UNIVERSITI TEKNOLOGI MARA

ASSESSMENT OF THE COASTAL VULNERABILITY INDEX ALONG KOTA BHARU COAST USING GEOSPATIAL TECHNIQUES

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requirements for the degree of
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AUTHOR'S DECLARATION

I declare that the work in this thesis/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

According to NCES, the total erosion rate in Kelantan in 2015 was 73.4% equivalent to 52.1km from 71km along the coast. This study aims to analyze the coastal vulnerability index along the Kelantan coast, using geospatial techniques. Based on this aim, the objective is as follows: i) To identify potential parameters of CVI along Kota Bharu coast ii) To determine coastal vulnerability level using CVI modeller iii) To produce CVI map along Kota Bahru coast use geospatial technique. Satellite image which is Sentinel 2A were used to perform pre-processing, land use classification and shoreline digitizing. Determination of fundamental vulnerability parameters such as land use classification, shoreline change rate, and coastal slope. These three variables are used to calculate the determination of CVI. Rank the vulnerability parameters and lastly produce a CVI map. The study reveals the ranking of the vulnerability parameters based on calculations from the modeler / formula used for each type of vulnerability in the four-management unit that has been created and produce CVI Map along 13km of the Kota Bharu coast. The map shows that the area of MU 1 is low (2), MU 2 very low (1), MU 3 very high (5) and MU 4 high (4). The coastal vulnerability map produced using the methods applied in this research serve as a specific predictor of threats to people living in this coastal area and this analysis can be used for proper planning and management that will minimize risk in the ecosystem and promoting safe adaptation to these natural hazards.

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