

Remote sensing indices for mangrove health assessment

ABSTRACT

This paper attempts to review the application of remote sensing technology for mangrove health assessment derived from spectral information. One of the most valuable forest lands in the coastal area is mangrove forests. Mangroves are economically and environmentally important for maintaining global conservation. Increase in population is putting high pressure in coastal areas with conversion of many mangrove forests to other land usages, including infrastructure, aquaculture, rice and salt production. The conversion affects water quality and hence, increases pressure to mangrove health. The health of mangrove can be assessed by employing remote sensing indices. Remote sensing technology is a very important technique for assessing mangrove health by derivation of spectral reflectance and conversion into mathematical equation. Normalised Difference Vegetation Index (NDVI) and Soil Adjusted Vegetation Index (SAVI) are discussed in this paper. This paper also highlights the potential of the indices to be integrated with drought index for drought modelling systems. In addition, it explores various cases studied in Peninsular Malaysia and elsewhere to emphasise the utilisation of the indices in various locations of mangrove areas around the globe.

Keyword: Remote sensing; Indices; Mangroves health; Mangrove forests; Tropical forests