

Overlapping climatic cooling mechanisms result in a tipping point towards an onset of Neolithic wetland occupation

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The reconstruction and understanding of tipping points in human-environmental systems have become an important issue for the global geoscientific community. Regarding the past 11,700 years, the Holocene, once considered a warm and stable interval, is now known to be characterised by long-term and abrupt climatic changes. In this paper, we focus on the reconstruction of the Late Neolithic wetland occupation history at Pestenacker, an UNESCO world heritage site in the northern Alpine forelands of Central Europe (South Germany). We aim to recover and understand potential interactions between supra-regional climate forcing, a corresponding passing of a middle Holocene environmental tipping point and local socio-ecological response mechanisms. In this context, we review dendroarchaeological and radiocarbon data sets from Pestenacker and close-by Late Neolithic wetland sites and present newly conducted tree-ring and ^{14}C age models featuring cumulative chronologies. Further, we compare the archaeological age models with high-resolution stratigraphical data and chronological records from the valley fills as well as prominent climatic proxy records.

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