Geophysical Research Abstracts,
Vol. 10, EGU2008-A-06942, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-06942
EGU General Assembly 2008

Climatic and Hydrological perspectives on long-term changes: a northern European view

R.E. Benestad (1), Ø. Nordli (1), A. Nesje (2), L.A. Roald (3), Ø. Lie (4), & I. Hanssen-Bauer (1)

(1) The Norwegian Meteorological Institute, (2) Department of Earth Science University of Bergen, (3) Norwegian Water Resources and Energy Directorate, (4) Bjerknes Center for Climate Research

Past climatic variations can provide indications about our climate system, its sensitivity to external forcings and about internal variability. Climatic changes may affect societies, ecosystems and geology in different ways, and hence records of geological, biological or societal variations may bear imprints of past climate. We review evidence for special historical climate episodes from instrumental measurements, farmers' diaries, river-discharge records, glacier variations, solar forcing, and iceberg drifts, and put these in context to the present climate. One of today's interesting questions is whether the 'Early 20th century Warming'- which took place in the vicinity of Greenland - can be explained in terms of these sources of information. We also compare the most recent decades with climatic index estimates and other evidence of the more distant past in terms of temperature and river run-off. The flooding events in Europe have been recorded since AD 1300 and reliable sea-ice reconstructions go back to the late 16th century. Has there been a systematic change in the hydrology? Glacier variations, reflecting both summer temperature and winter precipitation changes, have been reconstructed from lake sediments, historic information and dating of moraines by means of lichenometry. Historical evidence is discussed in terms of favorable climatic conditions coinciding with part of the Viking era and the Greenland settlement. Furthermore, pollen and macroscopic plant remains provide information of local and regional climate conditions. One question often taken for granted is whether the presence of ice-bergs really implies cold conditions. And what can be learned from the

historical solar forcing data in terms of past climatic variations?