

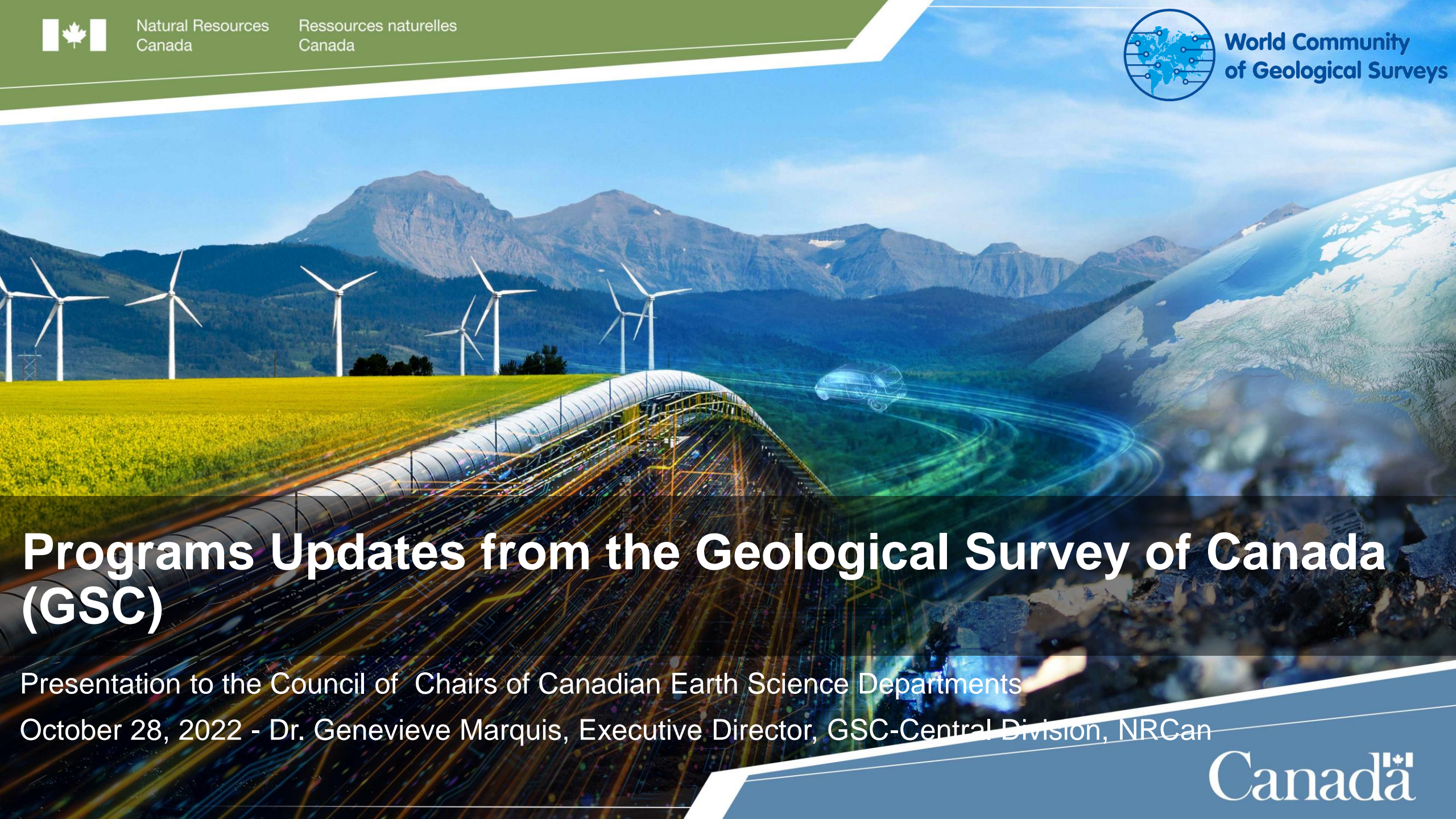


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World Community  
of Geological Surveys



# Programs Updates from the Geological Survey of Canada (GSC)

Presentation to the Council of Chairs of Canadian Earth Science Departments  
October 28, 2022 - Dr. Genevieve Marquis, Executive Director, GSC-Central Division, NRCan

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# At the Geological Survey of Canada (GSC), we pursue research and innovation for evidence-based decision-making...

- Internationally competitive mineral and energy sectors.
- Effective environmental stewardship.
- Wise land use.
- Safety and security of Canadians.



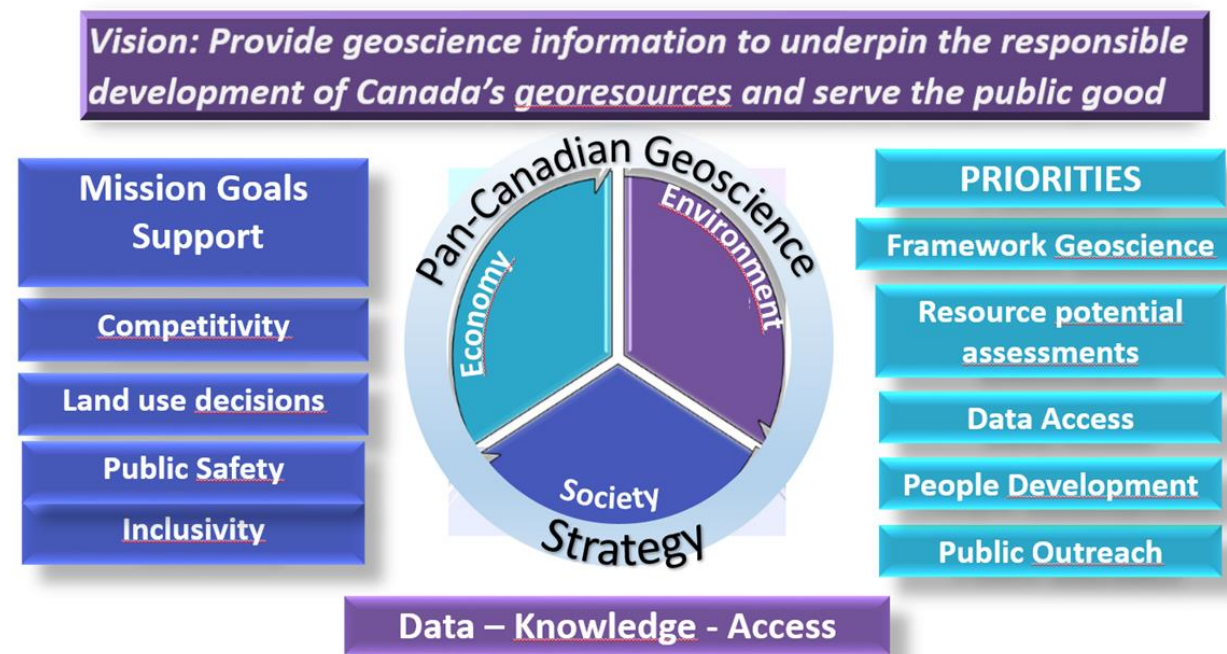
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# The Pan-Canadian Geoscience Strategy (PGS) sets the stage for collaboration and investment in public geoscience

- Driven by FPT Mines Ministers
- Responds to increased policy and stakeholder demands for public geoscience
- Maximizes government investments and cooperation towards next generation geoscience
- Supports mineral and energy exploration, and meet societal needs, including public safety



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# The Geological Survey of Canada (GSC)

The GSC is growing (450+ employees), and more than ever we will need to collaborate with CFES in order to:

1. Support the training of future geoscientists and
2. Gain from CFES by hiring new geoscientists

**Critical Minerals** and the **Environmental, Social and Governance (ESG)** are becoming central to all training of future geoscientists and to the GSC.

The international aspects of **geoscience** is growing in importance:

- Canada is well positioned in the world and will continue to attract mineral exploration investment.



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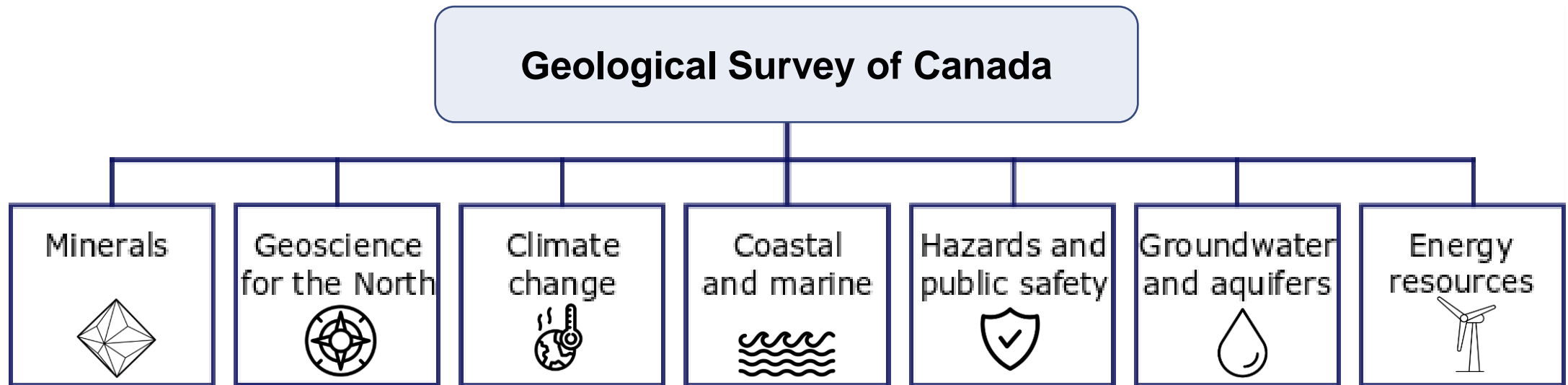
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# The Geological Survey of Canada (GSC)

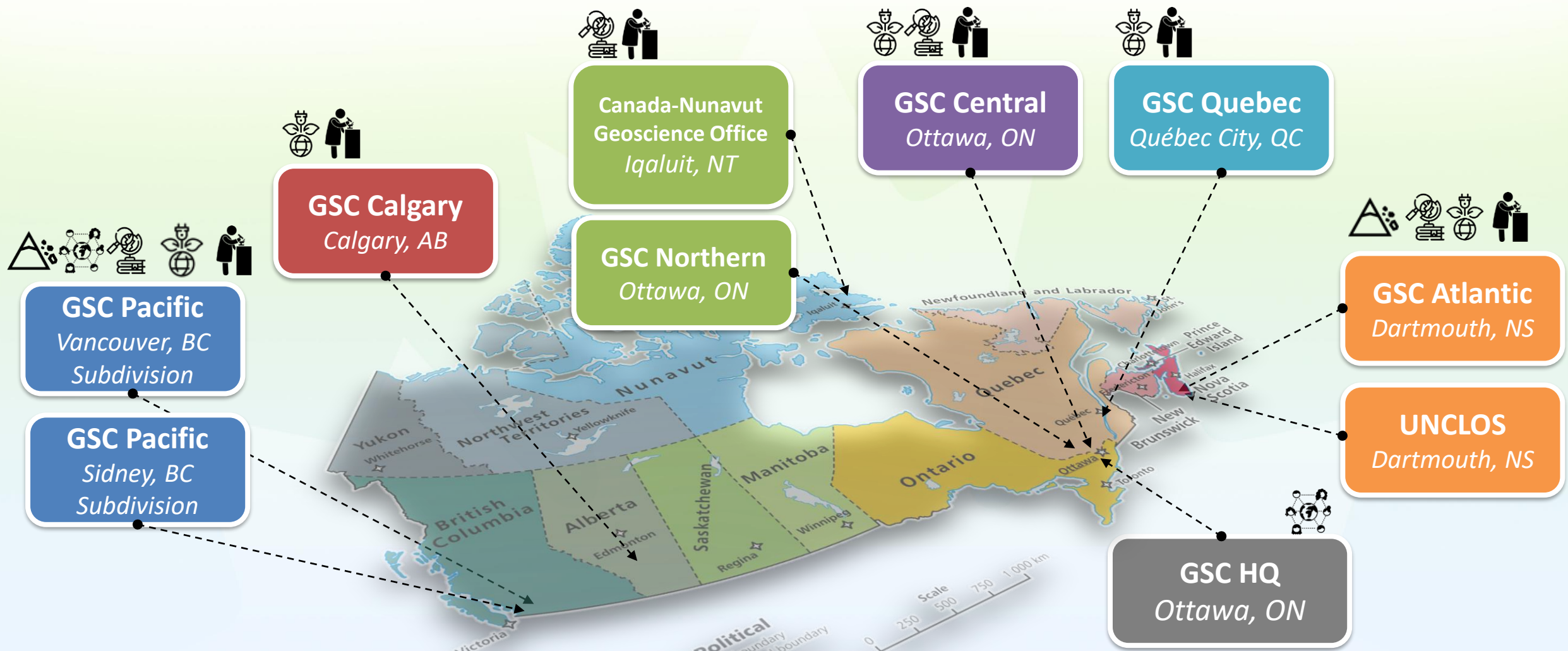
## What do we do?

- Geoscience to **inform** policy, **manage** the country's landmass and **develop** its natural resources responsibly





# The GSC is working with provinces, territories and partners from coast to coast to coast.



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# GSC Northern Division – PROGRAMS AND ACTIVITIES OVERVIEW



## LABORATOIRES DE RECHERCHE ANALYTIQUE

Géochimie et géochronologie isotopiques, géochimie inorganique, minéralogie et sédimentologie



## SCIENCE DE L'ENVIRONNEMENT

Service d'analyse d'impact environnemental, géologie environnementale, géochimie appliquée



## GÉOSCIENCES DE SURFACE

Pergélisol, processus de surface



## GEM-GéoNord



## TERRACANADA



## BUREAU GÉOSCIENTIFIQUE CANADA-NUNAVUT (BGCN)

Diverse expertise and multidisciplinary research with a focus on the North, the Arctic and scientific innovation.



- **Territorial and International Liaisons:** Nunavut, Northwest Territories, Yukon, Arctic, Africa
- Lead for the **environmental impact assessment**
- Innovative leadership in **laboratory research**
- **Devolution** of the Canada-Nunavut Geoscience Office to the Government of Nunavut (by April 2025).

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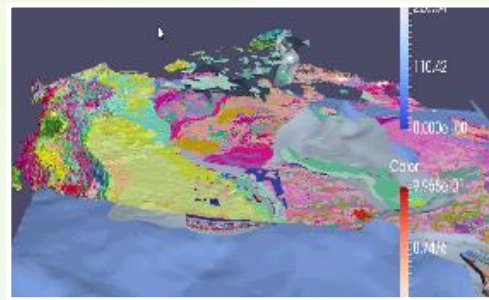
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Critical Minerals



Canada in 3D



Open Geoscience



Digital transformation



Targeted Geoscience Initiative (TGI)



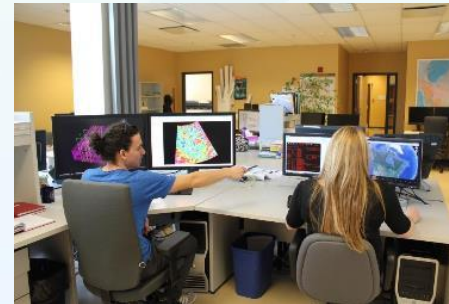
## GSC-Quebec

- Co-located with our partner, the *Institut national de recherche scientifique* (INRS) since its creation in 1988. Forms the Quebec Geoscience Centre.
- Training of more than 160 students since its creation.
- 2 main programs:
  - **Environmental Geoscience Program**
  - **Groundwater Geoscience Program**
- 2 major laboratories among a wide range:
  - LCNP and Delta-Lab

INRS



LCNP



Delta-Lab



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- Public Safety Geoscience Program

- Emergency Management Strategy

- Climate Change Geoscience Program



- GEM-GeoNorth Program – Western Region

- Targeted Geoscience Initiative



- Marine Geoscience for Marine Spatial Planning

- Environmental Geoscience Program

- Regional Liaison for British Columbia

- BC Geological Survey, Emergency Management British Columbia

- Academic institutions (UBC, SFU, University of Victoria, Royal Roads University, + others )

- International: Asia + Canada's membership to the Global Earthquake Model Foundation

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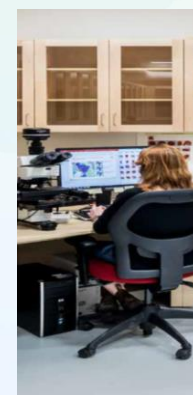
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- Established in 1967 to assist the fledgling petroleum industry, now well-positioned to support the transition to clean energy.
- NRCan owned facility located in the Calgary university research park with state-of-the-art research laboratories, a curated core and sample collection, and an NRCan library.
- Expertise includes unconventional and renewable energy, regional bedrock mapping, Arctic geoscience, environmental geoscience, and marine resource assessments.
- **Main programs:**
  - Marine Conservation Targets
  - Geoscience for New Energy Supply
  - Geothermal Energy



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- Co-located with DFO at Bedford Institute of Oceanography (BIO), Dartmouth, N.S.
- Canada's largest oceanographic facility
- Marine Collection & Curation Facility
- Labs:
  - Sediment Core, Geotechnical, Geochemistry
- Expertise:
  - Marine and Coastal Geology
  - Marine Regional Geological Framework
  - Marine technology development
  - Permafrost Research
  - Adaptation in Coastal Regions
  - National Glaciology Program
  - Extreme Events



Main program:

- **Marine Geoscience in support of Marine Spatial Planning**

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Overview of the GSC's mission and strategic priorities.

Information on geoscience programs and services.

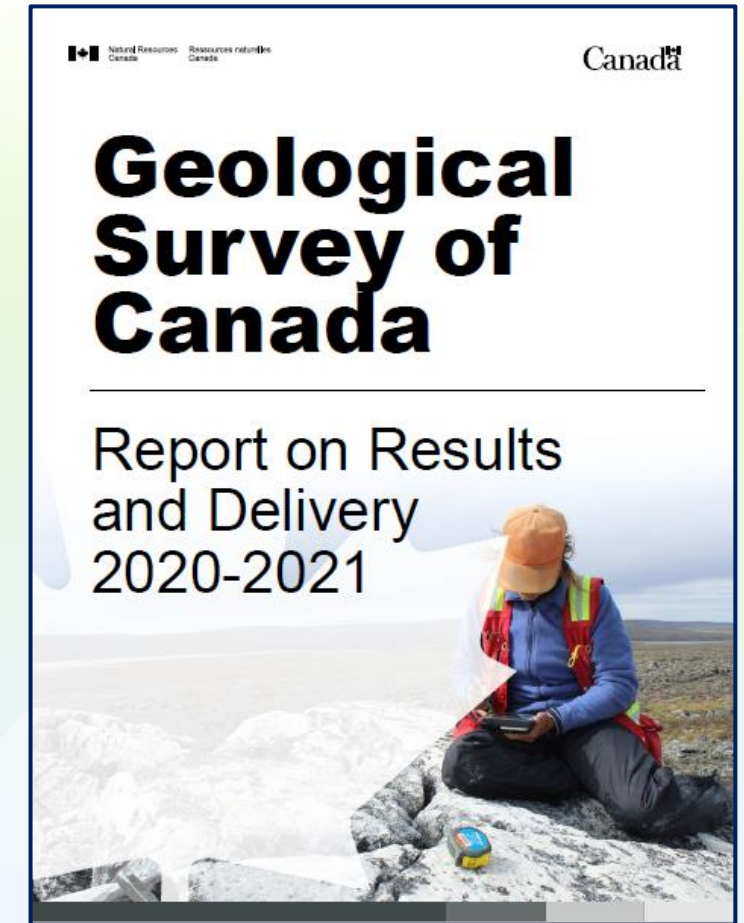
Success stories from each program's 2020-21 projects.

GSC Annual Report available for download at:

<https://www.nrcan.gc.ca/science-and-data/research-centres-and-labs/geological-survey-canada/geological-survey-canada-strategic-plan-and-annual-reports/23843>

Additional information on the GSC web at:

<https://www.nrcan.gc.ca/science-and-data/research-centres-and-labs/geological-survey-canada/17100>



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## Areas of focus based on policy priorities include:

- Critical mineral
- Artificial intelligence
- Sovereignty
- Net Zero and Inclusive Growth commitments



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# IGC – 2028 – Potential bid

**International Director CFES** (Canadian Federation of Earth Sciences)

-co-chair CNC (Canadian National Committee) with DG of GSC for IUGS & IGCP

**IUGS** – International Union of Geological Sciences

**IGCP** – International Geoscience Program

(used to be Intn Geological Correlation Program)

IGC – International Geoscience Congress – every 4 years, 5000-10000 delegates  
(opportunity to showcase Canadian geosciences)

Canada asked to submit a bid to replace St Petersburg 2028 (last in Canada in 1972 – Montreal)

Today – information for CCCESD; assessing 3 city expressions of interest

Decision to pursue bid at April 2023 CFES AGM

To be successful there needs to be buy-in across Canadian geosciences



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