

**MANGROVE VEGETATION STRUCTURE AND ANALYSIS : A CASE
FOR SUNGAI CHUKAI, KEMAMAN, TERENGGANU, EAST
COAST OF PENINSULAR MALAYSIA**

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**MANGROVE VEGETATION STRUCTURE AND ANALYSIS: A CASE FOR
SUNGAI CHUKAI, KEMAMAN, TERENGGANU, EAST COAST OF
PENINSULAR MALAYSIA**

By

Farhana Binti Othman

**Research Report submitted in partial fulfillment of
the requirements for the degree of
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**Department of Marine Science
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**DEPARTMENT OF MARINE SCIENCE
FACULTY OF MARITIME STUDIES AND MARINE SCIENCE
UNIVERSITI MALAYSIA TERENGGANU**

DECLARATION AND VERIFICATION REPORT

FINAL YEAR RESEARCH PROJECT

It is hereby declared and verified that this research report entitled:
Mangrove Vegetation Structure and Analysis: A Case for Sungai Chukai, Kemaman,
Terengganu, East Coast of Peninsular Malaysia by Farhana Othman, UK15999 have been
examined and all errors identified have been corrected. This report is submitted to the
Department of Marine Science as partial fulfillment towards obtaining the Degree of
Bachelor of Science in Marine Science, Faculty of Maritime Studies and Marine Science,
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DISCUSSION

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LIST OF SYMBOL

PCQM	=	Point-Centre Quarter Method
Gbh	=	Girth at breast height
%	=	percentage

Mangrove Vegetation Structure and Analysis:

A Case for Sungai Chukai, Kemaman, Terengganu, East Coast of Peninsular Malaysia

ABSTRACT

A study on the mangrove vegetation structure at Sungai Chukai was conducted during 23 – 24 July 2009. Altogether, 5 stations (at 1km intervals) were chosen and reach to their nearest point with the help of a Global Positioning Systems. The Point-Centered Quarter Method (PCQM) was employed in all mangrove stations to estimate different tree structural such as stem density (nos/0.1ha), basal area (m²/0.1ha), relative density (% composition), relative dominance (% composition), absolute frequency (% composition), and species individual ranking. Mangrove plant composition was represented by eight dominant taxa i.e., *Avicennia officinallis*, *Bruguiera gymnorhiza*, *Ceriops decandra*, *Excoecaria agallocha*, *Lumnitzera littorea*, *Nypa fruticans*, *Rhizophora apiculata*, and *Xylocarpus granatum*. Based on stem density and basal area measurements, three groups association were recognized. Group-1 represented by *R.apiculata*, *A.officinallis*, *B.gymnorhiza*, *X.granatum*, *L.littorea* and *C.decandra* were abundant throughout the forest. For Group-2, and Group-3 (*N. fruticans* and *E. agallocha*) species, the similarity of this species commonly found on the inter-tidal ridge forest and river banks. Overall, the mangrove at Sungai Chukai could categorized as riverine mangrove based on their ecological distribution.

Analisis dan Struktur Tumbuhan Paya Laut (Bakau):

Berdasarkan Perihal Sungai Chukai, Kemaman, Terengganu, Pantai Timur Semenanjung
Malaysia.

ABSTRAK

Kajian mengenai struktur tumbuhan paya laut di Sungai Chukai (Kemaman) dilakukan pada 23 -24 Julai 2009. Keseluruhan kawasan kajian meliputi 5 stesen dan mencapai kawasan yang paling hampir dengan menggunakan Global Positioning Systems. Teknik Point-Centered Quarter Method (PCQM) digunakan untuk mendapatkan nilai analisis tumbuhan seperti kepadatana tumbuhan, kawasan liputan, peratusan kepadatan, dan turutan spesis individu. Tumbuhan bakau meliputi lapan taxa i.e., *Avicennia officinallis*, *Bruguiera gymnorhiza*, *Ceriops decandra*, *Excoecaria agallocha*, *Lumnitzera littorea*, *Nypa fruticans*, *Rhizophora apiculata*, dan *Xylocarpus granatum*. Terdapat tiga kumpulan sepsis yang dianalisis. Kumpulan pertama mengandungi *R.apiculata*, *A.officinallis*, *B.gymnorhiza*, *X.granatum*, *L.littorea* dan *C.decandr*, ianya mempunyai kepadatan spesis yang berhubung antara satu sama yang lain. Bagi kumpulan ke-dua dan ke-tiga (*N. fruticans* dan *E. agallocha*), ia dijumpai di kawasan tebing sungai dan kawasan air pasang surut. Berhubungan dengan terhadap susunan tumbuhan yang terdapat di kawasan kajian, Paya laut di Sungai Chukai dikategorikan sebagai kawasan 'riverine mangrove'.