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Climatic stress events in the source region of modern man – Matching the last 20 ka of the Chew Bahir climate record with occupation history of adjacent refugia

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A rapidly changing environment is considered an important driver not just for human evolution but also for cultural and technological innovation and migration. To evaluate the impact that climatic shifts on different timescales might have had on the living conditions of prehistoric humans is one of the cornerstones in current research, but continuous paleo-climate records in the vicinity of archaeological sites are still rare. As a contribution towards a better understanding of this human-climate interaction we here present a match between the last 20 ka of the just recently developed paleo-climate record from Chew Bahir in southern Ethiopia and the settlement history of adjacent possible refugia.

The Chew Bahir basin, as a newly explored reliable climatic archive, lies in a biogeographically highly sensitive transition zone between the Main Ethiopian Rift and the Omo-Turkana basin and hence represents an ideal site to study climatic variability in the source region of modern man. The climatic history with a temporal resolution of up to 3 years is showing besides orbitally driven long-term transitions in and out of favourable living conditions several short abrupt excursions towards drier or wetter episodes.

Comparing the frequency of archaeological findings as a parameter for human occupation to this close-by climate record that allows us to outline how complex the interplay between humans and environment during the last 20 ka really was, which dynamics might have been involved and which role the temporal dimension of environmental changes could have played for the adaption of humans.