

UNIVERSITI TEKNOLOGI MARA

**EFFECT OF TEMPERATURE ON LAND USE
CHANGES FROM FOREST TO OIL PALM
PLANTATION IN SABAH**

ASMA' AMALINA BT MD YUSOF

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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/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.

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Name of Student	:	Asma' Amalina Bt Md Yusof
Student I.D. No.	:	2014634588
		Bachelors of Surveying Science and Geomatics–
Programme	:	AP220
Faculty	:	Architecture, Planning & Surveying
	:	Effect of Temperature on Land Use Changes from
Thesis/Dissertation Title	:	Forest to Oil Palm in Sabah
Signature of Student	:
Date	:	January 2018

ABSTRACT

The oil palm plantation has often been accused as the cause of global warming. The impact of oil palm expansion has been particularly severe in tropical forest regions and oil palm plantation is expected to increase continuously over the next 10 or 20 years. The aim of this study is to analyse the pattern of oil palm distribution and how its effect the temperature in Sabah from year 2000 to 2016. Landsat satellite images data were obtained from the USGS website of available years from 2000 to year 2016. These data were mosaicked and classified by using ERDAS Imagine 2014 and ArcGIS software. The result for area of changes of oil palm is about 17721.28 km² from 12601.91 km² in year 2000 to 29823.19 km² in year 2016. Then, the pattern of changes of oil palm distribution was analyzed by using Moran's I Spatial Autocorrelation method. The result obtained for the distribution pattern is random distribution. Meanwhile, the relationship between LST and the oil palm expansion was conducted by using correlation analysis. The result has shown that the R² is not linearly increase, however in 2016 the R² is quite high which is R² = 0.34. In conclusion, it can be conclude that the oil palm expansion have impact the land surface temperature, however several factors should be more investigated further. Assumption of the age of oil palm is one of the factor, but validation on the site is also important.

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