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**BOUNDARY AND LAND COVER CHANGES IN SELECTED  
ISLANDS OF KELANTAN DELTA**

By

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Research Report submitted in partial fulfillment of  
The requirements for the degree of  
Bachelor of Science (Marine Science)

Department of Marine Science  
Faculty of Science and Technology  
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## **LIST OF ABBREVIATIONS**

<b>ABBREVIATION</b>	<b>DESCRIPTION</b>
GCP	GROUND CONTROL POINT
GIS	GEOGRAPHICAL INFORMATION SYSTEM
MACRES	MALAYSIAN CENTRE OF REMORE SENSING
MRSO	MALAYSIAN RECTIFIED SKEWED ORTHOMORPHIC
EMR	ELECTROMAGNETIC RADIATION

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## ABSTRACT

Boundary and land cover changes in Kelantan Delta islands dominated by several factors such as strong wind, wave action, tidal period and sediment movement. Kelantan Delta land cover in year 1966 is covered 72.4030 hectare and changed to 159.7073 hectare in year 1995 and 134.3301 hectare in year 2004. The changes also reported for land use in Kelantan Delta islands where it is covered 16.0326 hectare in year 1966, 97.9946 hectare in year 1995 and 75.8725 hectare in year 2004. The drastic changes caused in year 1995 for both land cover and land use are because of big flood event that occurred in 1975. A lot of seedling and sediment movement became very active during the flood event toward contributed for vegetation widely in Kelantan Delta. This process is naturally occurred. The changes happened around 1995 and 2004 are more contributed by human activities such as sand mining and mangrove lumbering. These activities bring a lot of changes toward Kelantan Delta especially in the islands area. In order to preserve the erosion, Kelantan Forestry Department cooperated with KUSTEM (MARU) have organizing re-plantation work in selected islands of Kelantan Delta. This monitoring must be continued by government to preserve the one and only delta system that found so far in Malaysia.

**PERUBAHAN SEMPADAN PERAIRAN DAN KAWASAN LITUPAN TANAH DI  
PULAU-PULAU TERPILIH DI DELTA KELANTAN**

**ABSTRAK**

Perubahan sempadan perairan dan kawasan litupan tanah di kawasan pulau Delta Kelantan adalah didominasi oleh beberapa faktor seperti angin kuat, tindakan ombak, pasang surut dan pergerakan sedimen. Kawasan litupan tanah di Delta Kelantan pada tahun 1966 meliputi 72.4030 hektar dan berubah kepada 159.7073 hektar pada tahun 1995 dan 134.3301 hektar pada tahun 2004. Perubahan juga dilaporkan berlaku kepada penggunaan tanah di mana meliputi 16.0326 hektar pada 1966, 97.9946 hektar pada tahun 1995 dan 75.8725 hektar pada tahun 2004. Perubahan ketara yang berlaku terhadap kawasan litupan tanah dan penggunaan tanah pada tahun 1995 adalah disebabkan oleh banjir besar yang berlaku pada tahun 1975. Proses penyebaran benih dan pergerakan sedimen berlaku dengan aktif sepanjang banjir tersebut telah menyumbang kepada perkembangan tumbuh-tumbuhan di Delta Kelantan. Proses ini adalah berlaku secara semulajadi. Perubahan yang berlaku sekitar tahun 1995 dan 2004 adalah disebabkan oleh aktiviti manusia seperti pengorekan pasir dan pembalakan. Aktiviti-aktiviti ini telah membawa banyak perubahan kepada Delta Kelantan terutamanya di kawasan pulau. Bagi mengekalkan kawasan ini, Jabatan Perhutanan Kelantan dengan kerjasama KUSTEM (MARU) telah menjalankan kerja-kerja penanaman semula di pulau-pulau di Delta Kelantan. Pemantauan hendaklah diteruskan oleh pihak kerajaan untuk memelihara satu-satunya sistem delta yang boleh kita temui di Malaysia setakat ini.