

Wind-blown sand movement periods on the Nyírség alluvial fan, Hungary

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The Nyírség is an alluvial fan, was built by rivers, which were flown down from the NE Carpathians. When the weather was dry, wind-blown sand was blown out and the wind started to develop the aeolian landforms. The first significant sand movements in the Nyírség was in the Upper pleniglacial and the Late glacial. The main landforms of the Nyírség were developed at this time. The aeolic transformation of the land was not completed in the Nyírség at the end of the Pleistocene. In the Holocene the sand moved within small area, mainly by anthropogenic impact.

Our aim is clarify the age of the wind-blown sand movements period, with different absolute (Radiocarbon dating method, OSL), and relative (Archaeological finds, Pollen analyses) dating methods.

We have collected for the age determining charcoal from many sand quarry (Gégény, Kántorjánosi, Nyíradony, Nagyvarsány, Máriapócs and Lövőpetri) which contain fossil soil layer. For the OSL measurements samples were collected from Baktalórántháza, Gégény and Kántorjánosi sand quarries. We collected samples from 5 places for the pollen analyses (Nyírtanya, Máriapócs, Nyírbétek-Nyírlúgos, Nyírábrány, Vámospércs), and also from an archaeological excavation (Nyíregyháza– Oros).

The new age dates show us, that in the Nyírség the first significant sand movements were in the cold and drier period of the Upper pleniglacial and Late glacial (Baktalórántháza, Nyírtanya, Vámospércs). At the end of the Pleistocene the sand movements not competed in the Nyírség (Gégény, Kántorjánosi, Nyírábrány). In the Holocene there were many little sand movement periods, mainly caused by anthropogenic impact (Nyíradony, Nyíregyháza-Oros).

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