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Environmental Geoscience program

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ENVIRONMENTAL GEOSCIENCE PROGRAM

The Environmental Geoscience program (EGP) is conducted by the Geological Survey of Canada, which is part of Natural Resources Canada. This research program studies how to distinguish the environmental effects of natural resource development from those produced by natural processes. The EGP develops new geoscience approaches to support the responsible use of Canada's natural resources through informed decision making.

CONSIDERATIONS

Natural resource development contributes to an increased standard of living for Canadians and keeps the economy strong.

The impact this development has on the environment is the focus of increased government and public attention.

To develop and manage extracting natural resources, proponents and public authorities need reliable, research-based geoscience information.

FOCUS

- Developing methods and techniques to assess the geoenvironmental baseline conditions of resource-rich or high-potential natural systems, with particular emphasis on environmental processes.
- Improving methods and increasing knowledge of geoscience for responsible management of environmental risks. This information contributes to better detection, understanding and modelling of the environmental impact and cumulative effects of natural resources development.
- Training and mentoring future researchers to increase the number of highly qualified personnel in earth sciences and natural resource development in Canada.

APPROACH

The EGP conducts research in areas that have high potential for economic development. The 2019–2024 research phase targets five main areas of research:

- Baseline characterization
- Biosphere, hydrosphere and atmosphere
- Cumulative effects
- Deep environments
- Emerging issues

In 2020, 13 projects and activities covered the following topics:

- Role of volcanoes in the global mercury budget
- Cumulative effects in the Ring of Fire area (northern Ontario)
- Dynamics of the Mackenzie River basin (northwestern Canada)
- Cumulative effects in the Cobalt watersheds (northern Ontario)
- Cumulative effects of unconventional resources development
- Induced seismicity
- Oil sands contaminant plumes
- Terrestrial oil spills
- Marine oil spills
- Disposal of dredged material at sea
- Permafrost degradation
- Geochemistry of permafrost contaminants
- Geological carbon storage

Study sites are selected based on their potential to answer the research questions. Research projects identify knowledge gaps and work with a special focus on issues that will provide a better understanding of the baseline conditions of natural systems. Projects are conducted in partnership with other federal, provincial and territorial government organizations, as well as academic and private sectors.

CONTACT

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