

前植物生产层

基于GIS的天山北坡荒漠绿洲景观格局变化的研究——以新疆巴里坤哈萨克自治县为例

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摘要:

利用2000和2007年Landsat TM影像资料, 采用GIS技术研究了天山北坡荒漠绿洲区巴里坤哈萨克自治县(巴里县)的景观格局变化特征。结果表明, 从2000到2007年, 巴里坤县的水域和草地面积分别减少623.42和14 566.72 hm², 而未利用地、林地、耕地和居民及工矿用地分别增加9 397.30、3 090.15、259.57和2 443.12 hm², 但主要景观类型是草地和未利用土地的格局基本没有改变。8年内巴里坤县景观多样性指数从0.74增至0.80, 均匀度指数从0.35增至0.40, 景观构型指数从8.40增至9.40, 说明景观多样性略有增加, 景观构型逐渐变大, 草地破碎度加剧。版块特征变化表现为景观分维数增高, 而稳定性指数减小, 各个景观类型的相对稳定性为: 居民及工矿用地>水域>耕地>林地>草地>未利用地, 说明草地和未利用土地是目前主要开发利用的景观类型。

关键词: 荒漠绿洲 景观指数 FRAGSTATS 3.3 巴里坤县

The Landscape pattern changes of desert oasis in the northern Tianshan Mountains based on GIS——A case study of Balikun County in the Xinjiang Province

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Abstract:

Based on the data from Landsat TM image in the years of 2000 and 2007, GIS was used to study the landscape pattern changes of the desert oasis region in the Kazakh Autonomous County of the northern slope of Tianshan Mountain. This study showed the reduction area of water areas and rangeland areas was 623.42 and 14 566.72 ha, respectively, the increase area of unused land, farmland, settlement and industry used land was 9 397.30, 3 090.15, 259.57 and 2 443.12 ha, respectively; however, the dominant landscape type was still rangeland and unused land from 2000 to 2007. Landscape diversity index during 8 years increased 0.80 from 0.74, meanwhile the evenness index increased 0.40 from 0.35 and landscape composition increased from 8.40 to 9.40, indicating landscape diversity, landscape composition, and rangeland fragmentation increased from 2000 to 2007. The landscape dimensions increased and stability decreased, and the relatively stability of each landscape types was settlement and industry used land>water area>farmland>woodland>rangeland>unused land.

Keywords: Landscape pattern; Landscape index; FRAGSTATS 3.3; Balikun Province

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