

STAND STRUCTURE OF MANGROVE FOREST AT PULAU  
CHEPANG (CORE) KELANTAN DELTA SUMPAT

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**STAND STRUCTURE OF MANGROVE FOREST AT PULAU CHE MINAH  
(NORTH), KELANTAN DELTA, TUMPAT**

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**PENGAKUAN DAN PENGESAHAN LAPORAN  
PROJEK PENYELIDIKAN I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: STAND STRUCTURE OF MANGROVE FOREST AT PULAU CHE MINAH (NORTH), KELANTAN DELTA, TUMPAT oleh Salbiah binti Husain no. matrik: UK 8984 telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Biologi sebagai memenuhi sebahagian daripada keperluan memperoleh ijazah Sarjana Muda Sains Gunaan- Pemuliharaan dan Pengurusan Biodiversiti Fakulti Sains dan Teknologi, Kolej Universiti Sains dan Teknologi Malaysia.

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## LISTS OF ABBREVIATIONS

dbh	diameter at breast height
E	evenness
GPS	Geographical positioning system
H	diversity
ha	hectare
m	meter
S	richness

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## ABSTRACT

Mangroves have been classified as keystone ecosystems, as they are important for other ecosystems and generate a wide range of natural resources and ecosystem services. Pulau Che Minah is located at Sungai Kelantan Delta with the width of 8.0754ha. The vegetation of Pulau Che Minah (north) is dominated by *Avicennia alba* and *Sonneratia caseolaris*. The study was done using twenty circular plots which covers an area of 100m<sup>2</sup> each. The main plot used to measure height, crown form and bole form of tree with dbh greater than 5cm. Sapling plot is used to identify the sapling within dbh less than 5cm and height more than 1.5m. Seedling in every rectangular plot was counted. The density of tree is higher with 1955 compared to Tok Bali with 1230. Only four species found in the study area and *Nypa fruticans* found to be the most diverse and most abundance species with 725 individuals per hectare and also widely distributed in the forest profile. The stand of Pulau Che Minah (north) is very poor in sapling and seedling. Lack of seedling found is because of the difficulty of the seed to attach to any substrate as the area is flooded most of the time. This will lead to the declining of mangrove stand in this area. The total basal area of *Avicennia alba* and *Sonneratia caseolaris* are approximately the same with 5.235cm<sup>2</sup>h<sup>-1</sup>. The average evenness for tree is 0.939 and 0.715 for sapling. The average richness value is 16 with *Avicennia alba* appear to be the richness species for both tree and sapling. Research in this field should be done continuously so that a lot of information can be determined in order to protect this unique environment from declining.

## KAJIAN MENGENAI DIRIAN HUTAN PAYA LAUT DI PULAU CHE MINAH (UTARA), KELANTAN DELTA, TUMPAT.

### ABSTRAK

Pulau Che Minah (utara) didominasi oleh spesies *Avicennia alba* dan *Sonneratia caseolaris*. Kajian dijalankan dengan menggunakan dua puluh plot bulat yang berkeluasan 100m<sup>2</sup> dan berjari 5.64m. Plot utama digunakan untuk mengukur tinggi, menentukan bentuk silara dan bentuk batang bagi pokok berdiameter lebih dari lima sentimeter. Plot kedua berkeluasan 50m<sup>2</sup> adalah untuk mengira anak pokok yang berdiameter kurang dari lima sentimeter dan ketinggian melebihi 1.5m. *Avicennia alba* dijumpai dalam 18 dari 20 plot yang dibina dan dalam satu hektar dianggarkan terdapat 645. Profil hutan menunjukkan komposisi hutan yang tidak seimbang apabila jumlah anak pokok dan anak benih adalah sangat sedikit berbanding komposisi pokok dewasa. Nilai densiti bagi pokok adalah tinggi (1955) berbanding densiti di Tok Bali (1230) dan densiti untuk anak pokok adalah 1460 manakala untuk anak benih adalah 600. Keadaan ini menyumbang kepada kemerosotan sumber hutan yang menyebabkan kepupusan dalam jangka masa panjang. Di Pulau Che Minah, *Nypa fruticans* didapati dengan sangat banyak dan secara berselerak di dalam profil hutan. Jumlah luas pangkal bagi spesies *Avicennia alba* dan *Sonneratia caseolaris* adalah sama iaitu 5.25m<sup>2</sup>h<sup>-1</sup>. Purata keseragaman untuk pokok dewasa adalah 0.939 manakala 0.715 untuk anak pokok. Nilai kekayaan pokok ialah 16 dengan nilai kekayaan paling tinggi adalah *Avicennia alba*. Komposisi tumbuhan di pulau ini adalah rendah, langkah pencegahan perlu dilaksanakan dengan segera bagi mengelakkan dirian hutan dari mengalami kepupusan.