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Land use and sediment dynamics since the Neolithic Age in Dithmarschen (Schleswig-Holstein, Germany)

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Intensive geoarchaeological, sedimentological and pedological investigations were carried out to reconstruct the landscape development during the Holocene in the region of Albersdorf (Schleswig-Holstein, Germany). Interactions between man and environment caused constant changes of the topography and of the soil properties since the Neolithic Age. Soil erosion and soil degradation affected land use considerably. At four investigations areas along the valley of the Gieselau near Albersdorf stratigraphies and sediment budgets were established. Important findings with regard to the history of climate, land use, soils and topography could be acquired. Podzols developed under heath vegetation due to woodland pasture. The strong degradation of the soils was not caused by climatic fluctuations. Agriculture and cattle breeding was introduced in the area under investigation more than 6,000 years ago. The natural landscape was transformed to a cultural landscape. First, only small areas were cleared and used agriculturally. During the Middle Neolithic Age (since 5,300 BP) large parts of the landscape were transformed near the valley of the Gieselau. An exceptionally intensive erosion event was enabled by human land use and caused by heavy rainfall during the End-Mesolithic Period. During Modern Times the whole area was developed to a cultural landscape. A dense forest cover resulted in very low soil erosion rates during Mediaeval Times and Modern Times.