

These new radiometric maps were produced using the digital archives of the National Gamma Ray Spectrometry Program (NGRS), from data collected between 1974 and 1980. The program was funded by the Geological Survey of Canada (GSC) and the Canadian Atomic Energy Commission (CAEC) under a joint Federal-Provincial government funding. All data were digitized and converted to a common format and stored in a central database. The data were then processed using the GSC Open File File System (OFFS).

The data were collected using 20 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 GSC Open File File System (OFFS). The data were processed using the GSC Open File File System (OFFS). The data were processed using the GSC Open File File System (OFFS).

These maps depict radiometric data derived from the upper 30 cm of the earth's surface. The data represent average thorium concentrations, measured by varying amounts of counting, registration, and net resolution and surface water. As a result, measured concentrations are usually lower than underlying bedrock concentrations.

Throughout the diverse tectonic zones surveyed, the geochemical information provided by variations in potassium, uranium and thorium concentrations suggests complex relationships between geology and mineral resources, at regional and local scales. These results are presented in greater detail through the use of the original data, available from the Geological Survey of Canada.

The 1:100 000 compilation features a variety of geological features. For example, the area along the south coast of the island of Newfoundland is dominated by a variety of granitic complexes including the North Bay, Bay of Islands, Avalon and Fogo (Dunn, et al., 1981). 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 intensity is associated with the Fogo granite, a Cambrian pluton which the Fogo granite is also depicted in the survey's geologic map (Bourne et al., 1987).

Various gamma ray spectrometry surveys have also delineated areas of potassium enrichment associated with mafic volcanic eruptions in several areas of central and north-central Newfoundland. These results correspond to the areas with the highest potassium concentrations. In these and other areas there is a strong association between elevated potassium concentrations and mafic volcanic deposits, including the Fogo granite and the Avalon granite. The Fogo granite is also depicted in the survey's geologic map (Bourne et al., 1987).

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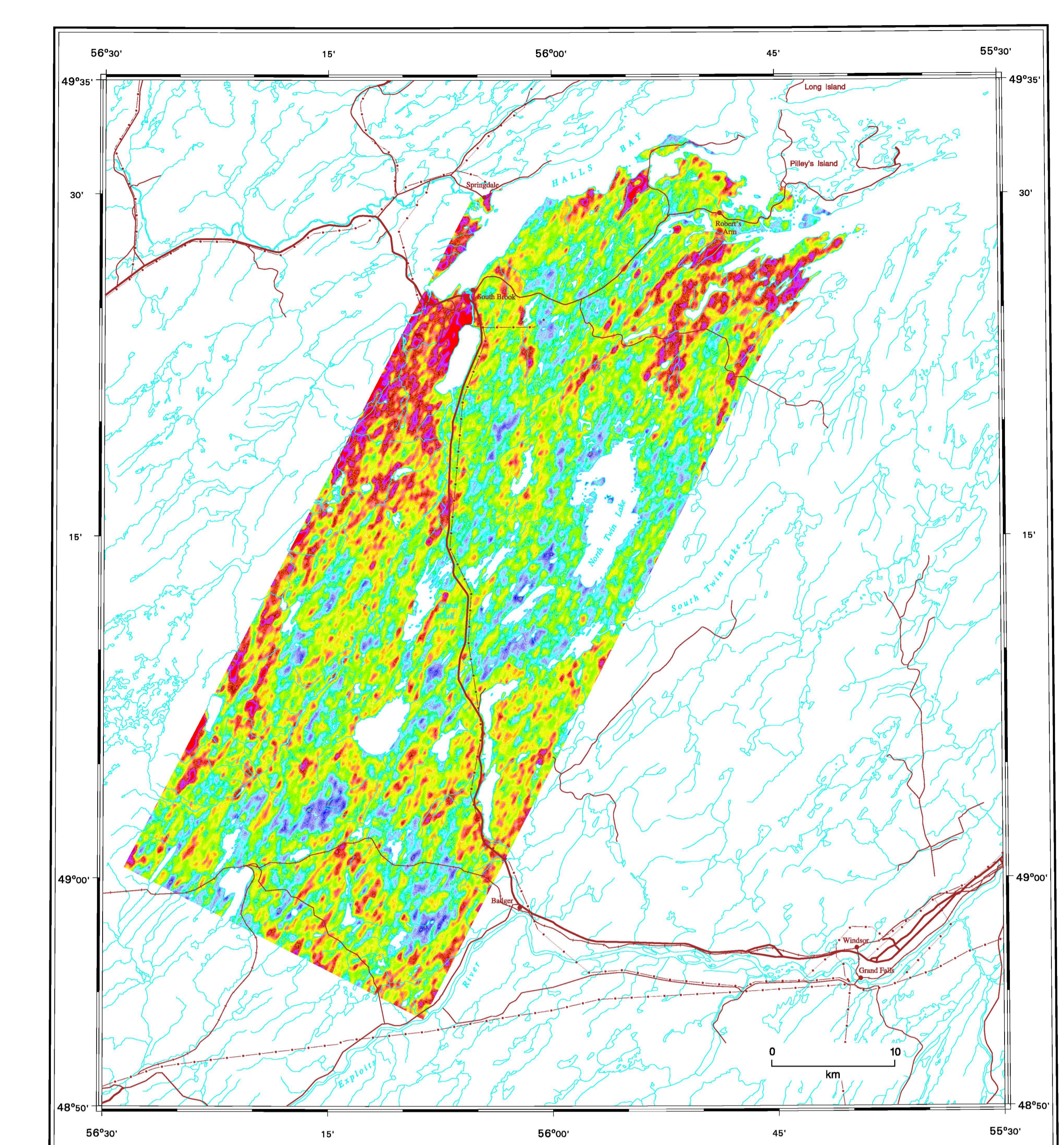
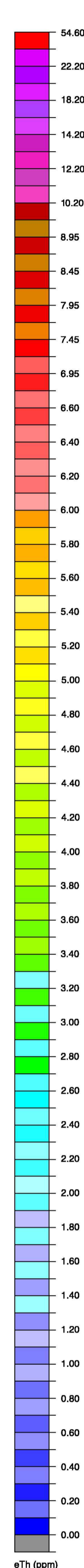
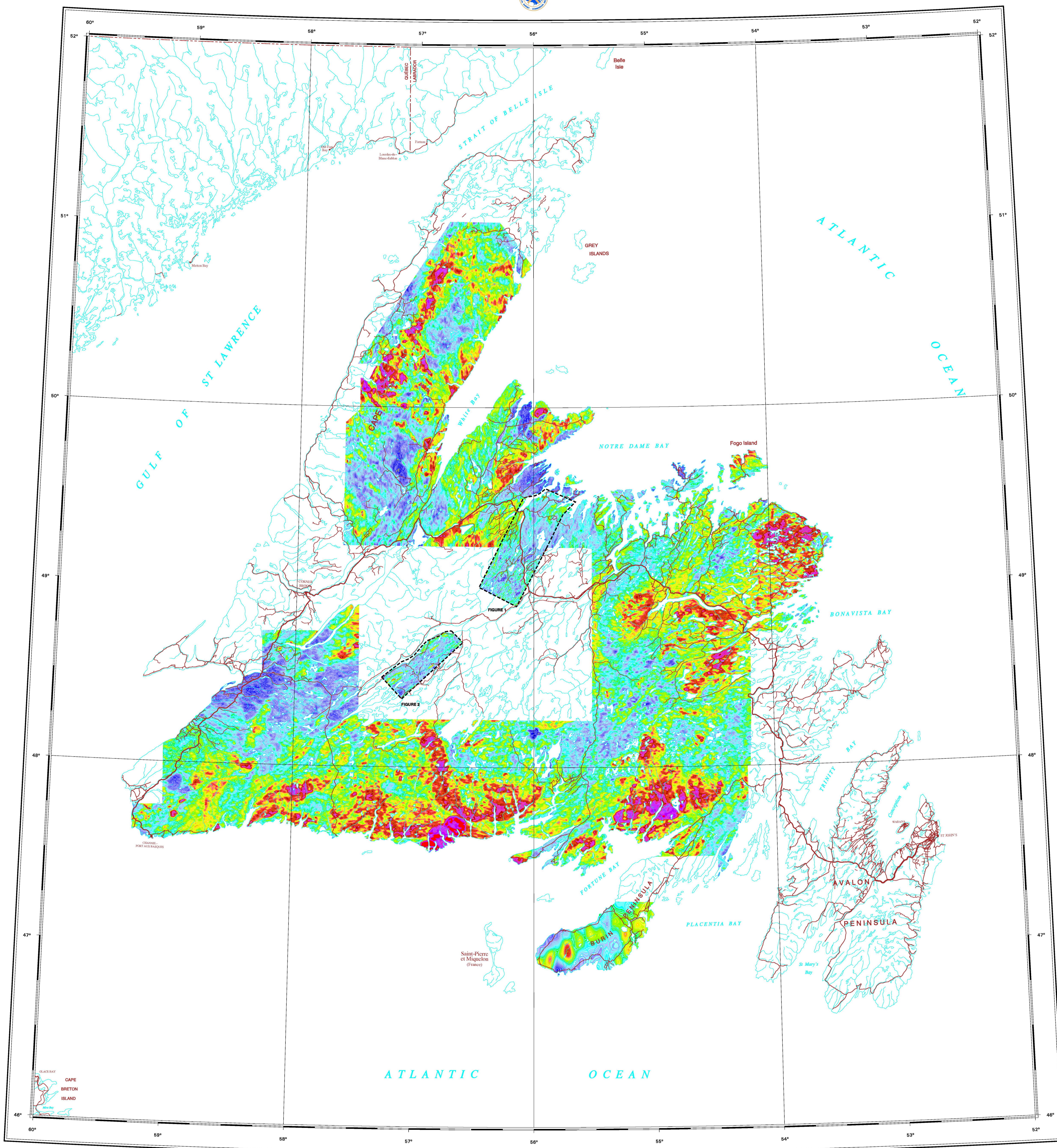


Figure 1  
equivalent Thorium  
GREAT GULL LAKE

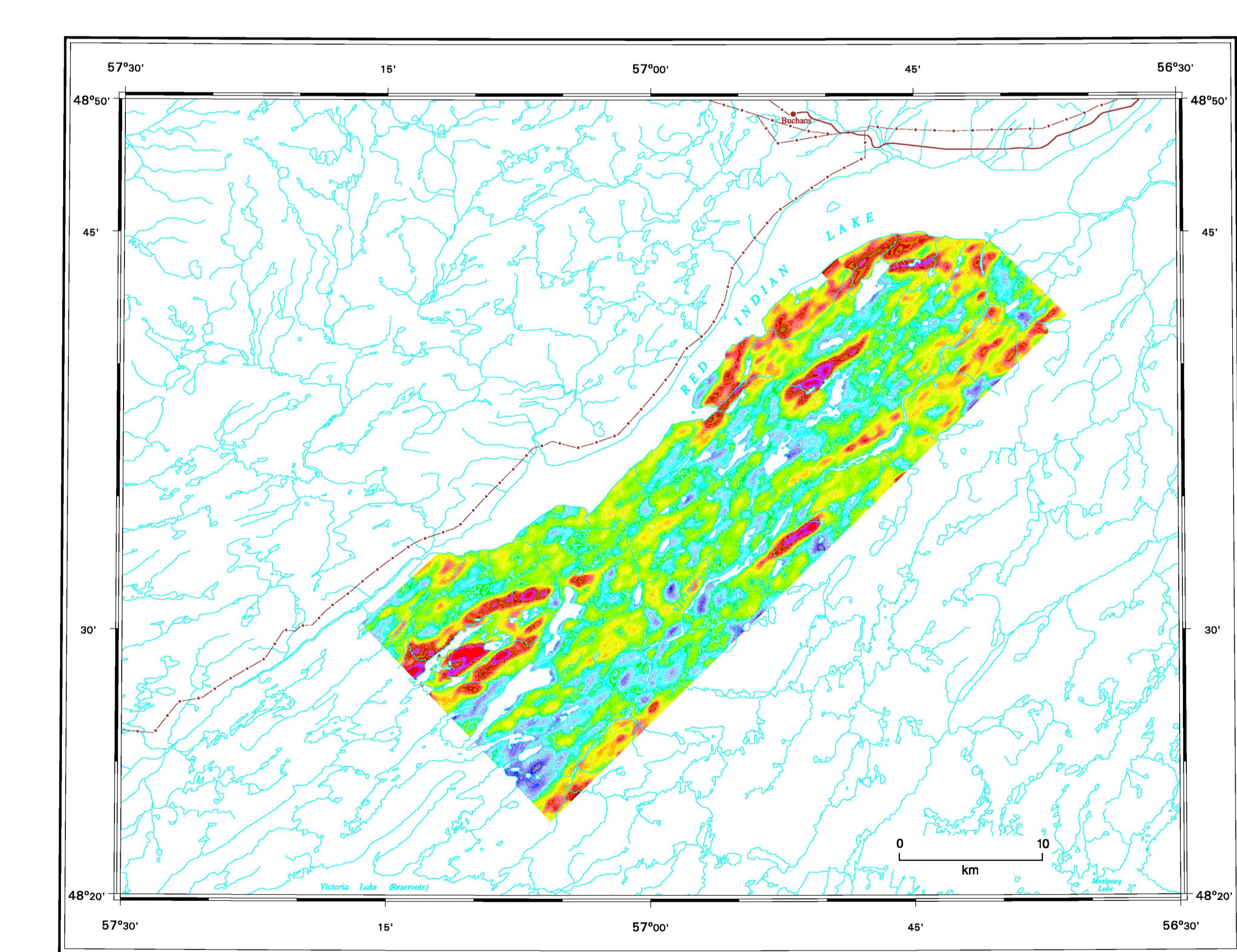


Figure 2  
equivalent Thorium  
TULLKS VOLCANIC BELT

equivalent Thorium  
OPEN FILE 4463  
AIRBORNE GAMMA RAY SPECTROMETRY COMPILATION  
ISLAND OF NEWFOUNDLAND  
AND LABRADOR

Scale 1:1 000 000/Echelle 1/1 000 000  
Universal Transverse Mercator Projection  
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