

LATE GLACIAL EROSION AND PEDOGENESIS DYNAMICS: EVIDENCE FROM HIGH-RESOLUTION LACUSTRINE ARCHIVES AND PALEOSOLS IN CENTRAL EUROPE

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Sediments from three paleolakes and two paleosol horizons in south Bohemia, Czech Republic, provide evidence of climate change and landscape evolution in central-eastern Europe on millennial to centennial timescales over the Late Glacial (~16–11.5 ky). Based on a combination of geochemical, sedimentological and geophysical proxy indicators, along with the pollen record and soil micromorphology, we propose a relationship between vegetation cover, soil development, and erosional processes. Four major and two minor environmental stages, identified in all investigated paleo-lakes, were broadly correlated with the Late Glacial climatostratigraphy. Short-term (decadal to centennial) climatic deteriorations between the Bølling and Allerød, and within the Allerød, have been correlated with the Older Dryas and the Intra-Allerød Cold Period (IACP) respectively. B horizons of two (gleyic) podzols discovered under aeolian sand dunes in the lake catchments were dated to the Allerød interstadial and were parallelized with Usselo soils – pedostratigraphical marker horizons of west- and northern-central Europe. The upper parts of these soils have signs of colluvial processes. According to the radiocarbon dating, the erosion occurred at $13,155 \pm 150$ cal. yr BP and can be associated with the IACP event, which is marked by a significant input of allogenic material into the lake basins. We attribute the significant increase in the iron and consequent phosphorus content in the lake sediments during the Allerød to the podzolization that occurred with the humid interstadial conditions.

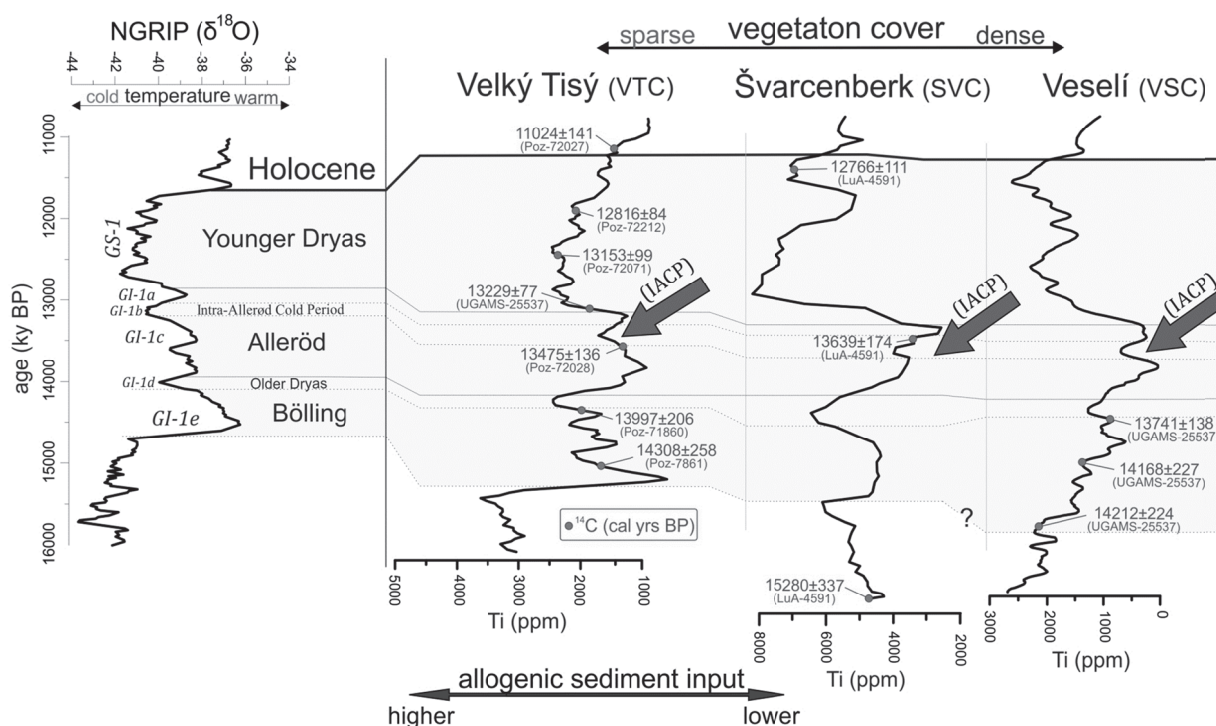


Fig. 1. Correlation of Ti-records from paleolakes Velký Tisý, Švarcenberk and Veselí with δ¹⁸O record from NGRIP