

Project acronym: Greenland

Project title: Growing season changes over the past Millennium in northern high latitudes

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Discipline: Earth Sciences & Environment

Station(s): Arctic Station (Greenland)

Palaeobotanical investigations provide one of the few tools to generate long-term growing season records beyond the relative short-term satellite records. Recent advances in palaeobotanical techniques, including the novel growing season length proxy, are capable of accurately reconstructing past growing degree days and spring onset data. In the proposed project, micro-phenological data from modern and fossil leaves will be tested against historical meteorological data, and validated by field climate manipulation experiments. Growing season signals from fossil leaves will subsequently be used to estimate spring thermal properties over the past Millennium from NAO-sensitive regions in Greenland and Scandinavia. These carefully chosen study areas (Arctic Station, Disko Island for the Greenland part of the study) are representative for the bipolar winter and spring temperature expression of the NAO. The production single-proxy records of NAO related spring dynamics will support the understanding of ongoing climate change.