

THE STUDY OF SEA SURFACE TEMPERATURE IN KUALA TERENGGANU
COASTAL WATER USING SATELLITE IMAGERY

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**THE STUDY OF SEA SURFACE TEMPERATURE IN KUALA TERENGGANU
COASTAL WATER USING SATELLITE IMAGERY**

By:

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

**Department of Marine Science
Faculty of Maritime Studies and Marine Science
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DEPARTMENT OF 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:

A study of Sea Surface Temperature in Kuala Terengganu Coastal Water from Satellite Imagery by **Rohaniza bt Mohamed Zin** Matric No. **UK18413** have been examined and all errors identified have been corrected. This report submitted to the Department of Marine Science and as a partial fulfillment toward obtaining the Degree of Marine Biology, Faculty of Maritime Study and Marine Science, University Malaysia Terengganu, Terengganu, Malaysia.

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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	li
LIST OF TABLES	Vii
LIST OF FIGURES	Viii
LIST OF ABBREVIATIONS	X
LIST OF APPENDICES	Xi
ABSTRACT	Xii
ABSTRAK	Xiii
CHAPTER 1: INTRODUCTION	
1.1 Introduction	1
1.2 Justification	4
1.3 Objectives	5
CHAPTER 2: LITERATURE REVIEW	
2.1 Sea Surface Temperature	6
2.2 Satellite Observation	9
2.3 MODIS Satellite Imagery	12
2.3.1 Terra Satellite	14
2.3.2 Aqua Satellite	15

CHAPTER 3: METHODOLOGY

3.1	Study Area	16
3.2	Equipments	20
3.2.1	List of Equipments during Sampling (Ground Sampling)	
3.2.2	Software that was used to process image from satellite (MODIS)	
3.3	Ground Sampling	21
3.3.1	Procedure	
3.4	Image and Map Processing	22
3.4.1	Geometric Correction	
3.4.2	Cloud Mask	
3.4.3	GIS Analysis	

CHAPTER 4: RESULT

4.1	Data from Ground Sampling SST	24
4.2	Comparison in-situ SST data according by year	29

CHAPTER 5: DISCUSSION

5.1	Comparison between in-situ SST data with MODIS Image	33
5.2	Correlation of SST Value Between Terra MODIS and in-situ Data	35
5.3	The Changes of SST Value by Seasonal Changes	37

5.4	Factors that Influence SST	39
	CHAPTER 6 : CONCLUSION	41
	REFERENCES	42
	APPENDICES	45
	CURICULUM VITAE	48

LIST OF TABLES

Table		Page
3.1	Coordinate for each station for the sampling	19
4.1	Physical parameter for first sampling	25
4.2	Physical parameter for second sampling	27
4.3	SST data from 2006, 2008, 2009 and 2010	29
5.1	SST value between Terra MODIS with in-situ data	33
5.2	Different SST value for first and second sampling	37

LIST OF FIGURES

Figure		Page
3.1	Area of Sampling Site	18
3.2	Flow Chart of Methodology to determine SST	20
4.1	SST for the First Sampling	26
4.2	SST for Second Sampling	28
4.3	Daily SST Map derived from Terra MODIS, 2010	31
5.1	Graph of SST derived from Terra MODIS and in-situ data for 2006, 2008, 2009 and 2010	35
5.2	Correlation of SST value before and during monsoon season	38

LIST OF ABBREVIATIONS

GPS	-	Global Positioning System
SST	-	Sea Surface Temperature
AVHRR	-	Advanced Very High Resolution Radiometer
IR	-	Infrared
km	-	Kilometre
MODIS	-	Moderate Resolution Imaging Spectroradiometer
NASA	-	National Aeronautics and Space Administration
NOAA	-	National Oceanic and Atmospheric Administration
°C	-	Degree Celcius
vs	-	Versus
DO	-	Dissolved Oxygen
mg/L	-	Milligram per Liter
TDS	-	Total Dissolved Solid

LIST OF APPENDICES

Appendix		Page
1	Hydrolab Quanta & YSI Multiprobe	45
2	Meteorological Data	46

THE STUDY OF SEA SURFACE TEMPERATURE IN KUALA TERENGGANU COASTAL WATER USING SATELLITE IMAGERY

ABSTRACT

The study of sea surface temperature was conducted at Kuala Terengganu Coastal Water that were around Pulau Kapas until Pulau Redang. The data were taken by in-situ and Satellite Image by using MODIS data. The in-situ data were taken for two times; first was from 12nd until 15th May 2010 and second sampling was done on 31st until 2nd October 2010. For MODIS Images were downloaded at ocean color website and the data were download according by sampling day which means by daily image. The MODIS data then extracted by using ENVI 4.5 and ArcGIS to process the image. After then, these two data from sampling site and MODIS data were combine to see the correlation between MODIS Satellite and in-situ data. From the result the R^2 shows the 0.001 value means that there's no correlation or correlation is low to compare between MODIS Image Satellite with in-situ data. There's some factors that influence with SST data by using satellite such as cloud formation, water vapour, reflected sky and also the other presences of gases.

KAJIAN MENGENAI SUHU PERMUKAAN AIR LAUT DI PERAIRAN KUALA TERENGGANU MENGGUNAKAN IMEJ SATELITE

ABSTRAK

Kajian mengenai suhu permukaan air laut telah dijalankan di sepanjang perairan Kuala Terengganu di sekitar Pulau Kapas hingga Pulau Redang. Data-data tersebut diambil melalui in-situ dan juga imej satellite menggunakan data dari MODIS. Data in-situ telah diambil kajian sebanyak dua kali; kali pertama dari 12 hingga 15 Mei 2010 dan persampelan kedua dilakukan pada 31 hingga 2 Oktober 2010. Bagi mendapatkan imej dari MODIS, data tersebut telah dimuat turun dari laman web ocean color. Data dari MODIS telah diproses menggunakan software ENVI 4.5 dan ArcGIS bagi menghasilkan imej MODIS. Kemudian, kedua-dua data ini telah digabungkan bagi melihat korelasi antara dua data dari Satellite MODIS dan data in-situ. Berdasarkan keputusan yang telah diperoleh, R^2 menunjukkan nilai 0.001 bermakna tiada korelasi atau korelasi antara kedua-dua data adalah rendah antara Satellite Imej MODIS dengan data in-situ. Terdapat beberapa faktor yang mempengaruhi data suhu permukaan air laut tersebut antaranya kehadiran awan yang tebal, wap air, pembalikan awan dan juga kehadiran gas-gas yang lain.