



Postglacial Human resilience and susceptibility to abrupt climate change new insights from Star Carr

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We know little about the lives of the early humans who lived during the early Postglacial period (the Lateglacial and Early Holocene), a time characterised by abrupt climate change after $\sim 16,000$, which includes a series of abrupt climatic transitions linked to the reorganisation of the global environment after the glacial maximum and the last major global warming event at the onset of the Holocene. The hunter-gatherers who lived during the early Postglacial have been characterised as highly mobile, dispersed and living within small groups, and there is much debate as to how they adapted to climatic and environmental change: did they move in response to climatic transitions (and if so what was the climatic threshold), or instead adapt their lifeways to the new environmental conditions? A key area for examining these ideas is the British Isles as it sits on the Atlantic fringe of Northwest Europe with a climate that is highly responsive to the wider climate forcing experienced in the northern Hemisphere. Furthermore, in this period, Britain is directly linked to continental Europe due to lowered global sea levels allowing for the ease of human migration in and out of this region. In general the British record has been seen as being dominated by abandonment and reoccupation in the Postglacial during periods of climatic transition with hunter-gatherer mobility being closely linked to the prevailing environment. Recent discoveries at the Early Mesolithic site of Star Carr and surrounding area, linked to local and regional climate records, based on isotopic, chironomid and pollen proxy data and dated at high chronological resolution, offer a new picture. Postglacial human occupation of the area commences at the Pleistocene/Holocene transition but is short lived and appears to end close to the Pre-Boreal Oscillation. However, this is followed by a period where hunter-gatherers occupy Star Carr and settle and invest time and effort into building huts and large scale wooden structures, with evidence for occupation that spans hundreds of years. This phase of occupation at Star Carr is sustained and crosses a period of abrupt climatic instability as significant as any in the Early Holocene record of the region. This reduced mobility implies that the inhabitants of the region around Star Carr had adapted to and, consequently, had developed a resilience to an unstable early Holocene environment and landscape despite clear evidence of significant climatic transitions during the Star Carr phase.