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THE INVESTIGATION OF URBAN HEAT ISLAND IN ABUJA CITY USING SATELLITE IMAGES

Abstract

Urban heat islands (UHIs) has been a critical environmental issue in many urban areas due to high rate of urbanization, its environmental impact has been receiving attention over the decades as it is an important factor in global climate change studies. The knowledge of surface temperature is important to climate changes and human interactions with environment. The UHI phenomenon is of interest across different disciplines since it signal reflects a broad suite of essential land surface transformation impacting human health, ecosystem function, local weather and possible climate. Remote sensing data because of its synoptic view provides the information for the entire city and its environs, it is therefore a powerful tool for studying the urban environment. This study attempts to estimate land surface temperature as well as mapping urban heat island phenomenon in Abuja city and environs and data from Landsat TM/ETM+ and field measurements were used to calibrate, spatially retrieve the brightness temperature as well as to quantitatively compare the patterns and intensity of UHI with land use/land cover (LULC) categories based on image classification and land surface retrieval methods. Identifying urban expansion and the relationship to urban heat development is important to urban planners and decision makers so as to effectively manage and control city future development