



## **Climate and environmental changes during the last 2000 years on Barentsøya and Edgeøya (E-Svalbard).**

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The Svalbard archipelago is positioned at the northern limb of the Atlantic Gulf Stream and, therefore, highly sensitive to climate changes related to changes in ocean circulation. At present, a strong climate gradient from SW-NE Svalbard illustrates the Atlantic influence. While from Spitsbergen (W-Svalbard) several palaeoclimate records are available, while palaeoclimate records from Barentsøya and Edgeøya (E-Svalbard) are lacking. During the 2015 SEES expedition (<http://www.sees.nl/>) the first lake sediment records from Barentsøya and Edgeøya (E Svalbard) have been collected. The lakes, formed in isolation basins on dolomite plateaus, were selected based on their elevation. Based on published isostatic rebound values, the lakes became disconnected from the sea around 3000 years ago. Since then the lakes recorded biological production changes which are clearly reflected in the lithology of the cores. The presence of abundant plant macro fossils including *Salix polaris* leaf remains allows for plant palaeophysiological palaeoclimate estimates, which together with pollen and diatom analysis provides a high detail palaeoenvironmental reconstruction for the last 2000 years. Age assessment of the sediments is based on Pb210 and AMS C14 dating on botanical macrofossils, while we also have indications for the presence of Icelandic tephra.