

MAPPING OF MANGROVE FOREST BY USING LANDSAT TM IMAGE IN
DISTRICT OF KEMAMAN, TERENGGANU

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BY

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ABSTRACT

Mapping and classifications of mangrove forest in Kemaman District was done by using satellite image of LANDSAT TM. LANDSAT TM image was processed by using PCI 6.2 Programme and Supervised Classification method. Ground truth had been done to check the actual condition of the study area and mangrove classification was done based on dominant species. Accuracy assessment which determined how accurate was the classification when it is compared with ground truth data. Only classification of mangrove that has overall accuracy higher than 80% will be accepted as a map. Mangrove classification in District of Kemaman found that LANDSAT TM image had achieved level three of classification according to ' United States Geological Survey ' (USGS) which can detect species distribution. Mangrove forest in District of Kemaman had been classified into 4 classes. They are *Avicennia-Sonneratia* Forest, Mixed mangrove, *Nypa* Forest and *Rhizophora* Forest with area coverage of 1454.76 hectares. Among that, mangrove forest consist of 0.79% *Avicennia-Sonneratia* Forest, 41.38% Mixed mangrove, 10.23% *Nypa* Forest and 47.61% *Rhizophora* Forest. LANDSAT TM image will provide an alternative for mangrove mapping and classification instead of using aerial photographs.

ABSTRAK

Kajian pemetaan dan pengklasifikasian hutan paya bakau di Daerah Kemaman dilakukan dengan menggunakan kaedah penderiaan jauh iaitu penggunaan imej LANDSAT TM. Imej LANDSAT TM telah diproses di makmal dengan menggunakan program PCI 6.2 dan menggunakan kaedah 'Supervised Classification'. 'Ground truth' dilakukan untuk melihat keadaan sebenar di lokasi dan pengklasifikasian hutan dibuat berdasarkan spesies yang dominan. 'Accuracy assessment' iaitu perbandingan di antara pengklasifikasian imej dengan 'ground truth data' telah dilakukan. Pengklasifikasian yang mempunyai peratus ketepatan melebihi 80% sahaja boleh diterima sebagai peta. Pengklasifikasian hutan bakau di Dearah Kemaman mendapati bahawa imej LANDSAT TM boleh mencapai sehingga pengklasifikasian tahap ketiga berdasarkan 'United States Geological Survey' (USGS) iaitu boleh mengesan sehingga kepada taburan spesies. Hutan paya bakau di daerah Kemaman telah diklasifikasikan kepada 4 jenis iaitu *Avicennia-Sonneratia*, Mixed mangrove, *Nypa* Forest dan *Rhizophora* Forest yang meliputi kawasan seluas 1454.76 hektar. Daripada jumlah itu, hutan paya bakau terdiri daripada 0.79% *Avicennia-Sonneratia* Forest, 41.38% Mixed mangrove, 10.23% *Nypa* Forest dan 47.61% *Rhizophora* Forest. Penggunaan imej LANDSAT TM akan dapat memberi satu alternatif lain kepada pemetaan dan pengklasifikasian hutan paya bakau yang selama ini banyak bergantung kepada kaedah foto udara.