

Present-day legacies of water and sediment connectivity of historical landscapes

Anna Smetanová (1), Zuzana Borzová (2), Martin Borza (3), Ján Jahn (4), and Peter Bisták (5)

(1) Research Group Ecohydrology and Landscape Evaluation, TU Berlin, Berlin, Germany (anna.smetanova@gmail.com), (2) Department of Archaeology, Constantine the Philosopher University, Nitra, Slovakia (zborzova@ukf.sk), (3) Geoaktual, s.r.o. Bernolákova 13, 927 05 Šal'a, Slovakia (<http://www.geoaktual.sk/en>, mborza@geoaktual.sk), (4) Department of Ecology and Environmental Sciences, Constantine the Philosopher University, Nitra, Slovakia (jjahn@ukf.sk), (5) The Monuments Board of the Slovak republic, Bratislava, Slovakia (peter.bistak@pamiatky.gov.sk)

Water and sediment connectivity and erosion processes are influenced by land use landscape design, which provides buffers and barriers for water and sediment transport. Current patterns of connectivity are influenced by existing landforms and spatial patterns of sediments, which contain information on past hydrodynamics and land use. In areas of long-term settlement history, it is interesting to recognize links between past land use and connectivity, and identify possible feedbacks on past societies. To tackle this challenge, the objective of the study is to analyse past spatial-temporal patterns of connectivity in two contrasting agricultural areas in north-west Pannonian Basin, using methods of interdisciplinary landscape archaeology. Historical landscape structures are reconstructed based on archaeological prospection and geomorphological field mapping, and analysis of available spatial data. Structural connectivity index is calculated for each historical period, and the time-series of changing connectivity analysed. The results confirm changing and increasing anthropogenic influence on landscape connectivity, and the impact of past anthropogenic landform transformation on current connectivity patterns. The project was supported by EC 2010-0653 and APVV-15-0054.