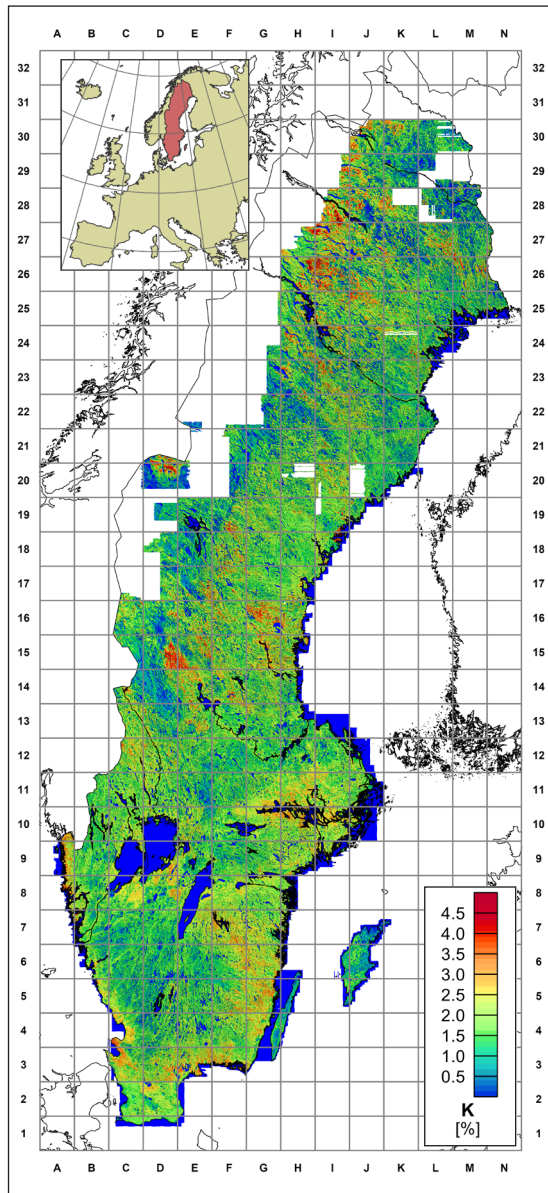


# Radiometric map (K)

January 2024



The map shows the distribution of potassium in the uppermost part of the bedrock and soil. The radioactive decay used in the calculation of the potassium concentration is the gamma radiation from the decay of potassium-40 to argon-40. Potassium-40 constitutes 0.0118% of the naturally occurring potassium.

SGU has performed airborne gamma-ray surveys of the natural gamma-ray emitters in the ground since the late 1960's. These measurements allow for the amounts of naturally occurring radioactive isotopes—potassium, uranium and thorium—to be calculated. The map is based on measurements until 2023.

The spectrometer has been calibrated by measuring its response over concrete pads with known concentrations of the radionuclides above. This is routinely performed at the SGU calibration facility in Borlänge. Spectral-fitting is then performed to calculate the nuclide concentration. The effect of absorption in the air has been determined through experiments using wood as absorbing material. The calibration has been verified by comparing measurements on the ground with airborne surveys over the same area. There are however some uncertainties in the result, since variations in air humidity to some amount affect the measurement of all three nuclides. There is also electronic noise in the instruments and ionising radiation from the measuring platform. By measuring the background level over large water areas it is possible to reduce these effects in processed data.

## Survey Parameters

**Survey altitude:** 30 or 60 m

**Altimeter:** radar

**Navigation:** GPS

**Line direction:** mainly N–S or E–W

**Line spacing:** 200–800 m over land areas

**Flight speed:** 250 km/h

Visit our digital Map viewer at [www.sgu.se/en/products/maps/map-viewer/](http://www.sgu.se/en/products/maps/map-viewer/)