

SOME ECOLOGICAL ASPECTS OF GASTROPODS  
AT TANJUNGPINANG FOREST  
KELANTAN DARUL KHAIR

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2006



SOME ECOLOGICAL ASPECTS OF GASTROPODS AT TOK BALI  
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**SOME ECOLOGICAL ASPECTS OF GASTROPODS AT TOK BALI  
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**By**

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**Research Report submitted in partial fulfillment of  
the requirements for the degree of  
Bachelor of Applied Science (Biodiversity Conservation and Management)**

**Department of Biological Sciences  
Faculty of Sciences and Technology  
KOLEJ UNIVERSITI SAINS DAN TEKNOLOGI MALAYSIA  
2006**

This project should be cited as:

Hazwin Dalila, H. 2006. Some Ecological Aspects of Gastropods at Tok Bali Mangrove Forest, Kelantan Darul Naim. Undergraduate thesis, Bachelor of Applied Science (Biodiversity Conservation and Management), Faculty of Science and Technology, Kolej Universiti Sains dan Teknologi Malaysia, Terengganu. 68p.

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**PENGAKUAN DAN PENGESAHAN LAPORAN**

**PROJEK PENYELIDIKAN I DAN II**

Adalah dengan ini disahkan bahawa laporan penyelidikan bertajuk SOME ECOLOGICAL ASPECTS OF GASTROPODS AT TOK BALI MANGROVE FOREST, KELANTAN DARUL NAIM oleh Hazwin Dalila Haris No. Matrik UK 8449 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 Pengurusan dan Pemuliharaan Biodiversiti, Fakulti Sains dan Teknologi, Kolej Universiti Sains dan Teknologi Malaysia.

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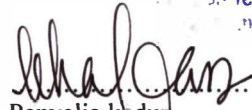
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## ACKNOWLEDGEMENTS

*Bismillahirrahmanirrahim*

First and foremost, I would like to thank God for His unconditional love. To my supervisor, Mr. Kasawani Ibrahim and Dr. Zaleha Kassim who has been generously share their knowledge, guidance, ideas and advices throughout the study and also exposing me to the meaning of scientific research.

I am also grateful and thankful to the MARU, for allowing me to use the facilities provided. To Mr. Razali, Mr. Hanafi, Mr. Matzam, and Mohd Firdaus Mohamad, thank you the cooperation and helps given throughout the six months, especially when I encountered problems in order to finish my project.

I would also forward a special thanks to my beloved family especially to my parents Mr. Haris and Mrs. Zainun, my sibling Hazreen Diana, Hazlini Dahlia, Razaleigh and Rais Yatimi, for giving me the unconditional support and love to finish my project. Also to my partner friend, Zaleha and Shida for their cooperation and enthusiasm while completing this project. To my roommates and friends, I thank you all for being there to give constructive criticism and ideas, thank you for being supportive and showing me the real meaning of friendship. Last but not least, to everyone who was involved direct or indirectly during the completion of this project, very big thanks for your supports and helps.

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## LIST OF ABBREVIATIONS

E	East
G	gram
ha	hectare
m	meter
N	North
ppt	part per thousand
PSA	particle size analysis
TOM	total organic matter
°C	degree of Celsius
μ	micron
ø	phi
%	percent

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## ABSTRACT

A study on gastropods community and some ecological aspects that related to the abundance of gastropods have been done at Tok Bali mangrove. The samples were collected at three different season which is dry season (July), pre monsoon (September) and monsoon (December) 2005. Collection of sediment and gastropods were done within 0.25m<sup>2</sup> quadrat and four sampling stations were chosen according to the forest type. There are *Nypa frutican*, *Rhizophora* spp., *Avicennia* spp., and mixed mangrove. Physico-chemical factors of the area such as temperature, salinity, pH and dissolved oxygen were measured using Hydrolab Quanta. Mean of grain size ( $\phi$ ) value range between 1.9 phi to 2.69 phi and classified the sediment as fine sand. For total organic matter, the range was only between 0.43g/g to 1.89g/g. There are nine families and 14 species of gastropods were found and the dominant family was Potamididae, Neritidae, Assimineidae. Meanwhile, *Cerithidea cingulata*, *Assiminidea brevicula* and *Clithon oualeniensis* being the dominant species at this site. Total mean density of gastropods for three sampling season was 5006 individual/m<sup>2</sup>. Diversity index H' range from 1.79 to 2.16 and evenness index E' range varied from 0.50 to 0.78. Meanwhile, richness index range from 1.61 to 2.16. The abundance of gastropods in this study was positively correlated to the season ( $r=-0.805$ ,  $p<0.01$ ), temperature ( $r=+0.735$ ,  $p<0.01$ ), pH ( $r=+0.729$ ,  $p<0.01$ ), and salinity ( $r=+0.604$ ,  $p<0.05$ ). The data from this study provided a valuable baseline for future use at this site and for comparison with more mangrove habitats elsewhere in Malaysia.

# ASPEK EKOLOGI BAGI SPESIS GASTROPODA DI HUTAN BAKAU TOK BALI

## ABSTRAK

Kajian tentang komuniti gastropoda dan aspek ekologi yang mempengaruhi kepadatan gastropoda telah dijalankan di hutan paya bakau Tok Bali. Semua sampel telah diambil pada tiga musim iaitu musim kering(July), pra monsun(September) dan monsun (December) 2005. Pengambilan sampel tanah dan gastropoda menggunakan kuadrat yang berukuran 0.25m<sup>2</sup> dan pemilihan stesen penyampelan adalah berdasarkan jenis hutan bakau iaitu *Nypa frutican*, *Rhizophora* spp., *Avicennia* spp., dan Hutan Campuran. Faktor- faktor persekitaran seperti suhu, kemasinan, pH dan oksigen terlarut juga diukur dengan menggunakan Hydrolab Quanta. Min saiz partikel berjulat di antara 1.9 phi - 2.69 phi. Kadar kandungan bahan organik pula adalah berjulat di antara 0.43g/g -1.89g/g. Terdapat sembilan famili dan 14 spesies yang dijumpai. Famili dominan ialah Potamididae, Neritidae, Assiminineidae. Species dominan ialah *Cerithidea cingulata*. Jumlah min kepadatan gastropoda untuk ketiga-tiga penyampelan adalah 5006 individu/m<sup>2</sup>. Indek kepelbagaian H' berjulat di antara 1.79-2.16, indek kesamaan E'; 0.50-0.78 dan indek kekayaan berjulat 1.61-2.16. Kepadatan spesies siput dalam kajian ini dipengaruhi oleh musim( $r=-0.805$ ,  $p<0.01$ ), suhu( $r=+0.735$ ,  $p<0.01$ ), pH( $r=+0.729$ ,  $p<0.01$ ), dan kemasinan( $r=+0.604$ ,  $p<0.05$ ). Data hasil daripada kajian ini menyediakan satu garis dasar yang berguna pada masa akan datang dan data ini juga boleh digunakan untuk membuat perbandingan antara habitat paya bakau lain yang terdapat di Malaysia.