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The Geological Survey of Finland (GTK) is, with some partners, carrying out a cooperative project, PO-MARA, in the Levi tourist center in northern Finland. The purpose of this applied geology project is to determine which soil combinations work best over the long term as substrates on slalom slopes and golf course areas. Since the tourist center is located in a cold climate area, it gives extra challenges to those landscaping activities. The average temperature in January is about -15°C and in July +14°C.

In the Levi area, the slalom slopes have normally been covered by local carex peat during the shaping phase of slopes. The problem has been that on the top part of the fell, the peat has “disappeared” after some years and stones have come up under the peat layer, since these areas are naturally covered by block fields. The main assumption at the beginning of the project was that frost weathering is causing the problems. In this project, test areas have been prepared on the slopes. The most important task is to compare test areas covered by carex peat to areas covered by a combination of sandy till and carex peat. The reason why sandy till was chosen to be the additional material was that it is supposed to stand up better against frost weathering than peat itself. Also, when considering future landscaping, the sandy till is the most economically viable mineral material to be used because of its nearby location .

In the golf course areas, a combination of fine sand and sphagnum peat has been used in landscaping. The peat was brought from the Simo area, 300 km south of Levi. In this project, the goal is to determine if the local carex peat is working properly in the green areas of the golf club.

The monitoring studies of the test areas on the slalom slopes and golf courses include the measuring of water content and temperature. Also, a visual inspection of the growing vegetation will tell if the experiment is succesful.

GTK’s partners in the project are Oy Levi Ski Resort, Levi Golf & Country Club Oy, the local water supply and sewerage company, the Municipality of Kittila and Tampere University of Technology. The project is partly funded by the European Regional Development Fund program and is implemented in 2008-2010. Follow-up research will continue afterwards. It is assumed that the project results can be used in other same kind of landscaping processes in northern areas.