Variability of human responses to Early Holocene abrupt cooling events in northwest Europe

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Research on the impacts of Early Holocene abrupt cooling events on human societies in Europe has been restricted predominantly to the transition to agriculture in the Mediterranean region. We therefore know little about the impact of these various events on the hunter-gatherer societies that inhabited most of Europe during this period. Recent progress has been made by the critical appraisal and recalibration of radiocarbon dates for the Mesolithic period (11,000-6000 cal BP) between the Paris and North Sea basins. These analyses indicate that the development of the Rhine-Meuse-Scheldt (RMS) culture coincided with the 9.3 cal BP cooling event, while the technological change to regular blade blank and trapeze armature industries coincided with the 8.2 cal BP cooling event. Here we focus on the central roles of robust radiocarbon chronologies and vegetation response times in developing our knowledge of the potential variability of human responses to abrupt climate change. Our findings support the need for integrating comparative inter-regional palaeoenvironmental studies alongside extensive diachronic and spatial investigations of Mesolithic land-use, exchange networks, and technological organization systems.