

EGU2020-889

<https://doi.org/10.5194/egusphere-egu2020-889>

EGU General Assembly 2020

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Glacial deposits in Connemara, dated with cosmogenic ^{10}Be , document melting of terrestrial ice in Western Ireland during Heinrich Stadial 1

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During the Last Glacial Maximum, the terrestrially based Connemara ice dome was one of several principal ice accumulation centres in western Ireland, distributing ice radially and terminating along its western margins in the North Atlantic Ocean. Our new beryllium-10 chronology, constrained with surface-exposure ages of erratics on a longitudinal coast-to-interior transect, demonstrates that post-LGM deglaciation of Connemara was rapid and that the ice dome was gone by ~ 17.5 ka. Coupled with the abundance of landforms in this mountainous region indicative of glacial meltwater production, we interpret the rapid and early deglaciation of Connemara as reflecting pronounced melting during the summer ablation season driven by strong atmospheric warming. While this model contrasts with the traditional view of Heinrich stadials as periods of intense cold in the North Atlantic, we note similarities with glacial records from elsewhere in the Northern Hemisphere and globally, as well as with recent marine-geologic evidence for enhanced melting of European ice sheets during Heinrich stadials.