

林学—研究报告

基于GIS的生态脆弱区林地生态适宜性研究

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摘要:

为了探讨生态脆弱区林地生态适宜性评价机制, 在对广西南丹县典型样地共41个作业区调查基础上, 综合考虑与林地生态适宜性密切相关的地形地貌、土壤、植被等因素, 利用ARCGIS分析方法对空间数据进行组织与计算, 结合AHP方法研究各参评因子权重, 并选择适当的隶属函数和模糊算法对南丹县林地生态适宜性进行模糊综合评判。结果表明: 林地生态适宜性各等级比重排序为: III级(45.62%)>IV级(27.84%)>V级(17.61%)>II级(8.93%)>I级(0%), 整体隶属度值为3.5413, 位于IV级水平; 影响因子排序为: 坡度>石砾含量>高程>土层厚度>郁闭度>坡向>灌木覆盖度>草本覆盖度。同时, 根据研究结果, 分析了林地生态适宜性较差的主要原因及生态恢复重建的重点。

关键词: 模糊综合评价

Research on Woodland Ecological Adaptability of Ecological Fragile Region Based on GIS

Abstract:

In order to study woodland ecological adaptability evaluation mechanism of ecological fragile region, based on the survey aiming to the typical sample plots totally 41 operation area of Nandan county, Guangxi, comprehensive consideration of some factors relating closely with woodland ecological adaptability such as landform and physiognomy, soil and vegetation, etc, woodland ecological adaptability of Nandan county was evaluated intangibly synthetically by using ARCGIS analysis method orgnizing and calculating the space data, combining with the AHP method reseaching various evaluation factors Weight and choosing suitable subordinate function and fuzzy algorithm. The results showed that the grade proportion scheduling was as follows: II grade (45.62%)>IV grade (27.84%)>V grade (17.61%)>II grade (8.93%)>I grade (0%), the overall membership value of 3.5413, in IV grade; the results also showed that the effecting factors scheduling was as follows: slope>gravel content>elevation>soil thickness>canopy density>aspect>shrub coverage>herb coverage. Meanwhile, according to the research results, the main reasons of woodland ecological adaptability for poor and the focus of ecological restoration and reconstruction were analyzed.

Keywords: fuzzy comprehensive evaluation

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