

(18)**Diversity and Abundance of Mangrove Species and Anthropogenic Threats to them in Bentota River Estuary, Galle, Sri Lanka****Gunawardana B.H.S.M**

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Abstract

Mangroves are intertidal plants with a remarkable diversity that have adapted to grow in saline and water-logged soil. The Bentota River Estuary has a dominant riverine mangrove forest that is located in one of the highly populated districts in Sri Lanka thus currently facing many anthropogenic stresses. Bentota River is located in Galle District which separates the Southern and Western provinces. However, it has not been recently studied for its mangrove diversity and abundance. Therefore, a transect survey was carried out to investigate the diversity and abundance of mangrove species together with the possible anthropogenic threats to the river and mangrove forest. A total of 43 randomly selected transects along the river were demarcated. A 200 m gap was maintained between each transect and transects were sub-divided into 5×5 m quadrats. The transect length depended on the width of the forest from the river bank to the inland. Both true mangroves and mangrove associates were taken into account. Shannon Diversity Index (H'), Simpson Index (D), and Shannon Evenness (E) were calculated to analyze the diversity and relative abundances. A total number of 4536 mangrove individuals and mangrove associates were enumerated during the survey. A total of 18 species belonging to 15 families and 15 genera were recorded during the study. Eight (8) true mangrove species and ten (10) mangrove associates were identified from the area. *Bruguiera sexangula* (43.3%), *Rhizophora apiculata* (5.2%), *Nypa fruticans* (4.1%), *Sonneratia caseolaris* (3.5%), *Excoecaria agallocha* (1.9%), *Bruguiera gymnorrhiza* (0.3%), *Excoecaria indica* (0.2%), and *Heritiera littoralis* (0.2%) are the true mangrove species recorded during the study. *Acrostichum aureum* (19.3%), *Cerbera manghas* (15.9%), *Acanthus ilicifolius* (2%), *Barringtonia racemosa* (1.3%), and *Pandanus kaida* (1.2%) are the common mangrove associates. The calculated Shannon Diversity Index shows value as 1.76, Simpson Index as 0.74, and Evenness as 0.61. Rhizophoraceae, Lythraceae, Apocynaceae, Arecaceae, and Pteridaceae are the most common families recorded from the area. It is clear that Bentota River represents a unique mangrove diversity. Several anthropogenic threats were recorded viz., illegal construction, cutting down mangrove trees, clearing for cultivation, and illegal hunting of Salt Water Crocodile (*Crocodylus porosus*). Hence, adequate conservation measures and law enforcement should be in place to halt these illegal activities. Moreover, this mangrove habitat provides a favorable refuge for endangered Southern Purple Faced Leaf Monkey (*Semnopithecus vetulus vetulus*), and Salt Water Crocodile. Therefore, protecting this sensitive ecosystem should be of the outermost importance.

Keywords: Abundance, Bentota, Diversity, Mangrove, Threats