

AERIAL MAPPING OF MANGROVE FOREST IN TUMPAT, KELANTAN

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**AERIAL MAPPING OF MANGROVE FOREST IN
TUMPAT, KELANTAN**

BY

CHONG YEW SENG

**This project report is submitted in partial fulfillment of the
requirement for the degree of Bachelor of Science (Marine
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Abstract

Mangrove forest in East Coast of Peninsular Malaysia has not been fully studied compared to the West Coast of Peninsular Malaysia. This is because the distribution of mangrove in the East Coast is much less than the West Coast. Mangroves in Tumpat, Kelantan have never been documented and are in the danger of over exploitation. The study area consists of 17 islands which are located in Tumpat, Kelantan. The final map of the study area was made based on interpretation of aerial photographs of scale 1 : 20 000. The final map contains mangrove forest distribution in the study area. Topographic map of scale 1 : 50 000 was used as a secondary resource. There are ten classes of mangrove forest identified in the study area namely: *Acanthus – Nypa*, *Acanthus – Sonneratia*, Mixed *Acanthus*, *Avicennia – Sonneratia*, *Avicennia*, *Sonneratia*, Mixed *Sonneratia*, *Hibiscus* and *Acrostichum*, Mixed *Acrostichum* and Mixed Mangrove. The accuracy of interpretation is 70%. The total study area coverage is 1140.27ha and the total mangrove distribution in the study area is 744.825ha. Percentage of each classes of mangrove are 18.18% (*Acanthus – Nypa*), 23.38% (*Acanthus – Sonneratia*), 4.99% (Mixed *Acanthus*), 20.27% (*Avicennia – Sonneratia*), 7.28% (*Avicennia*), 8.75% (*Sonneratia*), 2.66% (Mixed *Sonneratia*), 7.38% (*Hibiscus* and *Acrostichum*), 5.05% (Mixed *Acrostichum*) and 1.93% (Mixed Mangrove). Aerial photograph interpretation is a useful and easy technique to identify mangrove forest distribution. The larger the scale of the aerial photographs, the more accurate and better results of the final map.

Abstrak

Hutan bakau di Pantai Timur Semenanjung Malaysia masih belum dikaji sepenuhnya berbanding dengan Pantai Barat Semenanjung Malaysia. Ini adalah kerana taburan bakau di pantai timur adalah kurang berbanding dengan pantai barat. Sehingga kini, kawasan bakau di Tumpat, Kelantan masih belum direkodkan dan kini berada pada peringkat ancaman akibat eksploitasi yang berlebihan. Kawasan kajian meliputi 17 pulau terletak di Tumpat, Kelantan. Peta terakhir dihasilkan melalui interpretasi foto udara berskala 1 : 20 000. Peta terakhir mengandungi jenis taburan hutan bakau di kawasan lokasi kajian. Peta topo berskala 1 : 50 000 digunakan sebagai sumber kedua. Keputusan menunjukkan terdapat 10 kelas hutan bakau yang dikenalpasti dalam kawasan kajian termasuk; *Acanthus – Nypa*, *Acanthus – Sonneratia*, *Mixed Acanthus*, *Avicennia – Sonneratia*, *Avicennia*, *Sonneratia*, *Mixed Sonneratia*, *Hibiscus and Acrostichum*, *Mixed Acrostichum* dan *Mixed Mangrove*. Ketepatan interpretasi yang didapati ialah 70%. Jumlah keseluruhan keluasan kawasan kajian ialah 1140.27ha manakala jumlah keluasan taburan hutan bakau di kawasan kajian ialah 744.825ha. Peratusan bagi setiap kelas hutan bakau yang dikenalpasti ialah 18.18% *Acanthus – Nypa*, 23.38% *Acanthus – Sonneratia*, 4.99% *Mixed Acanthus*, 20.27% *Avicennia – Sonneratia*, 7.28% *Avicennia*, 8.75% *Sonneratia*, 2.66% *Mixed Sonneratia*, 7.38% *Hibiscus and Acrostichum*, 5.05% *Mixed Acrostichum* dan 1.93% *Mixed Mangrove*. Interpretasi foto udara merupakan teknik yang berguna dan mudah dalam mengenalpasti kawasan taburan hutan bakau. Foto udara berskala besar yang digunakan dalam interpretasi akan menghasilkan keputusan pemetaan yang tepat dan baik.