

STUDY ON DISTRIBUTION AND MOVEMENT OF SEDIMENT  
ALONG TANJUNG BATU BEACH  
OF KERTEH COASTAL AREA, TERENGGANU

ZAIESHA BINTI OTHMAN

FACULTY OF MARITIME STUDIES AND MARINE SCIENCE  
UNIVERSITI MALAYSIA TERENGGANU

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**By**

**Zaiesha binti Othman**

**Research Report submitted in partial fulfillment of  
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**DEPARTMENT OF MARINE SCIENCE  
FACULTY OF MARITIME STUDIES AND MARINE SCIENCE  
UNIVERSITI MALAYSIA TERENGGANU**

**DECLARATION AND VERIFICATION REPORT  
FINAL YEAR RESEARCH PROJECT**

It is hereby declared and verified that this research report entitled:  
Study on Distribution and Movement of Sediment Along Tanjung Batu Beach of Kerteh Coastal Area, Terengganu by Zaiesha bt Othman, Matric No. UK18301 have been examined and all error identified have been corrected. This report is submitted to the Department of Marine Science as partial fulfillment towards obtained the Degree of Science (Marine Science), Faculty of Maritime Studies and Marine Science, Universiti Malaysia Terengganu.

Verified by:

Principal Supervisor

**PROF. MADYA DR. ROSNAN YAACOB**  
Pensyarah  
Jabatan Sains Marin  
Fakulti Pengajian Maritim dan Sains Marin  
Universiti Malaysia Terengganu (UMT)  
21030 Kuala Terengganu

Name: Assoc. Prof. Dr. Rosnan Yaacob

Official Stamp:

Date: 29/4/11

Second Supervisor

**DR. ANTONINA ABDULLAH**  
Lecturer

Name: Dr. Nor Antonina Binti Abdullah  
Department of Marine Science  
Faculty of Maritime Studies and Marine Science  
Universiti Malaysia Terengganu (UMT)  
21030 Kuala Terengganu

Official Stamp:

Date: 27/4/11

Head of Department of Marine Science

Name: Dr. Razak Bin Zakariya

Official Stamp:

Date: 29/4/11

**DR. RAZAK ZAKARIYA**  
Ketua Jabatan Sains Marin  
Fakulti Pengajian Maritim dan Sains Marin  
Universiti Malaysia Terengganu  
(UMT)

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## LIST OF ABBREVIATIONS/SYMBOLS

### ABBREVIATION

HT	High tide
MT	Midle tide
LT	Low tide
NSD	Net Shore Drift
GPS	Global Positioning System
N	North
E	East
km	Kilometre
m	Metre
$\mu\text{m}$	Micrometre
g	Gram

### SYMBOL

$\emptyset$	Phi
%	Percentage
$^{\circ}$	Degree

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## ABSTRACT

The study on distribution and movement of sediment was conducted along Tanjung Batu Beach, Kerteh Terengganu. The study was carried out in order to determine the distribution of sediment and beach profile changes. The direction of sediment movement was also revealed based on the sediment characteristics and beach profiles. The rain distribution and wind velocity play a great role which influences the changes of the sediment characteristics and beach profile. Sampling was conducted in thirty stations with 100 meter interval and divided into two zones which is Zone A and Zone B. Transit Sokkia C410 was used to measure beach profile properties. Meanwhile, moment's method was employed to calculate sedimentological parameter. Based on the changes of beach profile for all stations, the degree of steepness is decreasing towards the northern of study area which is from Station 1 until Station 30 or Zone A to Zone B except for stations located in the middle of the study area either within the zones or the entire sampling site. This is due to the existence of natural feature such as headland and a hard engineering structure which is a groin that founded at the study area. For sedimentological analysis, the distribution of mean values increased from Station 1 until Station 30 and the increasing of this value indicates that the grains in that particular area are getting finer. Sediments in Zone A were founded poorly sorted compare to stations in Zone B. Shortly, the characteristic of surface sediment at sampling sites are dominated by coarse sand, moderately sorted, with varied of skewness but very leptokurtic. Overall, based on the beach slope and sediment characteristics, the movement of sediments in the study area were being transported from Station 1 to Station 30.

## ABSTRAK

Kajian taburan dan pergerakan sedimen telah dijalankan di sepanjang Pantai Tanjung Batu, Kerteh Terengganu. Kajian ini telah dijalankan untuk menentukan taburan sedimen dan perubahan profil pantai. Arah pergerakan sedimen juga dapat dikenalpasti berdasarkan ciri-ciri sedimen dan profil pantai. Taburan hujan dan kelajuan angin memainkan peranan yang besar dalam mempengaruhi perubahan ciri-ciri sedimen dan profil pantai. Panyampelan telah dilakukan pada tiga puluh stesen dan jarak di antara stesen adalah 100 m. Kawasan kajian juga telah dibahagikan kepada dua zon iaitu Zon A dan Zon B. Transit Sokkia C410 telah digunakan untuk mengukur profil pantai, manakala kaedah momen digunakan untuk mengukur parameter sedimen. Berdasarkan perubahan profil pantai untuk kesemua stesen, nilai kecerunan pantai menurun menuju ke arah utara kawasan kajian iaitu dari Stesen 1 hingga ke Stesen 30 ataupun dari Zon A ke Zon B. Kecuali pada kawasan tengah kajian samada diantara zon ataupun keseluruhan kawasan kajian. Ini adalah kerana kewujudan struktur semulajadi dan juga struktur kejuruteraan iaitu groin yang terdapat di kawasan kajian mempengaruhi pergerakan sedimen. Bagi sedimen analisis, taburan nilai min meningkat dari Stesen 1 hingga ke Stesen 30 dan peningkatan nilai mean menunjukkan saiz sesuatu stesen itu bertambah halus. Kemudian taburan sedimen di Zon A adalah sangat tidak sekata berbanding taburan di Zon B. Secara ringkasnya, ciri-ciri sedimen di kawasan kajian adalah didominasi oleh pasir kasar, bertabur secara sekata dan sangat leptokurtik. Secara keseluruhannya, pergerakan sedimen di kawasan kajian adalah dari Stesen 1 hingga ke Stesen 30.