

A summary of the environmental history of the Skagi peninsula, northern Iceland, 11,300-7800 BP

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Abstract – A summary is presented of the Late Weichselian and early Holocene changes of vegetation, climate and sea level on the Skagi peninsula, northern Iceland, as reflected in bio- and lithostratigraphic data from five sediment sequences. The period 11,300-10,900 BP was characterized by grass-tundra vegetation and low lake productivity, indicating cold climatic conditions. Milder conditions after 10,900 BP are reflected by an expansion of dwarf shrubs and increased limnic productivity. The Younger Dryas cold event began with an abrupt cooling at 10,600 BP that caused a return to grass-tundra vegetation and low limnic productivity. A marine transgression occurred in the later part of this cold event. Abrupt warming associated with the opening of the Holocene at 9900 BP resulted in a change to herb-tundra vegetation and high lake productivity. Rapid regression after 9900 BP was followed by a minor transgression in the period 9800-9700 BP, coincident with a short-lived cooling event on Skagi (the Preboreal oscillation). A dwarf-shrub expansion and raised limnic productivity at 9600 BP indicate milder conditions. Relative sea level fell below present sea level at 9000 BP. A rapid change in the composition of the dwarf-shrub and shrub vegetation at 8800 BP may reflect a temperature rise and a change to drier summer conditions. Another rapid vegetational succession at 8000 BP resulted in a dominant shrub and dwarf-shrub tundra vegetation in the period 8000-7800 BP. The Late Weichselian and early Holocene climatic reconstruction for Skagi fits well with palaeoclimatic data from other parts of the North Atlantic region, indicating a close connection between deglacial ocean circulation changes and climatic conditions on Iceland. In addition, the recording of transgressions on Skagi during cold events implies that the Icelandic lithosphere is extremely sensitive to changes in volume of glacial ice.