

These new radiometric maps were produced using the digital archives of the National Gamma Ray Spectrometry Program (NGRS), from data collected between 1974 and 1985. The program was funded by the Geological Survey of Canada (GSC) and contracted to the University of Ottawa and the Geological Survey of Canada. All data were processed and corrected according to the standards of the International Atomic Energy Agency (IAEA) and the International Geophysics Year (IGY) program.

The data were collected using 25 lines of sodium iodide detectors, at a nominal pulse rate of 120/s. For most of the surveyed area, flight lines were spaced at 300 m intervals. In the southern part of the island, the flight lines were spaced at 150 m intervals. The data were processed using the GRS software developed by the GSC and the University of Ottawa. The data were processed using the GRS software developed by the GSC and the University of Ottawa.

These maps depict radiometric information from the upper 30 cm of the earth's surface. The data represent average surface concentrations, obtained by averaging counts of gamma rays emitted by potassium, uranium and thorium isotopes. The data represent average surface concentrations, obtained by averaging counts of gamma rays emitted by potassium, uranium and thorium isotopes.

Through the diverse radiometric surveys, the geochemical information provided by variations in potassium, uranium and thorium concentrations suggests insights into tectonic and magmatic evolution and mineral resources, at regional and local scales. More detailed information is possible through the use of the original data, available from the Geological Survey of Canada.

The 1:1 000 000 compilation features a variety of geological features. For example, the area along the south coast of the island is characterized by a variety of igneous complexes including the North Bay, Bay de St-Jean, and Bay de St-Jovite. Each complex displays a variety of radiometric characteristics that enable discrimination of various phases within and between them, and their host lithologies. The area of highest radiometric contrast is associated with the Fogo Island and the Avalon Peninsula.

Recent gamma ray spectrometry surveys have also detected areas of potassium enrichment associated with mafic volcanic eruptions in several areas of central and north-western Newfoundland. These results correspond to the areas of mafic volcanic eruptions identified in the 1970s and 1980s. The data represent average surface concentrations, obtained by averaging counts of gamma rays emitted by potassium, uranium and thorium isotopes.

The Fogo Island geologic studies indicate that the strongest potassium enrichment is associated with altered intracrustal dykes and pegmatites. The hydrothermal alteration and carbonaceous shales, but do not appear to be associated with the mafic volcanic eruptions. The data represent average surface concentrations, obtained by averaging counts of gamma rays emitted by potassium, uranium and thorium isotopes.

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Geophysical compilation by J.M. Carson, P.B. Holman, K.L. Ford, J.A. Grant, and B.K. Shaw

Digital cartography by J.A.Y. Pratt, Earth Sciences Sector Information Division (ESS Info)

This map was produced from processes in conformance with the Cartographic Services Sector Quality Management System. Criteria registered to the Quality System ISO 9001:2000 standard.

Any revisions known to the user would be welcomed by the Geological Survey of Canada.

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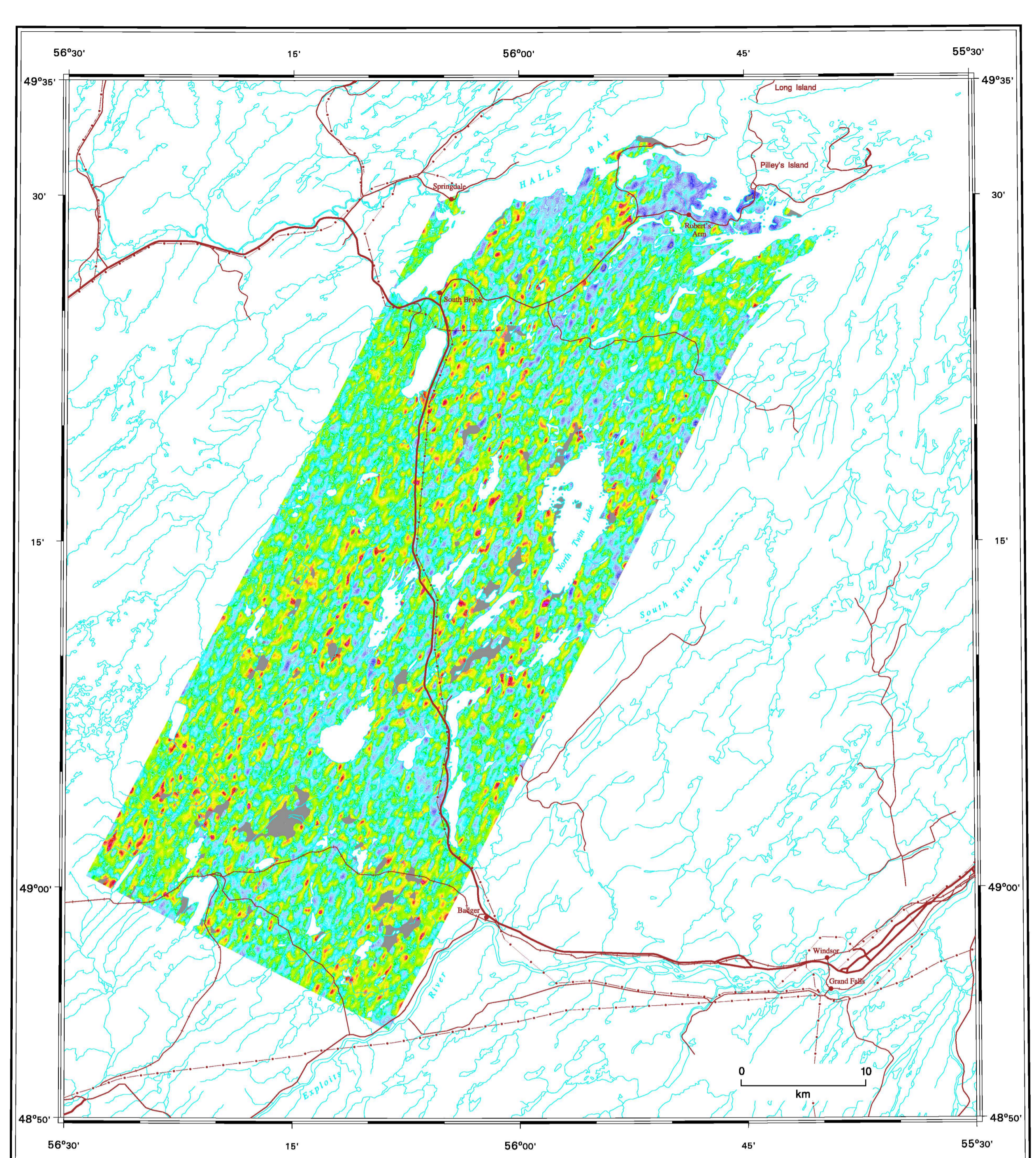
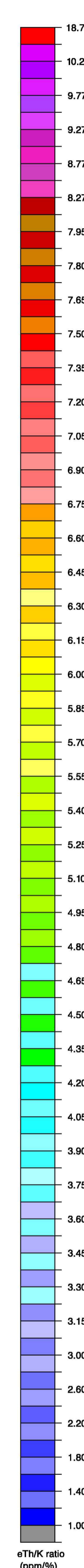
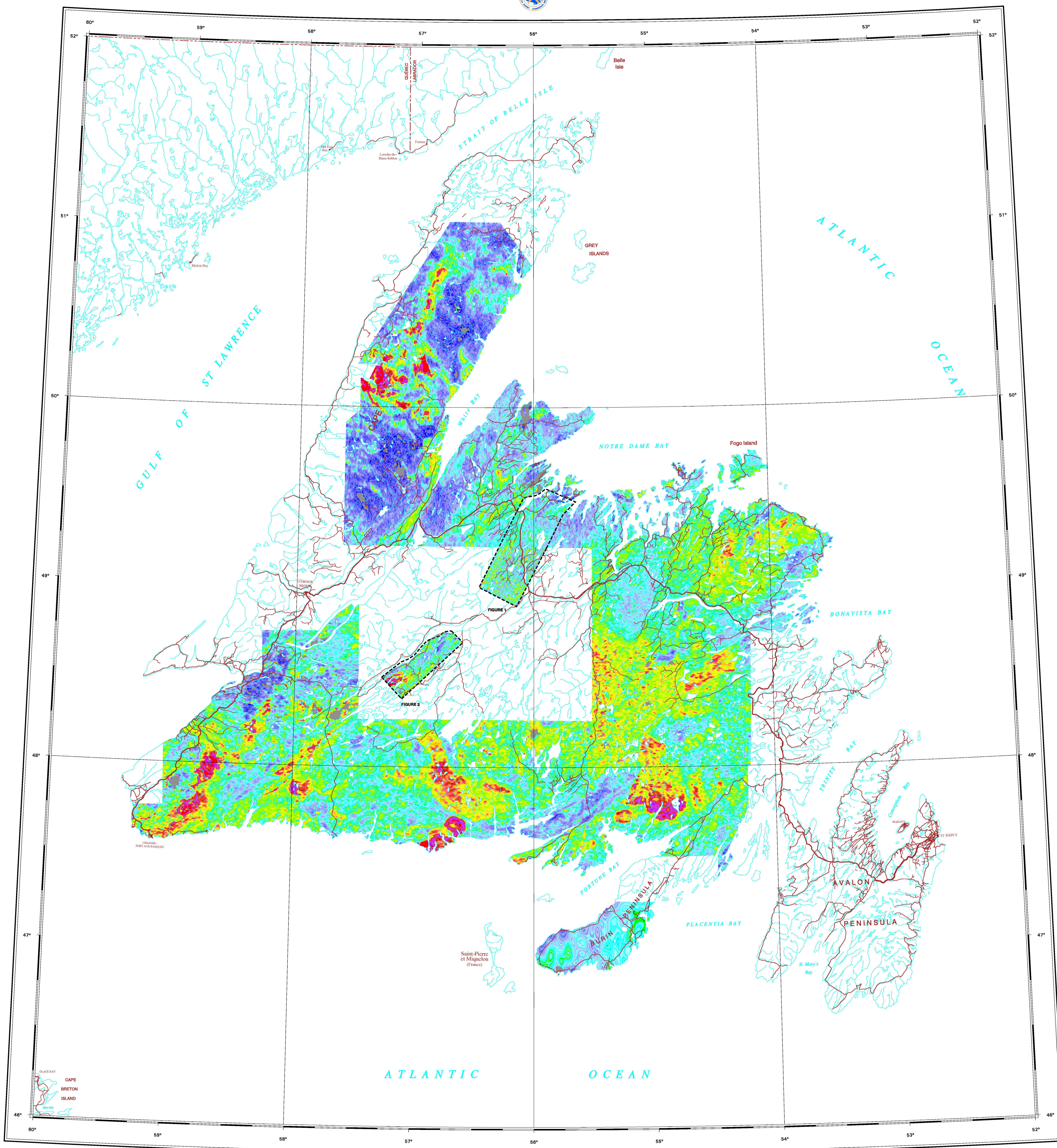


Figure 1
eThK ratio
GREAT GULL LAKE

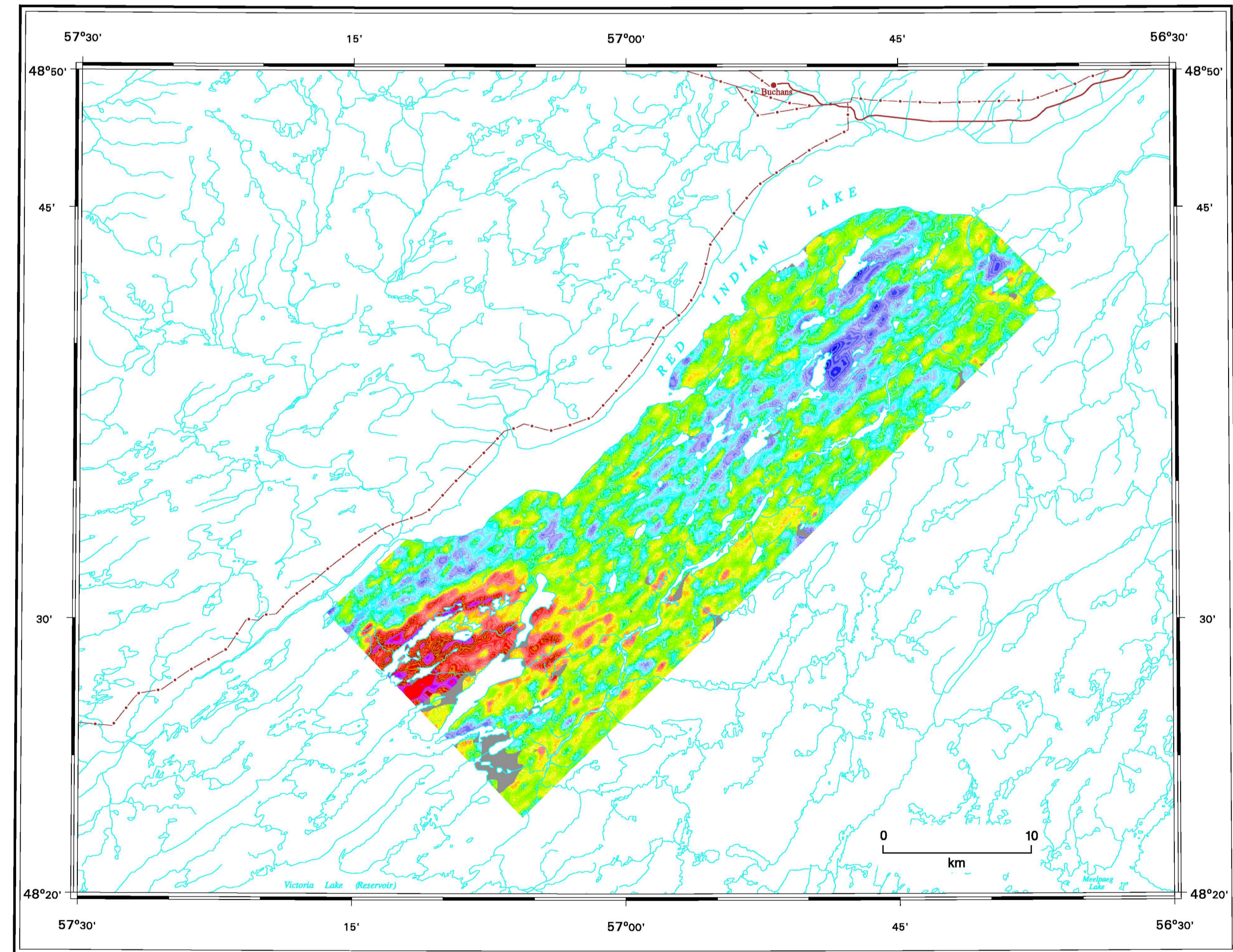


Figure 2
eThK ratio
TULKUS VOLCANIC BELT

eThK ratio
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ISLAND OF NEWFOUNDLAND
AND LABRADOR
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