

DISPERSED AND BUILT UP ON THE BEACH OF  
MOUNTAIN VIEW

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MOUNTAIN VIEW



**DISTRIBUTION OF TAR BALLS ON THE  
BEACH OF KUALA TERENGGANU**

By

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**Research Report submitted in partial fulfillment of  
the requirements for the Degree of  
Bachelor of Science (Marine Biology)**

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UNIVERSITY MALAYSIA TERENGGANU  
2007**

1100054089

This project should be cited as:

Tye, K. H. 2006. Distribution of Tar Balls on the Beach of Kuala Terengganu. Undergraduate thesis, Bachelor of Science in Marine Biology, Faculty of Maritime Studies and Marine Science, University Malaysia Terengganu. 106p.

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PROJEK PENYELIDIKAN I DAN II**

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## ACKNOWLEDGEMENTS

Firstly, I would like to extend my greatest gratitude towards my parents for their undivided support for me to pursue my tertiary education in this varsity. The love shown towards me had been monumental towards my success here.

Next, is the person instrumental in making my final year project a reality; my supervisor, Professor Dr. Law Ah Theem, who has been a constant source of knowledge and inspiration. His comments and dedication ensured that my thesis could be completed in time.

Then, I would like to extend my sincerest gratitude towards Mr. Yong Jaw Chuen, who was very patient and has been a great mentor to me. Without his guidance and demonstrations, I would have had to overcome tremendous obstacles in the completion of my project.

Also, I would like to express my gratitude towards Professor Dr. Law's post-graduate students, namely, Mr. Chuah Lai Fatt for their invaluable opinions and guides. I would like to express a big thank you too to Mr. Ooi Boon Leong and Ms. Siti Ariza for their help during sampling.

Last but not least, I would like to thank the Science officers, laboratory assistants of both the BioD and Ocean Labs for rendering great help in obtaining whatever needs for my project completion.

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## LIST OF ABBREVIATIONS

km <sup>2</sup>	-	square kilometres
km	-	kilometres
%	-	Percentages
B.C.	-	Before Christ
°F	-	Degrees Fahrenheit
°C	-	Degrees Celsius
mm	-	Millimetres
cm	-	Centimetres
UV	-	Ultraviolet
m	-	Meters
mL	-	millilitre
μL	-	microlitre
DCM	-	dichloromethane
cm <sup>2</sup>	-	square centimetre
mg	-	milligram
g	-	gram
v/v	-	volume per volume
mL.min <sup>-1</sup>	-	millilitre per minute
g.m <sup>-1</sup>	-	gram per meter
ng.mg <sup>-1</sup>	-	nanogram per milligram
[C]	-	concentration
ERS-1	-	European Remote Sensing 1

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## ABSTRAK

Bebola tar sering digunakan sebagai penunjuk kepada pencemaran minyak di persisiran pantai. Terengganu, yang merupakan sebuah negeri pantai, terdedah kepada Laut China Selatan dan sering dipengaruhi dengan deposisi bebola tar setiap tahun. Kajian ini telah dijalankan sepanjang tempoh dari September 2006 hingga Januari 2007. Bebola tar dikutip untuk mengukur secara kualitative dan kuantitative. Kajian ini merupakan kajian berlanjutan ekoran kajian-kajian terdahulu yang dilakukan oleh Universiti Malaysia Terengganu (dahulu KUSTEM). Dari kajian ini, Stesen 1 merupakan stesen paling tercemar dengan bebola tar manakala Stesen 3 tidak tercemar dan Station 2 hanya tercemar pada masa-masa tertentu. Kadar pencemaran ditentukan dengan Kaedah Piawai yang ditetapkan UNEP. Bebola tar sebanyak  $21.90 \text{ g.m}^{-1}$  di Stesen 1 manakala terdapat masa di mana tiada sebarang bebola tar dijumpai di Stesen 3. Analisis kimia telah dijalankan ke atas bebola tar untuk menentukan komposisi dan konsentrasi bebola tar. Banyak proses telah berlaku ke atas bebola tar sebelum terdampar di atas pantai. Dari kajian ini, pantai Kuala Terengganu mempamerkan pencemaran bebola tar yang sederhana.



## ABSTRACT

Coastal oil pollution is measured in the form of tar ball distribution. Terengganu, being a coastal state and directly exposed to the South China Sea, is affected by tar ball deposition each year. Five sampling trips were conducted from the months of September 2006 to January 2007. The sampling trips were aimed to collect tar ball samples to measure their quantitative and qualitative properties. The tar balls were also measured for their size distribution. This study is as a continuous assessment from previous studies conducted by the University Malaysia Terengganu (formerly KUSTEM). From the study, Station 1 was the most polluted whereas Station 3 exhibited no pollution and Station 2 was only polluted during certain periods. The measure of pollution was determined by the UNEP Standard Method. Tar ball deposition ranged from  $21.90 \text{ g.m}^{-1}$  in Station 1 to no tar balls at Station 3. Chemical analyses have also been done onto the samples to determine the composition and the concentration within the tar ball. Various weathering processes have occurred towards to tar ball before eventually being deposited onto the beach. From this study, the beach of Kuala Terengganu exhibited moderate tar ball pollution.