

STUDY ON COASTAL EROSION VARIABILITY AND SEDIMENT  
MOVEMENT AS RESPONSE TO COASTAL DEVELOPMENT  
AT KERTEH AND KEMAMAN BEACH

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**STUDY ON COASTAL EROSION VARIABILITY AND SEDIMENT MOVEMENT  
AS RESPONSE TO COASTAL DEVELOPMENT AT KERTEH AND KEMAMAN  
BEACH**

**By**

**Khairul Rijal Bin Bahrulazmi**

**Research Report submitted in partial fulfillment of  
the requirements for the degree of  
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**DECLARATION AND VERIFICATION REPORT**  
**FINAL YEAR RESEARCH PROJECT**

It is hereby declared and verified that this research report entitled: **A study on coastal erosion variability and sediment movement as response to coastal development at kerteh and kemaman beach by Khairul Rijal Bin Bahrulazmi**, Matric No. **Uk 21253** 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 Bachelor of Science (Marine Science)**, Faculty of Maritime Studies and Marine Science, Universiti Malaysia Terengganu.

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<b>ACKNOWLEDGMENT</b>	<b>i</b>
<b>TABLE OF CONTENTS</b>	<b>ii</b>
<b>LIST OF TABLES</b>	<b>v</b>
<b>LIST OF FIGURES</b>	<b>vii</b>
<b>LIST OF ABBREVIATIONS</b>	<b>x</b>
<b>LIST OF APPENDICES</b>	<b>xi</b>
<b>ABSTRACT</b>	<b>xii</b>
<b>ABSTRAK</b>	<b>xiii</b>
<b>TABLE OF CONTENTS</b>	
<b>1.0 INTRODUCTION</b>	<b>1</b>
<b>1.1 Objectives</b>	<b>2</b>
<b>1.2 Justification</b>	<b>2</b>
<b>2.0 LITERATURE REVIEW</b>	<b>3</b>
<b>2.1 Beach</b>	<b>3</b>
<b>2.1.1 Beach profile</b>	<b>3</b>
<b>2.1.2 Beach steepness</b>	<b>4</b>
<b>2.1.3 Beach erosion</b>	<b>4</b>
<b>2.1.4 Coast</b>	<b>5</b>
<b>2.2 Sedimentology</b>	<b>6</b>
<b>2.2.1 Sediment</b>	<b>6</b>
<b>2.2.2 Sediment sources</b>	<b>6</b>
<b>2.2.3 Sediment transportation</b>	<b>7</b>
<b>2.3 Deposition</b>	<b>8</b>
<b>2.4 Sediment movement and Net Shore Drift</b>	

<b>2.5</b>	<b>Monsoon</b>	<b>10</b>
<b>2.6</b>	<b>Physical factor</b>	<b>10</b>
<b>2.6.1</b>	<b>Tides</b>	<b>10</b>
<b>2.6.2</b>	<b>Waves</b>	<b>11</b>
<b>2.6.3</b>	<b>Currents</b>	<b>11</b>
<b>2.6.4</b>	<b>Winds</b>	<b>12</b>
<b>3.0</b>	<b>METHODOLOGY</b>	<b>13</b>
<b>3.1</b>	<b>Study area</b>	<b>14</b>
<b>3.2</b>	<b>Beach Profile data collection</b>	<b>18</b>
<b>3.3</b>	<b>Dry sieving method</b>	<b>19</b>
<b>3.3.1</b>	<b>Statistic Calculation</b>	<b>19</b>
<b>3.3.2</b>	<b>Mean (<math>X\bar{O}</math>)</b>	<b>20</b>
<b>3.3.3</b>	<b>Standard Deviation (<math>\sigma\bar{O}</math>)</b>	<b>21</b>
<b>3.3.4</b>	<b>Skewness (<math>Sk\bar{O}</math>)</b>	<b>22</b>
<b>3.3.5</b>	<b>Kurtosis (<math>K\bar{O}</math>)</b>	<b>22</b>
<b>4.0</b>	<b>RESULT</b>	<b>24</b>
<b>4.1</b>	<b>Analysis Physical Parameter</b>	<b>24</b>
<b>4.1.1</b>	<b>Precipitation</b>	<b>24</b>
<b>4.1.2</b>	<b>Wind</b>	<b>27</b>
<b>4.2</b>	<b>Beach Profile Analysis</b>	<b>29</b>
<b>4.2.1</b>	<b>Beach Profile</b>	<b>29</b>
<b>4.2.2</b>	<b>Beach Steepness</b>	<b>37</b>
<b>4.3</b>	<b>Grain Size Analysis</b>	<b>39</b>
<b>4.3.1</b>	<b>Mean size</b>	<b>39</b>
<b>4.3.2</b>	<b>Sorting</b>	<b>45</b>
<b>4.3.3</b>	<b>Skewness</b>	<b>41</b>



4.3.4	Kurtosis	57
4.4	Net Shore Drift	63
4.4.1	Grain Size Distribution	63
4.4.2	Beach slope	66
4.4.3	Beach width	68
5.0	DISCUSSION	70
5.1	Beach Profile	70
5.2	Grain Size Analysis	75
5.2.1	Mean	75
5.2.2	Sorting	78
5.2.3	Skewness	81
5.2.4	Kurtosis	84
5.3	Net Shore Drift	87
5.3.1	Grain Size Distribution	87
5.3.2	Beach Slope	91
5.3.3	Beach Width	91
6.0	CONCLUSION	92
7.0	REFERENCES	94
8.0	APPENDICES	97
9.0	CURICULUM VITAE	100

## LIST OF TABLES

TABLE	PAGE
3.2.1: Coordinates of Kerteh beach sampling stations.	16
3.2.2: Coordinates of Mak nik beach sampling stations	17
4.1.1(a): Statistical Average Precipitation of Kuala Terengganu	25
4.1.2 (a): Average of Wind Speed	27
4.2.2.1 (a): Beach Steepness	37
4.2.2.2 (a): Beach Steepness	38
4.3.1.1 (a) : Mean Value Jun 2011 and March 2012	40
4.3.1.2 (a) : Mean Value May and December 2011	43
4.3.2.1 (a): Sorting Value for Jun 2011 and March 2012	46
4.3.2.2 (a): Sorting Value May and December 2011	49
4.3.3.1 (a): Skewness Value for Jun 2011 and March 2012	52
4.3.3.2 (a): Skewness Value for May and December 2011	55
4.3.4.1 (a): Kurtosis Value Jun 2011 and March 2012	58
4.3.4.2 (a): Kurtosis Value May and December 2011	61
4.4.1.1 (a): Mean and Sorting in Mid tide during Jun 2011 and March 2012 (Phi)	64

4.4.1.1 (b): Average of Mean and Sorting in Mid tide during Jun 2011 and March 2012 (Phi)	64
4.4.1.2 (a): Mean and Sorting in Mid tide during May and December 2011 (Phi)	65
4.4.1.1 (b): Average of Mean and Sorting in Mid tide during Jun and December 2011 (Phi)	65
4.4.2.1 (a): Order of Beach Slope Degree	66
4.4.2.2 (a): Order of Beach Slope Degree	67
4.4.3.1 (a): Order of Beach Width	68
4.4.3.2 (a): Order of Beach Width	69
5.1.1 (a): Comparison of Slope Degree Jun 2011 and March 2012	72
5.1.2 (a): Comparison of Slope Degree May and December 2011	74
5.3.1.1 (a): Order of Station According to Average Mean Value (Mid Tide) of Kerteh Beach	88
5.3.1.1 (b): Order of Station According to Average Mean Value (Mid Tide) of Mak Nik Beach	88
5.3.1.2 (a): Order of Station According to Average Sorting Value (Mid Tide) of Kerteh Beach	90
5.3.1.2 (b): Order of Station According to Average Sorting Value (Mid Tide) of Mak Nik Beach	90

## **LIST OF FIGURES**

<b>FIGURES</b>	<b>PAGE</b>
3.1.1 Location of station at Kerteh beach study area	14
3.1.2: Location of station at Mak Nik beach study area	15
4.1.1 (b): Distribution of Precipitation from June 2011 until March 2012	26
4.1.2 (b): Wind Speed Distribution	28
4.2.1.1 (a) : Differences between first and second sampling at Station 1	30
4.2.1.1 (b): Differences between first and second sampling at Station 2	30
4.2.1.1 (c): Differences between first and second sampling at Station 3	31
4.2.1.1 (d): Differences between first and second sampling at Station 4	31
4.2.1.1 (e): Differences between first and second sampling at Station 5	32
4.2.1.1 (f): Differences between first and second sampling at Station 6	32
4.2.1.2 (a): Differences between first and second sampling at Station 1	34
4.2.1.2 (b): Differences between first and second sampling at Station 2	34
4.2.1.2 (c): Differences between first and second sampling at Station 3	35
4.2.1.2 (d): Differences between first and second sampling at Station 4	35
4.2.1.2 (e): Differences between first and second sampling at Station 5	36

4.2.1.2 (f): Differences between first and second sampling at Station 6	36
4.3.1.1 (a): Comparison of Mean Value Jun 2011 and March 2012	41
4.3.1.2 (b): Comparison of Mean Value May and December 2011	44
4.3.2.1 (b): Comparison of Sorting for Jun 2011 and March 2012	47
4.3.2.2 (b): Comparison of Sorting May and December 2011	50
4.3.3.1 (b): Skewness Value for Jun 2011 and March 2012	53
4.3.3.2 (b): Skewness Value for May and December 2011	56
4.3.4.1 (b): Comparison of Kurtosis Jun 2011 and March 2012	59
4.3.4.2 (b): Comparison of Kurtosis May and December 2011	62
5.1.1 (b): Comparison of slope Degree Jun 2011 and March 2012	72
5.1.2 (b): Comparison of slope Degree May and December 2011	74
5.1.2 (a): Percentage Mean Type Value Jun 2011 and March 2012 of Kerteh Beach	76
5.1.2 (b): Percentage Mean Type Value May and December 2011 of Mak Nik Beach	77
5.2.2 (a): Percentage Sorting Type Value in Jun 2011 and March 2012 of Kerteh Beach	79

5.2.2 (b): Percentage Sorting Type Value in May and December 2011 of Mak Nik Beach	80
5.2.3 (a): Percentage Skewness Type Value in Jun 2011 and March 2012 of Kerteh Beach	82
5.2.3 (b): Percentage Skewness Type Value in May and December 2011 of Mak Nik Beach	83
5.2.4 (a): Percentage Kurtosis Type Value in Jun 2011 and March 2012 of Kerteh Beach	85
5.2.4 (b): Percentage Kurtosis Type Value in May and December 2011 of Mak Nik Beach	86

## LIST OF ABBREVIATIONS/SYMBOLS

### SYMBOLS

Km = (kilometer)

° = (Degree)

m = (meter)

cm = (centimeter)

mm = (millimeter)

g = (gram)

% = (percentage)

Φ = (Phi)

N = (north)

E = (east)

## LIST OF APPENDICES

<b>Appendix</b>	<b>Page</b>
1. Grain size Classification	95
2. Instrument used in study	97



## **ABSTRACT**

A study on erosion on beach profile and sediment characteristics was done along the Kerteh and Mak Nik beach. Sampling activity for Kerteh area was conducted on Jun 2011 and March 2012 while for Mak Nik area, the sampling was conducted on May and December 2011. Each beach was divided into 6 stations with interval for both area was 500 meter from a station to another station. Sampling of beach profile was carried out from berm that has first vegetation area until low tide area. Regarding sediment analysis, it was done by collecting about more than 100g of sediment for each high, mid and low tide. The beach profile changes continuously by time and the environment surrounded. In this study, each of the study sites shows different result such as mean and beach slope. This shows that which beach has more undergo process erosion and deposition. Furthermore, the study also noticed that there are some of physical parameters which influenced the environment such as wind speed, direction of wind, current and direction of sediment movement.

## ABSTRAK

Kajian hakisan terhadap profil pantai dan ciri-ciri sedimen telah dijalankan di pantai Kerteh dan Mak Nik. Setiap pantai kajian dibahagikan kepada 6 station. Aktiviti penyampelan untuk kawasan Kerteh telah dijalankan pada bulan Jun 2011 dan March 2012 manakala bagi kawasan Mak Nik, penyampelan telah dijalankan pada bulan Mei dan Disember 2011. Setiap kawasan pantai dibahagikan kepada 6 stesyen dan jarak di antara stesyen untuk kedua-dua kawasan pantai adalah 500meter. Penyampelan untuk profil pantai dijalankan bermula daripada kawasan berm yang mempunyai kawasan tumbuhan yang pertama tumbuh sehingga ke kawasan 'low tide'. Merujuk kepada analisis sedimen, ianya telah dijalankan dengan mengambil sampel pasir sebanyak 100 g atau lebih untuk setiap bahagian 'high tide', 'mid tide' dan 'low tide'. Bentuk pantai telah berubah mengikut masa. Dalam kajian ini, ianya telah menunjukkan yang setiap kawasan kajian pantai mempunyai keputusan yang berlainan seperti min dan kecerunan pantai. Lebih-lebih lagi, kajian ini turut mengenal pasti beberapa parameter fizikal yang mempengaruhi persekitaran seperti halaju angin, arah tiupan angin, arus dan arah pergerakan sedimen.