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THE RELATIONSHIP OF LAND USE CHANGES AND LAND SURFACE TEMPERATURE FOR URBAN AREA IN KUCHING, SARAWAK

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Abstract

Land surface temperature (LST) is used as an indicator for land temperature. Previous research demonstrates a strong correlation between urban growth and land surface temperature. The rising of land temperature will lead to urban heat island if there are no preventative precautions done. Due to the area's rapid urbanisation, this study will focus on Kuching City. Matang Jaya, Tabuan Jaya, Satok, and Batu Kawa were chosen as case studies. These areas are rapidly developing, with new townships and population growth. The Landsat 7 data set was used as secondary data in this study. Spatial and thermal analysis were performed on the output using ERDAS software and ArcGIS. The analyses derived land use changes between 2005 and 2017, temperature statistics for land use types, and LST retrieval for case studies. The result indicates that the land surface temperature increased with the case studies' physical development.

Keywords: Land Use Changes, Land Surface Temperature (LST), urban growth, spatial analysis, thermal analysis

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