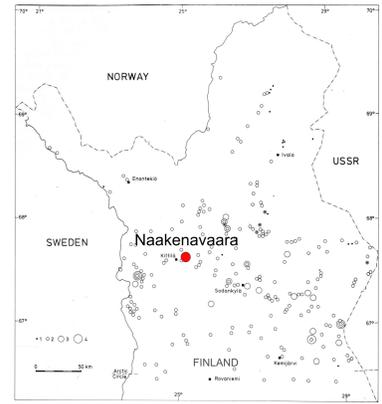


OSL dating of the inter-till stratified sediments of the Naakenavaara key section in Kittilä, northern Finland

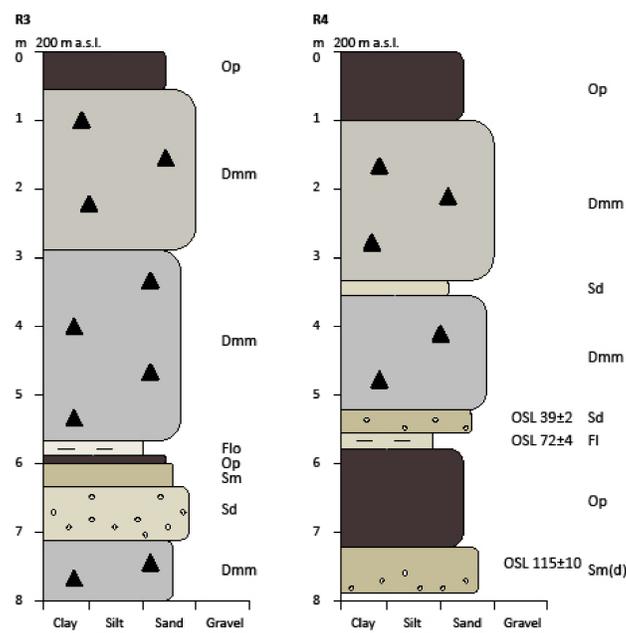
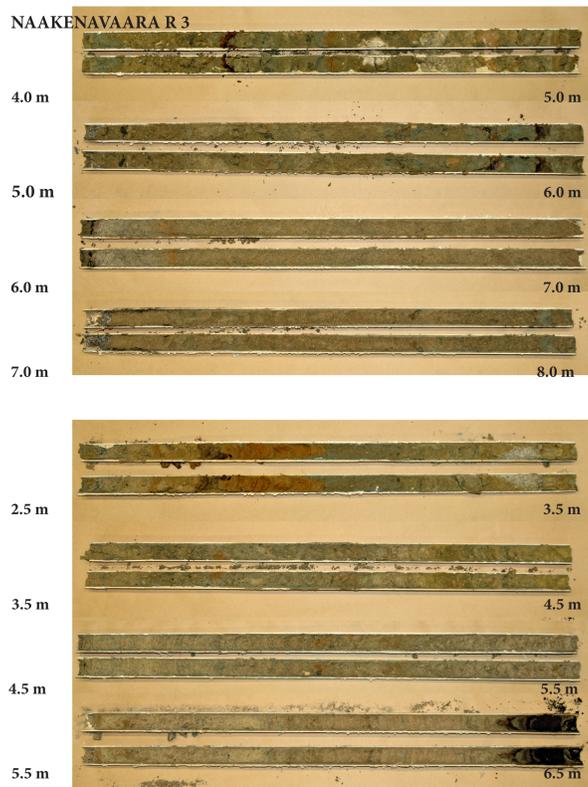
Pertti Sarala

The Naakenavaara interglacial deposit in Kittilä, Lapland (Hirvas 1991, Aalto et al. 1992), is a 1.5-2-m-thick peat deposit having stratified sediments on upper and lower side of it. The deposit is covered by three till beds and underlined by one till bed. Hirvas (1991) was presented that the lowermost till bed was probably deposited during the Saalian glacial stage and based on that the peat deposit was correlated with the Holsteinian interglacial. The pollen stratigraphy (with *Aracites johnstrupii*) is clearly indicating interglacial (Eemian or possibly Holsteinian) conditions but the macrofossils suggest the deposit to be of either Holsteinian or Tertiary age (Aalto et al. 1992). Saarnisto and Salonen (1995) were interpreted the peat to be correlative with the Holsteinian interglacial (MIS 7), although there is possibility that the sediments may be even older. The pollen and macrofossil contents show that during the deposition of Naakenavaara interglacial sequence, pine, spruce (including *Picea omorika*) and larch forests grew in northern Finland (Ambrosian et al. 1998).

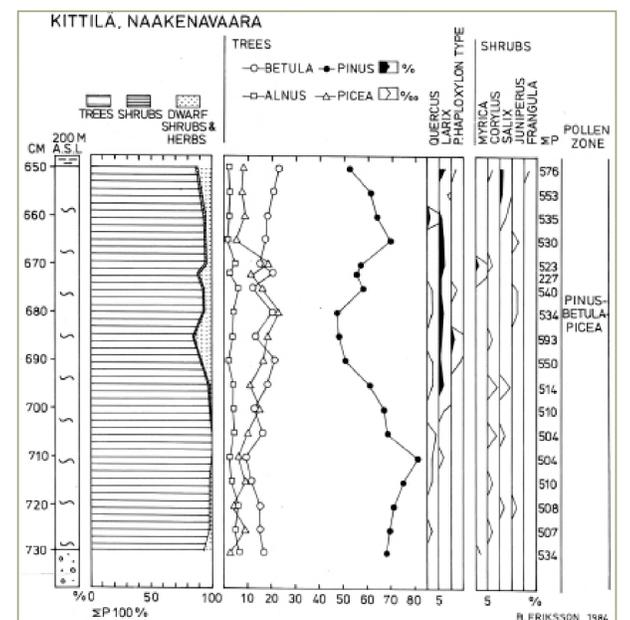
Present chronological studies based on OSL sampling indicate that the stratigraphical succession of the section is representative of deposits from the Saalian age to the last deglaciation. OSL age for the sand layer under the peat is 115 +/- 10 ka and above the peat 72 +/- 4 ka and 39 +/- 2 ka. Based on this data the peat represents *in situ* Eemian interglacial deposition. However, the results also give the possibility of redeposition of the older peat to the present position.



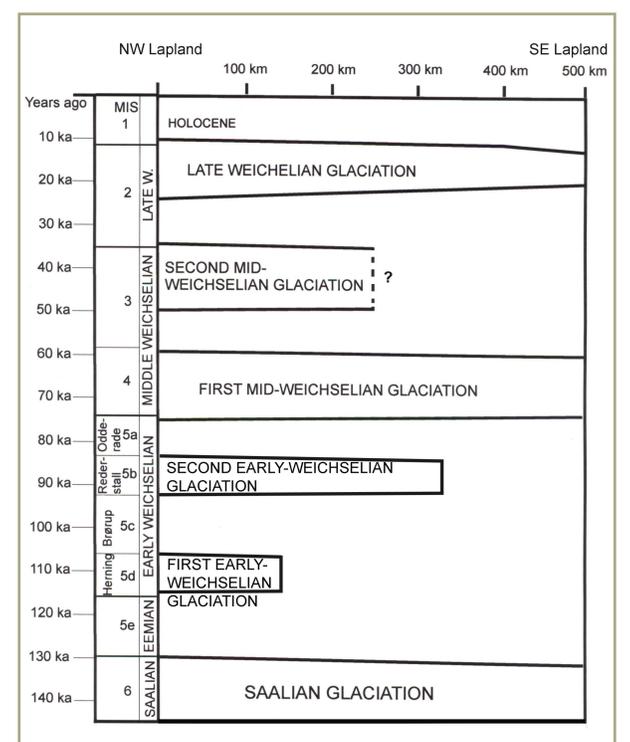
Location of the Naakenavaara Interglacial site in central Finnish Lapland.



a) Bore holes drilled in 2009 at Naakenavaara. Log R4 locates in the same place than earlier observation made by Hirvas (1991) and R3 30 m south from R4. Photos by R. Lampela, b) Stratigraphy of the two bore holes with OSL ages.



Pollen diagram of the inter-till peat layer in Naakenavaara after Hirvas 1991.



Time-distance diagram showing the growth and decay of the Scandinavian ice sheet during the Middle and Late Pleistocene (After Johansson et al. 2011). Based on new OSL dating, Naakenavaara inter-till peat layer represents Eem Interglacial.

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