

Composition and diversity of plants in Sibuti mangrove forest, Sarawak, Malaysia

Abstract

Sarawak is endowed with numerous pristine and estuarine mangroves. However, information pertaining to the species composition and diversity of pristine mangroves of Sarawak is scanty. Hence, this study was carried out to assess the plant composition and diversity of Sibuti mangrove forest, Miri, Sarawak to investigate the current status and diversity of vegetation. Nine mangrove plant species were recorded employing the line transect (100–240 m) survey method. Major mangrove species were *Rhizophora apiculata*, *Xylocarpus granatum*, and *Nypa fruticans*. The stand density was recorded as 1938.46 ± 482.24 trees ha^{-1} , 1722.22 ± 254.58 saplings ha^{-1} , and 6222.22 ± 384.90 seedlings ha^{-1} . The mean diameter, height, and basal area for the whole forest stand were 20.83 ± 13.79 cm, 13.53 ± 5.55 m, and 201.83 ± 12.68 m^2 ha^{-1} , respectively. The mean diameter of the dominant species *R. apiculata* was 24.10 ± 13.90 cm, height 15.18 ± 5.09 m, and basal area 176.13 ± 12.73 m^2 ha^{-1} . The importance value index (IVI) of *R. apiculata* was 202.24 followed by 63.85 for *X. granatum*. Shannon diversity indices (H'), Margalef richness (D), and Peilou evenness (J') of the forest stand were 1.18, 1.41, and 0.54, respectively. Similarity of species composition showed two major clusters for the whole forest stand. The findings of this study suggest that Sibuti mangrove forest stand is undisturbed and healthy. This forest could be managed and conserved for multi-sectoral uses such as ecotourism, biodiversity, research, and education rather than solely as a wildlife sanctuary.

Keyword: Mangroves; Ecosystem; Diversity; Wildlife sanctuary; Importance value index