



Rapid climate change during the Weichselian Lateglacial in Ireland

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The Weichselian Lateglacial (14.7-11.7 ka cal BP) is marked by rapid climatic oscillations, as can be seen in the Greenland oxygen isotope records. In addition to Greenland Stadial 1 (or Younger Dryas), two distinct cold phases, GI-1b and GI-1d, occurred during Greenland Interstadial 1 (Lowe et al., 2008). How did these changes affect climate and vegetation in Ireland? Here we present a high-resolution multi-proxy study from Ireland, in which both climatic and environmental changes are reconstructed for the Lateglacial period. The reconstruction is based on a combination of oxygen isotope (climate reconstruction, correlation to Greenland ice cores), chironomid (summer temperature reconstruction) and pollen (vegetation reconstruction) analyses.

Results show that warming at the onset of the Interstadial led to the development of open juniper and birch shrubland. This was replaced by herb-rich grassland in the second half of the Interstadial. Subsequently, the Younger Dryas cooling led to an expansion of tundra vegetation. In more detail, the chironomid and oxygen isotope data provide the first unambiguous evidence for the occurrence of at least two short-lived cold episodes during the Interstadial in Ireland. The first of these cold events, correlated to Greenland Interstadial 1d, led to a brief decline in *Juniperus* and *Betula*. The second cold event, correlated to Greenland Interstadial 1b, led to a temporary expansion of *Artemisia*.

Reference

Lowe J.J. et al., 2008. Synchronisation of palaeoenvironmental events in the North Atlantic region during the Last Termination: a revised protocol recommended by the INTIMATE group. *Quaternary Science Reviews* 27, 6-17.