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Tongzhou District Beiyun river riparian zone ecology assessment

Alisa Salimova, Zuo J and Homer C
Tsinghua University, China

The objective of this study is to analyze the Beiyun River riparian zone ecology with help of remote sensing analysis in ArcGis using 30 cloudless Landsat TM image of 2013 and 2017 taken in the periods of May-August. Land cover, grassland and vegetation cover, heat island effect and water system change were chosen as the main parameters and further analyzed to determine a Beiyun River ecological state. The methodology involved the following steps: Firstly, 30 satellite cloudless images were collected from Landsat TM image open source database. The visual interpretation method was used to determine different land types in a catchment area. After primary and secondary classification, 28 land coverage types in total were classified. Visual interpretation method was used with the help of ArcGIS for the grassland monitoring and US Landsat TM remote sensing image processing with a resolution of 30 meters was used to analyze the vegetation cover. Water system was analyzed using the visual interpretation method on the GIS software platform to decode the target area, water use and coverage. The results of this research were promising. During the period of 2013-2017, urban residential, industrial and mining storage land areas significantly increased compare to other land use types. The vegetation coverage in the ecological corridor in 2017 is higher than the vegetation coverage in 2013. The water volume in the river area in Tongzhou District has been partially reduced indicating the potential water scarcity risk in Beiyun River watershed. The surface brightness temperature value is positively correlated with the vegetation coverage density and the distance from the surface of the water bodies. This indicates that the vegetation coverage and water system have a great effect on temperature regulation and urban heat island effect.

Biography

Alisa Salimova has earned her Bachelor's degree in Geography from the Lomonosov Moscow State University, Master's degree in Environmental Science and Engineering at Tsinghua University, School of Environment, where she is currently in a PhD program working on a computer model and riparian ecology assessment of the North Canal watershed in Beijing. She has also been developing social innovation start-ups in the fields of environmental protection and water supply management. Currently she is working on water quality modelling, remote sensing assessment and developing mapping visualization software.

Als15@mails.tsinghua.edu.cn

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