

Diversity Of Mangroves Ecosystem in Semporna Mangrove Forest

ABSTRACT

The aim of this study is to determine the diversity and density of mangrove tree species as well as to compare the diameter distribution of mangrove species in Semporna mangrove area. Two types of study area were compared the non-disturbed and disturbed mangrove areas in Semporna. The non-disturbed mangrove areas that were selected were distant from local settlements namely Sg. Sipit, Sum-sum, Tong Tabataba, Hampalan, Bantau-bantau and Sg. Gajah. While Kalumpang, Kg. Tanjung Kapur, Kg. Salimbangun, Kg. Parang Tengah, Pangkalangan, Labuan Senang and Proboscis monkey area were selected as disturbed mangrove areas due to their location close to settlements. A total of 30 rectangular plots were established randomly, each measuring 20 x 10 m. Each site consists of 3 separate plots and the minimum sampling area was 0.6 ha. From the findings, 26 species were identified at both disturbed and non-disturbed mangrove area. The mean diameter at breast height (DBH) at disturbed mangrove area ranges from 10-20 cm, as compared to 20-35 cm in non-disturbed mangrove area. Besides, the value of the mangrove species diversity in non-disturbed mangrove area is less diverse with Shannon-Weiner (H') = 0.711 as compared to disturbed mangrove area which has a higher value with $H' = 1.725$. The diameter distribution graph indicated both areas show an inverse J-curve shape which represents an even-aged tree stand structure. However, the graph showing disturbed mangrove area revealed more scattered and randomly distributed tree stands. This is due to local community activities in that area such as collection of wood and firewood for personal use. The species *Rhizophora apiculata* is the most common species counted in most of the disturbed mangrove area with the highest Important Value Index (IVI) value of 173.6, as opposed to *Rhizophora mucronata* which is most dominant in nearly all of the non-disturbed mangrove area. The results show that the disturbed mangrove area has higher tree diversity, and the tree stands are less dense as compared to non-disturbed mangrove area. It is recommended that more similar studies and longtime monitoring should be conducted in these areas in the future.