

## Retrospective Cartography of Tbilisi and Surrounding Area

**Authors :** Dali Nikolaishvili, Nino Khareba, Mariam Tsitsagi

**Abstract :** Tbilisi has been a capital of Georgia since the 5<sup>th</sup> century. City area was covered by forest in historical past. Nowadays the situation has been changing dramatically. Dozens of problems are caused by damages/destruction of green cover and solution, at one glance, seems to be uncomplicated (planting trees and creating green quarters), but on the other hand, according to the increasing tendency, the built up of areas still remains unsolved. Finding out the ways to overcome such obstacles is important even for protecting the health of society. Making of Retrospective cartography of the forest area of Tbilisi with use of GIS technology and remote sensing was the main aim of the research. Research about the dynamic of forest-cover in Tbilisi and its surroundings included the following steps: assessment of the dynamic of forest in Tbilisi and its surroundings. The survey was mainly based on the retrospective mapping method. Using of GIS technology, studying, comparing and identifying the narrative sources was the next step. And the last one was analyzed of the changes from the 80s to the present days on the basis of decryption of remotely sensed images. After creating a unified cartographic basis, the mapping and plans of different periods have been linked to this geodatabase. Data about green parks, individual old plants existing in the private yards and respondents' Information (according to a questionnaire created in advance) was added to the basic database, the general plan of Tbilisi and Scientific works as well. On the basis of analysis of historic, including cartographic sources, forest-cover maps for different periods of time were made. In addition, was made the catalog of individual green parks (location, area, typical composition, name and so on), which was the basis of creating several thematic maps. Areas with a high rate of green area degradation were identified. Several maps depicting the dynamics of forest cover of Tbilisi were created and analyzed. The methods of linking the data of the old cartographic sources to the modern basis were developed too, the result of which may be used in Urban Planning of Tbilisi. Understanding, perceiving and analyzing the real condition of green cover in Tbilisi and its problems, in turn, will help to take appropriate measures for the maintenance of ancient plants, to develop forests and to plan properly parks, squares, and recreational sites. Because the healthy environment is the main condition of human health and implies to the rational development of the city.

**Keywords :** catalogue of green area, GIS, historical cartography, cartography, remote sensing, Tbilisi

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