UNIVERSITI TEKNOLOGI MARA

DETECTION OF DEFORESTATION AND FOREST FRAGMENTATION IN FOREST RESERVE ULU MUDA, KEDAH BY USING SPOT DATA IMAGERY

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Thesis submitted in fulfillment
of the requirements for the degree of
Bachelor of Surveying Science and Geomatics (Hons.)

Faculty of Architecture, Planning and Surveying

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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

Deforestation is one of the commonly issue that occur in Malaysia whether it is legal or illegal logging activity. The deforestation give an impact to the animal and plant in the forest by having the animal loss their habitat, effecting water catchment and losing of valuable tree species. As of for this research project, the aim and purpose of the project is firstly for the aim is to analyse the forest cover changes using SPOT data imagery and as for the purpose is to detect the deforestation, detection of forest fragmentation and to analyse the rate of forest loss in Forest Reserve Ulu Muda, Kedah. The problem that having in Ulu Muda forest is the forest management do not update the information more efficiency and consistent. The require data use to make a detection based from the objective are three SPOT data with different year which is 2006, 2011 and 2016. These three data was achieved from the MRSA (Malaysian Remote Sensing Agency). The method used to process the data is pixel classification on classifying the feature that consist on land cover such as forest, non-forest, water and logging trail. Next is performing the landscape fragmentation tool based from the pixel classification output to extract the information of types of fragmentation which is patch, edge, perforated and core forest. Lastly, perform the Normalised Difference Vegetation Index (NDVI) for verification with pixel classification and then analyse the area of forest and calculate the rate of forest loss in between year 2006 and 2016. As for conclusion, the output result in the project is the table of accuracy assessment, bar graph for the forest fragmentation detect in the Ulu Muda Forest, Kedah and lastly the table of forest loss rate that occur in the Ulu Muda forest.

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