UNIVERSITI TEKNOLOGI MARA

A COMPARATIVE ANALYSIS OF SEA SURFACE TEMPERATURE (SST) DISTRIBUTION PATTERNS IN KUALA TERENGGANU COASTAL WATERS

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Thesis submitted in fulfillment
of the requirements for the degree of
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AUTHOR'S DECLARATION

I declare that the work on this project /dissertation was carried out in accordance with the regulations of UniversitiTeknologi MARA. The project/ dissertation are original and it is the result of my own work, unless otherwise indicated or acknowledge as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree qualification.

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ABSTRACT

The title of this research is A Comparative Analysis of Sea Surface Temperature (SST) Distribution Patterns in Kuala Terengganu Coastal Waters. The data that have been used in this research are from Landsat 8 satellite images and in-situ data of SST. This study demonstrated that Landsat 8 images can successfully be used to obtain SST in Kuala Terengganu coastal waters area. The aim of this research is to study the project of Sea Surface Temperature (SST) distribution pattern in Kuala Terengganu coastal waters by using ERDAS and ENVI software. Basically, there are two objectives in this research. The first objective of this research is to identify dominant patterns of Sea Surface Temperature (SST). Then, the second objective in this research is to compare the accuracy of two difference software in SST model. In this study, the method that had been used is begin with downloading the Landsat 8 images for three different years which are from year 2013, 2015 and 2017 using USGS website. In order to retrieve SST data, a Thermal Infrared (TIR) band is required to extract the SST using Landsat 8 images. Landsat 8 Thermal Infrared Sensor (TIRS) was used to retrieve SST data because it has thermal band that usually used to detect temperature. In fact, remote sensing technology using a thermal band in TIRS sensor of Landsat 8 satellite imagery which are band 10 and band 11 are used to determine the intensity and distribution of temperature changes. The software that had been used in this research were ERDAS Imagine, ENVI and ArcGIS software in order to extract the SST data from Landsat 8 images until the final output of this research. Map production and correlation coefficient graph between image processing result of SST and in-situ data of SST are the final output of this research.

TABLE OF CONTENTS