



Effects of Ecological Restoration in Karst Catchment in Yunnan Province, China

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Based on Landsat TM data, the temporal and spatial variations and driving factors of vegetation in Luxi County in recent 31 years were studied, and then the ecological benefits of rocky desertification control project were explored. The results show that: (1) In the past 31 years, the vegetation coverage of Luxi County showed an increasing trend, a sudden change point of time in 2001, and the growth rate increased from 0.35%/10a to 0.63%/10a, which coincided with the time point of national rocky desertification control project; The region with high vegetation coverage mainly distributes in the eastern and southern mountainous areas of Luxi County, while the region with low vegetation coverage mainly distributes at the junction of the central and Northern towns. The spatial distribution of the abrupt change from 2001 to 2010 coincides with the high value area. (3) From 1986 to 2016, vegetation coverage in Luxi County showed an increasing and decreasing trend, accounting for 85.21% and 14.79% respectively, with the most significant increase in the area change, from 7.71% before treatment to 21.62% after treatment; (4) Before and after treatment, only the vegetation of Quaternary and carbonate intercalation showed a change in lithologic conditions. The degradation trend is caused by the expansion of cities. After 2000, 79.6% of Luxi County's vegetation coverage was positively affected by human activities, 20.4% was negatively affected, 29.3% was affected by meteorological factors, and 70.7% was affected by human activities, especially by rocky desertification control projects.