

Lateglacial climate and vegetation in Ireland

N. van Asch*, A.F. Lutz, M.C.H. Duijkers, W.Z. Hoek and O. Heiri

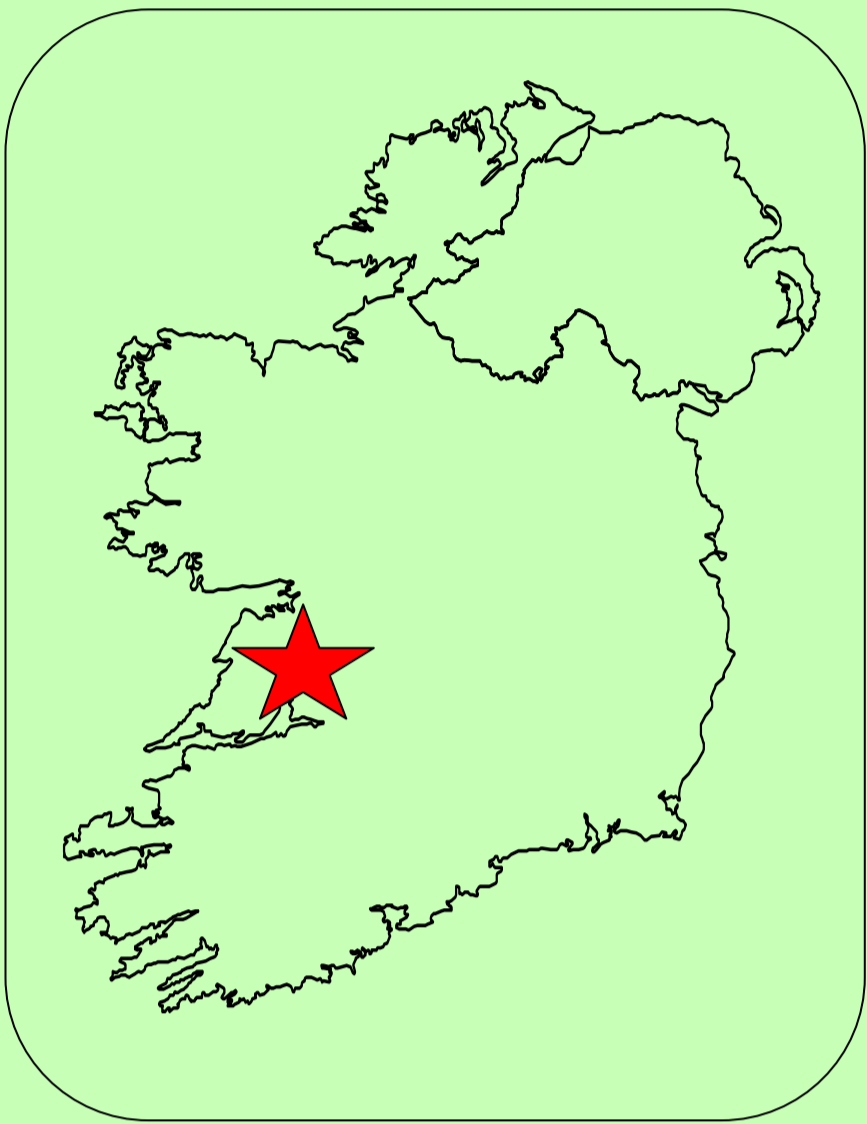
BACKGROUND

The Lateglacial vegetation development in Ireland is subdivided into the Early Interstadial, Late Interstadial and Younger Dryas Stadial. During the Early Interstadial, open shrubland developed, which was replaced by herb-rich grassland in the Late Interstadial.

Is this change in vegetation caused by climatic change?

A multi-proxy analysis will show the relation between temperature and vegetation development.

CORING SITE



The study site lies in County Galway, close to the County Clare boundary. It is a (partly) infilled basin, set within limestone bedrock.

A cross-section was cored and a core (LURGA-A) was taken near the deepest part of the infilled-lake (53°00'55.8"N, 08°52'03.0"W).



METHODS AND FIRST RESULTS

POLLEN

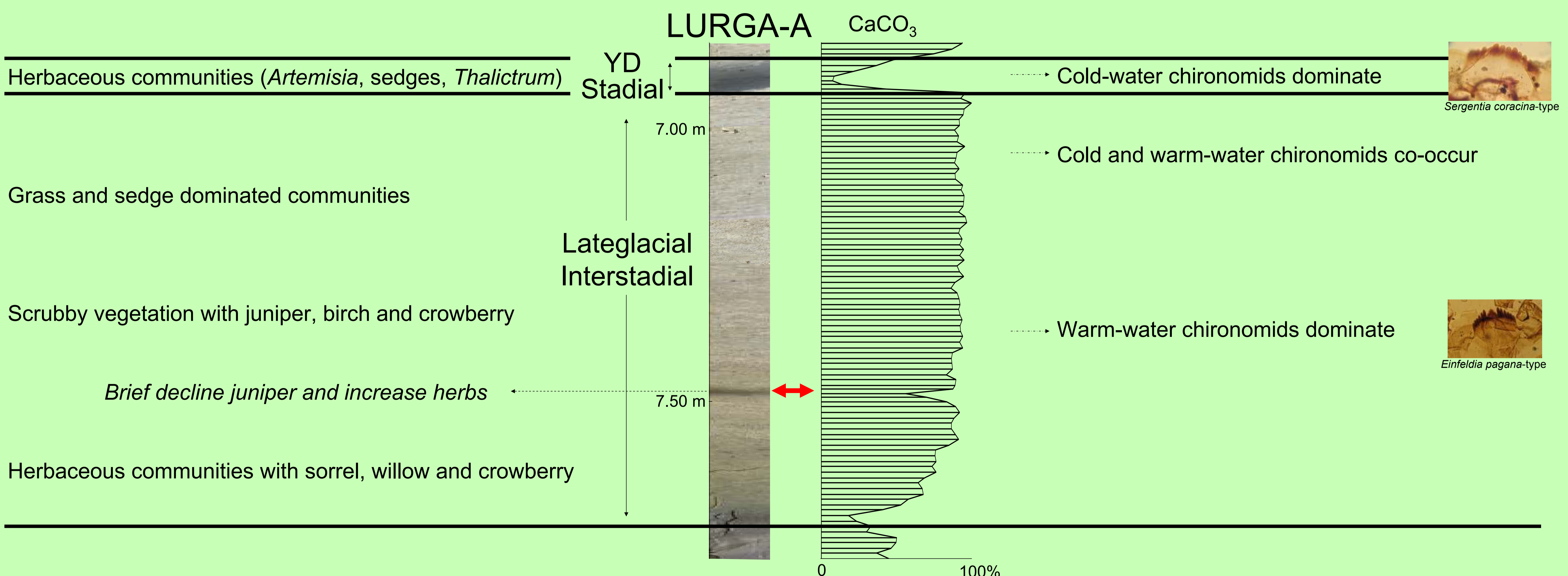
Pollen analysis will be carried out on core LURGA-A. The vegetation development shown here is based on a lithological correlation with results from previous research on this site (Paus *et al.*, 1994)

LITHOLOGY

Carbonate content: Scheibler method
(Organic matter content: Loss on Ignition)

CHIRONOMIDS

Chironomid analysis is carried out for a summer temperature reconstruction. Preliminary results (of 3 samples) indicate:



PRELIMINARY CONCLUSIONS AND FURTHER RESEARCH

- Chironomids possibly indicate cooler conditions during the grass-sedge phase of the Interstadial than during the juniper phase; higher resolution analysis is needed to confirm this.
- Temporary decline in juniper can be correlated to increased clastic input. Chironomid analysis will show whether this is correlated to a decrease in temperature.
- Pollen analysis on core LURGA-A will allow us to directly compare the climatic signal (chironomids) with the vegetation signal.
- Tephra and AMS ^{14}C dating will be used for building a chronological framework.
- Oxygen isotopes will be measured for a correlation with the Greenland ice cores.

Reference:
• Paus, A., Huang, C.C., Birks, H.H. and O'Connell, M., 1994, Investigations toward the reconstruction of the late-glacial environment at Lurga, SE-Burren. I. The sedimentary record and the pollen and macrofossil evidence. In: The Burren, Co. Clare, Field Guide No. 18. Irish association for Quaternary Studies

* Department of Physical Geography, Faculty of Geosciences, Utrecht University, The Netherlands. E-mail: N.vanAsch@geo.uu.nl