

ABSTRACT

The technical feasibility and cost-effectiveness of selected remote sensing techniques and the problems of remote sensing transfer in Jamaica are examined. A comprehensive evaluation of remote sensing activities in Jamaica revealed a dependence on imported technical expertise in remote sensing technology.

Two remote sensing applications: Landsat multispectral digital analysis to wetland mapping and Manually Digitised Radar (MDR) for convective monitoring were examined in order to determine their applicability and future potential in Jamaica.

A. Using Manually Digitised Radar (MDR), cloud/rainfall echoes were plotted on a matrix of 435 squares covering the island of Jamaica and immediately adjacent seas. During two four-month periods in 1983 and 1984, data from 0900 hours to 1700 hours (EST) on days experiencing the diurnal convective heating precipitation were analysed. Days with synoptic scale disturbances modifying the diurnal cycle were excluded. In this way the pattern of daily convective rainfall over Jamaica was extracted from the radar data, presenting a pattern apparently consistent and normal for an island of Jamaica's size and approximate shape in the tropical wind belt.

B. Using a subscene of Landsat Computer Compatible Tapes (CCTs) collected on March 26, 1982, spectral pattern recognition was used as the basis for formulating a computer-aided classification for the Black River Lower Morass. The results compared favourably with a survey done by conventional methods. The classification logistics employed were that of the parallelepiped classifier. The ineffectiveness of Landsat bands 7/5 as an indicator of a generalised vegetation index necessiated the development of an Enhanced Vegetation Index for the Black River Lower Morass. The combination of field reflectance data and Landsat multispectral data holds potential as an interpretative key for Cannabis sativa.