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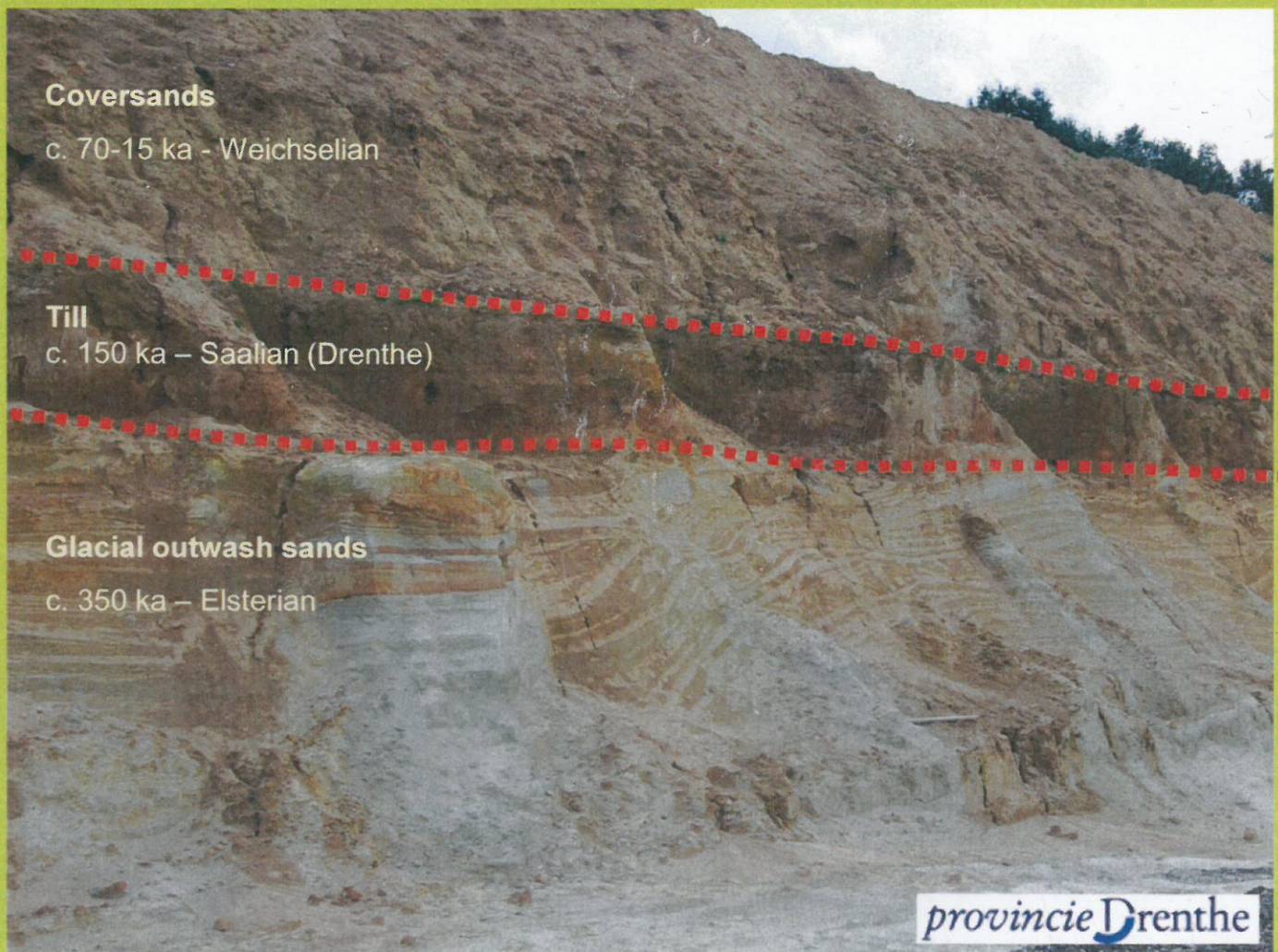
Quaternary Geology and Modern Questions



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Perspective of a new cosmogenic (^{10}Be) chronology for the last Scandinavian Ice Sheet recession in Poland – project “DatErr”

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Terrestrial cosmogenic nuclide dating (TCND) has been successfully used for direct dating of the last SIS recession, providing valuable data for the chronology of late Pleistocene glacial phases in Europe. However, the decay of the last SIS's southern sector is still a matter of debate, including its absolute time frame, dynamics of ice-margin fluctuations and style of deglaciation. We suggest that North Western (NW) Poland is the key region to resolve this issues. Project “DatErr” will provide a new set of ^{10}Be ages that bridges the existing gap between the records available further west and east (Fig. 1). The exciting perspective to build a comprehensive chronology for the demise of the SIS along its entire southern margin will allow us to understand its dynamic with respect to readily available paleoclimate records.

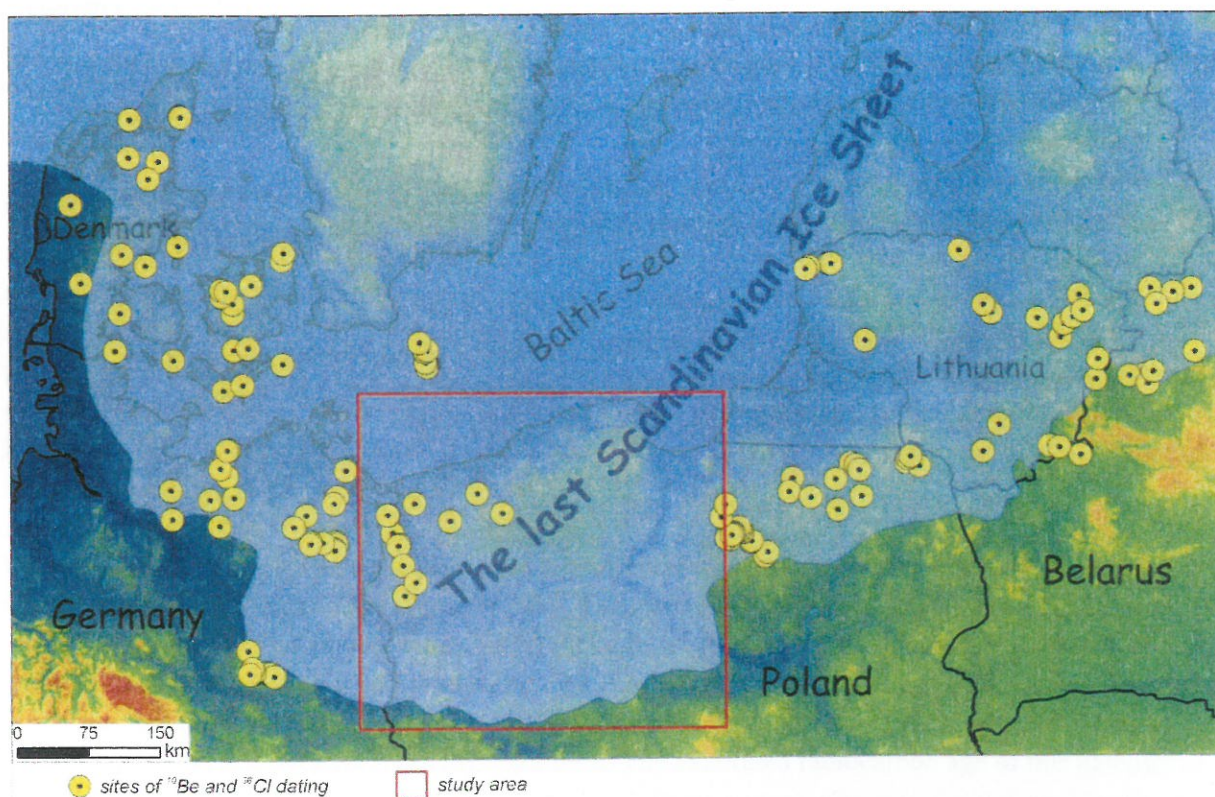


Fig. 1. Surface exposure ages (^{10}Be and ^{36}Cl) of erratic boulders and bedrock available for the southern front of the last Scandinavian Ice Sheet (Dzierżek & Zreda 2007, Houmark-Nielsen et al. 2012, Rinterknecht et al. 2005, 2007, 2008, 2012, 2014) and study area of “DatErr” project.

“DatErr” focuses on the recession of the last SIS in NW Poland and erratic boulders resting in-situ on moraine surfaces. Seventy large, well preserved boulders were selected for investigation. The project covers marginal belts in NW Poland correlated with successive glacial phases of the late Weichselian (Brandenburg, Frankfurt, Pomeranian and Gardno). Cosmogenic nuclide ^{10}Be dating of these erratics

will lead to constructing a robust chronology of paleo ice-sheet retreat. During the Late Weichselian NW Poland was covered by a significant part of the southern sector of the last SIS that responded but also influenced the Late Pleistocene climate. Direct dating of the SIS retreat in NW Poland and compilation of a new ^{10}Be dataset with existing geochronological data for this part of the last SIS will allow to reconstruct the past ice sheet dynamics with respect to climate variations.

Our research will result in: (1) the first direct dating of the last SIS maximum extent in Poland, (2) getting the first surface exposure ages of Poznań (Frankfurt) Phase of the last SIS recession in NW Poland, (3) the first complete ^{10}Be chronology of the last SIS recession from the local Last Glacial Maximum to the final deglaciation of NW Poland, (4) bridging the gap between the “western” and the “eastern” Peribaltic regions in terms of surface exposure ages of the last SIS recession.

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