

## Askja 1875 tephra in lake sediment in Southern Finland

M. KALLIOKOSKI<sup>1\*</sup>, T. SAARINEN<sup>1</sup> AND S. WASTEGÅRD<sup>2</sup>

<sup>1</sup>*Department of Geography and Geology, University of Turku, 20014, Turku, FINLAND  
(\*correspondence: mkalli@utu.fi)*

<sup>2</sup>*Department of Physical Geography, Stockholm University, 106 91, Stockholm, SWEDEN*

Tephra from Icelandic volcano eruptions is known to be carried to Northern Europe, but no tephra has previously been found or reported in Finnish peats or lake sediments. We report a recent finding of a cryptotephra layer in lakes Kalattomalammi, Pernunjärvi and Ahvenuslammi in Southern Finland.

Lake sediment samples from three lakes, located in the fall-out zone of the Hekla 1947 eruption, were investigated for presence of tephra shards in order to assess the possibilities of tephrochronology in Finland. Tephra shards were extracted from lake sediment using heavy liquid separation method, and electron probe microanalysis of main elements was conducted on single shards. The results of geochemical analysis show that the tephra originates from an eruption of Askja in 1875, thus extending the known distribution of the Askja 1875 tephra towards east.

Our results confirm that the size of cryptotephra particles and the shard concentrations in Finnish sites are sufficient for tephrochronological work. The presence of the Askja 1875 tephra in our study sites suggests that high-resolution studies of the recent environmental change in Finland could greatly benefit from using tephrochronology as a dating method. Additionally, the absence of the Hekla 1947 tephra from sites located in the previously inferred fall-out zone is an important implication of the complexity of tephra deposition and needs to be investigated further.