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# Late Pleistocene to Holocene palaeoclimate reconstruction of a sediment core from the Bayan Tohomiin Nuur dry lake (southern Mongolia)

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The reconstruction of Late Quaternary landscape evolution and paleoclimate development in southern Mongolia is the main interest of a research project (RWTH Aachen, University of Cologne, University Mainz, Mongolian Academy of Sciences) funded by the DFG (2007-2010). The study area is situated in the southern part of Mongolia comprising the mountains of the southern Khangay, Gobi Altai and endorheic basins of the Gobi Desert. Here we present results of a 7m sediment core taken from the Bayan Tohomiin Nuur dry lake, serving as an archive for geomorphic, palaeoecologic and palaeoclimatic processes during the last 13 ka cal BP. The multiparameter analysis of the core includes geochemical, palynological and granulometric methods in order to reconstruct sedimentation, weathering processes, vegetation cover and palaeoclimate within the catchment area of the lake. First results show a dominance of dry conditions with low lake levels between 13 ka and 8 ka being interrupted by shorter periods of lake extension and sediment input at 11,8-11 ka and 10,3 - 9,3 ka. An increased sediment input and lake level rise between 8,5-8 ka is consistent with the global 8,2 cooling event. Due to the fragmentary data younger than 8 ka, environmental conditions could only be estimated, though indicating a transition to dry conditions. The analysis of the grain size distribution of the lacustrine sediments yielded signals of dune activity from the nearby located Khongoryn Els dune field showing several activity phases at 12,5-12 ka and 10,5 ka. The aeolian input caused by remobilization of the youngest dunes could also be verified in the uppermost samples of the core.