

UNIVERSITI TEKNOLOGI MARA

**THE IMPACT OF SEA LEVEL
RISE ON COASTAL REGION OF
SELANGOR, MALAYSIA**

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THESIS submitted in partial fulfillment
of the requirements for the degree of
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(AP220)

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AUTHOR'S DECLARATION

I declare that the work in this dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.


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ABSTRACT

Climate change interacts in a particular perspective with varieties of human activities and other drivers of coastal change. Phenomena of Sea level rise (SLR) is the major impacts of global warming. SLR and Climate Changes may impact critical infrastructures such as jetty, coastal road, and the local community. This research aims to investigate the impact of inundation due to Sea Level Rise along the coastal Selangor using the geospatial technique. The main objectives of this study are to predict the sea level rise in the year 2020 until 2060, thus determine the impact due toward infrastructure and land use along the Selangor shoreline. Data used were three altimeter satellites located at Border Malaysia - Thailand, Border Penang – Perak, and Straits Johor and three JUPEM tide gauge data. Hydrodynamic modelling along the coastline was developed using MIKE 21 Flow Model. This hydraulic stimulation numerical is an ideal method for coastal studies. The parameter used consists of bathymetry, currents speed, current direction and tidal data. Seawater prediction was determined by calculation using algorithm formula from (NAHRIM, 2010). Then, the impact of sea level rise on the whole study area was derived using ArcGIS 10.3 and Google Earth Pro to identify the potential infrastructures and land use against inundation. The result showed the seawater rising to 0.051 – 0.289 in the year 2020 until 2060. Next, the impact of inundation shown 192 - 274 units of infrastructures were potential to affected in period 40 years. Lastly, the cropland showed the most impact land use area by inundation ranging from 14.3 – 18.4 percent and followed by settlement area 3.9 – 5.2 percent.

TABLE OF CONTENT

	Page
CONFIRMATION BY PANEL OF EXAMINERS	i
AUTHOR'S DECLARATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENT	v
LIST OF TABLES	vii
LIST OF FIGURES	ix
LIST OF SYMBOLS	x
LIST OF ABBREVIATIONS	xi
CHAPTER ONE: INTRODUCTION	1
1.1 Introduction	1
1.2 Research Background	1
1.3 Problem Statement	2
1.4 Aim of the study	3
1.5 Objectives	3
1.6 Research Question	4
1.7 Significance of the Study	4
1.8 Scope and Limitation	4
1.9 Conclusion	6
CHAPTER TWO: LITERATURE REVIEW	7
2.1 Introduction	7
2.2 Climate Change	8
2.3 Coastal Region	9
2.4 Geographic Information System (GIS)	10
2.5 Altimeter Satellite	11
2.6 Identify The Parameter for Sea Level Rise	12
2.7 Conclusion	14

CHAPTER THREE: RESEARCH METHODOLOGY	15
3.1 Introduction	15
3.2 Study Area	15
3.3 Management Unit (MU)	17
3.4 Methodology of the study	18
3.5 Sea level rise	22
3.6 Coastal Hydrodynamic Modelling	25
3.7 Inundation Prediction	31
3.8 Impact of Sea Level Rise	32
CHAPTER FOUR: RESULTS AND ANALYSIS	34
4.1 Introduction	34
4.2 Results and Analysis	34
4.3 Sea Level Rise	34
4.4 Conclusion	55
CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS	56
5.1 Introduction	56
5.2 Conclusion	56
5.3 Recommendations	57
REFERENCES	58
APPENDICES	62