

Comparing the cooling ability of green space in suburban and urban areas using LST and NDVI

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Abstract

Urban green spaces have been found to effectively mitigate the effects of the Urban Heat Island through localized cooling. This study identifies how green spaces differ in their cooling characteristics in a suburban study area and an urban study area by focusing on the Surface Urban Heat Island effect. Remote sensing techniques are utilized to derive land surface temperature, the normalized difference vegetation index and urban cool islands. The patch features percentage of tree canopy cover, percentage of grass/shrub cover and patch size were also calculated. A forward multiple regression was used to determine which characteristics had more of an influence on surface temperature. Results showed that urban cool islands are formed in and around green spaces in their respective study areas. Patch characteristics played significant roles in dictating the temperature of suburban green spaces but not urban green spaces, which were more influenced by the surrounding land use.