Integrating marine and terrestrial chronologies across the Last Interglacial for sequences from NW Europe

PRESENTED BY

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ABSTRACT
The Last Interglacial (ca. 129 to 116 ka BP) provides an opportunity to interrogate the impact of warmer-than-present polar climates on the Earth's system. To build an accurate spatio-temporal picture of the global response to high latitude warming, including the timing and rate of melt ice sheets, the construction of robust chronologies is paramount. Integrating records of past climate and environment in a wide range of Quaternary archives, all with different approaches to dating and chronology-building, is, however, a complex task. Here, we outline the key methods which have been used to effectively date proxy sequences from NW Europe which span the Last Interglacial. We then present newly developed chronologies for 5 sediment cores from the Southern North Sea. Our rigorous approach to dating integrates pollen biostratigraphy, luminescence dating, AAR dating, and tephrostratigraphy within a Bayesian framework. We identify, for the first time, Last Interglacial tephra deposits in the North Sea, facilitating correlation of our complex coastal and estuarine records to deep sea marine records from the North Atlantic. Finally, we consider how the many detailed pollen records from throughout NW Europe can be reconciled with reconstructions of global climate and environmental change during the Last Interglacial.

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