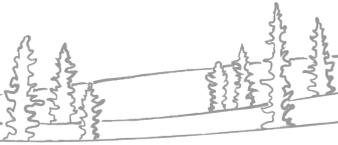




Government of
Northwest Territories

Northwest Territories Geological Survey Research & Data Projects 2025



Updated November 2025

MINERALS

- **Characterisation of the drift prospecting signatures of Lithium-bearing pegmatite from the Slave craton using indicator minerals and till geochemistry**
Philippe Normandeau, Gideon Lambiv Dzemua, CMGD
[Completion 2026](#)
- **Investigate the geological controls on critical metal enrichment (especially zinc and vanadium) in the Selwyn basin in the Canadian Cordillera, western NWT**
Merilie Reynolds, University of B.C., University of Toronto, Selwyn Chihong Mining Ltd., CMGD
[Completion 2027](#)
- **Geology and geochemistry of the Prairie Creek silver-zinc-lead-germanium deposit – focus on the critical mineral germanium**
Merilie Reynolds, University of Toronto, NorZinc Ltd., TGI
[Completion 2028](#)
- **Acquisition of new airborne geophysical datasets**
Asif Mirza and Barrett Elliott
[Ongoing program with recent release of new survey data from Pine Point area \(Open Report 2025-003\)](#)
- **Gold mineralisation, geochemistry, and geochronology of the Indin Lake belt of the Slave Craton – focus on gold transport and enrichment that lead to deposit formation**
Merilie Reynolds, Lakehead University, STTR Gold Inc., NSERC Alliance Grant
[Completion 2027](#)
- **Investigation of cobalt and nickel mineralisation in the Bear Magmatic Zone and East Arm**
Merilie Reynolds and Rebecca Canam, University of Alberta, Fortune Minerals Ltd.; funding support by NSERC Alliance Grant, University of Alberta, and Fortune Minerals Ltd.
[Completion 2028](#)
- **Enhancement of geophysical datasets acquired from mineral exploration projects as part of the Assessment Report process**
Asif Mirza
[Ongoing program](#)
- **Regional bedrock mapping of the southwestern Rae Craton to update the bedrock geology of the Hill Island Lake map sheet – assisting the mineral potential of this region**
Rebecca Canam; funding support by PCSP
[Completion 2027](#)
- **Critical and rare metals mineralisation in granitic pegmatites in the Slave Geological Province**
Gideon Lambiv Dzemua and Philippe Normandeau, University of New Brunswick; funding support by CMGD
[Completion 2027](#)
- **Rare Earth Elements (REE) Occurrence in kimberlites – enhance understanding of the presence, distribution, and behaviour of REE in kimberlite and derived tailings during hydrothermal alteration and weathering**
Gideon Lambiv Dzemua, Dalhousie University, DeBeers
[Completion 2027](#)

- **Beneficiation of amblygonite-montebbrasite co-occurring in pegmatites with spodumene to enhance Li recovery during processing**
Gideon Lambiv Dzemua, Queen’s University; funding support by CMGD
[Completion 2027](#)
- **Evaluating NWT’s high-purity silica/quartz potential**
Gideon Lambiv Dzemua, University of Alberta, and GSC
[Anticipated completion 2028](#)
- **A New Comprehensive Compilation of Radiometric Ages for the Northwest Territories**
Tyler Acorn and Merilie Reynolds, University of British Columbia
[Completion 2026](#)
- **Characterisation of a nickel, cobalt, and platinum group metals occurrence at the Mon Property, Yellowknife greenstone belt**
Merilie Reynolds, Saint Mary’s University; GSC’s Critical Minerals Mapping Initiative
[Completion 2026](#)
- **Characterisation of the precious metal-bearing base metal mineralisation at the Homer Lake prospect, Yellowknife greenstone belt**
Merilie Reynolds, Laurentian University; NSERC Alliance
[Completion 2026](#)

ENERGY

- **Shale Basin Evolution Project: oil and gas basin modelling of the Central Mackenzie Valley’s Canol Formation**
Jonathan Rocheleau
[Completion 2026](#)
- **Western Canada Sedimentary Basin Atlas 2027 project: chapter contribution and steering committee membership**
Viktor Terlaky and Jonathan Rocheleau
[Completion 2027](#)
- **Geological analysis of carbon sequestration potential and geological mapping of phanerozoic strata, 3D modelling, and hydrocarbon accumulation modelling of the Beaufort-Mackenzie Basin in support of potential future LNG projects**
Yaqub Adepoju, MPRDI; funding support by PCSP, CanNor
[Completion in 2026 for CSS and 2027 for geological analysis](#)
- **Thermal history mapping and analysis of the southern NWT to support geothermal research in the region**
Talha Qadri, University of Calgary
[Completion 2026](#)
- **South-Slave geothermal project: analysis of geothermal energy potential and geothermal energy harvesting through borehole exchange systems**
Talha Qadri, INRS
[Completion 2028](#)

PERMAFROST

- **Leading a national collaboration to map sensitive permafrost terrain across the NWT**
Steve Kokelj, Wilfrid Laurier University; Aurora Research Institute; NWT Centre for Geomatics; Department of Environment and Natural Resources; Prince of Wales Northern Heritage Centre; Geological Survey of Canada; Yukon Geological Survey; Queen's University; University of Guelph; University of Victoria; University of Ottawa; University of Auckland; Ehdiiat Renewable Resources Council; Tetl'it Renewable Resources Council; Inuvialuit Land Administration; funding support by GNWT-CIMP; ECC-FMB; MACA; CIRNAC CCPN; PCSP; NSERC, Global Water Futures; ArcticNET; PermafrostNET
[Ongoing](#)
- **Mapping permafrost and hazards for NWT communities to support climate change planning**
Ashley Rudy, Alexandre Chiasson, Steve Kokelj; funding support by NRCAN; MACA; CIRNAC CCPN,
[Completion 2027](#)
- **Developing an NWT permafrost database to support infrastructure and community planning and decision making**
Niels Weiss, Steve Kokelj, GNWT NWT Centre for Geomatics; GNWT ISSS; Tetra Tech EBA; Geological Survey of Canada; Carleton University
[Completion 2025](#)
- **Maintaining an applied NWT permafrost monitoring network in collaboration with the Geological Survey of Canada, academic, and industry partners**
Steve Kokelj, Alice Wilson, Niels Weiss, Geological Survey of Canada; Aurora Research Institute; Wilfrid Laurier University; funding support by ECC-FMB, GEM GeoNorth, PCSP
[Ongoing](#)