



Reconstructing human-induced geomorphic change in a small agricultural catchment (HOAL, Lower Austria)

Ronald Pöppel (1), Chris Renschler (1,2), Sabine Kraushaar (1), Peter Strauss (3), and Markus Fuchs (4)

(1) University of Vienna, Geography and Regional Research, Vienna, Austria (ronald.poeppel@univie.ac.at), (2) University at Buffalo, Geography, USA, (3) Federal Agency for Water Management, Institute for Land and Water Management Research, Petzenkirchen, Austria, (4) Justus-Liebig-University Giessen, Geography, Germany

Human settlement and associated extensive land cover and land use changes have induced significant geomorphic landscape changes as water and sediment dynamics have been transformed. The presented project focuses on the reconstruction of human-induced geomorphic landscape evolution of a small catchment (ca. 66 ha), located in the Northern foothills of the Eastern Alps in Austria – an area intensively agriculturally used since the Middle Ages. The catchment elevation ranges from 268 to 323 m a.s.l. and has a mean slope angle of 8%. The climate in this region is characterized as humid. The lithology mainly consists of Tertiary marly to sandy deposits which are superimposed by Quaternary sediments, mainly loess. Dominant soil types are Cambisols, Luvisols, and Planosols. The main objective of this research project is to reconstruct human-induced geomorphic change by analyzing sediment cores taken from colluvial and alluvial sediment archives with additional ¹⁴C and OSL dating as well as by applying the physical based soil erosion model of the Water Erosion Prediction Project (WEPP) and its geospatial interface (GeoWEPP).

The results reveal a dramatic increase of colluvial sediment deposition rates (e.g. from approx. 3.5 to 7 mm per year) since the 1950s and in accordance with the intensification of agriculture in the region. Further results will be presented at the EGU General Assembly 2018.