# Canadian provincial and territorial geological surveys



## Canadian provincial and territorial geological surveys

Geological surveys are government agencies that provide geoscience information to the public, thus supporting responsible resource development and encouraging investment. Geoscience information is used by governments to make informed decisions and create effective policy on resource development, land use, and environmental stewardship. The provincial and territorial surveys are the main stewards for public geoscience within their borders. They conduct programs that address jurisdictional priorities and provide systematic information about bedrock and surficial geology, mineral deposits, energy, geohazards, environmental science, hydrogeology, and marine geology.

Canada's national survey, the Geological Survey of Canada, focusses on programs that are thematic or of national scope. The GSC also partners with provinces and territories on projects of common interest.



This booklet, produced by the Committee of Provincial and Territorial Geologists (<u>www.ngsccanada.com</u>), provides information on the core activities of Canada's provincial and territorial surveys, and how to access key publications and services.











British Columbia Geological Survey PO Box 9333 Stn Prov Gov't Victoria, British Columbia,V8W 9N3 www.BCGeologicalSurvey.ca

> Yukon Geological Survey PO Box 2703 Whitehorse, Yukon, Y1A 2C6 www.geology.gov.yk.ca

Alberta Geological Survey 402, Twin Atria Building, 4999 - 98 Avenue Edmonton, Alberta T6B 2X3 ags.aer.ca

Northwest Territories Geological Survey P.O. Box 1320, 4601-B 52 Avenue Yellowknife, Northwest Territories, X1A 2L9 www.nwtgeoscience.ca/

> Saskatchewan Geological Survey 11th floor, 1945 Hamilton Street Regina, Saskatchewan, S4P 2C7 https://sgshome.ca/



CANADA-NUNAVUT GEOSCIENCE OFFICE لمح⊂⊳<->مم¢->

BUREAU GÉOSCIENTIFIQUE CANADA-NUNAVUT KANATAMI-NUNAVUMI 

**Canada-Nunavut Geoscience Office** 1106 Inuksugait Plaza Iqaluit, Nunavut, X0A 0H0 http://www.cngo.ca



Manitoba Geological Survey 360-1395 Ellice Ave Winnipeg, Manitoba, R3G 3P2 www.manitoba.ca/minerals



**Ontario Geological Survey Branch** Ministry of Energy, Northern Development and Mines Willet Green Miller Centre, 933 Ramsey Lake Road, 3rd Floor Sudbury, Ontario, P3E 6B5 www.mndm.gov.on.ca/en/mines-and-minerals/geology

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Nouveau

Ministère de l'Énergie et des Ressources naturelles du Québec Direction générale de Géologie Québec 5700, 4e Avenue Ouest, D-307, Québec, G1H 6R1 https://mern.gouv.qc.ca/

> **Geological Survey of Newfoundland and Labrador** Natural Resources Building, 50 Elizabeth Avenue P.O. Box 8700 St. John's, Newfoundland and Labrador, A1B 4J6 https://www.gov.nl.ca/nr/mines/geoscience/

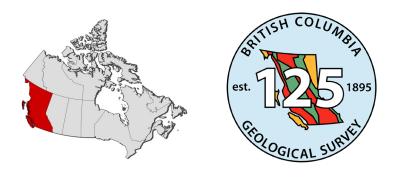
**New Brunswick Geological Survey** 1350 Regent Street, Room 150 Fredericton, New Brunswick, E3C 2G6 www2.gnb.ca/content/gnb/en/departments/erd/energy/content/minerals.html



Nova Scotia Department of Energy and Mines - Geological Survey 1701 Hollis Street PO Box 698, Halifax, Nova Scotia, B3J 2T9 http://novascotia.ca/natr/meb/



### **British Columbia Geological Survey**



#### **Core activities**

Drawing on continuously advancing concepts and technologies, the Survey connects government, the minerals industry, and communities to the province's geology and mineral resources. The information provided by the Survey is used for effective mineral exploration, sound land use management, and responsible governance, benefitting decisions that balance the economy, the environment, and community interests.

**Bedrock geoscience:** mapping, stratigraphy, sedimentology, structural geology, geochronology, stable isotopes, lithogeochemistry, petrogenesis, physical volcanology, tectonics

**Surficial geoscience:** mapping, glacial geology, ice-flow indicators, indicator minerals, water, stream-sediment and till geochemistry

**Minerals:** mineral deposit research, deposit modelling, mineral occurrence database, mineral potential, regional metallogeny

Energy: coal, oil and gas

Environmental: land use

**Data management:** databases, digital geology, 3D mapping, Open Geoscience

Outreach: geoheritage, education, Global Geopark

#### Web service: <u>www.MapPlace.ca</u>

MapPlace is the Survey database-driven geospatial web service that is designed to reduce the costs of accessing and analyzing multidisciplinary geoscience data in BC. Users can browse, visualize, and download data and create custom maps.



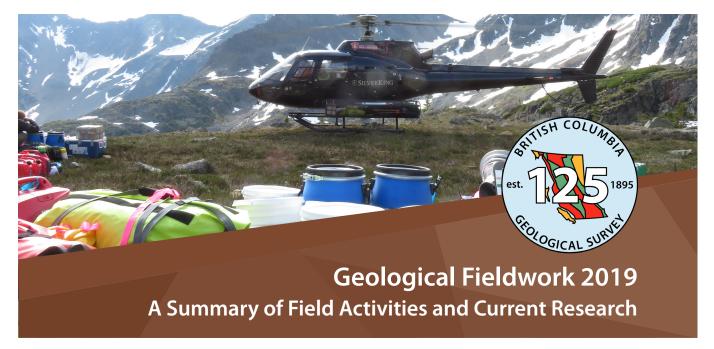
Celebrating its 125th anniversary in 2020, the British Columbia Geological Survey conducts field mapping and laboratory projects to establish the geological evolution and mineral resources of the province, providing information to guide societal decisions centred on the Earth sciences. The Survey has 28 staff and is headquartered in the provincial capital, Victoria, with a second office in Vancouver to serve the mineral exploration industry.

- Major: coal, copper, gold
- Minor: industrial minerals, aggregates, silver, molybdenum, lead, zinc, jade
- Potential: rare metals, tantalum, cobalt, graphite



All BCGS publications are available at no cost from www.BCGeologicalSurvey.ca

- Geological Fieldwork, a Summary of Field Activities and Current Research
- Provincial Overview of Exploration and Mining in British Columbia
- Mines, Mine Development, Selected Proposed Mines, and Selected Exploration Projects in British Columbia
- British Columbia Coal Industry Overview



#### Local geoscience meetings

- BCGS Annual Open House (November, Victoria)
- AME Mineral Exploration Roundup (January, Vancouver)
- Minerals South (November, various locations)
- Minerals North (May, various locations)
- Kamloops Exploration Group (April, Kamloops)

#### Contacts

Main Office 5th floor, 1810 Blanshard Street Victoria, BC V8T 4J1 250-952-0372 geological.survey@gov.bc.ca

Mineral Development Office 300-865 Hornby Street Vancouver, BC,V6Z 2G3 604-660-3332

Dr. Adrian Hickin Chief Geologist and Executive Director (250) 953-3801 <u>Adrian.Hickin@gov.bc.ca</u>



## Yukon Geological Survey





The mandate of Yukon Geological Survey is to provide the geoscience information required for responsible resource and land management for the well-being and public safety of Yukoners. The survey acquires and disseminates geological and geohazard knowledge to support mineral exploration, to inform resource and land management planning, and to engage communities, schools and the public.

#### **Core activities**

**Bedrock geoscience:** mapping, sedimentology, stratigraphy, structural geology, geochronology, geophysics, lithogeochemistry tectonics, thematic studies

**Surficial geoscience:** mapping, geochronology, soils, glacial and periglacial geomorphology, permafrost, placer studies

**Minerals:** mineral deposit research, mineral potential assessments, regional metallogeny, drill core library

Energy: geothermal, hydrocarbon studies

**Geohazards:** earthquakes, landslides, ground subsidence, radon, fluvial floods

**Data management:** digital geology maps, mineral occurrence data, stream sediment chemistry, publications, Assessment Reports, Web map gallery, geochronologic and geochemical data

**Outreach:** educational programs, engagement with First Nations communities

#### Web services: https://yukon.ca/en/geology-publications-data

Yukon Geological Survey publications, data, and industry files can be accessed online using the Integrated Data System (IDS) search tool. In addition to the IDS, an online map gallery allows users to view and download a variety of data and reports

- Major: gold, copper, silver
- Potential: lead, zinc



- Yukon Exploration and Geology Overview
- Yukon Exploration and Geology Annual Technical Papers
- Yukon Placer Mining Industry Report
- Yukon Mineral Deposits Summary

### Local geoscience meetings

- Yukon Geoscience Forum (November; Whitehorse)
- Yukon Placer Forum (November; Whitehorse)
- Gold Show (May, Dawson City)
- Annual mineral industry workshop/field trip





**Contacts** Bedrock Geology unit 91807 Alaska Highway Whitehorse, Yukon, Y1A 2C6 867-667-8508 www.geology.gov.yk.ca

Minerals and Surficial Geology units 301 Main Street Whitehorse, Yukon 867-667-3201 www.geology.gov.yk.ca

Dr. Carolyn Relf Chief Geologist/Director 867-667-8519 Carolyn.Relf@gov.yk.ca



### **Alberta Geological Survey**





Since 1920, the Alberta Geological Survey (AGS) has provided information and advice to the Government of Alberta, provincial regulatory agencies, industry, and the public. The AGS is responsible for the systematic description of Alberta's geology and resources, and for providing geoscience information supporting regulatory decisions about resource development, land use, environmental protection, and public safety. The AGS, a branch of the Alberta Energy Regulator, is based in the provincial capital, Edmonton.

### **Core activities**

The Alberta Geological Survey generates, manages, and communicates integrated geoscience knowledge of Alberta's surface and subsurface geology and Earth resources. Our geoscience programs focus on geological hazards and groundwater resources for public safety and security, energy and mineral resources for economic development and prosperity, and landscape evaluation for environmental sustainability. In addition to our website (ags.aer.ca), two repositories provide the public access to a wealth of geological information: 1) the Core Research Center in Calgary contains approximately 2 million m of core and 20 million vials of cuttings related to oil and gas exploration and development; and 2) the Mineral Core Research Facility in Edmonton contains approximately 60,000 m of mineral exploration core, 12,500 m of coal core, and 17,000 rock samples.

**Bedrock geoscience:** subsurface characterization, mapping and modelling, stratigraphy, structural geology

Surficial geoscience: mapping, ice-flow indicators, indicator minerals

**Groundwater:** quality, quantity, and availability at local and regional scales

**Minerals:** surface and subsurface mineral potential, including emerging resources and critical minerals opportunities

Energy: coal, oil and gas

**Environmental:** land use; Earth observation using satellite-based technologies to evaluate land change over time

Geohazards: earthquake studies and landslide evaluations

**Outreach:** educational products including Minecraft gaming models, printable 3D geological models, and a virtual tour of Alberta geological sites of interest

#### Web services

Visit us at <u>ags.aer.ca</u> to access more than 2500 geological reports, 400 maps, and 1300 datasets (digital data, shapefiles, digital imagery, and interactive GIS data and mapping tools). Current projects and activities are also highlighted, along with additional geoscience information about Alberta.

- Major: oil, gas, NGL, coal, aggregate, limestone
- Minor: silica sand, gold, building stone, salt, clay, shale, bentonite, ammolite, sulphur
- Potential: lithium, uranium, vanadium, titanium, diamond, potash, phosphate, REEs, helium





#### Local geoscience meetings

- Geoconvention (May, Calgary) geoconvention.com
- Calgary Mineral Exploration Group <u>megcalgary.com</u>

#### Contacts

Alberta Geological Survey 402, Twin Atria building, Edmonton, Alberta T6B 2X3 Phone: 780-638-4491 Website: <u>ags.aer.ca</u> Information requests: <u>ags-info@aer.ca</u>

Mineral Core Research Facility 5405 Elaniuk Road Edmonton, Alberta 780-466-1779

Core Research Center 3545 Research Way NW, Calgary, Alberta 403-297-6400

Andrew Beaton, Vice President, Alberta Geological Survey Branch Alberta Energy Regulator andrew.beaton@aer.ca



### **Northwest Territories Geological Survey**



The Northwest Territories Geological Survey (NTGS) is a Division of the Department of Industry, Tourism and Investment, Government of the Northwest Territories. The NTGS advances the geoscience knowledge of the Northwest Territories by conducting and publishing geoscience research, analyzing mineral and petroleum potential, and offering excellence in digital data management. The NTGS also conducts environmental geoscience research and outreach activities.

#### **Core activities**

**Bedrock geoscience:** mapping, sedimentology, stratigraphy, structural geology, basin analysis, geochronology, geophysics, lithogeochemistry, tectonics, thematic studies

**Surficial geoscience:** mapping, geochronology, glacial and periglacial geomorphology, geophysics, geochemistry, indicator minerals

**Minerals**:mineral deposit research, deposit modelling, mineral occurrence database, mineral potential, regional metallogeny

Energy: conventional and unconventional oil and gas, geothermal

**Permafrost geoscience:** permafrost stability, ground temperature monitoring, thaw slumps, hydrology, environmental and infrastructure impacts

**Environmental:** environmental geochemistry, climate change, land-use planning

**Data management:** databases, digital geology, Open Geoscience, AI

**Outreach:** geoscience education, company and prospector support, prospector training, community events

Web services: https://www.nwtgeoscience.ca/

NTGS web applications provide search, display, and download capabilities for Northwest Territories geoscience information and publications

http://webapps.nwtgeoscience.ca/WebAppsV2/SearchHome.aspx

- Major: diamonds
- Minor: industrial minerals, oil and gas
- Potential: gold, rare metals and elements, lead, zinc, silver, copper, cobalt, bismuth, tungsten



• Northwest Territories Mineral Exploration Overview, published annually in November and updated the following March

#### Local geoscience meeting

• Yellowknife Geoscience Forum (November, Yellowknife)





#### Contacts

P.O. Box 1320 4601-B 52 Avenue Yellowknife, NT X1A 2L9 867-767-9211, extension 63469 Fax: 867-873-2652 <u>NTGS@gov.nt.ca</u> <u>https://www.nwtgeoscience.ca/</u>

Dr. John Ketchum Director 867-767-9211, extension 63200 John\_Ketchum@gov.nt.ca



### Saskatchewan Geological Survey



The Saskatchewan Geological Survey (SGS) has a mandate to provide highquality, easily accessible geoscience data to inform and facilitate the responsible exploration for, and development of, Saskatchewan's mineral and petroleum resources, thereby advancing Saskatchewan's natural resource advantage. The SGS has forty staff and is based in Regina, with a northern satellite office in La Ronge.

#### **Core activities**

The SGS conducts geoscience investigations across Saskatchewan to advance knowledge of the province's geologic history, and the mineral and petroleum resources associated with these diverse geological settings. This work encompasses a wide range of technical expertise and includes collaborations with other institutions in Canada and globally. High-quality, pre-competitive public geoscience information supports the exploration for mineral and petroleum resources by industry stakeholders, and informs the development government policy and regulations with respect to the province's resource sector.

**Precambrian geoscience:** bedrock mapping programs in the Precambrian Shield of northern Saskatchewan that include surficial geology, stratigraphy, structural geology, geochronology, lithogeochemistry, and industrial minerals and metallogenic ore system studies

**Petroleum and natural gas (Phanerozoic) geoscience:** research on Phanerozoic sedimentary rocks and petroleum resources of southern Saskatchewan by the Petroleum Geology Unit, based out of the Subsurface Geological Laboratory in Regina

**Geoscience data management**: management of SGS data, GIS services, technical review of mineral assessment reports, geophysical data acquisition and research, administration of the La Ronge Precambrian mineralized core and sample repository

Land use: evaluating broad mineral and petroleum resource potential to aid in developing regulatory and policy decisions

**Education and outreach partnerships:** partnerships with various organizations and educational institutions in Saskatchewan to inform the public on the benefits of geosciences and natural resource development, and to train future geoscientists.

#### Web services

View, analyze, and download Saskatchewan geoscience data through the Saskatchewan Mining and Petroleum GeoAtlas (www.saskatchewan.ca/geoatlas) or access the SGS GeoHub (https://hub-saskatchewan.opendata.arcgis.com/pages/sgs) for more information on SGS programs and products.

- Major: potash, uranium, oil and gas
- Minor: gold, coal, sodium and potassium sulphate, salt, clays, helium
- Potential: base metals, diamonds, rare earth elements, platinum group and specialty metals, silica sand



- Summary of Investigations of research projects
- Saskatchewan Exploration and Development Highlights
- Prospect Saskatchewan informational brochure on oil and gas
- Resource Map of Saskatchewan

All SGS publications are available at no cost from <a href="https://publications.saskatchewan.ca/#/categories/1197">https://publications.saskatchewan.ca/#/categories/1197</a>

#### Local geoscience meetings

- Saskatchewan Geological Open House (early December, Saskatoon)
- Williston Basin Petroleum Conference (May, biennually in Regina)
- Core Days (September, La Ronge)





The Saskatchewan Geological Survey is responsible for investigating, managing and distributing information on the geology, and mineral and petroleum resources of the province.

Featured Map | Latest from SGS | GeoAtlas | Databases | Publications | Datasets



#### Saskatchewan Resources

Learn about the areas of resource potential in the province of Saskatchewan through an interactive story map.

Launch the Story Map

#### Contacts

Main Office 1945 Hamilton Street, Regina, SK, S4P 2C7, 306-787-2476

Subsurface Geological Laboratory 201 Dewdney Avenue East Regina, SK, S4N 4G3, 306-787-0650 La Ronge Precambrian Geological Laboratory P.O. Box 104, 1310 La Ronge Avenue, La Ronge, SK S0J 1L0, 306-425-4498

Dr. Gary Delaney Chief Geologist and Executive Director 306-787-1160 <u>Gary.Delaney@gov.sk.ca</u>

### **Canada-Nunavut Geoscience Office**



#### CANADA-NUNAVUT GEOSCIENCE OFFICE baCP<-\_\_\_\_\_ とっこや、しつうう」 KANATAMI-NUNAVUMI GEOSCIENCE TITIGAKVIIT

The youngest jurisdiction in Canada, becoming a territory in 1999, Nunavut does not yet have a formal survey. Instead, the Canada-Nunavut Geoscience Office (CNGO) is managed and funded by the federal government through Natural Resources Canada (Lands and Minerals Sector), Crown-Indigenous Relations and Northern Affairs Canada, and the Government of Nunavut (Economic Development and Transportation). The CNGO is managed with input from a Management Board with representatives from the federal and territorial governments and Nunavut Tunngavik Inc., the organization that ensures the Nunavut Land Claims Agreement is adhered to. An Agreement-in-Principle was signed in August 2019 between the governments of Canada and Nunavut. This agreement is a significant step toward Nunavut assuming control over its Crown lands and natural resources.

The CNGO office is in Iqaluit. The CNGO's mandate is to provide accessible geoscience information and expertise in Nunavut and support: responsible resource exploration and development; responsible infrastructure development; geoscience-capacity building; and geoscience education, training and awareness. To accomplish this mandate, the CNGO conducts research and publishes maps and reports about the geology and resources of Nunavut. In collaboration with many partners, CNGO aims at engaging the public on key geoscience issues.

#### **Core activities**

CNGO has expertise in Precambrian, Paleozoic, and Quaternary geology, GIS, and online geoscience data dissemination.

**Bedrock geoscience:** regional bedrock mapping, targeted Paleozoic and stratigraphic research, regional airborne geophysical surveys

**Surficial geoscience:** mapping, glacial geology, permafrost, community-level granular aggregate and industrial minerals

Minerals: mineral exploration and deposit studies

**Geoscience for infrastructure development:** permafrost, climate change, landscape hazards, seabed mapping

Data management: databases, digital geology

**Outreach:** community engagement, pre-and post- fieldwork information sessions, course modules and workshops at schools and Nunavut Arctic College, training of students and participants of the Inuit Learning and Development Program

#### Web services

CNGO web applications provide display and download capabilities. The <u>NunavutGeoscience.ca</u> website is an open access data portal to public geoscience information that is available for Nunavut.

- Major: gold, iron
- Potential: diamonds, lead, zinc, silver, copper, uranium, nickel



- Summary of Activities
- Nunavut Exploration Overview

All CNGO publications are available at no cost from <u>www.cngo.ca</u>

All Geological Survey of Canada publications are available on GEOSCAN at http://geoscan.nrcan.gc.ca/

#### Local geoscience meeting

• Nunavut Mining Symposium (April, Iqaluit)



#### Contacts

P.O. Box 2319 1106 Inuksugait Plaza Iqaluit NU, X0A 0H0 867-975-4412 http://www.cngo.ca

Linda Ham Chief Geologist Linda.Ham@canada.ca







### Manitoba Geological Survey



#### **Core activities**

**Bedrock geoscience:** mapping, stratigraphy, sedimentology, structural geology, geochronology, stable isotopes, lithogeochemistry, petrogenesis, tectonics, thematic studies

**Surficial geoscience:** mapping, stratigraphy, geochronology, ice flow history, glacial landforms, till geochemistry, clast counts, kimberlite-indicator minerals (KIMs), aggregate

**Minerals:** mineral deposit research, deposit modelling, mineral occurrence database, mineral potential, regional metallogeny

Energy: conventional and unconventional oil and gas

**Environmental:** carbon capture and storage, protected areas, land-use planning

Water: deep saline aquifers, salt water disposal

**Data management:** databases, digital geology, 3-D mapping, integrated mining and quarrying system, Map Gallery, Petrinex



#### Web service: http://www.gov.mb.ca/iem/geo/index.html

The Manitoba Geological Survey website offers, at no charge, current and historical geoscience information to assist the exploration, mining and petroleum industry, academia, and the general public. These include the GIS Map Gallery, an interactive map portal to view, query and extract diverse information including mineral disposition and geoscience data; commodityspecific data; surficial geology maps and digital data; and an online tracker for Geological Survey activities.

The Manitoba Geological Survey collects, analyzes, distributes, and archives information about Manitoba's geology and mineral resources to attract exploration investment, foster sustainable mineral and petroleum developments, inform government policy and land management, and contribute to the quality of life and economic prosperity of all Manitobans.

- Major: nickel, copper, zinc, gold, silver, oil
- Minor: cesium, natural gas, gypsum, high-Ca limestone, aggregate, crushed stone, dimension stone, high-purity dolomite, halite, bentonite
- Potential: frac sand, potash, lithium, diamonds, helium, vanadium, graphite



All MGS publications are available at no cost from <u>http://www.manitoba.ca/iem/info/index.html</u>

Annual reports on fieldwork and the geological program are published in

- Report of Activities (<u>http://www.manitoba.ca/iem/geo/field/index.</u> <u>html</u>)
- Preliminary Maps (<u>http://www.manitoba.ca/iem/info/library/</u> <u>downloads/pmap.html</u>)

### Local geoscience meetings

- Central Canada Mineral Exploration Convention (yearly in November, Winnipeg) <u>https://ccme-convention.ca/</u>)
- Manitoba Prospectors and Developers Association (member meetings throughout the year, Winnipeg) <u>http://mpda.ca/</u>
- Women in Mining, Winnipeg Chapter (member meetings throughout the year, Winnipeg) <u>http://wimwinnipeg.com</u>



Contacts Manitoba Geological Survey 360-1395 Ellice Ave Winnipeg, MB R3G 3P2 <u>www.manitoba.ca/minerals</u> 204-945-1119 1-800-223-5215 (toll-free)

Michelle Nicolas A/Director, Geological Survey 204-945-6571 Michelle.Nicolas@gov.mb.ca







## **Ontario Geological Survey**





The Ontario Geological Survey is the provincial government organization responsible for documenting and distributing geoscience information. The survey has 115 staff and is headquartered in Sudbury. Eight satellite offices throughout the province serve the mineral exploration industry and a variety of other clients.

#### **Core activities**

**Bedrock geoscience:** Precambrian and Paleozoic bedrock geology mapping, airborne geophysical surveys, stratigraphy, structural geology, geochronology, lithogeochemistry, tectonics, physical volcanology

**Surficial geoscience:** 2-D and 3-D mapping, airborne and ground-based geophysical surveys, stratigraphy, geochronology, indicator mineral studies, till and soil geochemistry, aggregate resource assessments, remote predictive mapping

**Minerals:** Mineral Deposit Inventory database, mineral resource assessments, regional metallogeny, mineral deposit research, recommendations for exploration, investment attraction

#### Energy: oil and gas

**Environmental and groundwater:** groundwater, lake water, lake sediment and stream-sediment surveys, aquifer mapping, stable isotopes

Water: deep saline aquifers, salt water disposal

**Data management:** databases, digital geology, geophysical surveys, 3-D mapping, Open Geoscience

**Outreach:** Indigenous communities, education, prospecting training

#### Web services

Geoscience data collected by the OGS can be viewed using the OGSEarth application (www.ontario.ca/ogsearth).

Embedded links in OGSEarth allow users to download maps and data from GeologyOntario (www.ontario.ca/geology)

- Major: gold, nickel, copper, platinum group metals, zinc, salt, sand and gravel
- Minor: silver, cobalt, clay, stone, lime, dolomitic lime, cement, nepheline syenite, gypsum, wollastonite, talc, semi-precious gemstones, oil and gas
- Potential: lithium, indium, selenium, tellurium, diamonds, vanadium, quartz (silica), graphite, chromium, rare earth elements, phosphate

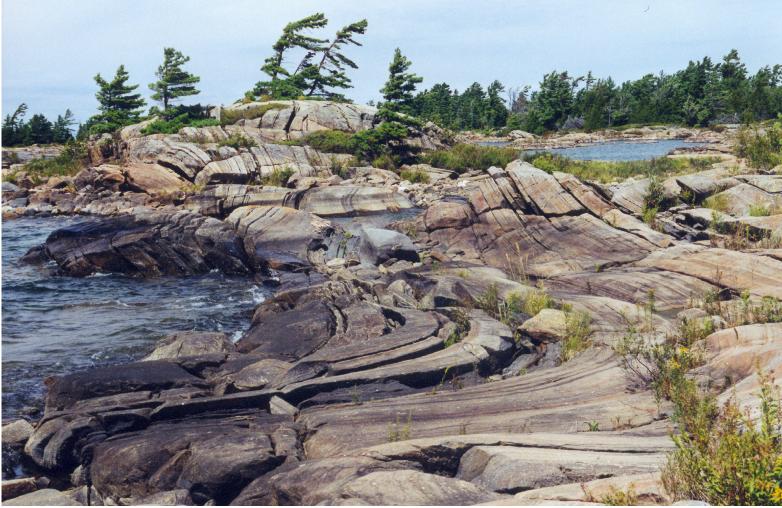


- Summary of Field Work and Other Activities (annual report of OGS mapping work)
- Report of Activities, Resident Geologist Program (six annual reports from the regional offices)
- Recommendations for Exploration

#### Local geoscience meetings

- Ontario Prospectors Exploration Showcase (April, Thunder Bay) and Northeastern Ontario Mines and Minerals Symposium (fall, various locations in northeastern Ontario)
- Ontario Petroleum Institute Annual Meeting (spring or fall, various locations)
- Regional-Scale Groundwater Geoscience in Southern Ontario: An Ontario Geological Survey–Geological Survey of Canada–Conservation Ontario Geoscientists Open House (spring, various locations)





#### **Contacts** Ontario Geological Survey Branch, Ministry of Energy, Northern Development and Mines Willet Green Miller Centre 933 Ramsey Lake Road, 7th Floor Sudbury, ON P3E 6B5 705-670-5755 or 1-888-415-9845 (toll-free) OGS@ontario.ca

### Québec Ministère de l'Énergie et des Ressources naturelles



The mission of the Ministère de l'Énergie et des Ressources naturelles is to acquire geoscientific knowledge to ensure the development and optimal use of energy, land, and mineral resources in Québec from a sustainable development perspective. Its Mining sector relies on 200 staff members and is headquartered in Québec City, with satellite offices in Val-d'Or and Montréal. Géologie Québec evaluates and promotes the mineral potential of the province, by the acquisition, processing, integration, and distribution of geoscientific knowledge on mineral resources. Québec's strength lies not only in its mineral potential, but also in the excellence of its labour pool, training institutions and specialized research centres. In addition, Québec is a world leader in the capture and processing of geoscientific data.

#### **Core activities**

**Bedrock geoscience:** mapping, stratigraphy, structural geology, geochronology, lithogeochemistry

**Surficial geoscience:** mapping, glacial geology, iceflow analysis, indicator minerals, till geochemistry, lake sediments

**Mineral potential assessment:** favourable areas for exploration, mineral potential modelling and assessment studies, regional metallogeny

Promotion: annual events and international missions

**Outreach:** Discovery days (during the Québec Mines+Énergie Convention), public events, education

#### Data management and web services

#### http://sigeom.mines.gouv.qc.ca/signet/classes/I1102\_ indexAccueil?l=F

SIGÉOM is a unique spatial reference geomining information system, which contains the entire Québec geoscientific database collected over the past 150 years. Every year, it grows richer with additional data coming mainly from geological surveys undertaken by the Ministry, prospecting and exploration assessment reports by exploration companies, and geoscientific studies by university researchers.

- Major: gold, iron, nickel, titanium, niobium, zinc, diamond, feldspar, graphite, mica, salt, slicium
- Minor: antimony, bismuth, cadmium, cobalt, copper, silver, platinum group elements, selenium, sulphur, tellurium
- Advanced projects: apatite, lithium, rare earth elements, vanadium



Annual publications

Investing in Québec's mining sector: <u>mern.gouv.qc.ca/english/publications/mines/mining-sector.pdf</u>

- Local geoscience meetings
  Québec Mines+Énergie Convention (November, Québec City, QC)
  Nunavik Mining Workshop (April, Kuujjuaq, QC)







Contact Centre de service des mines 5700, 4e Avenue Ouest, D-307 Québec (Québec) G1H 6R1 418-627-6278 1-800-363-7233 service.mines@mern.gouv.qc.ca



## **Geological Survey of Newfoundland and Labrador**



The Geological Survey of Newfoundland and Labrador is responsible for mapping the geological framework of the province to interpret and explain its geological evolution, and to describe, interpret, and explain the distribution, nature, quantity, and origin of the province's mineral resources. It currently has three sections (Regional Geology; Mineral Deposits; Terrain Sciences & Geoscience Data), with offices and a geochemical laboratory in St. John's, the provincial capital.

#### **Core activities**

**Bedrock geoscience:** mapping, stratigraphy, sedimentology, paleontology, structural geology, geochronology, geophysics, lithogeochemistry

**Surficial geoscience:** mapping, glacial limits and ice flow, lake-sediment geochemistry, till geochemistry and mineralogy, indicator minerals, glacial isostatic adjustments, aggregate assessments

**Minerals:** mineral deposit research, mineral occurrence database, mineral potential, regional metallogeny

Energy: oil and gas

Geohazards: coastal erosion and flooding, landslides

Environmental: land use, environmental geochemistry, climate change

Data management: databases, digital geology

**Outreach:** propsector support, geoheritage database, Global Geoparks. UNESCO Word Heritage, education prorgams

#### Web services

We have a comprehensive suite of online tools, including links to public geoscience, industry reports, and other data, and real-time mineral land tenure. GeoScience OnLine Includes interactive maps of geology, geophysics, geochemistry, mineral occurrences, and mineral land tenure (gis.geosurv.gov.nl.ca). The GeoFiles database (https://gis.geosurv.gov.nl.ca/minesen/geofiles/) is a repository of documents about provincial geoscience including mineral exploration assessment reports, reports and maps, university theses, books, and unpublished reports and maps. The MIRIAD page (https://www.gov.nl.ca/nr/mines/exploration/minerallands/) provides real-time claim staking and status information.

- Major: iron ore, nickel, copper, gold, fluorspar, antimony
- Minor: cobalt, limestone, dolomite, barite, pyrophyllite
- Historic: zinc, lead, silver, slate
- Potential: rare earth elements and rare metals, uranium



Our publications are freely available on the Geological Survey website at https://www.gov.nl.ca/nr/mines/geoscience/

• Current Research, an annual report highlighting Geological Survey field activities

- Local geoscience meetingsMineral Resources Review (November, St. John's)
- Baie Verte Mining Conference (June, Baie Verte) •
- Geological Association of Canada (Newfoundland Section) • (February, St. John's)





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### **New Brunswick Geological Survey**



The New Brunswick Geological Survey traces its origin to 1838, when Abraham Gesner was appointed as the first Provincial Geologist. The Survey has 20 permanent staff and is headquartered in Fredericton, with regional offices in Bathurst and Sussex. The province maintains three drill core repositories containing about 900,000 m of core derived from mineral exploration.

#### **Core activities**

The Survey acquires, catalogs, and distributes geological information about mineral and petroleum resource exploration, and coastal geohazards. Acquisition and dissemination of geoscience information by government plays a vital role in attracting investment in New Brunswick's mineral and petroleum sector. Geoscience data also provide the framework for making informed land-use decisions, identifying potential geohazards, mitigating coastal erosion, locating sources of construction aggregate, investigating groundwater, and managing forests.

**Bedrock geoscience:** mapping, stratigraphy, sedimentology, structural geology, geochronology, lithogeochemistry, petrogenesis, tectonics

**Surficial geoscience:** mapping, geochronology, glacial geology, aggregate, till geochemistry

**Minerals:** mineral deposit research, mineral occurrence database, regional metallogeny, mineral potential, deposit modelling

Geohazards: coastal erosion, coastal zone mapping and monitoring

Energy: oil and gas

Environmental: land-use planning

Data management: databases, digital geology, Open Geoscience

Outreach: education

#### Web service

A variety of GIS open data are available on the Department of Natural Resources and Energy Development website through direct access in GIS software, download, or interactive web mapping applications. For example, the Mineral Exploration Map allows users to interactively view provincial geology, mineral claims, mineral occurrences, drill holes and exploration reports of work. (https://nbdnr.maps.arcgis.com/apps/webappviewer/index.html?id= 9222d8a1ccf54f4a9655c9d7026112a3&locale=en)

- Major: zinc, lead, peat
- Minor: copper, silver, salt, industrial minerals
- Potential: potash, manganese, tungsten, molybdenum, gold, antimony, tin, indium
- Historic: potash, manganese, tungsten, gold, antimony, tin

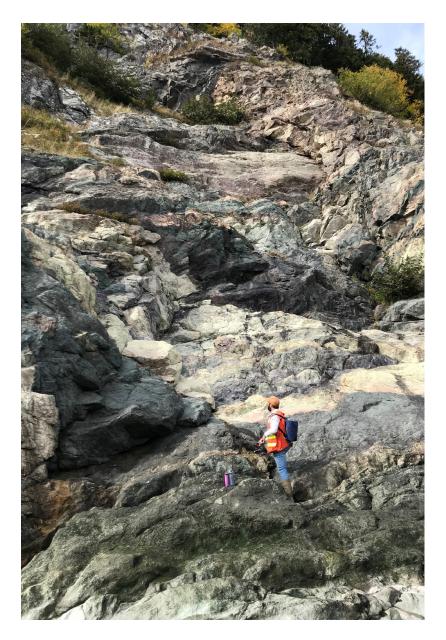


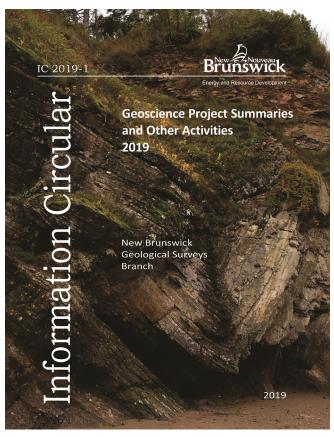
All NBGS publications are available for download at no cost from <u>http://dnr-mrn.gnb.ca/ParisWeb</u>

- Geoscience Project Summaries and Other Activities
- Geological Investigations
- Exploration, Mining and Petroleum Conference Abstracts Volume

#### **Geoscience meetings**

- Atlantic Geoscience Society (AGS) Colloquium (February)
- New Brunswick Exploration, Mining and Petroleum Conference (November, Fredericton)







#### **Contacts** Fredericton Office

Hugh John Flemming Forestry Complex 1350 Regent Street, Ancillary Building Fredericton, New Brunswick, E3C 2G6 506-453-3826 **Bathurst Office** 2574 Route 180 South Tetagouche, New Brunswick, E2A 7B8 506-547-2070 Sussex Office 701 Main Street Sussex New Brunswick, E4E 7H7 506-432-2008

Dr. Kathleen Thorne Director 506-444-2309 Kay.Thorne@gnb.ca

### Nova Scotia Geological Survey



**Core activities** 

**Bedrock geoscience:** mapping, sedimentology, stratigraphy, structural geology, geochronology, stable isotopes, geophysics, lithogeochemistry, tectonics, thematic studies

**Surficial geoscience:** mapping, geochronology, soils, glacial and periglacial geomorphology, glaciology, geophysics, geochemistry, indicator minerals

**Metallic minerals:** mineral deposit research, deposit modelling, mineral occurrence database, mineral potential, regional metallogeny

**Industrial minerals:** marketing, aggregate, sand and gravel, mineral occurrence database, building stone, potential

**Geohazards:** coastal vulnerability (flooding, erosion), karst, sinkholes, radon, acid rock drainage, salt-water intrusion, risk mapping

**Groundwater:** quantity, well-water quality, drought monitoring, risk mapping (arsenic, uranium, manganese, lead, methane), wells database, well monitoring, environmental geochemistry

Energy: coal, geothermal

Geoheritage: GeoParks, geoheritage sites, geotourism

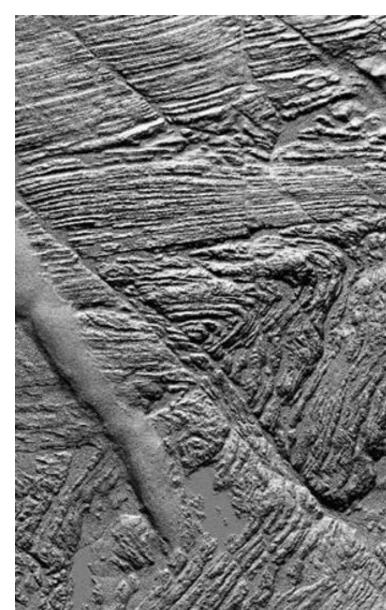
**Exploration services:** core library, promotional activities, prospector's assistance, incentive programs, exploration monitoring, integrated resource management, trade shows

**Information services:** databases, GIS, application development, cartography, metadata, publications, editing, information management

#### Web services

The Geoscience and Mines Branch provides internet access to its maps, data, and information through an online map gallery, downloadable GIS data products, searchable databases, and online interactive geoscience map applications. Access to all of our online products can be found at https://novascotia.ca/natr/meb/maps/ The Geological Survey provides knowledge and oversight of the province's geology and geological resources to help government achieve priorities in economic development, public health and safety, and resource stewardship. Services are delivered through four program areas: Regional Geoscience and Resource Evaluation, Environmental Geoscience, Information Services, and Exploration Services.

- Major: aggregate, gypsum, salt, limestone, coal, gold
- Minor: silica sand, anhydrite, building stone, barite, clay
- Potential: REE, nickel, cobalt, copper, lead, silver, zinc, niobium, tantalum, tungsten, lithium, vanadium, cesium, molybdenum, graphite, potash, antimony, arsenic, beryllium, bismuth, chromium, fluorspar, gallium, germanium, indium, manganese, strontium, tellurium, tin, titanium, zirconium



- Geoscience and Mines Branch Report of Activities is an annual publication of our activities. These reports can be found at <a href="https://novascotia.ca/natr/meb/geoscience-online/report-of-activities-recent.asp">https://novascotia.ca/natr/meb/geoscience-online/report-of-activities-recent.asp</a>
- Mineral exploration assessment reports are technical reports submitted annually by holders of mineral exploration licences. These can be found by searching the NovaScan database.
- The Geological Record is a quarterly newsletter of geological survey activities and stories of interest to the geoscience community. Issues can be found at <a href="https://novascotia.ca/natr/meb/pdf/tgr.asp">https://novascotia.ca/natr/meb/pdf/tgr.asp</a>

#### Local geoscience meetings

- Atlantic Geoscience Society (AGS) Colloquium (location rotates among maritime provinces)
- Mining Society AGM (location varies in Nova Scotia)







Contacts Brian Fisher Director 902-717-2890 Brian.Fisher@novascotia.ca Nova Scotia Department of Energy and Mines - Geological Survey 1701 Hollis Street PO Box 698 Halifax, Nova Scotia, B3J 2T9 http://novascotia.ca/natr/meb/ Join our representatives at annual national meetings such as the Prospectors and Developers Association conference in Toronto (PDAC) and the Association for Mineral Exploration (AME) Mineral Exploration Roundup in Vancouver.

