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Barret L. Kurylyk, Kerry T.B. MacQuarrie, Jeffrey M. McKenzie

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Barret L. Kurylyk[1], Kerry T.B. MacQuarrie[2], and Jeffrey M. McKenzie[3]

[1]Corresponding author, Department of Civil Engineering, University of New Brunswick, PO Box 4400, Fredericton, NB, Canada E3B 5A3, (506) 453-4521, barret.kurylyk@unb.ca.

[2] Professor, Department, of Civil Engineering, University of New Brunswick, PO Box 4400, Fredericton, NB, Canada E3B 5A3, ktm@unb.ca.

[3]Associate Professor, Earth and Planetary Sciences Department, McGill University, 3450 University Street, Montreal, PQ, Canada H3A 0E8, jeffrey.mckenzie@mcgill.ca.

Abstract

Climate change is expected to increase regional and global air temperatures and significantly alter precipitation regimes. These projected changes in meteorological conditions will likely influence subsurface thermal regimes. Increases in groundwater and soil temperatures could impact groundwater quality, harm groundwater-sourced ecosystems, and contribute to the geotechnical failure of critical infrastructure. Furthermore, permafrost thaw induced by rising subsurface temperatures will likely alter surface and subsurface hydrology in high altitude and latitude regions and exacerbate the rate of anthropogenic climate change by releasing stored carbon into the atmosphere.