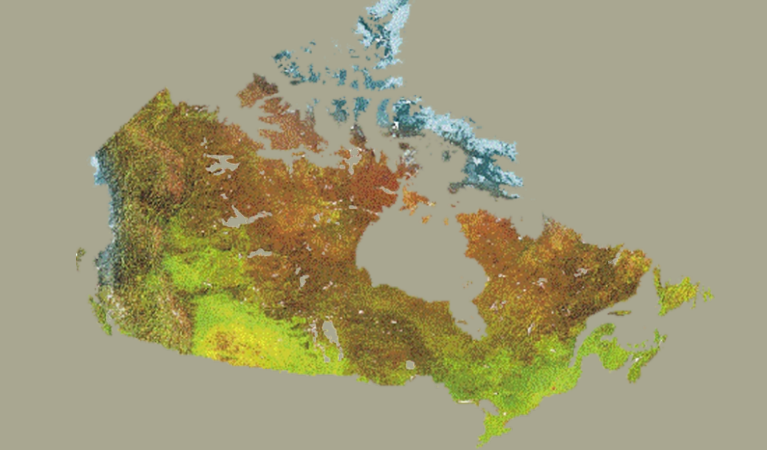


# PRELIMINARY COMPILATION OF APATITE FISSION-TRACK DATA IN CANADA

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Geological Survey of Canada  
Open File 8454

Apatite fission-track (AFT) analysis is a well-established thermochronological method widely used to constrain the low-temperature thermal histories of many areas around the world. Fission track ages do not typically indicate the timing of cooling through a specific temperature (except for nearly instantaneous cooling, such as in volcanic settings), but instead represent the integrated time-thermal history of studied samples. Modern interpretation of individual AFT data is based on the combined analysis of the fission track age, track length distribution and one or more kinetic parameter(s). Excellent reviews on the AFT method are found in Gallagher et al. (1998), Gleadow et al. (2002), Donelick et al. (2005), Ketcham (2005) and Green and Duddy (2012).

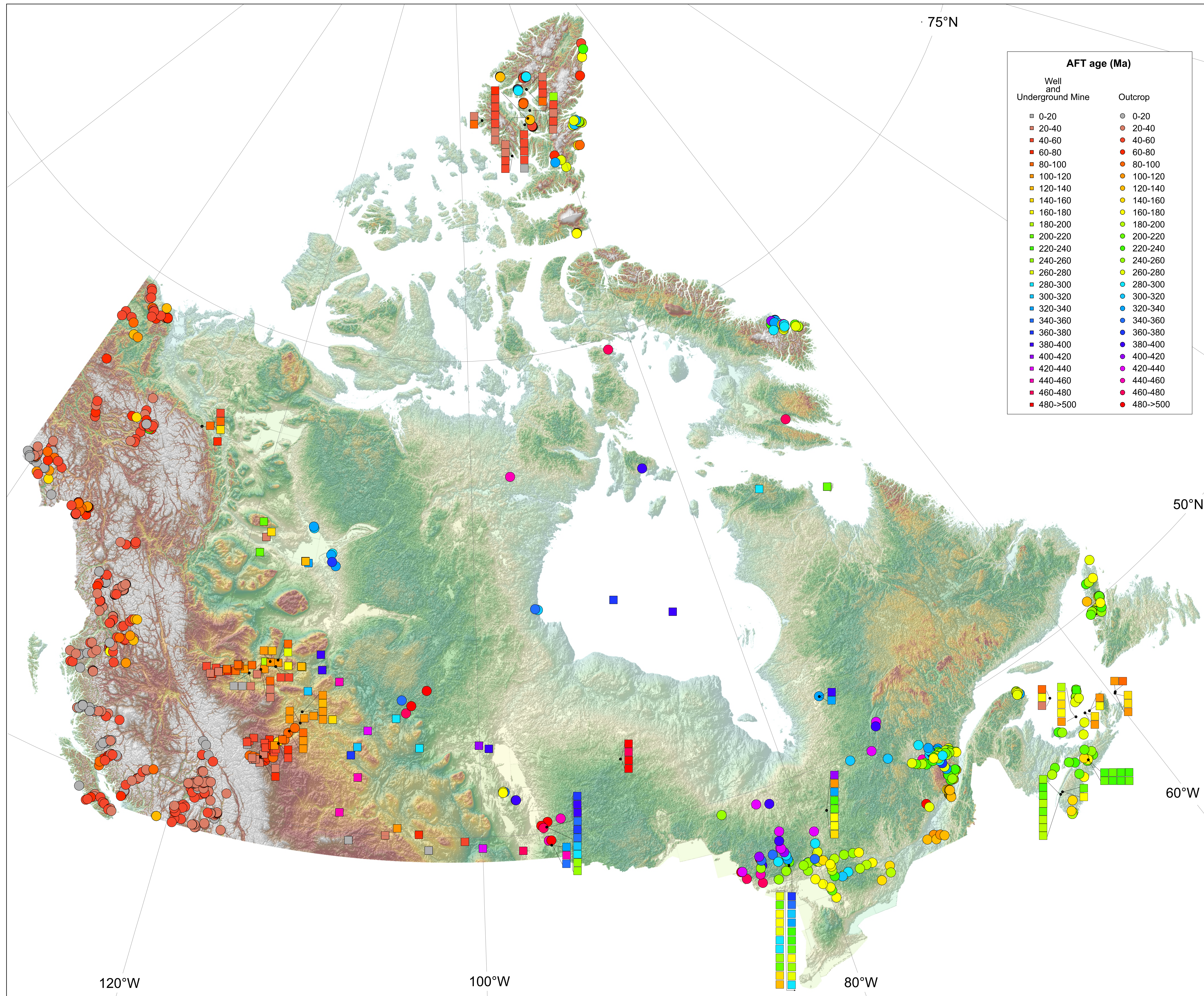
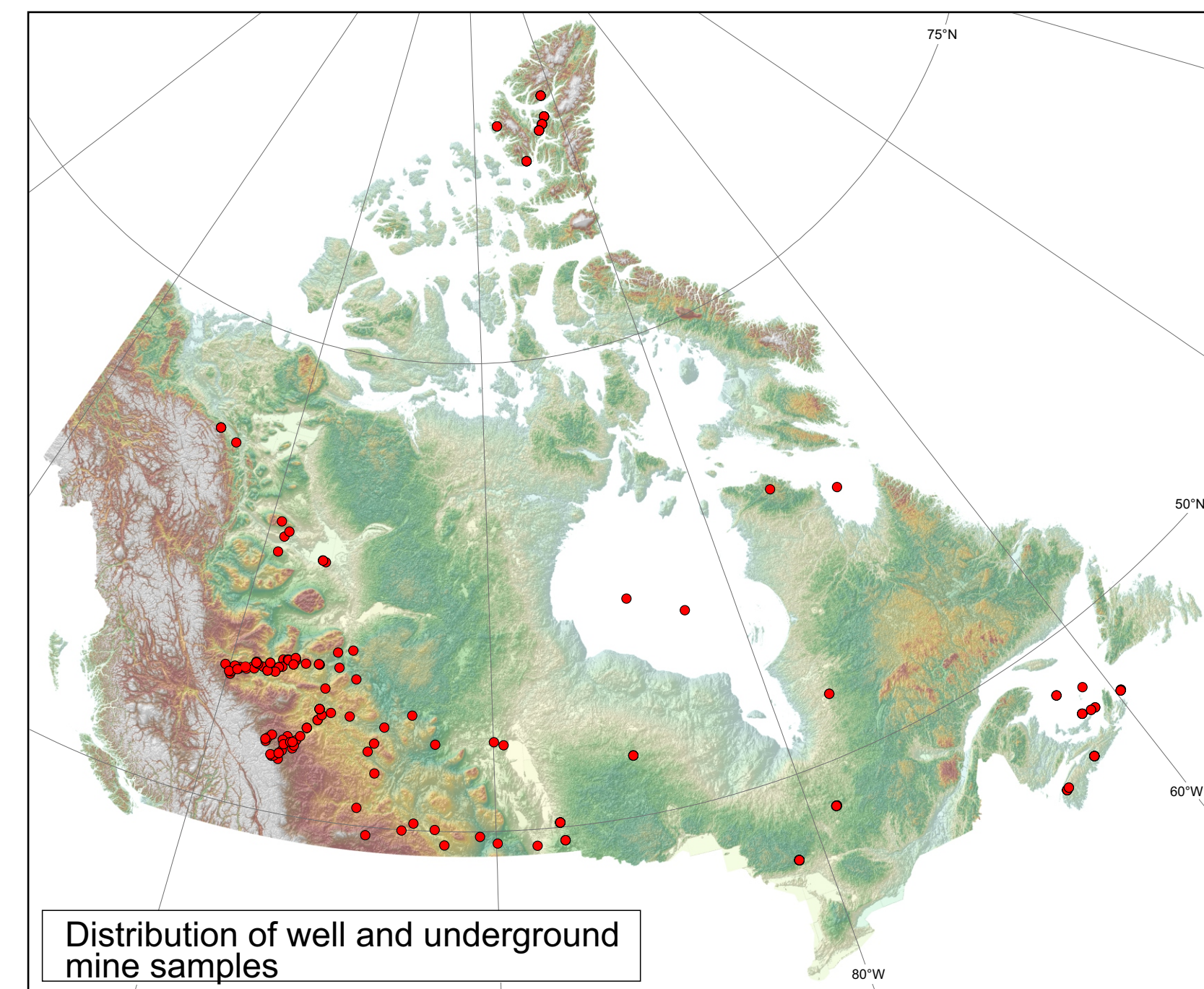
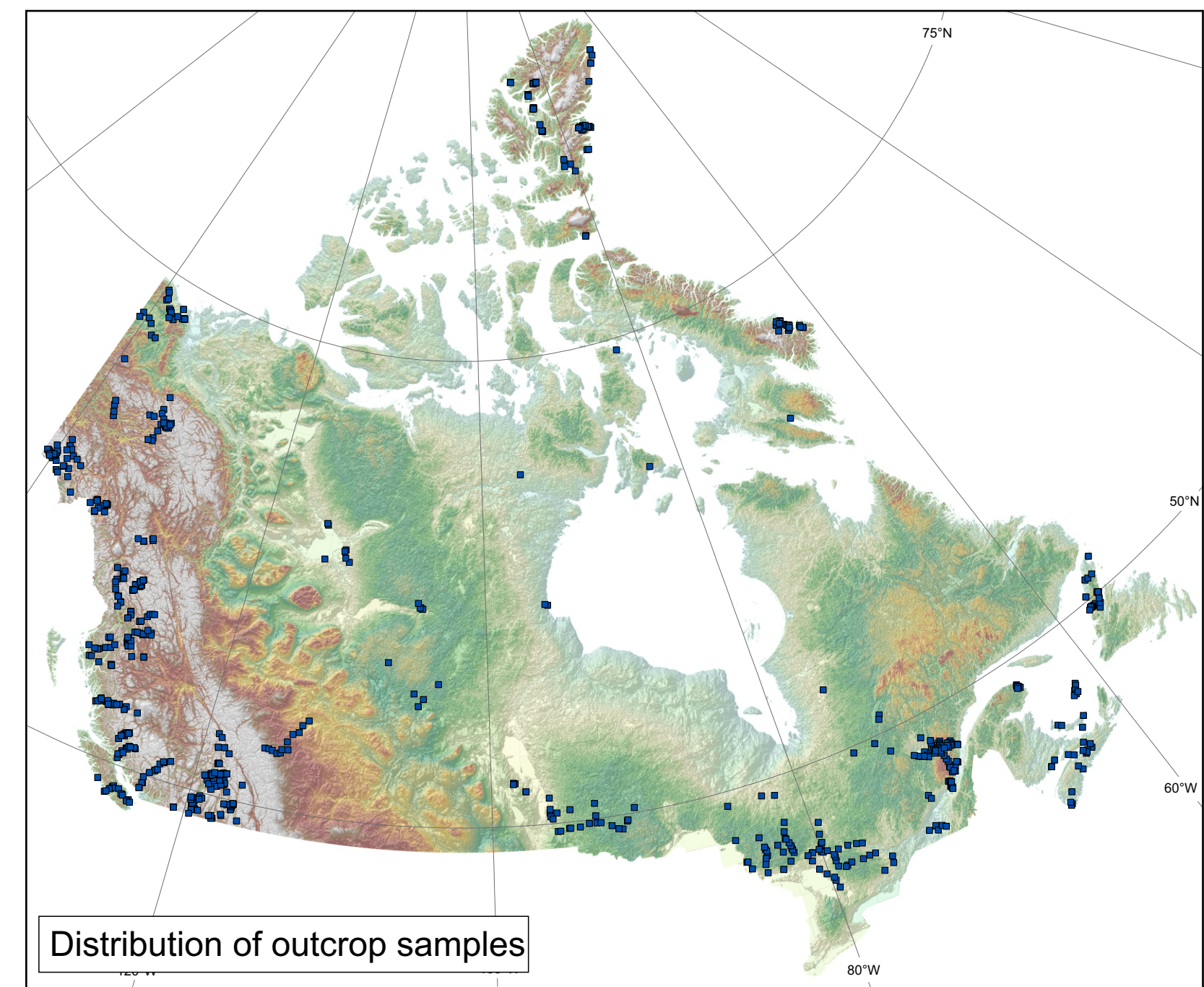
Large regional AFT datasets including multiple samples provide the opportunity to study the spatial coherence of results and the variability of the timing and magnitude of cooling with the ultimate goal of extracting geological information that can bring new insights on crustal processes and landscape evolution.

This Open File presents a preliminary compilation of AFT analysis in Canada. It includes 1138 analysis based on the population, external detector or LA-ICPMS methods. Among the samples analyzed, 20% are from wells or underground mines. The spatial distribution is highly irregular, with British Columbia alone accounting for 36% of the compiled data.

Published datasets rarely include individual grain results, length data and kinetic parameters which prevents a fair reappraisal of individual analysis. Hopefully, newly generated datasets will make the most of the supplementary materials now offered by most scientific journals and government publications.

The preliminary AFT map of Canada was possible thanks to the contributions of more than 60 studies that published or shared their results (see reference list). To contribute to the AFT map of Canada, please contact the first author.

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