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Impact of land use change on soil resources in the peri-urban area of Suzhou city

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The Yangtze delta area is among the fastest developing areas in China. Here there are mega-cities like Shanghai, Nanjing and the attached urban areas of different sizes including those along the lower reaches of the Yangtze River from Shanghai up to Nanjing as well as their satellite cities and towns, forming one of the most densely distributed urban areas in China. This is a case study done in Suzhou city at the center of the Yangtze delta to reflect the impact of urban sprawl on soil resources using satellite images and digital soil databases. The extent of the developed land in the studied area and the impact of development on soil resources at 1:100,000 scale are estimated and the soil types impacted most by urbanization development are determined through overlaying the soil map on the satellite images (Landsat-7) of the studied area at different times (1984, 1995, 2000 and 2003). The methodology for this study consists of analyzing data resulting from using a geographic information system (GIS) to combine urban land use maps of different times derived from satellite images with data on soil characteristics contained in the established soil databases by which some results come into being to present the fast expanding trend of urbanization in the Yangtze delta area, the urban spread and the soils occupied by the urbanization process, and also the quality of the occupied soils.

Paper (PDF)

关键词: urban sprawl; Suzhou city; satellite images; soil databases