

SEDIMENT DISTRIBUTION AROUND
CORAL AREA AT BIDONG ISLAND

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FACULTY OF MARITIME STUDIES AND MARINE SCIENCE
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SEDIMENT DISTRIBUTION AROUND CORAL AREA AT BIDONG ISLAND

By

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**Research Report submitted in partial fulfillment of
the requirements for the degree of
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 FACULTY OF MARITIME STUDIES AND MARINE SCIENCE
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**DECLARATION AND VERIFICATION REPORT
 FINAL YEAR RESEARCH PROJECT**

It is hereby declared and verified that this research report entitled:

SEDIMENT DISTRIBUTION AROUND CORAL AREA AT BIDONG ISLAND
 by **MOHD SYAIBUL HAMDI B MAT**, Matric No. **UK 18050** has 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 Science (Marine Science)**, Faculty of Maritime Studies and Marine Science, University Malaysia Terengganu.

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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	i
LIST OF TABLES	v
LIST OF FIGURES	vi
LIST OF ABBREVIATIONS	vii
LIST OF APPENDICES	viii
ABSTRACT	ix
ABSTRAK	x
CHAPTER 1: INTRODUCTION	1
1.1 Introduction	1
1.2 Objectives	3
CHAPTER 2: LITERATURE REVIEW	
2.1 Sedimentology	4
2.1.1 Sediment	4
2.1.2 Sediment Source	5
2.1.3 Sediment Distribution	6
2.2 Coral Reef	7
2.3 Factor of Geological Features	8
2.3.1 Wind	8
2.3.2 Current	9
2.3.3 Wave	10
2.3.4 Monsoon	10
CHAPTER 3: METHODOLOGY	

3.1 Study Area	11
3.2 Sediment Sampling	15
3.3 Sediment Preparation	15
3.4 Dry Sieving Method	16
3.5 Particle Size Analysis(PSA)	16
3.6 Statistic Calculation of Sedimentological Parameters	18
3.6.1 Mean	19
3.6.2 Standard Deviation(Sorting)	19
3.6.3 Skewness	20
3.6.4 Kurtosis	21
CHAPTER 4: RESULTS	
4.1 Rain	22
4.2 Wind	23
4.3 Particle Size Analysis	25
4.3.1 Mean	25
4.3.2 Standard Deviation(Sorting)	27
4.3.3 Skewness	29
4.3.4 Kurtosis	31
CHAPTER 5: DISCUSSION	
5.1 Wind and Rain Distribution	33
5.2 Sedimentology Characteristic and Distribution	35
5.2.1 Mean	35
5.2.2 Standard Deviation (Sorting)	
5.2.3 Skewness	42
5.2.4 Kurtosis	45

CHAPTER 6: CONCLUSION	47
REFERENCES	49
APPENDICES	52
CURICULUM VITAE	56

LIST OF TABLES

Table		Page
3.1	Coordinate of sampling at Bidong Island	13
3.1	Coordinate of sampling at Bidong Island (continue)	14
4.1	Statistical analysis of monthly precipitation in Kuala Terengganu 2010	22
4.2	Statistical analysis of monthly wind distribution at Kuala Terengganu 2010	24

LIST OF FIGURES

Figure		Page
3.1	Map of study area	12
4.1	Monthly precipitation distribution at Kuala Terengganu 2010	23
4.2	Monthly wind speed distribution at Kuala Terengganu 2010	24
4.3.1	Mean value (\bar{X}) of sediment for the station at Bidong Island	25
4.3.2	Sorting value (σ) of sediment for the station at Bidong Island	27
4.3.3	Skewness value (γ) of sediment for the station at Bidong Island	29
4.3.4	Kurtosis value (β) of sediment for the station at Bidong Island	31
5.1	Wind distribution during sampling at Kuala Terengganu 2010	34
5.2.1(a)	Distribution map of sediment mean size at sampling 1 and 2	35
5.2.1(b)	Percentage of mean value at sampling 1	36
5.2.1(c)	Percentage of mean value at sampling 2	37
5.2.1(d)	Wind distribution during sampling at Kuala Terengganu 2010	38
5.2.2(a)	Distribution map of sediment sorting size at sampling 1 and 2	39
5.2.2(b)	Percentage of sorting value at sampling 1	40
5.2.2(c)	Percentage of sorting value at sampling 2	40
5.2.3(a)	Distribution map of sediment skewness value at sampling 1 and 2	43
5.2.3(b)	Percentage of skewness value at sampling 1	44
5.2.3(c)	Percentage of skewness value at sampling 2	44
5.2.4(a)	Distribution map of sediment kurtosis value at sampling 1 and 2	45
5.2.4(b)	Percentage of kurtosis value at sampling 1	46
5.2.4(c)	Percentage of kurtosis value at sampling 2	46

LIST OF ABBREVIATIONS

d	-	Diameter
g	-	Gram
GPS	-	Global Positioning System
PSA	-	Particle Size Analysis
\bar{X}	-	Mean
Sd	-	Standard deviation
Sk	-	Skewness
K	-	Kurtosis
ϕ	-	Phi
μm	-	Micrometer
km	-	Kilometer
°	-	Degree'
F	-	Percentage weight of each grade of particle size
m	-	Median of each particle size in ϕ
n	-	Total number of the sample in 100 when f = %

LIST OF APPENDICES

Appendix		Page
1	Wentworth particle size classification	52
2	Mean, Sorting, Skewness and Kurtosis characteristic	53
3	Particle Size Analysis for Bidong Island station (Sampling 1)	54
4	Particle Size Analysis for Bidong Island station (Sampling 2)	55

ABSTRACT

A study was carried out around the Bidong Island in order to determine the general characteristic, grain size distribution of the sediments and comparison was made between these different areas of coral reef and non-reef areas. Samplings were conducted two times at each station. The first and second sampling was done on 25th – 27th March 2010 and 8th – 10th July 2010 that caring out along the Bidong Island area. Sediment samples were collected from 35 stations and three stations from them is from the coral area. Then, they are analyzed for their sedimentological characteristic i.e. means size, sorting, skewness and kurtosis by using dry sieving method and particle size analysis. The sediment mean size value ranged between $-0.1\phi - 2.0\phi$ for the first sampling and $-0.31\phi - 1.771\phi$ for the second sampling. In this study, grain size distribution for all station of study area indicates that some differentiation between station at coral reef area and non-coral reef area. Generally, the sediments in the study area consist mostly of coarse to fine particles. The major portions of the sediment are negatively skewed. This indicates that the study area is under the influence of the rather strong wave and current action.

ABSTRAK

Satu kajian telah dilakukan di perairan Pulau Bidong bagi pengukuran ciri-ciri sedimen, bentuk taburan serta melakukan perbandingan di antara dua kawasan yang berbeza iaitu sampel sedimen dari kawasan terumbu karang dan sampel sedimen dari bukan kawasan terumbu karang. Penyempelan telah dijalankan sebanyak dua kali iaitu pada 25-27 Mac 2010 untuk penyempelan kali pertama dan 8-10 Julai 2010 untuk penyempelan kali kedua. Sampel sedimen telah diambil dari 35 stesen di sekitar perairan Pulau Bidong dengan 3 stesen daripadanya adalah dari kawasan terumbu karang. Kemudian, sampel sedimen tadi di analisis untuk mendapatkan nilai mean, sorting, skewness dan kurtosis dengan menggunakan kaedah analisa ayak kering dan analisa saiz partikel (Malvern Mastersize). Di dalam kajian ini, purata nilai mean bagi penyempelan pertama ialah $-0.1\phi - 2.0\phi$ dan untuk penyempelan kedua ialah $-0.31\phi - 1.771\phi$. Dalam kajian ini, taburan untuk saiz partikel bagi semua stesen di kawasan kajian menunjukkan terdapat perbezaan di antara kawasan terumbu karang dan kawasan bukan terumbu karang. Umumnya, sedimen di kawasan kajian terdiri daripada sebahagian besar adalah 'moderate coarse grain'. Bahagian utama dari sedimen adalah 'negative skewed'. Hal ini menunjukkan bahawa ada kawasan kajian yang menerima gelombang dan ombak yang agak kuat ketika kajian di jalankan.