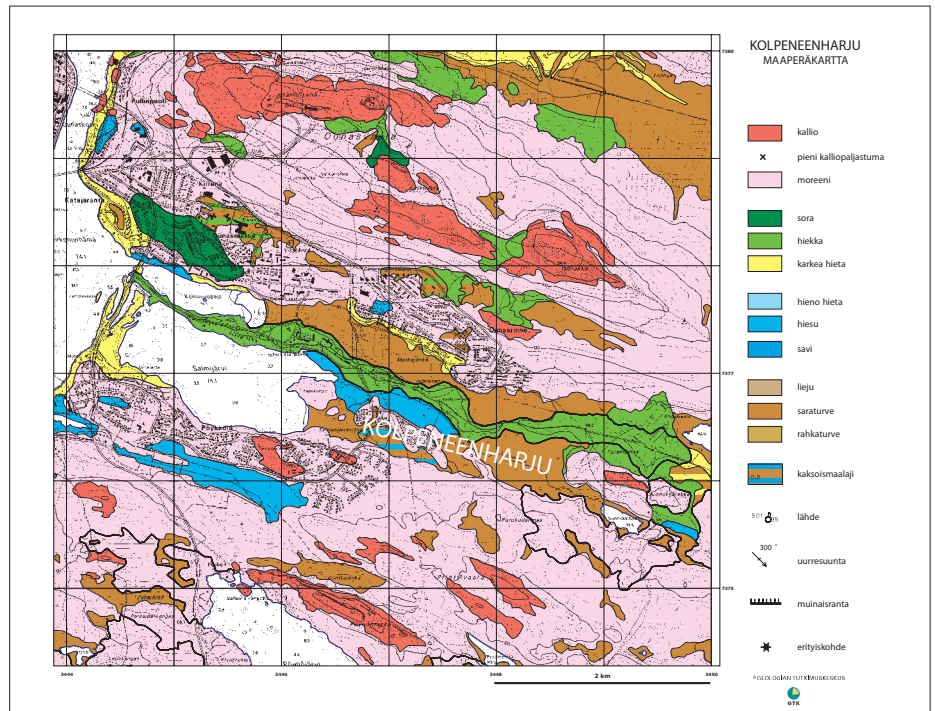


Groundwater

Groundwater is a precious natural resource. Groundwater collects when rainwater and melting snow are absorbed into the soil. The amount of water absorbed as groundwater is influenced by vegetation, the form of the surface of the ground, the moisture level of the surface layer, the coarseness of the soil, and the structure and density of the layers. Groundwater is mostly stored in layers of sand and gravel. Groundwater also exists in bedrock, where water enters through fractures and crevices. The annual amount of precipitation absorbed as groundwater varies from 0% to 50%, depending on soil quality.

The quality of groundwater is affected by the salts contained in the water absorbed into the soil, and by the structure and composition of the soil and bedrock. In soil where the circulation of groundwater is slow, the quantity of solute substances in the water is greater than in groundwater that circulates rapidly. For example, the quantity of solute substances in moraine groundwater is usually greater than on ridges, which contain water from leaching, well-sorted and coarse soil types. Also in rapidly circulating groundwater, moraine-type content is often very small. As far as obtaining groundwater is concerned, the most beneficial factors are ridges and other thick deposits of sand and gravel.

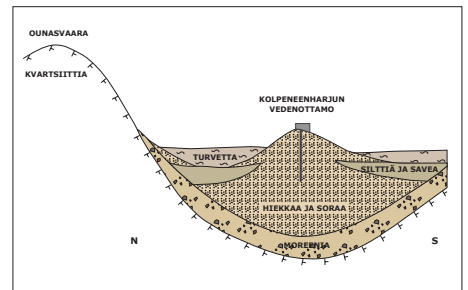
The Rovaniemi region has many ridges, which provide good groundwater. These include Kolpeneenharju, Jokkavaara and Kroopinpalo-Palovaara. The ridges are also important for their sand and gravel reserves. They are also popular areas for trekking and holidaying, and form an excellent base for construction. For these reasons, the planning of land use in ridge areas can cause disagreement, because of their diverse possibilities for use. Kolpeneenharju Ridge is situated to the north-east of Rovaniemi city centre, south of Ounasvaara Hill. It is more than 5 km long. The ridge begins east of Kirkonjyrhämä and proceeds between Salmijärvi and Keinuvoopaja and on to Toramomaa.



Kolpeneenharju Ridge is a long and narrow glacial river deposit, consisting of sand and gravel. Boring tests have shown the thickness of the ridge stratification to be 25-30m in places.

About 10,300 years ago at the time of the most recent deglaciation, the ridge began to form in a long, valley-shaped hollow in the bedrock. Based on boring tests, the thickness of the covering layer of ground is 25-30m, although the ridge rises no more than a few meters above its surroundings.

A groundwater intake plant, completed in 1959, is situated at Kolpeneenharju Ridge. Up to 9,000 m³ of groundwater per day is taken from there. It has been possible considerably to reduce the amount of water pumped from there, as new groundwater intake plants have been set up in other ridge areas around Rovaniemi. In previous times, sand and gravel were also taken



A cross-section from the east end of the Kolpeneenharju Ridge at the location of the groundwater intake plant.



A housing estate at the west end of Kolpeneenharju Ridge.



A ridge between Salmijärvi Lake and Keinuvoopaja.

from Kolpeneenharju Ridge. Part of the ridge has been preserved in its almost natural condition, if you do not take into account the road built on top of the ridge. Another part of it is a densely built-up area. As far as scenery is concerned, the western part of the ridge wending its way between bodies of water is very beautiful.