

基于遥感与GIS的土地用途转移分析——以洞庭湖区为例

Analysis of the land use changes based on remote sensing and GIS: a case study of the Dongting Lake area

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作者	单位
李仁东	中国科学院测量与地球物理研究所, 武汉 430077; 中国科学院地理科学与资源研究所, 北京 100101
庄大方	中国科学院地理科学与资源研究所, 北京 100101
胡文岩	中国科学院地理科学与资源研究所, 北京 100101

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中文摘要:

采用遥感、GIS一体化技术,以1989~1990、1999~2000年获取的陆地资源卫星Landsat TM或ETM图像为主信息源,对洞庭湖区近10年土地用途的转移变化进行了检测,对驱动变化的主要因素进行了分析。结果表明,1990年以来的10年间,耕地减少 $0.9\text{万}\text{hm}^2$,占总面积的比重减少了0.32%;各类建设用地的总计增加了 $0.75\text{万}\text{hm}^2$,比重增加0.26%;水域增加 $0.16\text{万}\text{hm}^2$,比重增加了0.06%。林地略有减少,草地、未利用地略有增加。流失的耕地中,绝大部分被退田还渔还湖,或被建设用地所占用。建设用地的扩张占地中,耕地被占74.08%,林地被占20.86%。土地利用、土地价格及税收等方面的政策、城市化与工业化、农业结构的调整、以及科技的进步对土地用途的转移有决定性的影响。

英文摘要:

By using the Landsat TM and ETM data which were acquired in 1989~1990 and 1999~2000 respectively, the characteristics of land use changes in the Dongting Lake area on scale of 100000 were analyzed. The result revealed that cultivated land area decreased by $0.9 \times 10^4 \text{ hm}^2$, and the proportion in total area declined by 0.32% during the 10 years. The built-up land and water area expanded by $0.75 \times 10^4 \text{ hm}^2$ and $0.16 \times 10^4 \text{ hm}^2$ respectively, and correspondingly the proportion increased by 0.26% and 0.06%. Changes of woodland, grassland and unused land were small. Large-scale reclamation that was a popular method to get arable land before 1980s has been limited. There are significant shifts among cultivated land, water body and built-up land. From 1990~2000, most of the lost arable land was converted to water body (including fish pond) and built-up land. Seventy-four percent of increased built-up land was obtained at the expense of cultivated land, while 21 percent of woodland was used. On the whole, the land use changes from 1990~2000 in the study area have been driven by urbanization and industrialization, infrastructure and agricultural intensification. The rapid growth of population and economics play an important role in the land use changes, and the advances in techniques also give rise to the changes obviously. To a great extent, the policies on land use, land price and taxes levied on agricultural products have definitely influenced the land use changes. In view of the results mentioned above, future land use and land consolidation, some strategies and policies should be reoriented to attenuate the conflicts among the protection of cultivated land and ecosystem and social-economic needs for land.

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