

# Holocene marine tephrochronology on the Iceland shelf: An overview

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**Abstract** – *Currently the Late-glacial and Holocene marine tephrochronology on the shelf around Iceland comprises 130 tephra layers from 30 sediment cores ranging in age from 15,000 years cal. BP to AD 1947. A vast majority of the cores and tephra layers are from the North Iceland shelf. Much fewer tephra layers have been found on the South and West Iceland shelf. The early Holocene Saksunarvatn ash and Vedde Ash are the only tephra layers identified on all investigated shelf areas. For the last 15,000 years correlated tephra layers from the shelf sediments around Iceland to their terrestrial counterparts both in Iceland and overseas are 40 of which 26 are terrestrially dated tephra markers. Thirty correlations are within the last 7050 years. The terrestrially dated tephra markers found on the shelf have been used to constrain past environmental variability in the region, as well as marine reservoir age. The marine tephra stratigraphy on the North Iceland shelf has revealed variations in volcanic activity in Iceland further back in time than terrestrial records in Iceland. The numerous tephra layers identified in the sediments on the shelf demonstrate the potential of marine tephrochronology for dating purposes, land-sea correlation, marine reservoir estimations and reconstruction of past volcanic activity of Icelandic volcanoes.*