

EFFECT OF VEGETATION STRUCTURE ON PRIMARY PRODUCTIVITY OF MANGROVES AT KADOLKELE IN NEGOMBO LAGOON

J.M.A.L.JAYAKODI¹, M.D.AMARASINGHE¹ AND
V. PAHALAWATTAARACHCHI²

¹Department of Botany, University of Kelaniya;

²Regional Research Centre, Kadolkele, National Aquatic Resources
Research and Development Agency, Crow Island, Colombo 15

The structure and Gross Primary Productivity (GPP) of the mangrove community at Kadolkele in Negombo Lagoon (7°11'N and 79° 50' E) was studied from June to August 2005. Kadolkele is a natural mangrove area that has been used to extract twigs and branches to construct brush parks. Nevertheless this area has been protected for the past decade. Data on plant community structure were collected from three belt transects (10 m x 50 m), laid perpendicular to the shoreline. All transects were divided into 10 m x 10 m sub plots and plant species diversity, plant density, basal area and height were collected and analyzed to calculate complexity index. This mangrove area was found to be dominant by *Avicennia marina*. Gross Primary Productivity was determined through measuring light absorption by the mangrove plants. A light meter with photo synthetically active radiation (PAR) was used for the purpose. Data on light absorption by the forest canopy were used to estimate leaf area index and these values were then converted to gross primary productivity using an assimilation coefficient. Data of the present study indicate that the gross primary productivity of mangrove stand increases with increasing stand structural complexity as represented by the diversity index values. Implications of the findings on mangrove area management are also discussed.