



British Columbia Geological Survey

British Columbia Geological Survey
Mines and Mineral Resources Division
Ministry of Energy and Mines

www.em.gov.bc.ca/geology





The Survey

Founded in 1895, the British Columbia Geological Survey is the oldest scientific agency in the province. The Survey is responsible for assessing British Columbia's geology and related coal and mineral resources. The Survey provides pre-competitive raw data, historical information, and new concepts to guide geological, mineral resource, and environmental decisions.



Structure of the British Columbia Geological Survey

*Cordilleran
Geoscience
Section*

*Resource
Information
Section*

*Mineral
Development
Office*



The British Columbia Geological Survey strives to be a leader in public government geoscience, providing data and knowledge to diverse stakeholders. MapPlace, the Survey's online digital delivery system, enables easy access to public geoscience data, ensuring that British Columbia remains a preferred destination for investment in mineral exploration.



Survey Activities

**Generates
pre-competitive
geoscience data**



**Custodian of
geoscience
data for BC**



**Advises
government**



**Provides
confidential
expertise**



**Monitors industry
activity**



**Attracts global
investment**





Role of Public Government Geoscience

Developed nations around the world have publically funded geological surveys that provide geoscience information to support responsible resource development and encourage investment, thus stimulating economic growth. Geoscience information is used by government to make informed decisions and create effective policy on resource development, land use, and environmental stewardship.

Public Government Geoscience

“Our investment in resource exploration will continue to unlock the full economic, mineral and energy potential of the region, while generating new government revenues, private sector investment and jobs.”

- Prime Minister of Canada, August 2013

Exploration and mining are critical to the economy of British Columbia. For example, in 2014, the total value of mine production was \$7.4 billion and production remains strong. Despite challenging equity markets, exploration companies continue to persevere, making significant investments that benefit the province.

The British Columbia Geological Survey has an important role in stimulating activity, attracting investment, and providing continuous research based on a corporate memory that extends back over 100 years.





Public Government Geoscience in the Exploration Industry

Public government geoscience from the British Columbia Geological Survey benefits the exploration industry by

- providing the geological framework to identify areas with high mineral potential and reduce the cost of exploring unprospective ground
- increasing exploration efficiency by gathering regional information useful for property-scale evaluation
- archiving exploration results and activities so that explorationists can advance projects without duplicating previous work



Impact of Public Government Geoscience

“On balance, the evidence indicates that the “Rule of Thumb” that \$1 spent on government geoscience will stimulate \$5 in private sector exploration is reasonable...”

- J.M. Duke (Prospectors and Developers Association of Canada presentation, 2010)





Cordilleran Geoscience Section

The Cordilleran Geoscience Section is responsible for generating new, pre-competitive geoscience knowledge through regional, field-based geological mapping programs. This information provides the geological framework that reduces investment risk.





Cordilleran Geoscience Section geologists conduct field-based projects directed at

- regional bedrock mapping, stratigraphy, lithogeochemistry, and geochronology
- mineral deposit studies
- establishing the tectonic evolution of the Cordillera
- developing exploration methods
- Quaternary and surficial geology
- drift prospecting, till geochemistry, and indicator minerals





Laboratory and Sample Archive



The British Columbia Geological Survey maintains geochemical databases containing multi-element analyses from rock, till, stream sediment, and water surveys. Accessible to the public, these data are used to evaluate mineral deposits and to identify new exploration targets.



The geochemical and rock archive has been upgraded with a new storage library to accommodate over 600,000 geochemical samples collected by the Survey since the 1970s.

The updated BCGS Bedrock Lithogeochemical Database, released in 2015 in easily accessed formats, is a unified repository for standardized bedrock lithogeochemical data collected in the last 30 years.





Mineral Development Office (MDO)

The Mineral Development Office (MDO) is the Vancouver base of the British Columbia Geological Survey. The MDO links the Survey with the more than 800 global exploration and mining companies headquartered in Vancouver.

The Mineral Development Office distributes British Columbia Geological Survey data and provides technical information and expertise about mineral opportunities to the investment community. It also coordinates the exploration and mining reviews produced each year by the Regional Geologists.



Regional Geologists Program



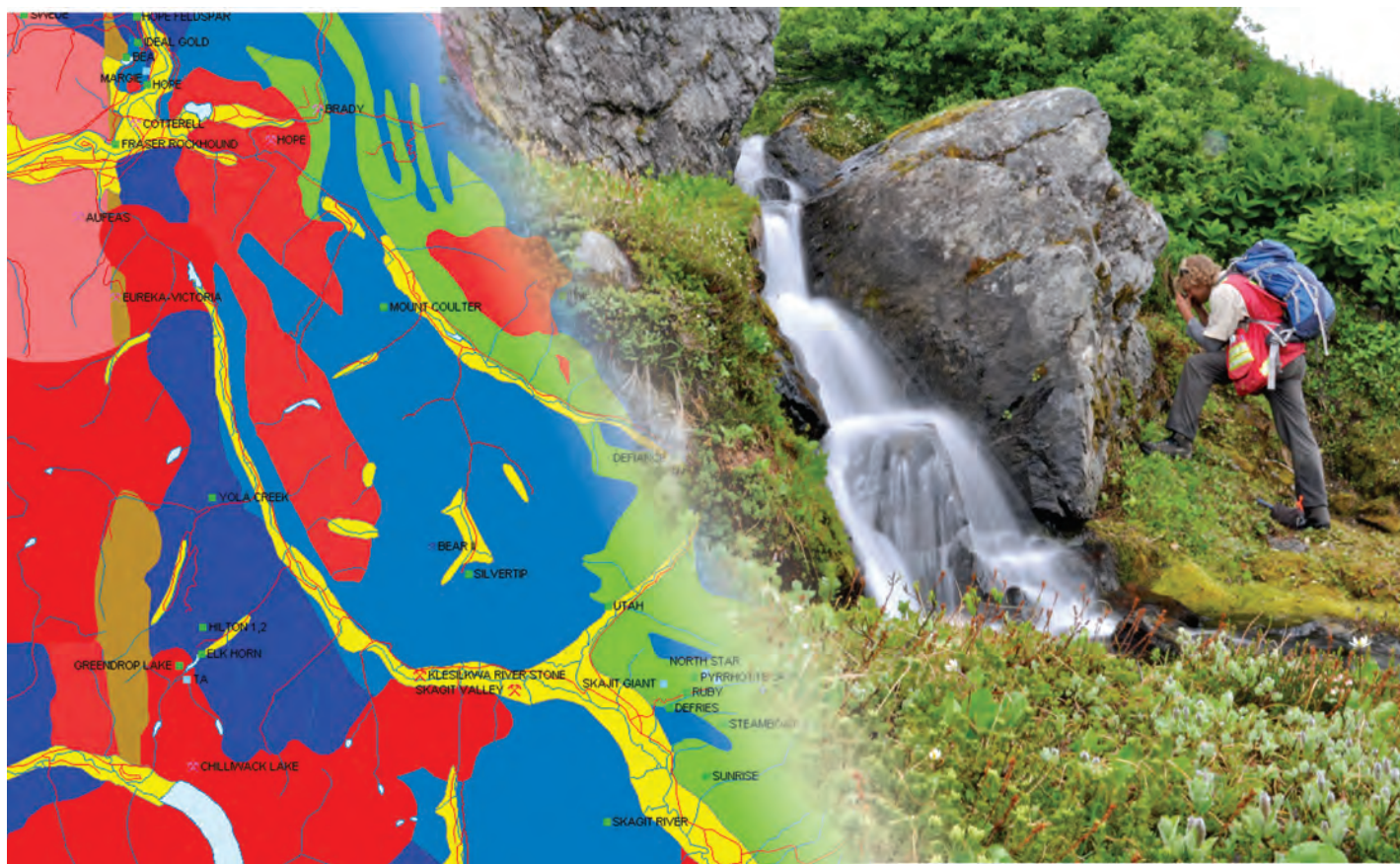
Regional Geologists are based in Smithers, Prince George, Kamloops, Cranbrook, and Vancouver. They monitor exploration and mining activities, and provide expertise to prospectors and mineral exploration companies. They also work in their communities to enhance understanding of local geoscience and to foster a healthy and prosperous minerals sector.





Resource Information Section

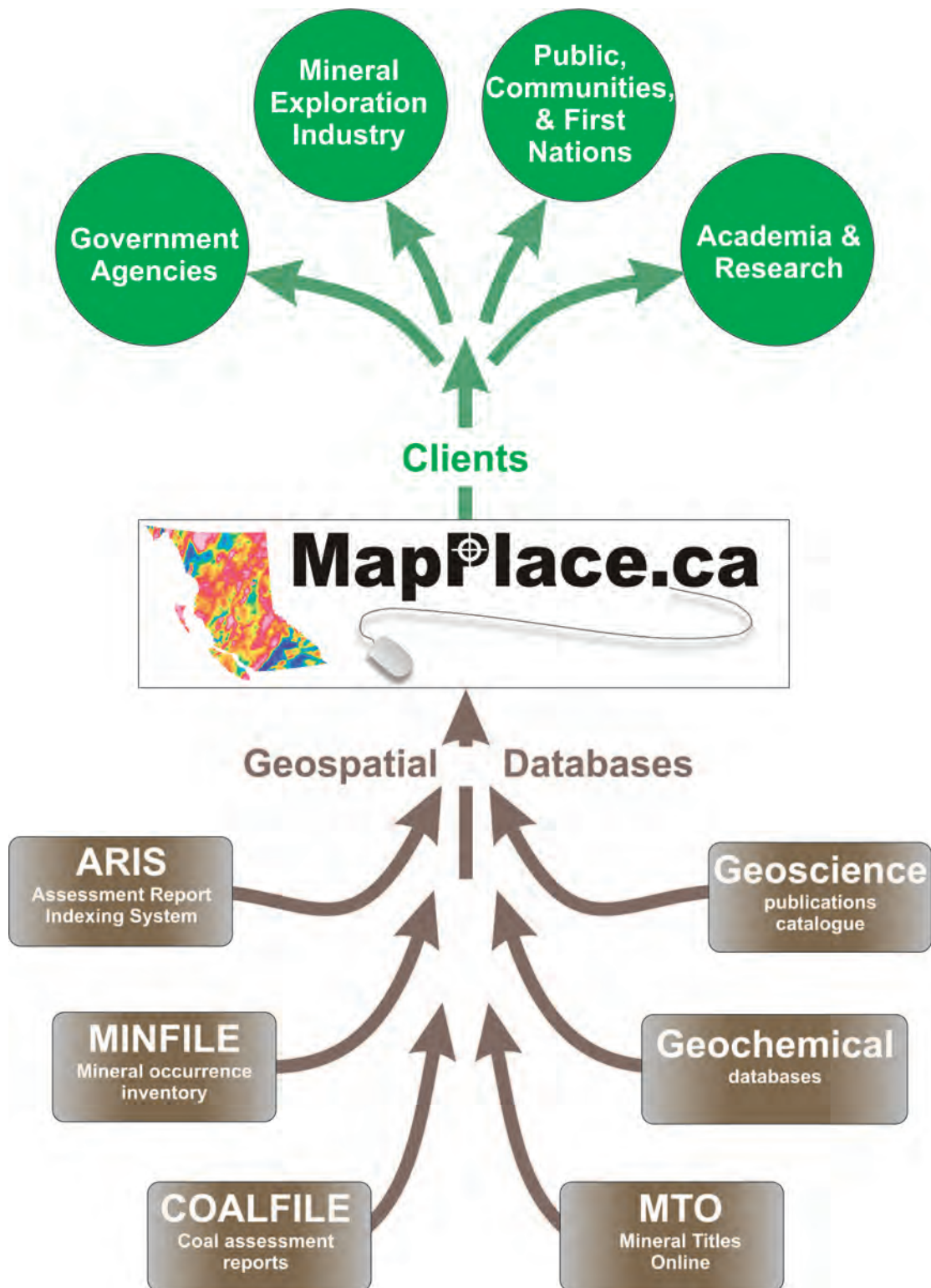
The British Columbia Geological Survey preserves, archives, and provides free web-based access to over a century's worth of geoscience information. Since 1995, MapPlace, our database-driven web service, has provided open geoscience data and custom map-making tools to aid in the discovery of deposits and the assessment of mineral potential in British Columbia.

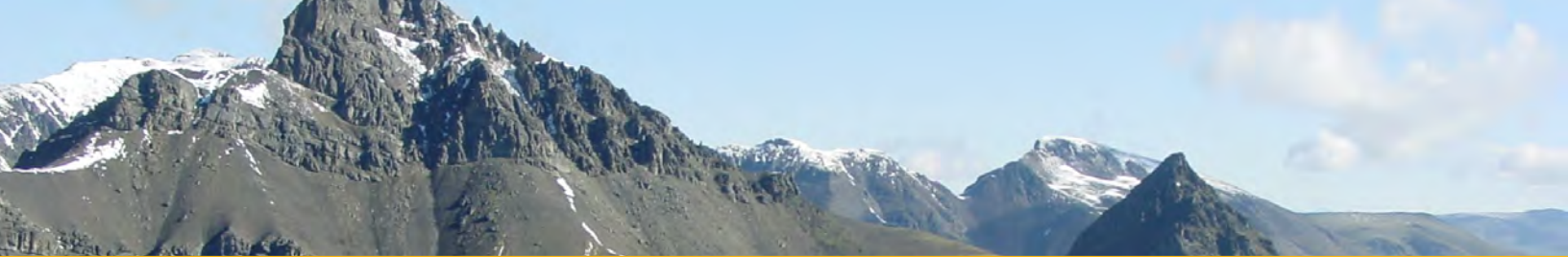


Through MapPlace, Survey databases talk to each other.

ARIS, MINIFILE, COALFILE, Property File, mineral titles, geochemical databases, geological and topographic maps, and the British Columbia Geological Survey publication catalogue can be queried simultaneously, and the output projected onto base imagery of choice.







Publications

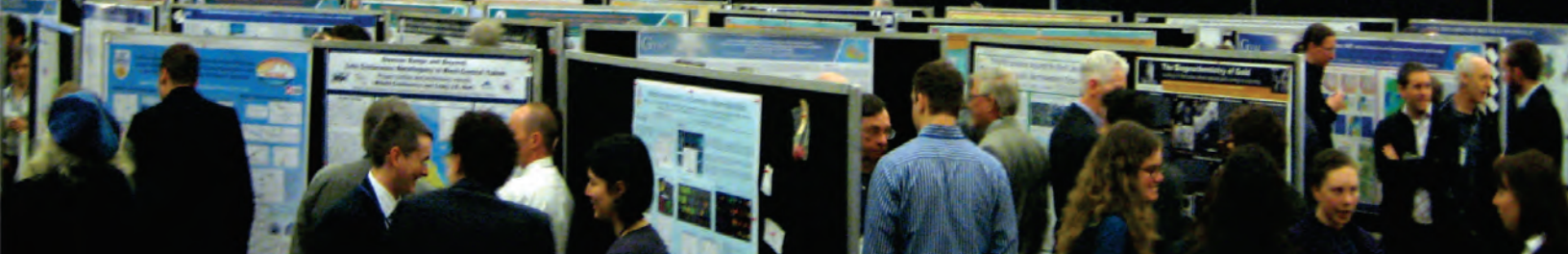
The British Columbia Geological Survey publishes geological Papers, Open Files, GeoFiles, and Information Circulars that are available online free of charge. Geological Fieldwork, published annually in January, includes technical papers that highlight current Survey activities.



All our publications can be downloaded at:
www.empr.gov.bc.ca/Geology

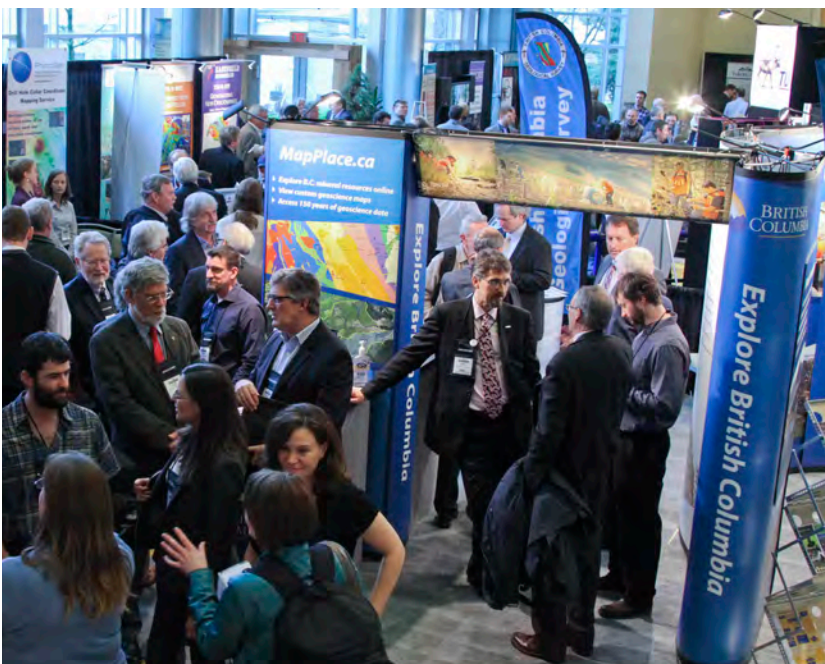
To receive notification of our latest releases
email: Geological.Survey@gov.bc.ca





Meetings

The British Columbia Geological Survey distributes maps and reports at regional, national, and international meetings. Survey staff regularly give presentations highlighting new developments in Cordilleran geology. Look for the BCGS booth at the Kamloops Exploration Group (KEG) meeting in Kamloops, the Minerals South meeting in Nelson or Cranbrook, the Mineral Exploration Roundup in Vancouver, and the Prospectors and Developers Association of Canada (PDAC) meeting in Toronto.



The British Columbia Geological Survey invites 2016 Mineral Exploration Roundup delegates to visit our new home in the BC Pavilion at Canada Place in the Vancouver Convention Centre.



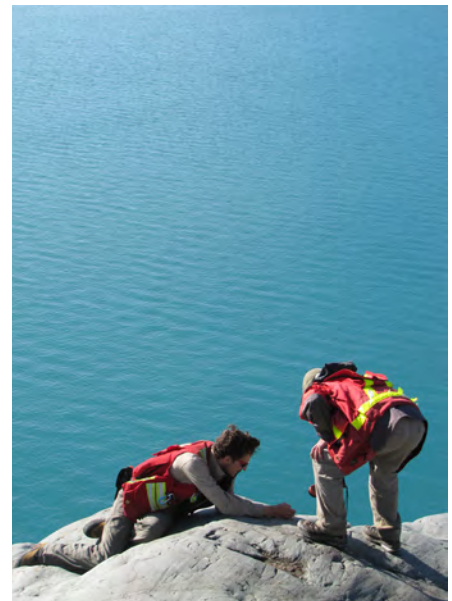


Skills Training

The British Columbia Geological Survey invests in the next generation of exploration geologists by hiring and training student assistants, supporting graduate students, and mentoring student research.



The Survey helps exploration geoscientists, prospectors, and professionals learn new exploration skills and better understand Cordilleran Geology by providing presentations, short courses, workshops, and field trips.





Partnerships

The British Columbia Geological Survey is a collaborative agency.

We partner with federal, provincial, and territorial governments, other national and international organizations, and the mineral exploration and mining industry to develop and deliver geoscience projects.



The Survey is collaborative and continues to develop partnerships with industry, academia, and other geoscience agencies. If you are interested in the British Columbia Geological Survey - Industry Partnership Program please contact:

***Adrian Hickin, Director, Cordilleran Geoscience
Adrian.Hickin@gov.bc.ca***

2015 Partners



GEM-2



**CMIC-NSERC
FOOTPRINTS**



Ministry of
Energy and Mines



**University
of Victoria**

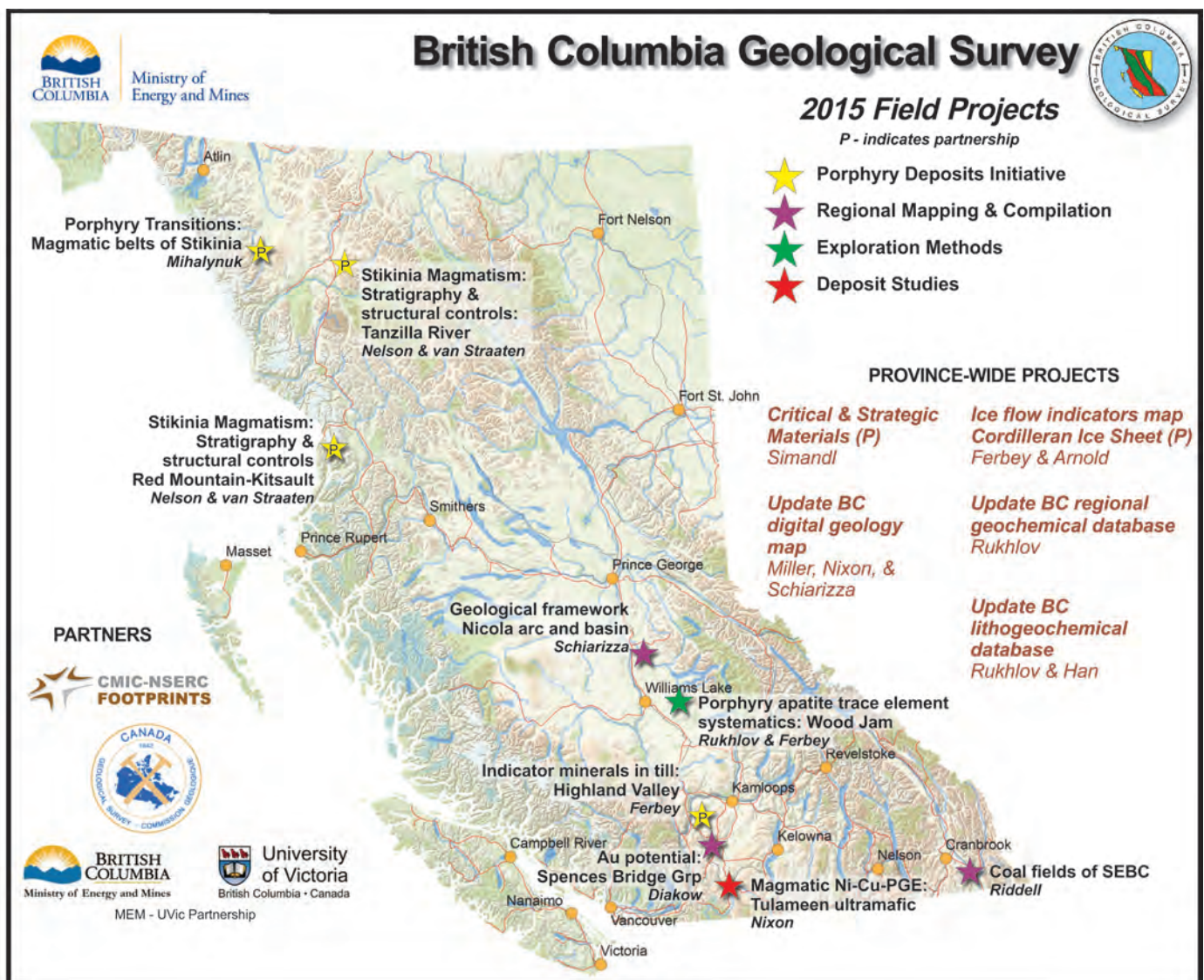
MEM-UVic Partnership Energy and Minerals Projects





2015 Projects

For 2015, the British Columbia Geological Survey's core program focuses on porphyry Cu-Au \pm Ag-Mo deposits, which make up a significant component of the province's mineral wealth. Other important themes include: deposit studies (epithermal Au, orogenic Ni-Cu-PGE); developing exploration methods (indicator minerals, Pb isotopes); generating province-wide compilations (ice-flow indicators, digital map of BC, coal); and updating geochemical databases.





Porphyry Initiative

Nicola Arc

Nicola arc stratigraphic framework

Contact: paul.schiarizza@gov.bc.ca

Northwest BC

Stikinia magmatism: Stratigraphic and structural controls: Tanzilla

Contact: joanne.nelson@gov.bc.ca

Northwest BC

Stikinia magmatism: Stratigraphic and structural controls: Red Mountain to Kitsault

Contact: joanne.nelson@gov.bc.ca

Northwest BC

Porphyry transitions and Triassic-Jurassic magmatic arc axes in Stikine terrane (GEM-2)

Contact: mitch.mihalynuk@gov.bc.ca

Deposit Studies

Epithermal Au, Spences Bridge Group

Contact: larry.diakow@gov.bc.ca

Orogenic Ni-Cu-PGE

Contact: graham.nixon@gov.bc.ca

Geochemical database

Lithogeochemical database refurbishing and updating

Contact: alexei.rukhlov@gov.bc.ca

Exploration Method Development

Indicator Minerals

Trace element compositions of detrital apatite: a robust porphyry indicator mineral

Contact: alexei.rukhlov@gov.bc.ca

Porphyry indicator minerals, central BC

Contact: travis.ferbey@gov.bc.ca

Till geochemistry and mineralogy of the Highland Valley mine area

Contact: travis.ferbey@gov.bc.ca

Specialty metals (TGI-4)

Contact: george.simandl@gov.bc.ca

Lead Isotopes

Application of lead isotopes in till for mineral exploration: A simplified method using ICP-MS

Contact: alexei.rukhlov@gov.bc.ca

Regional Syntheses and Map Compilation

BC Digital Geology

Contact: yao.cui@gov.bc.ca

Ice-flow indicators for the Canadian Cordilleran Ice Sheet (GEM-2)

Contact: travis.ferbey@gov.bc.ca

British Columbia coalfield map compilation

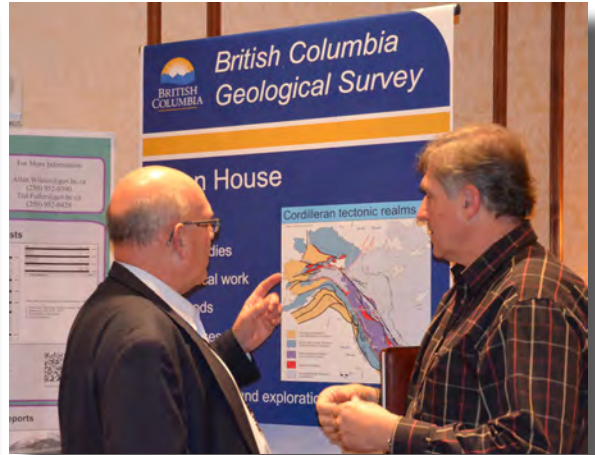
Contact: janet.riddell@gov.bc.ca





British Columbia Geological Survey Open House

Each year in Victoria, the British Columbia Geological Survey holds an Open House. Co-sponsored with the Pacific Section of the Geological Association of Canada, the Open House features talks, posters, and fieldtrips devoted to Cordilleran geoscience.





British Columbia Geological Survey

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