Data on floristic composition and tree height were collected along each transect line and analysis on soil salinity, salinity variation with mangrove distribution was carried out. Shannon-Wiener diversity index and Pielou's evenness index incorporated in the Primer software version 6.1.2 and Minitab ver.16 were used for data analysis and statistical analysis. Five mangrove species belonging to the dominant families such as Avicenniaceae (*Avicennia marina*), Rhizophoraceae (*Rhizophora apiculata*), Combretaceae (*Lumnitzera racemosa*), Euphorbiaceae (*Excoecaria agallocha*) and Sterculiaceae (*Heritiera littoralis*) were recorded from the mangrove forest. The greatest mangrove diversity (1.155) was calculated in transect 7 and the lowest mangrove diversity (0.224) was recorded in transect 14. The effects of soil salinity, the distance from the shore, and their interactions were found to be significant ($P < 0.05$) in distribution of mangrove species. On the basis of frequency distribution of vegetation data sets *Avicennia marina* was found to be dominant and widely adapted to the various salinity conditions. There is a negative moderate linear correlation revealed between soil salinity and mangrove species ($P < 0.05$). Negative weak linear relationship between soil salinity and mangrove height was found out as significant ($P < 0.05$). The results of the study indicate Irakkandy lagoon consists of low biological diversity of mangroves compared to Negombo, Chilaw and Puttalam lagoons but is extremely valuable as a living mangrove forest due to its extent.

Key words: Mangroves, Irakkandy lagoon, Diversity