

**Irena SMOLOVÁ**

**SELECTED ASPECTS OF RAW MATERIALS EXTRACTION IN THE CZECH REPUBLIC IN 1990 – 2006, IMPACTS OF ECONOMIC TRANSFORMATION AND ENVIRONMENTAL CONSEQUENCES**

Transformation processes in the Czech economy resulted in significant changes in raw materials extraction. In this paper, such changes concern the volume of extracted materials, as well as employment in mining industries. The area and structure of mining spaces are also reflected in such changes. This report describes an assessment of changes in raw materials extraction and development from 1990 to 2006: selected aspects assessed here include changes in the spatial distribution of mining localities, the economic effects of mining for municipalities, the globalisation of extraction activities, some specifics of mining in specially protected areas, and the possible further use of abandoned mining spaces.

**Hana DOLEŽALOVÁ, Karel HOLUB, Zdeněk KALÁB**

**UNDERGROUND COAL MINING IN THE KARVINÁ REGION AND ITS IMPACT ON THE HUMAN ENVIRONMENT (CZECH REPUBLIC)**

The objective of the project discussed in this article is to suggest that mining activity in the Ostrava-Karviná Coal Basin has a long-term negative impact on the human environment. This assertion is based on the results of long-term seismic monitoring in coal mines, which are, in principle, dealing with the investigation of locally-induced seismicity regimes. A 'seismic regime' is defined as a complex of studies aimed at the determination of various time dependent parameters, e.g. the spatial and temporal distribution of seismic event foci, release of seismic energy (displayed usually by Benioff graphs), and regularities of frequency-energy relationships. A special area of interest represents a detailed study of manifestations of individual seismic mining shocks observed on the surface, and their influence on structures, buildings and inhabitants. All of these effects are most often denoted as seismic load, and their displays are represented as so-called "maps of clash of interests", which enable the definition of values of seismic loading for predetermined localities, and to estimate the risk for selected buildings and structures. Sinking and other deformations of the surface represent another negative impact on landscape caused by long-term mining activity. Geodetic measurements are applied in the process of observations aimed primarily at determination of the surface elevation and/or changes of the surface of the undermined area. Several methods are used in this respect, e.g. geometric levelling, site surveying, GPS, ground and aerial photogrammetry.

**Jan HRADECKÝ, Tomáš PÁNEK, Jiří ŠVARC**

**GEOECOLOGICAL IMPRINTS OF SLOPE DEFORMATIONS ON HABITATS – CASE STUDIES FROM THE WESTERN CARPATHIANS (CZECH REPUBLIC)**

Slope deformations represent one of the dominant morphogenetic processes in the Czech part of the Western Carpathians, and they contribute significantly also to the modification of landscape evolution processes. Entirely new, and in many cases unique, habitats evolve on the bases of the differentiation of originally direct undisturbed slopes, caused by land-sliding. For the case studies of Miaší Mt and Černá hora Mt slope deformations, the research focussed on the imprint of land-sliding on soil variability. The evolution of specific geo-topes in the case of the extension zone of the Čertův Mlýn Mt deep-seated slope deformation, was accompanied by the creation of a trench that was subsequently in-filled with organogenic sediments. The relatively low concentration of peat-bog biotopes in the Czech part of the Western Carpathians is often associated with landslides, as in the case of the peat-bog on the southern slopes of Groníček Mt. High dynamics of changes of geo-tope features are linked to the occurrence of flow-like landslides (as evidenced in the case study of debris flows in Smrk Mt. massif and the rock avalanche of Ropice Mt).

**Jakub LANGHAMMER**

**IDENTIFICATION OF FLOODPLAIN ELEMENTS SUITABLE FOR USE IN INTEGRATED FLOOD PROTECTION USING HYDROMORPHOLOGICAL MAPPING. CASE STUDY: UPPER OPAVA RIVER BASIN (CZECH REPUBLIC)**

A new mapping methodology for stream network and floodplain modification rates for the purposes of flood risk analysis is presented in this article: as a case study, it is applied to the upper Opava River basin, Czech Republic. The methodology, HEM-F, represents a tool to identify anthropogenic modifications of watercourses and floodplains, which have a negative impact on the course and consequences of floods, and on the retention and transformation potential of the river basin. The

results show that geomorphological conditions, as well as anthropogenic pressures on landscape utilization, leave only limited space for using the natural potential of the landscape and floodplain in the Opava River basin to transform the runoff in floods and to increase the retention rate in the landscape.

### ***REPORTS***

**Evžen QUITT** - CONTRIBUTION TO THE METHODOLOGY OF CLIMATIC REGIONALIZATION OF THE CZECH REPUBLIC

When the new Climate Atlas of the Czech Republic based on the climatic characteristics of the 1961–2000 monitoring period was published in 2007, it provided an opportunity of utilizing its final maps to define climate regions in a similar fashion to the first Climate Atlas of Czechoslovakia published in 1958 summarizing the results of monitoring between 1901 and 1950. This enabled at least a partial comparison of the results of earlier climatic regionalizations with newly demarcated climate regions.

**Radan KVĚT** - HISTORICAL PATHWAYS IN GEOGRAPHIC AND ARCHAEOLOGICAL STUDIES