

GSC's Geo-mapping for Energy and Minerals program (GEM): 12 years of Northern Geoscience

*Carl A. Ozyer, Daniel Lebel, Linda Richard, Michel Plouffe, Sonya Dehler
Geological Survey of Canada*

Summary

The Geo-mapping for Energy and Minerals (GEM) program, conducted by the Geological Survey of Canada (GSC) in collaboration with partners, establishes public geoscience foundations for viable economic development in Canada's North.

The 12-year (2008-2020) \$200 million dollar collaborative program has been providing modern, public geoscience, setting the stage for long-term decision making related to responsible land-use and resource development. Geoscience knowledge produced by GEM supports evidence-based exploration for new energy and mineral resources, enabling Northern communities to make informed decisions about their land, economy and society.

The success of GEM comes from the close collaboration between the GSC, provincial and territorial geological surveys, communities and Northerners. Program results include almost 2000 publications, 500 maps, 400 engagement sessions with communities and their organizations, and more than two million line-km flown on geophysical surveys. It is clear GEM products provide a critical first step for a better scientific understanding of Canada's northern geology, and helps promote sustainable economic and social development. Since the program's inception in 2008, GEM has also supported Canadian geoscience initiatives, providing grants to academia, colleges and Northern communities.

GEM studies have economic impacts across the north – from expanding areas of mineral exploration potential, such as gold in the Yukon and Nunavik/Labrador, to identifying areas in the Northwest Territories previously thought to have little resource value. In addition to the economic opportunities, GEM continues to promote geoscience through engagement with Northern communities, along with hosting community learning opportunities, such as a GEM-led field school and interactive classroom sessions with scientists.

GEM also had impacts on Northern land-use planning. The Ukkusiksalik National Park in Nunavut for example, was expanded by 327 km² after an exchange of land between the Government of Canada and the Kivalliq Inuit Association (KIA) that was informed by results from the GEM program. The transfer will result in the conservation of culturally and archaeologically significant land that will benefit all Inuit and Nunavummiut.