



Integration of Ice-core Marine and Terrestrial records

W.Z. Hoek and INTIMATE group

Department of Physical Geography, Faculty of Geosciences, Utrecht University,
Heidelberglaan 2, 3508 TC Utrecht, The Netherlands (w.hoek@geo.uu.nl / Tel: +31 30
2532416 / <http://www.geo.uu.nl/fg/INTIMATE>)

The time period from 30-8 ka cal. BP covers the transition from full Glacial to full Interglacial conditions, and includes the Last Termination as recognised in the North Atlantic region. The principal objective of the INTIMATE project of the INQUA Palaeoclimate Commission is to synthesise marine, terrestrial, and ice-core data for the Last Glacial-Interglacial Transition. For correlation, precise dating of the records from the different realms is imperative. The development of an event-stratigraphy for the Last Glacial-Interglacial Transition (Björck *et al.*, 1998) provided a template to compare other, independently dated, palaeoclimate records with the high-resolution Greenland oxygen isotope records. The event-stratigraphy has recently been refined and updated to the new NGRIP record using the GICC05 timescale (Lowe *et al.*, 2008), which will be used by the Northern Hemisphere INTIMATE project..

The specific goals of the Northern Hemisphere INTIMATE project, in close collaboration with the Southern Hemisphere project, are:

- explore the potentials of time-stratigraphic marker horizons in ice-core, marine, and terrestrial records over the last 30 ka;
- reduce the uncertainties in timing of events for the different environments, (e.g. spatial and temporal differences in marine reservoir ages);
- determine spatial patterns of events and gradients in subject regions;
- compare the results from the spatial and temporal reconstructions with palaeoclimate model results;

- to examine the (global) correlation of abrupt climatic events over the time period from 30 ka.

In this presentation, the use of the INTIMATE event-stratigraphy is outlined and examples from NW European palaeoenvironmental records are given that can be correlated in detail to the Greenland Ice core records.

references

Björck, S., Walker, M.J.C., Cwynar, L.C., Johnsen, S., Knudsen, K.-L., Lowe, J.J., Wohlfarth, B. and INTIMATE members (1998) An event stratigraphy for the Last Termination in the North Atlantic region based on the Greenland ice-core record: a proposal by the INTIMATE group. *Journal of Quaternary Science* **13**, 283-292.

Lowe, J.J., Rasmussen, S.O., Björck, S., Hoek, W.Z., Steffensen, J.P., Walker, M.J.C., Yu, Z. and INTIMATE group (2008) Precise dating and correlation of events in the North Atlantic region during the Last Termination: a revised protocol recommended by the INTIMATE group. *Quaternary Science Reviews*, 27, in press.