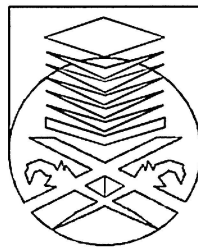


**THE EFFECT OF DIFFERENT SATELLITE IMAGE
RESOLUTION FOR MONITORING CHANGES OF
MANGROVE IN SANDAKAN, SABAH**

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**Thesis submitted to the Universiti Teknologi MARA Malaysia
in partial fulfilment for the award of the degree of the
Bachelor of Surveying Science and Geomatics (Honours)**

JULY 2020

DECLARATION

I declare that the work on this project/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA (UiTM). This project/dissertation is original and it is the result of my work, unless otherwise indicated or acknowledged as referenced work.

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ABSTRACT

This project examines the use of remote sensing to identify a valuable swamp forest which is mangrove that benefits for environmental and economic. Mangrove provide shelter for birds, monkey, and aquatic species such as fishes, shrimps, crabs and others. The purpose of this project is to detect the changes that have taken place in this area during the period in Sandakan, Sabah. The effect of different satellite is implied on image classification to identify which satellite is more compatible. This study used the data that obtained from Malaysian Space Agency which is satellite image of Spot-5 and Spot-6. There are 2 images are classified using supervised classification as to extract the land use especially mangrove area. After done with image classification process, shoreline identification is performed in order to identify how much the erosion occurs between years 2007 until 2019. The factor of erosion is defined which the major factor is the rising of sea level due to climate change. It is done as one of the reason that affect mangrove and marine habitat. The normalized different vegetation index (NDVI) applied to enhance the mangrove for better visualization and as a reference to detect location of mangrove area. It also can differentiate the vegetation and non-vegetation based on colour after being processed. From the result land used changes result by supervised classification, change detection is done to see the changes of mangrove and other land use. The changes detection map was produced by using the data of supervised classification between 2007 and 2019. The accuracy assessment result for Spot-5 using supervised method of Maximum Likelihood classification show just a slightly different which is 80% while for Spot-6 is 85%. Area of mangrove also calculated by tools in software Arcgis. Between 12 years, the result shows that the mangrove area is decreasing gradually from 2007 until 2019. The approximation is about 219.58 hectares of losses each year which quite a lot. The total changes in 12 years of mangrove areas losses approximately about 2635.00 hectares. From this time series study has proved that the mangrove areas were decreased, due to major factor that contributed such as the declination of shoreline that occurred because shoreline act as a protection for mangrove area and marine habitat from being degraded high resolution of satellite image is preferred as to enhance the features detection and the classification will produce more accurate result.

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