



Late Holocene eolian fossilization of Podzols in Northeastern Germany

Florian Hirsch (1), Thomas Raab (1), Anna Schneider (1), and Klaus-Peter Wechler (2)

(1) Brandenburgische Technische Universität Cottbus - Senftenberg, Geopedology and Landscape Development, Cottbus, Germany (florian.hirsch@b-tu.de), (2) Brandenburgisches Landesamt für Denkmalpflege und Archäologisches Landesmuseum (BLDAM), Zossen, Germany

The North European lowland has been formed by glacial and periglacial processes in the Late Pleistocene. Multiple reshaping since the Late Glacial considerably changed the landscape up to and including especially historic times. Sediment sequences and (fossilized) soils can improve our understanding of Late Quaternary landscape development, but mapping of buried soils and surfaces is often limited to single outcrops. Ongoing archaeological rescue excavations in the pre-field of the open-cast mine Cottbus-Nord (northeastern Germany) with dense excavation trenches in an about 10 ha dune and drift sand area reveal multilayered sediment sequences with fossilized soils and sediments from the Late Pleistocene to the Late Holocene. Archaeological findings ranging from Mesolithic flint stones to an about 200 year old ceramics in eolian sediments covering plow horizons and wheel tracks suggest that eolian relocation of sandy material was intensive about 200 years ago. Still unpublished OSL dating underline the intense eolian activity. Recent studies showed that between the 15th to the 19th century an iron smelter 5 km to the west of our study site was supplied with charcoal, which was produced in a forest 5 km east to our study site. Our current findings about Late Holocene eolian activity raise the question if this eolian reshaping of the landscape is connected with the operation of the iron smelter either directly by transport or bog iron ore winning or indirectly by population pressure caused by the prospering iron smelter. Our ongoing research indicates, that already for historic land-use off-site effects causing further landscape changes have to be considered.