Tephrochronology of the North Atlantic region – a tribute to Svante Björck

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Svante Björck was a pioneer in many fields of Quaternary science, including tephrochronology as a tool for dating and correlating palaeoclimate archives. A search in Google Scholar on "Svante Björck Tephra" returns almost 175 results with a main focus in the North Atlantic region, but also several papers and citations based on his research in remote localities in Antarctica and the southern oceans (e.g. Björck et al. 1991, Ljung et al. 2006, van der Putten et al. 2015).

In the North Atlantic region, Svante worked with many exciting island lakes, bogs and wetlands. Some sites were part of his Atlantis project, starting in 2002 (Björck 2019), but also his work on Icelandic lake records are today regarded as benchmark papers in the North Atlantic tephrochronology The sediment study from Lake Torfadalsvatn in northern Iceland was first effort to identify the terrestrial tephra equivalents of the North Atlantic Ash Zone I and reported evidence for the Saksunarvatn and Vedde tephras as well as several basaltic tephras (Björck et al. 1992). The tephra record of Lake Lögurinn in eastern Iceland contains no less than 157 tephra layers which is among the highest number in Europe (Gudmundsdóttir et al. 2016).

In this presentation, I will revisit some of the tephra records that I have studied in collaboration with Svante in Sweden (Late Weichselian; e.g. Wastegård et al., 1998), the Faroe Islands (Eemian and Holocene; e.g., Wastegård et al., 2005), the Azores (Holocene; Björck et al., 2006) and Jan Mayen (late Holocene; e.g. Björck et al., 2022). The results have been published between 1998 and 2022, from the first discovery of the Vedde Ash in a Swedish lake sediment record (Wastegård et al. 1998), to the tephrostratigraphy of sediments from Nordlaguna, the only permanent lake on Jan Mayen (Björck et al. 2022).

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