

论文

基于栅格的土地利用功能变化监测方法

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摘要:

选择黑龙江省哈大齐地区(哈尔滨—大庆—齐齐哈尔)为研究区,把土地利用功能划分为资源功能、生态功能、经济功能和社会功能四项主功能,并进一步细分成资源供给、景观维护、生态防护、环境净化、经济增长、人口承载、居住生活和文化休闲等8项子功能;然后从土地利用、生态环境和社会经济三方面选择指标,研究了1976年和2005年两个时段各指标的空间化方法,并采用层次分析法进行了各土地利用功能的识别,在千米格网尺度上对土地利用功能变化热点进行了监测,采用相关分析研究了不同土地利用功能之间的消涨关系,实现了土地利用功能的空间化、定量化和动态化研究,其结果可为土地利用功能的协调配置提供参考。

关键词: 土地系统 土地利用功能 地理格网 热点监测

Changing Detection Method of Land Use Functions Based on Geographical Grid

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Abstract:

Based on land use and land cover research, land system, which is composed of land use, land cover and ecosystem, now is focusing on the study of human vulnerability and sustainability under global environmental change with an integrated perspective, and becoming the core of present land change science. Land system is interested in the functional changes caused by structural changes, and emphasizes comprehensive assessments and simulations of the coupled human-environmental system. Detailed investigations of land system can combine region and city as a whole and contribute to urban ecological safety and regional sustainability. This paper takes Harbin-Daqing-Qiqihaer region in Heilongjiang Province of Northeast China as study area, on the basis of defining land use functions conception and classification, this paper selects several indices from land use, environment and socio-economic development, and utilizes Analytical Hierarchy Process (AHP) method to identify land use functions distribution of the year 1976 and 2005 on geographical grid scale. There are four main functions (resources function, ecological function, economic function and social function) and eight sub-functions, such as resources provision, ecological defense, landscape maintenance, environmental purification, economic increase, population bearing, human habitat, culture and recreation. This paper investigates its changing hotspots and coupling relations, the results show that correlativity between resources provision function and other functions are negative, which means obvious land use functions conflicts. The framework proposed by this paper can provide spatial, quantitative and dynamic study of land use functions, and can provide references for land configuration.

Keywords: land system land use functions geographical grid hot-spot detection

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