

## **Impacts of natural and human disturbances on the density of tree species in selected mangrove ecosystem in Batticaloa, Sri Lanka**

**Mathiventhan, T., and Jayasingam, T**

Density of tree species that were destructed by 2004 Tsunami, civil unrest and shrimp farm practice in Mattikali-Bar road (MB), Kokkuvil-Sathurukondan-Thannamunai (KST) and Kokkaddicholai (KOK) were studied respectively at the Batticaloa, Sri Lanka. Studies were conducted in parallel transects at 20 m intervals across whole area of each site. The number of transects varied accordingly (MB-5, KST-9 and KOK-3). The number of species (mangrove and others), number of trees, and numbers of seedling, saplings and the status of damage for each tree species were recorded along each transect. Number of stumps of dead trees was also recorded. Ten mangrove species were found in MB and KST and four species in KOK. Twelve non-mangrove species was found in MB, six in KST and two in KOK. Density was significantly different ( $p < 0.05$ ) among the three sites. Highest mean density of seedling was observed in MB. Highest mean density to stumps with re-growth and density of dead stumps were observed in KST. Highest mean density in total mangrove species was observed in remaining mangrove forest at KOK. *Excoecaria agallocha* was the most common tree species in KOK and KST, but *Dolichandrone spathacea* was the most common tree species in MB. The Number of death stumps was the highest in KST. The number of seedlings was highest in MB and Lowest in KOK. Mangroves of 75-100m stretch on both sides of main road at KST were seriously degraded due to civil unrest. 75% of mangrove forests at KOK had been destroyed for a shrimp farm practice in 1983, which had not been restored to date. About 10-20% of mangroves at MB were damaged by the Tsunami that struck on 26<sup>th</sup> of December 2004. This Paper discussed the impacts of natural and human interferences on the density of mangroves.

**Key Words:** Mangroves, non-mangroves, density and destruction