



**TGI 3**

# Targeted Geoscience Initiative III



**Geoscience ... “mapping to help sustain the reserves of base metals in established mining communities” (Budget 2005)**

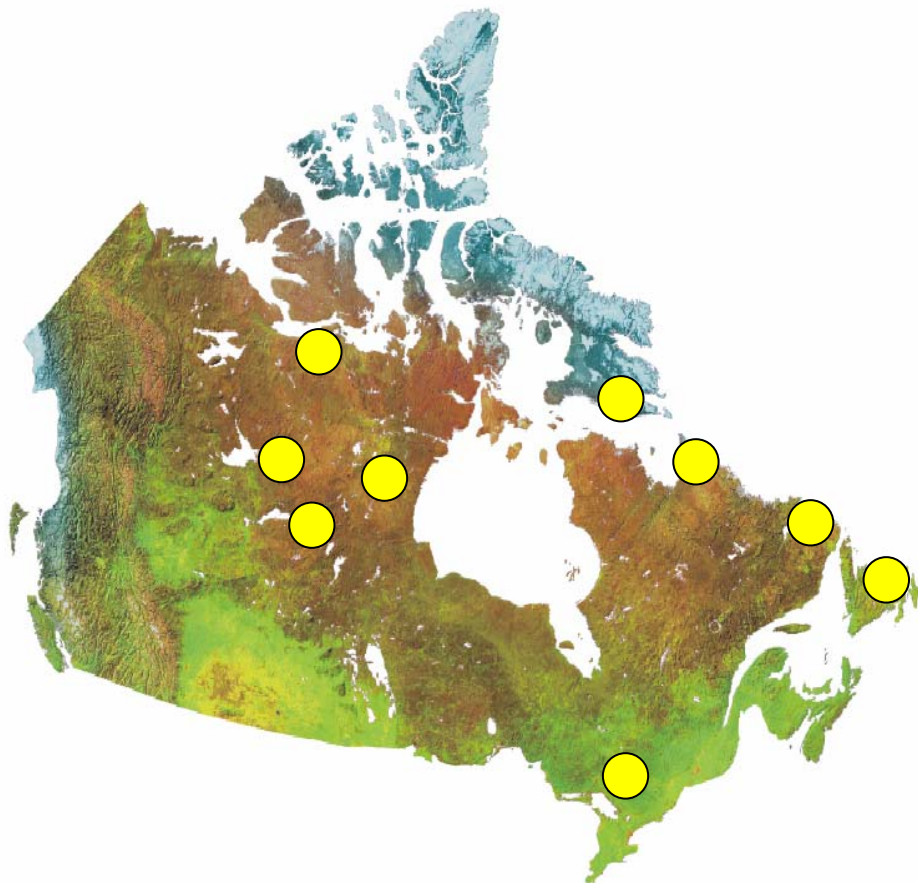
**Simon Hanmer (GSC)**





# My mapping career in Canada ...

*Simon Hanmer*





**TGI 3**



**Why are we here today?**

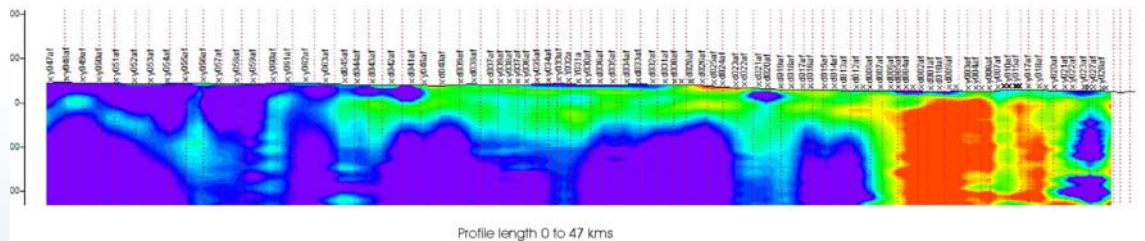
Can you spot the Survey geologist in this field crew?



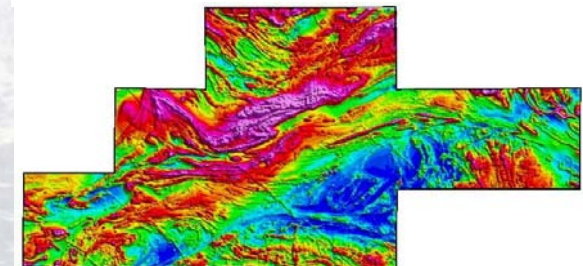
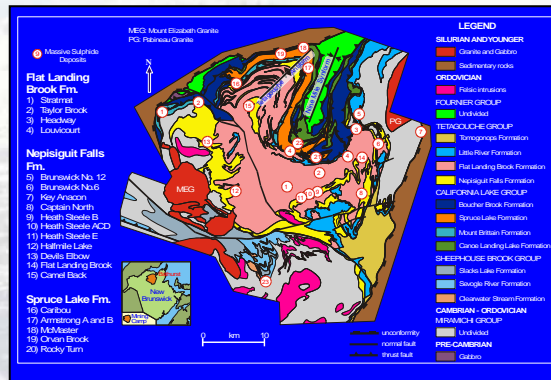
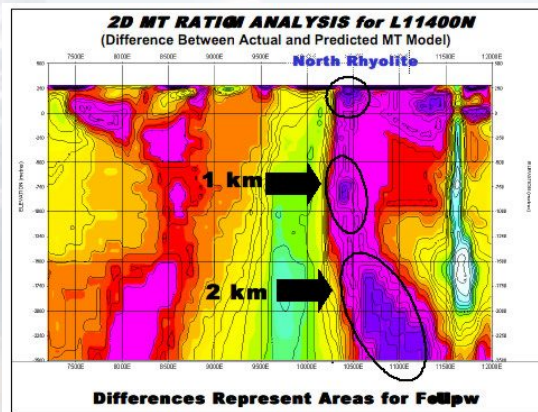
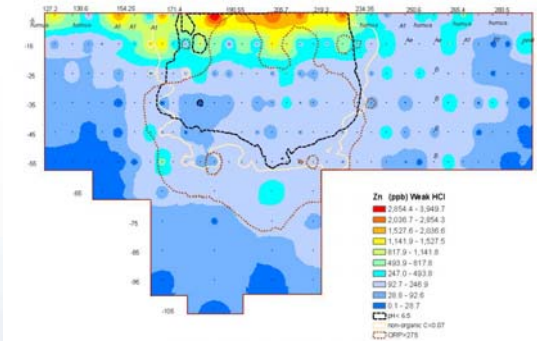


# Geological Survey of Canada ... what does it do?

Camp road X-section (TE mode 1D models)



Profile length 0 to 47 kms





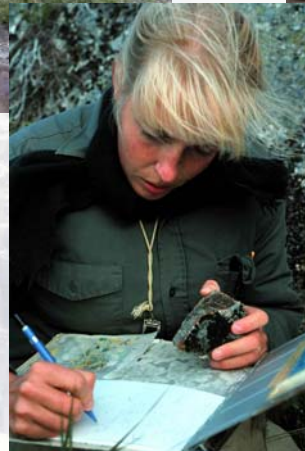
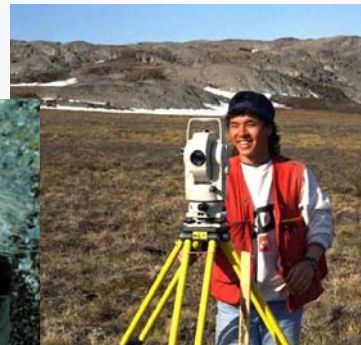
# Geological Survey of Canada ... how does it work?





# Students ... where do they fit in GSC work?

**Seniors**



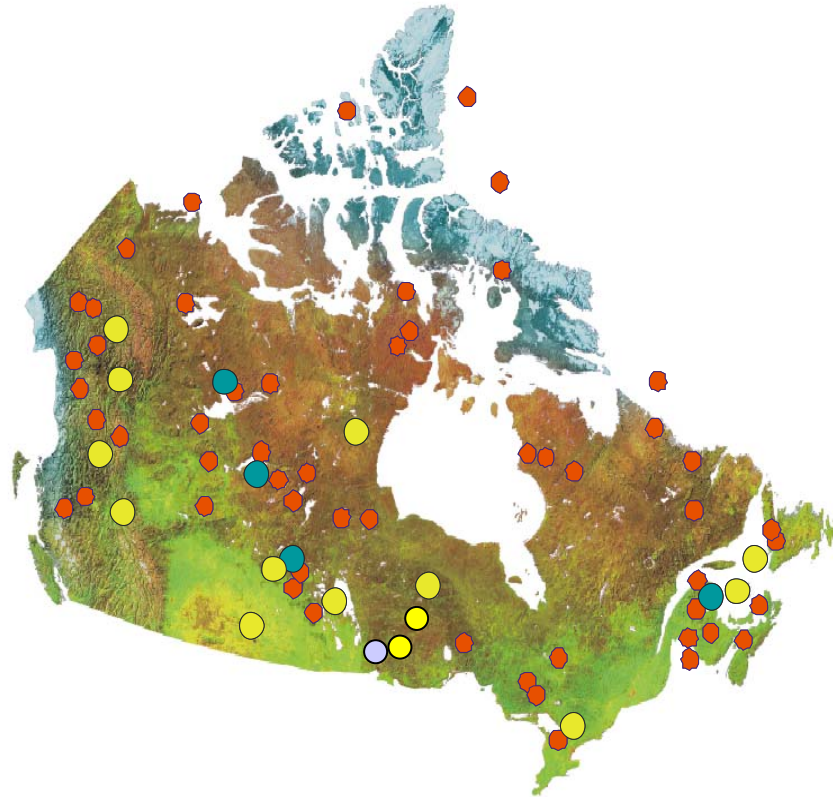
**Everywhere**





# Recent GSC Programs - NATMAP, EXTECH, TGI

- TGI
- NATMAP
- EXTECH





# Targeted Geoscience Initiative – Phase III

## How much & how long?

- \$25M over 5 years
- Focused on sustaining base metal reserves in existing mining communities ... *as per the 2005 federal budget*

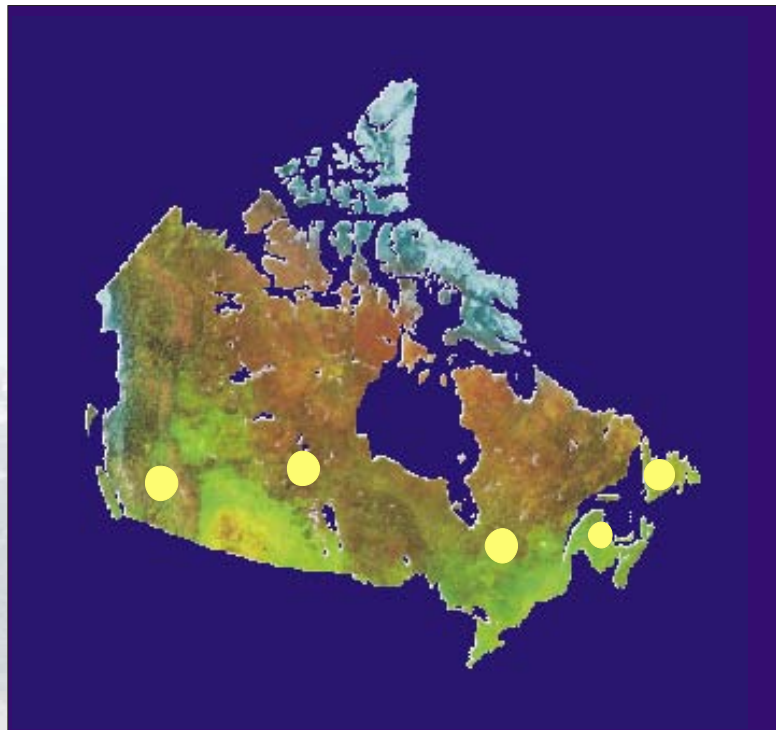






# Targeted Geoscience Initiative – Phase III

Where's the geographical focus?



## Appalachians

Buchans (Nfld)

Bathurst (NB)

Abitibi (Ontario & Quebec)

Sask/Man Near North

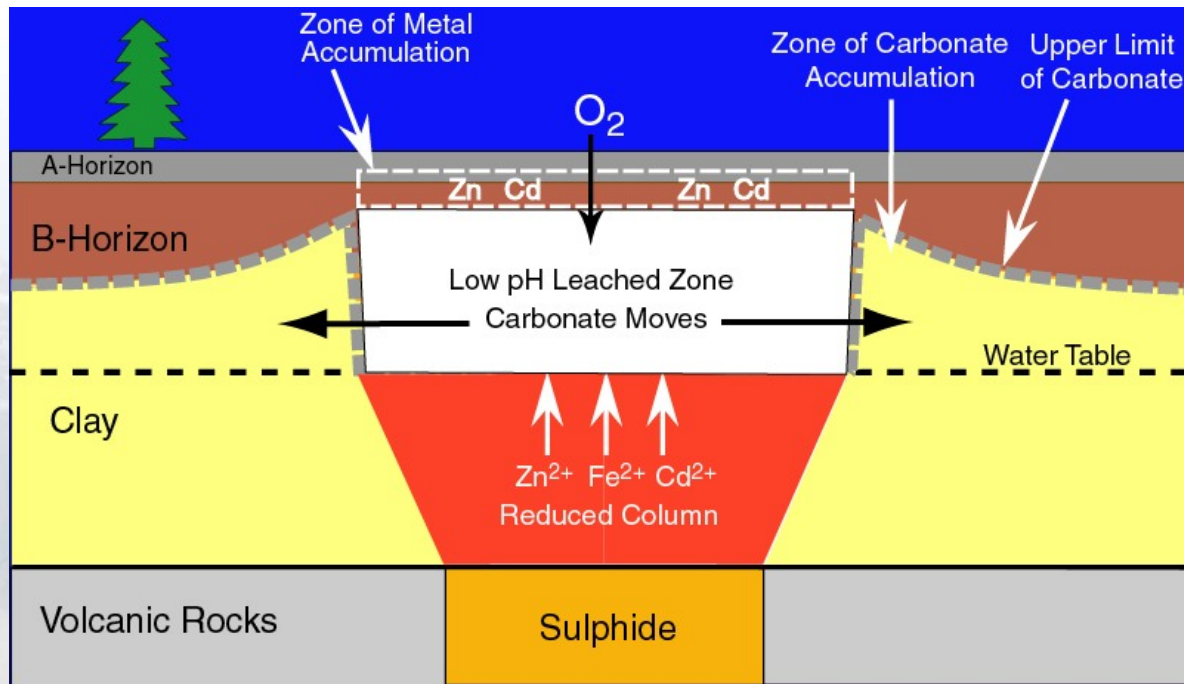
Kootenay-Highland V. (SE BC)





# Targeted Geoscience Initiative – Phase III

## Where's the thematic focus?



## “Deep Search”

*Innovation for mapping the next generation of hidden deposits*

Thanks to Stu Hamilton (OGS) and Gwendy Hall (GSC)





# Targeted Geoscience Initiative – Phase III

## Where's the student focus?

- Industry needs highly qualified people (*so do Survey's*)
- Need to ensure succession (*next generation ... that's you*)
- Experienced students to undertake graduate thesis work
- New recruits (*no previous experience required*)

*... and of course we are looking for active participation by your professors and thesis supervisors*





# Targeted Geoscience Initiative – Phase III

## Where's the student advantage?

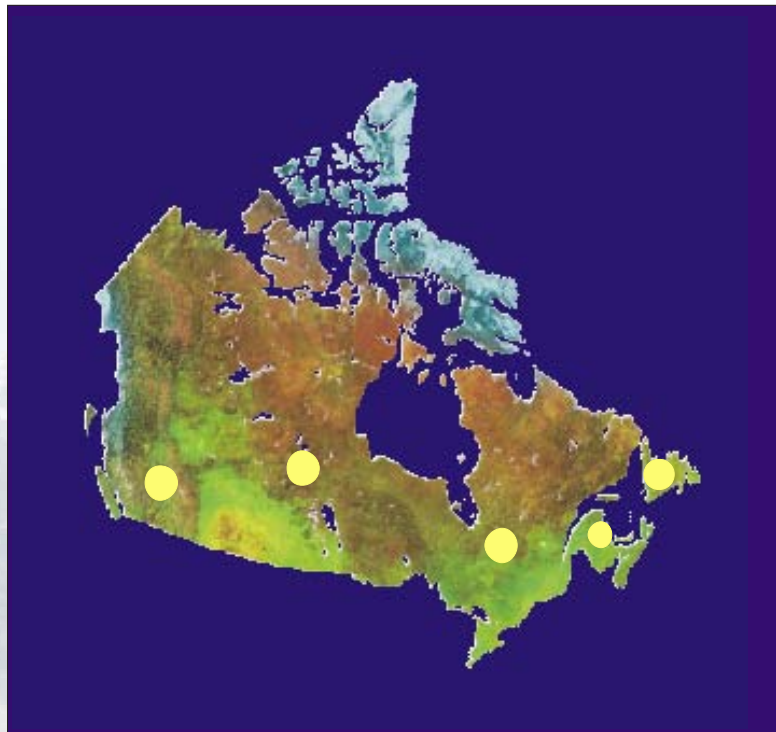
- \$\$\$'s ... you get paid for having fun! (\$10-12K/summer)
  - You learn a great deal beyond the classroom and field school
  - Graduate students get logistical and mentoring support
  - You get to see Canada!
- *Industry values Survey experience*





# Targeted Geoscience Initiative – Phase III

Where's the geographical focus?



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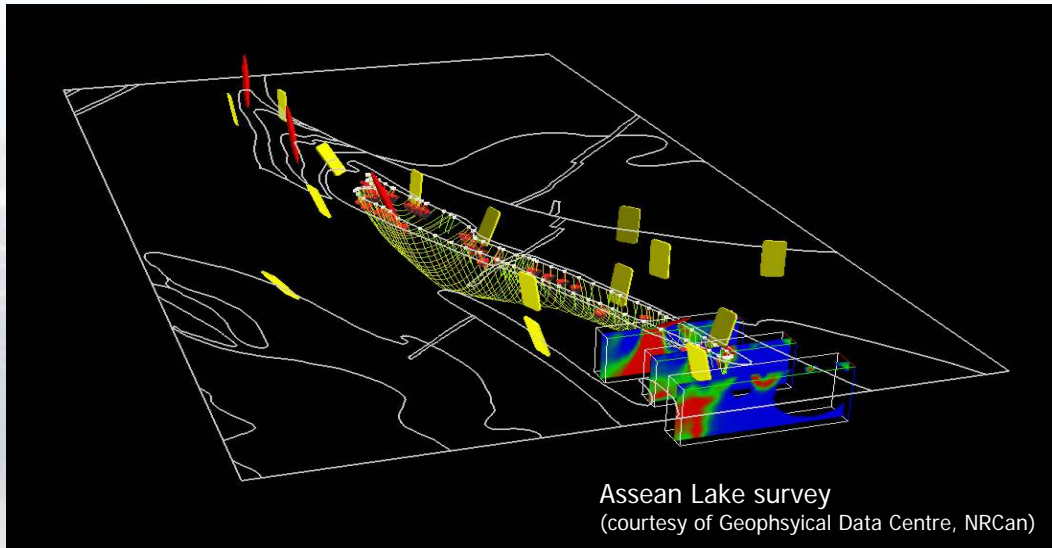
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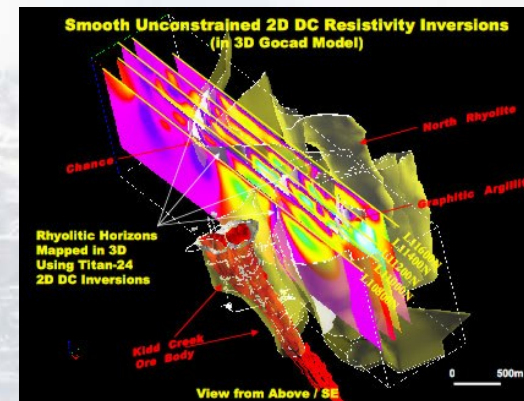
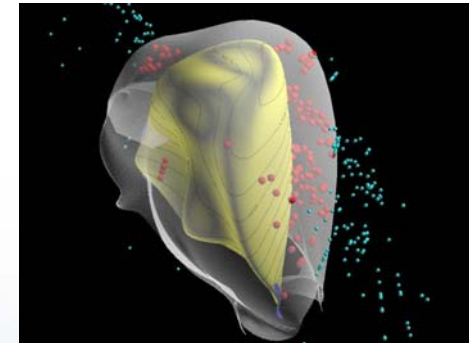


# Targeted Geoscience Initiative – Phase III

Projects ... what are they about?



Assean Lake survey  
(courtesy of Geophysical Data Centre, NRCan)





## Potential university contributions ...

### • Appalachians

- Mapping (Baie Verte Peninsula and Belt)
- Downhole geophysics (Buchans)
- Geological modelling (Buchans and Bathurst)
- Stable isotopes – alteration systems
- Biogeochemical vectoring
- GIS





## Potential university contributions ...

### • Abitibi

- Volcanology (Blake River & Chibougamau)
- Mineral deposits (Blake River [Horne] & Chibougamau)
- 3D modelling of the Noranda & Chibougamau camps
- Lithogeochemistry synthesis and modelling
- 3D IV dispersal patterns in multiple tills (Northern belt)
- Application of new surficial geochemistry vectoring methods





## Potential university contributions ...

### • Saskatchewan-Manitoba Near North

- Volcanology, stratigraphy, structure (Flin Flon)
- High resolution seismic (Flin Flon)
- Tectonic settings of Ni-PGE & VMS (Reindeer zone)
- Characterisation of “undifferentiated amphibolite” (Sask)
- Targeted IV mapping & regional integration
- Lithogeochemistry synthesis and modelling





## Potential university contributions ...

### • Kootenay Arc – Highland Valley

- Seismic reprocessing, downhole, image deposits?
- Basin instability and pulses of mineralisation
- Vectoring SEDEX through dispersal of pore waters
- Compilation and new mapping (Foreland Belt E of RMT)
- Isotopic “fingerprinting” of metallotects (Pb-Zn & Cu-Au)
- GIS synthesis of the Sullivan area





## Potential university contributions ...

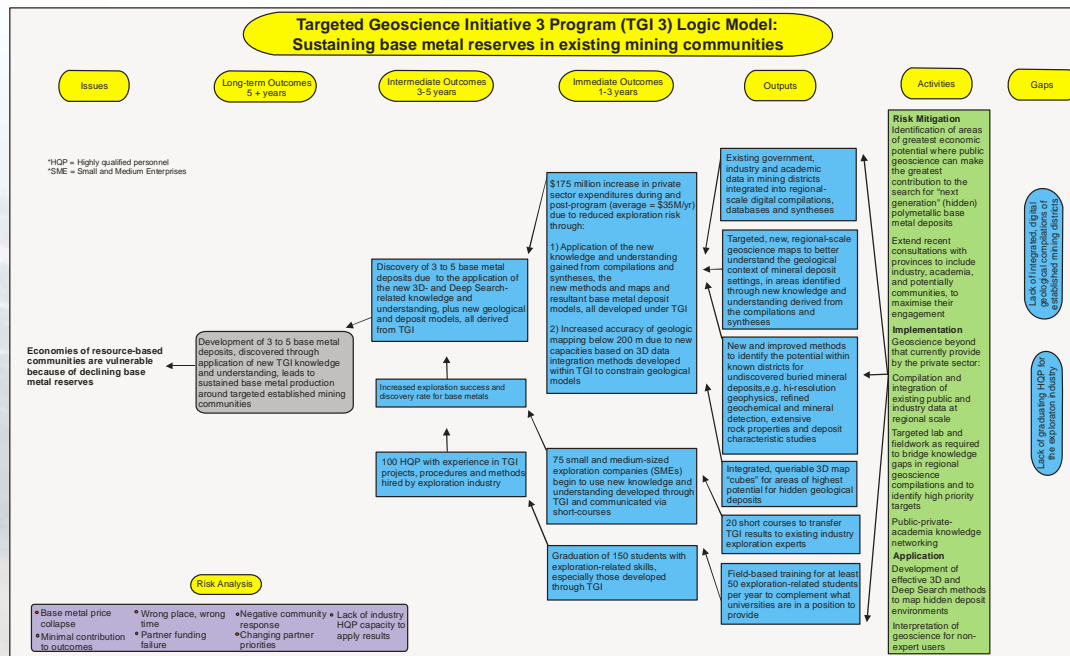
- **Deep Search** ... *method development & application*
  - Understanding EM response (UQAT, INCO centre?)
  - Vectoring using exhalites, alteration haloes & halogens
  - Stable isotopes and hydrothermal systems
  - Development of surficial vectoring methods (chem/m/h)
  - Development of seismic mode conversion imaging
  - Development of 2D & 3D mineral potential mapping





# Targeted Geoscience Initiative – Phase III

## Graduate theses ... new conditions and constraints



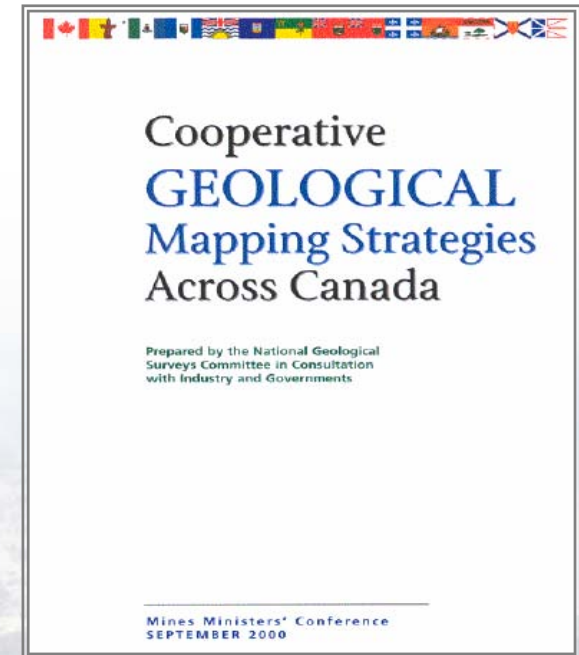
## Program Logic Model

*What does it mean?  
= Accountability!*





- A **National** public geoscience initiative proposed jointly by the National Geological Surveys Committee (NGSC)
  - To renew the public geoscience knowledge base that is one of Canada's **key competitive advantages** in attracting investment in **mineral and energy resource exploration**
  - To support the **responsible development of Canada's natural resources** for the benefit of all Canadians





# Targeted Geoscience Initiative – Phase III

## How do students get involved?

- **FSWEP ... for summer employment**
- **How to fill out an FSWEP application**
- **Multi-year hiring with the federal government**
  
- **Graduate students**
  - ... as above plus
    - **Grants & Contributions**
    - **NSERC scholarships**
- **Post-Doctoral Fellowships (PDF)**





# Targeted Geoscience Initiative – Phase III

## Who should you contact about projects?

Appalachians - *Neil Rogers* [nrogers@nrcan.gc.ca](mailto:nrogers@nrcan.gc.ca)

Abitibi Belt - *Benoît Dubé* [bdube@nrcan.gc.ca](mailto:bdube@nrcan.gc.ca)

Flin Flon - Creighton - *Sally Pehrsson* [pehrsson@nrcan.gc.ca](mailto:pehrsson@nrcan.gc.ca)

SE British Columbia - *Bob Anderson* [boanders@nrcan.gc.ca](mailto:boanders@nrcan.gc.ca)

"Deep Search" - *Wayne Goodfellow* [wgoodfel@nrcan.gc.ca](mailto:wgoodfel@nrcan.gc.ca)





# Targeted Geoscience Initiative – Phase III

**Who should you contact about the program?**

Program Manager – *Simon Hanmer* [shanmer@nrcan.gc.ca](mailto:shanmer@nrcan.gc.ca)

... or

*Kathryn Coyle* [kcoyle@nrcan.gc.ca](mailto:kcoyle@nrcan.gc.ca)

