

INLAND DUNES OF SWEDEN, AN AEOLIAN ARCHIVE. M. Bernhardson¹ and H. Alexanderson¹,
¹Department of Geology, Lund University, Sölvegatan 12, SE-223 62 Lund, Sweden
(martin.bernhardson@geol.lu.se)

Sweden is not famous for its dune fields, and rightfully so; compared to most other countries of the world the Swedish dune fields are humble in size. Also, many of them are inactive and covered by vegetation. Due to this the dune fields of Sweden have been left largely unexplored the last decades. This is unfortunate since many of the dune fields in Sweden are valuable palaeo-environmental time capsules, recording e.g. past wind patterns. We have therefore studied a number of these dune fields and dunes in south-central Sweden using LiDAR (Light Detection And Ranging) based remote sensing, sedimentological field investigations, optically stimulated luminescence dating and ground-penetrating radar. Here we present one example, Bonåsheden, the largest continuous dune field in Sweden, covering around 15.5 km². The dunes of Bonåsheden are primarily of a transverse type, mainly formed by north-westerly winds, in contrast to most dunes present in former periglacial areas of the world, where parabolic dunes often are the most common type. The luminescence ages show that the majority of the dunes formed shortly after the deglaciation of this part of Sweden, around 10.5 ka, and later events of sand drift in the area were limited. Still, there seem to have been an ongoing phase of dune formation for 1,500 years, with a shift at 10 ka from primarily north-westerly dune forming winds to westerly dune forming winds. The reason behind this change in wind direction is still unknown, but the retreat of the Scandinavian Ice Sheet from the area would mean that the katabatic winds would have had a progressively smaller impact on the dune field.