UNIVERSITI TEKNOLOGI MARA

ESTIMATION OF COLORED DISSOLVED ORGANIC MATTER (CDOM) AND CHLOROPHYLL AROUND MARANG SEA

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of the requirements for the degree of
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AUTHOR'S DECLARATION

I declare that the work in this thesis 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

This project entitled a study of the estimation of colored dissolved organic matter (CDOM) and chlorophyll by satellite imagery. Colored dissolved organic matter is the largest bio reactive inventory of carbon in the global ocean. It also primarily absorbs light in the UV and visible spectral range affecting the intensity and spectral quality of the light field in the water. Phytoplankton use chlorophyll to carry out photosynthesis, absorbing atmospheric carbon dioxide to produce sugars for fuel. Chlorophyll in the water changes the way it reflects and absorbs sunlight, allowing scientists to map the amount and location of phytoplankton. This project utilizes the images that have been downloaded from USGS. The sensor and satellite that is used is Landsat 8 OLI. These projects have been led by taking after the requirement of the project. For the project, there are three objectives. Firstly, to estimate the concentration of the CDOM and chlorophyll at Marang sea using appropriate algorithms. Generally, the images that have been downloaded from the USGS sites demonstrate the whole universe of the CDOM and chlorophyll area. Next objective will be to detect the trend changes of CDOM and chlorophyll concentration from 5 years of satellite imageries. This objective achieved by selecting the study region by utilizing the Erdas Imagine software. After satisfying the two objectives, next will be the creation of the map. The map that is created can be updated into the chlorophyll and CDOM concentration database for further research. An analysis will be done on the relationship and the trend changes between CDOM and chlorophyll for five years data. Result for the entire project can be made as guide for further research and a better oceanography management.

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