



地理学报(英文版) 2005年第15卷第4期

### Land cover changes in the rural-urban interaction of Xi'an region using Landsat TM/ETM data

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Landsat ETM/TM data and an artificial neural network (ANN) were applied to analyse the expansion of the city of Xi'an and land use/cover change of its surrounding area between 2000 and 2003. Supervised classification and normalized difference barren index (NDBI) were used respectively to retrieve its urban boundary. Results showed that the urban area increased by an annual rate of 12.3%, with area expansion from 253.37 km<sup>2</sup> in 2000 to 358.60 km<sup>2</sup> in 2003. Large areas of farmland in the north and southwest were converted into urban construction land. The land use/cover changes of Xi'an were mainly caused by fast development of urban economy, population immigration from countryside, great development of infrastructure such as transportation, and huge demands for urban market. In addition, affected by the government policy of "returning farmland to woodland", some farmland was converted into economic woodland, such as Chinese gooseberry garden, vineyard etc.

Paper (PDF)

**关键词:** urban expansion; supervised classification; NDBI; land use/cover changes doi: 10.1360/gso50405