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ECOLOGY OF LAGOON FRINGING AND RIVERINE MANGROVES OF THE
NORTHWEST, WEST AND SOUTH COASTS OF
SRI LANKA

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SUMMARY

Kithsiri B. Ranawana. Ecology of lagoon fringing and riverine mangroves of northwest, west, and south coasts of Sri Lanka. Typed and bound thesis, 97 pages, 15 figures, 9 tables, and 2 appendices. November 1994.

Mangroves are salt tolerant woody plant species found along sheltered lagoons, bays and estuaries in the tropics. These intertidal plant communities of different families show remarkable adaptations to survive in saline and water logged soils. Since mangroves are usually found in soft intertidal sediments their distribution is governed by the tidal amplitude.

Two major types of mangals, namely riverine mangals and fringing mangals were selected for study. Sixteen core mangrove species, 45 associates, three freshwater and marsh plants, seven salt marsh taxa and five sea grass species were recorded during the present survey. *Rhizophora mucronata* and *R. apiculata* were found along the water front zone of most of the mangles, while *Nypa fruticans* was found mainly in the upper reaches of estuaries where there was adequate freshwater flow. *Xylocarpus granatum* and *Lumnitzera littorea* were two very rare species recorded in the present survey.

Soil salinity levels of the fringing mangals are very much higher than the values obtained for the riverine sites, largely due to the presence of high amounts of Na^+ in the soil. Most of the mangroves studied accumulate large amounts of Na^+ in the tissues, but the Na^+ content of riverine taxa were lower than those of species of fringing mangals.

Ecophysiological parameters such as leaf area, leaf thickness

and the leaf water content of the tree species of the genus *Rhizophora* collected from different locations showed marked difference.

Mangrove propagules of all species showed better growth performance when grown in low salinity water under plant house conditions, even though they tend to occupy different zones within a mangal. Riverine mangals and fringing mangals are characterized by the presence of different species combinations. Riverine mangals are floristically more diverse than the fringing mangals, and support a large number of associate species intergrading into freshwater swamps.

Nypa fruticans, *Sonneratia caseolaris*, *Rhizophora apiculata*, and *Bruguiera sexangula* were usually found in riverine mangals while *Rhizophora mucronata*, *Ceriops tagal*, *Sonneratia alba*, and *Avicennia marina* were largely confined to fringing mangals of the dry and intermediate zone.

