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SPATIO TEMPORAL DISTRIBUTION OF FOREST FIRE USING LANDSAT NDVI AND NBR

MOHAMAD DANIEL WAFRY BIN MOHD NAZARI

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of the requirement for 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.

Name of Student	:	Mohamad Daniel Wafry bin Mohd Nazari
Student I.D. No.	:	2014504477
Programme	:	Bachelor of Surveying Science and Geomatics (Hons)
Faculty	:	Faculty of Architecture, Planning & Surveying
Dissertation Title	:	Spatio Temporal Distribution of Forest Fire using Landsat –NDVI and NBR
Signature of Student	:	.....
Date	:	july 2017

Approved by:

Name of Supervisor	:	Madam Rohayu Haron Narashid
Signature and Date	:	.....

ABSTRACT

Forest fire are common problem in world where it is the main factor of climax change according to the HAL archive – ouvertes, the causes of forest fires are varied and their distribution differs among countries, but may also differ spatially and temporally within the same country and mostly it is cause by human other than that forest fire are effected by the natural causes. The first effect of forest fire is destroyed homes, wildlife as well as the vegetation, the soil in the area will be completely destroy and the forest growth are effected. The large amount of smoke release to the air can also cause an air pollution. The forest fire study in Malaysia are not much compare to other country. Chuping are the northern area in Perlis which is happen to be the hottest area in Malaysia yearly the forest was burned and the area effected are been studied yet. most researcher study about the forest fire are focusing on vegetation index and the land surface temperature. Normalized Burn ratio (NBR) can provide us the information about the area of burn severity area as confirmation that the area was burned. The aim of this research is to determine Spatio temporal distribution of forest fire episode between 2013 – 2016 at Chuping Perlis based on Normalized Difference Vegetation Index (NDVI) and Normalized Burn Ratio (NBR) of Landsat images at Chuping Perlis. The objective of the study to generate the vegetation and burn severity indices coverage based on NDVI and NBR. And the second objective to estimate the change of NDVI and NBR, and the third are to determine the spatio temporal distribution of forest fire based on NDVI and NBR change. The study attempts to provide a comprehensive review of current research with respect to remotely sensed data and methods used to model post-fire effects and forest recovery patterns in the forest regions. As a result, the change of area of vegetation can be identify in five different classes. To support the vegetation value effect of forest fire the burn severity ratio was used to view the area of fire happen to make sure the relation of forest fire with the vegetation index. The conclusion of this study the correlation between NDVI and NBR were proved and the significant of the study achieve the aim of the study were the area of forest fire can be monitor using the both method.

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