



Research related to global change, at the
National Energy Authority

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Orkustofnun (National Energy Authority) has been active in collecting information on environmental conditions from all parts of Iceland for more than half a century. Much of this has been information on hydrology which has been monitored systematically to an increasing extent since the year 1947, particularly discharge measurements of the most important rivers. Today the Hydrological Service of Orkustofnun has about 180 water-level gauges in rivers, lakes and drill holes all over the country. This information has been vital in assessing precipitation in the country. The hydrological data have been used in interpretation of the effect of general circulation of the atmosphere and the North Atlantic Oscillation on the climate in Iceland. Now monitoring of chemistry in freshwater has been added to the program.

Orkustofnun, Hydrological Service carried out a Nordic research program on climate change and energy production in cooperation between the Nordic hydrological services and the Nordic hydroelectric power industry funded by the Nordic Council of Ministers and the participating institutions. The program was running in the years 1991-1996 and the resulting final report was published by the Nordic Council of Ministers in 1998.

Glacier variation in Iceland has been monitored since 1930 by the Iceland Glaciological Society. The information is collected and interpreted at Orkustofnun and the data is conveyed to the World Glacier Monitoring System (WGMS) in Switzerland which has published them every five years and now the same data are available electronically at the WGMS. Glacier mass balance is monitored by Orkustofnun on two different ice caps in the country, a program that has been going on since 1987. This information is published every other year by the WGMS.

A joint project between Orkustofnun, the Icelandic Meteorological Office, the University of Iceland, and the National Power Company, has been started in modeling the mass balance of the Hofsjökull Ice Cap for the past 3 to 4 centuries. This is expected to give valid information on climate changes in the North Atlantic for a big part of the Little Ice Age.

Orkustofnun is in cooperation with the University of Iceland and a few other universities in Europe in a project called "Arctic and Alpine Stream Ecosystems Research; a study of climatic change effects on alpine and arctic running waters." The project was started in 1996 and will end in 1999. This research is intended to reveal the relation between the ecosystems of rivers with varying degree of glacier runoff to be able to predict changes in the fauna of rivers in an environment of dwindling glaciers in northern Europe and the Alps. The project is partly financed by the European Community.