Geophysical Research Abstracts
Vol. 12, EGU2010-5232-1, 2010
EGU General Assembly 2010


# Natural and man-made alternation of the landscape at the northwestern Neusiedlersee during the Pleistocene and Holocene - a comprehensive analysis using field and laboratory methods

Dana Homolova (1), Birgit Terhorst (2), and Franz Ottner (3)

(1) Department of Geodynamics and Sedimentology, Center for Earth Sciences, University Vienna, Austria (dana.homolova@univie.ac.at), (2) Institute of Geography, University of Würzburg, Am Hubland, D-97074 Würzburg, Germany, (3) Institute of applied geology (IAG), University of Natural Resources and Applied Life Sciences, Peter-Jordan-Straße 70, A-1190 Vienna, Austria

The Neusiedlersee-region, situated southeast of Vienna at the border to Hungary, forms – due to its specific natural setting – a unique landscape and environment in central Europe. Thanks to the combination of the warm and dry climate and the presence of the lake Neusiedlersee, the region is characterized by a very long settlement history and intensive agricultural use, which resulted in turning the region in a cultural landscape.
This thesis is part of a comprehensive geo-ecological analysis of the landscape at the NW front of Neusiedlersee, including geology, morphology, soil cover, landscape evolution and land use.
Our investigations cover geomorphological and pedological field survey and analysis of soils and sediments in the laboratory. To get a thorough overview on the types of soils and their present condition as well as their formation we gathered 35 soil profiles, following the catena principle. Laboratory analyses include grain size, carbonate content, pH-value and color. Additionally we determined the mineralogy of characteristic study sites. To complete the investigations, a drilling of 6 m depth was conducted in the Joiser Seewiesen, a former see floor of Late Glacial age.
The results of the soil survey are summarized in two catenae, which represent the pedological situation of the research area. Plough- and trench-horizons record intensive agricultural use where most of the soils show human impact in form of soil erosion and correlative soil sediments.
The study area is characterised by periglacial sediments as frost debris, solifluction layers, loess and ventifacts and in places, paleosols are present as well.
The drilling core from the Joiser Seewiesen contains 440 cm of fine grained sediments most likely of Pannonian age at the base and a 50 cm thick layer of lake sediments with the recent soil on top. The profile also includes two thin layers of gravel of unknown origin, one below the lake sediments and one within the Pannonian sediments. The absence of the Pleistocene fluvial sediments, which are widespread in the surrounding areas at the same altitude, refers to a unique sedimentation history of the Neusiedlersee basin, which differs from that of the surrounding area.
Further investigations are in process to solve remaining scientific problems.