

SEDIMENTOLOGY AND SEDIMENT ACCRETION RATE  
IN THE FRINGING MANGROVE OF SETU WETLAND

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FRINGING MANGROVES OF SETIU WETLAND**

**BY**

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**JABATAN SAINS SAMUDERA  
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## TABLE OF CONTENTS

	PAGE
ACKNOWLEDGEMENT	i
TABLE OF CONTENTS	ii
LIST OF TABLES	v
LIST OF FIGURES	vi
LIST OF APPENDIXES	viii
LIST OF ABBREVIATIONS	x
ABSTRACT	xi
ABSTRAK	xii
<b>CHAPTER</b>	
<b>1.0 INTRODUCTION</b>	<b>1</b>
1.1 Introduction	1
1.2 Objectives	3
<b>2.0 LITERATURE REVIEW</b>	<b>4</b>
2.1 Mangrove	4
2.1.1 Mangrove Distribution in Malaysia	4
2.1.2 Mangrove Classification	5
2.1.3 Fringing Mangrove	8
2.2 Mangrove Sediment	9



2.3	Sediment Movement	11
2.4	Mangrove Sedimentation	13
2.5	Important of Mangroves	15
2.5.1	Indirect Importance	15
2.5.2	Direct Importance	18
3.0	<b>MATERIALS AND METHOD</b>	20
3.1	Description of Study Area	20
3.2	Field Sampling	22
3.2.1	Surface Sediment Collection	22
3.2.2	Sediment Marker	23
3.2.3	Accretion Rate	23
3.3	Laboratory Analysis	24
3.3.1	Sample Preparation	24
3.3.2	Grain Size Analysis	24
3.3.3	Fine Particle Size Analysis	25
3.3.4	Sedimentological Characteristic	25
3.3.4.1	Mean	26
3.3.4.2	Standard Deviation	26
3.3.4.3	Skewness	26
3.3.4.4	Kurtosis	27
4.0	<b>RESULTS</b>	28



4.1	Sediment Accretion Rate	28
4.2	Sediment Texture	32
4.3	Particle Grain Size	34
4.3.1	Mean	35
4.3.2	Standard Deviation	40
4.3.3	Skewness	45
4.3.4	Kurtosis	50
<b>5.0</b>	<b>DISCUSSION</b>	<b>54</b>
5.1	General	54
5.2	Sediment Accretion Rate	56
5.3	Particle Grain Size	60
5.3.1	Mean	60
5.3.2	Standard Deviation	64
5.3.3	Skewness	67
5.3.4	Kurtosis	69
5.4	Texture of Sediment	71
<b>6.0</b>	<b>CONCLUSION</b>	<b>74</b>
	REFERENCES	76
	APPENDIX	80
	CURRICULUM VITAE	106

## LIST OF TABLES

<b>Table</b>		<b>Page</b>
3.1	Global Positioning System (GPS) locations of sampling station	22
4.1	The accretion rate at Fringing Mangrove	28
4.2	The average of accretion rate at fringing mangrove according to location	31
4.3	The percentage of clay, silt and sand during non-monsoon season	33
4.4	The mean, sorting, skewness and kurtosis value of surface sediment	34
4.5	Value of mean in non-monsoon season (June) and monsoon season (November)	37
4.6	Value of sorting in non-monsoon season (June) and monsoon season (November)	42
4.7	Value of skewness in non-monsoon season (June) and monsoon season (November)	47
4.8	Value of kurtosis in non-monsoon season (June) and monsoon season (November)	50

## LIST OF FIGURES

<b>Figure</b>		<b>Page</b>
3.1	Map of research location, Setiu lagoon	21
4.1	The accretion rate among location for both the non-monsoon and monsoon period.	30
4.2a	The accretion rate on non-monsoon period (June), fringing mangroves	31
4.2b	The accretion rate on Monsoon period (November), fringing mangroves	32
4.3	The percentage of clay, silt and sand during non-monsoon season	33
4.4	The mean particle size of surface sediment among location in both non-monsoon and monsoon period	38
4.5a	Particle mean size of surface sediment in non-monsoon period (June)	39
4.5b	Particle mean size of surface sediment in Monsoon period (November)	39
4.6	The standard deviation value of surface sediment among location in both non-monsoon and monsoon period	43
4.7a	The standard deviation of surface sediment in non-monsoon season (June)	44
4.7b	The standard deviation of surface sediment in monsoon season (November)	44
4.8	The skewness value of surface sediment among location for both	48

non-monsoon and monsoon period.

4.9a	The skewness of surface sediment in non-monsoon season (June)	49
4.9b	The skewness of surface sediment in monsoon season (November)	49
4.10	The kurtosis value of surface sediment among location in both non-monsoon and monsoon period	52
4.11a	The kurtosis of surface sediment in non-monsoon season (June)	53
4.11b	The kurtosis of surface sediment in monsoon season (November)	53
5.1	The accretion rate of fringing mangrove in June and November	60
5.2	Mean size variability for both sampling	63
5.3	The sand percentage for June and Novemeber	63
5.4	The standard deviation of surface sediment in June and November	66
5.5	The percentage of standard deviation in June and November	66
5.6	The skewness of surface sediment in June and November	68
5.7	The percentage of Skewness in June and November	68
5.8	The kurtosis of surface sediment in June and November	70
5.9	The percentage of kurtosis in June and November	70
5.10	Standard deviation vs mean ( $\phi$ )	73
5.11	Skewness vs mean ( $\phi$ )	73

## LIST OF APPENDICES

<b>Appendix</b>		<b>Page</b>
A1	A view of fringing mangrove 1	80
A2	A view of fringing mangrove 2	81
A3	A view of fringing mangrove 3	82
A4	A view of fringing mangrove 4	83
A5	A view of fringing mangrove 5	84
A6	A steps how to plant the perspex and take the reading	85
A7	A way how to completed particle size analysis using the sieve and shaker.	86
A8	Instruments used in particle size analysis	87
A9	Steps for the grain size analysis	88
A10	Steps taken for the digestion of sample for analysis of particle size analysis	89
A11	Grain size classification based on Wentworth (1992)	90
A12	Classification of Sorting, Skewness and Kurtosis	91
A13	Category of r value	91
B1	Master Sizer result analysis report	92
B2	Aerial map of Setiu lagoon in June	93
B3	Aerial map of Setiu lagoon in November	94
C1	The Mean, Sorting, Skewness and Kurtosis of surface sediment using paired sample t-test	95

C2	The Accretion Rate using Anova: Two-Factor without Replication	97
C3	The Mean particle size using Anova: Two-Factor Without Replication	98
C4	The Sorting using Anova: Two-Factor Without Replication	100
C5	The Skewness using Anova: Two-Factor Without Replication	102
C6	The Kurtosis using Anova: Two-Factor Without Replication	104

## LIST OF ABBREVIATIONS

°C	degree Celsius
Ø	phi
µm	micrometer
mL	milliliter
cm	centimeter
cm.month <sup>-1</sup>	centimeter per month
cm.yr <sup>-1</sup>	centimeter per year
L	liter
st.	station
FM	fringing mangrove
TR	transect
PSA	particle size analysis
H <sup>2</sup> O <sup>2</sup>	Hydrogen Peroxide



## ABSTRACT

Study on the grain size characteristic and distribution were carried out in the fringing mangrove forest of the Setiu lagoon. Sediment characteristic are one of the most important factors directly affecting mangrove productivity and structure. Two samplings were conducted from May 2004 until November 2004 at 43 stations. Artificial markers were used to determine whether the study areas experienced deposition or erosion during the period. Particle size analyses were done to determine the temporal sediment pattern in study area. During the non-monsoon season the sediment was found to be dominated by medium, poorly sorted and positive skewed sediment. While during the monsoon season the sediment although still dominated by medium sand but to a lesser extent compared to the non-monsoon season with characteristics of also being poorly sorted but negative skewed. There is not much variation in Kurtosis where most of the sediment is found to be very leptokurtic. The distribution of sediment were found to be mostly influenced by certain forces such as wind speed, tidal current and wave action as well as the function of mangrove forest ecosystem itself. Accretion rate data tend to be mostly positive indicating deposition of sediment rather than erosion.

## ABSTRAK

Kajian terhadap saiz butiran endapan telah dilakukan disekitar pesisir hutan paya di lagun Setiu bertujuan untuk lebih memahami ciri-ciri endapan di hutan paya laut tersebut. Bentuk saiz endapan adalah antara faktor terpenting dalam pertumbuhan dan produktiviti di hutan paya laut. Penyempelan dilakukan dua kali bermula dari Mei 2004 hingga November 2004 dimana lima lokasi dengan 43 stesen kajian telah dikenalpasti. Kaedah penanda buatan digunakan untuk melihat kawasan tersebut samada mengalami penimbunan atau hakisan sepanjang aktiviti dijalankan. Sedimen permukaan setebal 1cm diambil bagi menjalankan analisa saiz partikel bagi menentukan taburan saiz partikel yang juga berkaitan dengan penimbunan dan hakisan. Kadar sedimentasi diukur bagi mengetahui kadar pemendapan sediment. Pada musim bukan monsun sedimen kebanyakannya terdiri dari pasir sederhana, bersisihan sederhana sempurna dan berkepencongan positif. Di musim monsun pula sedimen masih didominasi oleh pasir sederhana tapi bersaiz lebih kecil berbanding pada musim bukan monsoon, bersisihan sederhana sempurna tetapi berkepencongan negatif. Kurtosis paling leptokurtic paling jelas mendominasi hampir disemua stesen. Kajian ini juga menunjukkan bahawa taburan endapan adalah dipengaruhi oleh pelbagai faktor seperti kalajuan angin, arus pasang-surut, aktiviti ombak dan fungsi ekosistem hutan paya laut itu sendiri. Data menunjukkan kebanyakan stesyen kajian menunjukkan penimbunan berbanding hakisan.