

Landscape Changes in the Czech Republic 1763–2005: An Assessment Based on Historical Maps and GIS Technology

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With 16 Figures and 1 Table

Abstract

In 2005 the Agency for Nature Conservation and Landscape Protection of the Czech Republic launched the Research Project No. 629335101 “Research of resources and indicators of biodiversity in a cultural landscape in context of dynamics of its fragmentation”, supported by Ministry of Education, Youths and Sport of Czech Republic. An important part of the Project is to study dynamics of land-use changes and landscape development on the territory of the Republic. The project runs on two levels of detail. The first aim is a general survey (map scale 1 : 200,000) on the whole state territory. The second level is to study landscape changes in test areas in various parts of the Republic (map level 1 : 10,000–1 : 25,000). The research is based on analyse of historical and contemporary topographic maps in scales 1 : 28,800, 1 : 25,000 and 1 : 10,000 in digital form. The authors used Austrian Military Maps from the periods around 1770, 1830 and 1870 (the 1st, 2nd and 3rd Austrian Military Mapping). In the agency, Czechoslovak Military Maps from 1930 and 1955 and Czech Military Maps from 1995 were digitized. For the evaluation of the present state the digital Basic Map of Czech Republic of 2005 and aerial photographs of 2003 were used. Digitized topographic maps were processed by GIS software (ArcView 3.3, ArcGIS 9.0). The compilation of land-use maps were supposed to be automatized by using the eCognition software. But in the case of Historical Maps, problems with hachures and letters in the map arose. As a result, digital land-use maps and landscape maps were compiled. Digitization enabled the comparison of landscape changes, the dynamics of changes, and the determination of landscape stability and quantification. As a case study authors choose the test area Javorník in Silesia.