Position Statement on the Role of Professional Geoscientists in a Resilient Canada

Public Safety, Climate Resilience, and Evidence-Based Decision-Making

This position statement is intended to inform federal, provincial and territorial governments, Indigenous governments, industry leaders, regulators, and the public of the essential role of Professional Geoscientists in safeguarding Canadians and enabling evidence-based, climate-resilient decision-making. As Canada faces accelerating environmental change, infrastructure renewal, population growth, and a transition in energy and resource systems, sound public policy and investment decisions increasingly depend on rigorous geoscientific expertise.

Regulation of the geoscience profession protects public health, safety, welfare, and the environment for all Canadians. Where geoscience work is conducted in Canada, that work must be performed or supervised by a Professional Geoscientist licensed in the province or territory in which the work takes place. Through enforceable standards of practice, codes of ethics, and disciplinary processes, provincial and territorial geoscience regulators ensure that geoscientists are competent, ethical, and publicly accountable for their professional work.

Professional Geoscientists are accountable both to their regulators and to the public interest. This dual accountability—professional and societal—provides decision-makers and communities with confidence that geoscientific advice, analysis, and sign-off meet high standards of independence, integrity, and technical rigor.

Canada is experiencing rapid and compounding change driven by climate impacts, expanding infrastructure, resource development and transition, urban growth, and increasing competition for land and water. Canadians face growing risks from natural hazards, environmental degradation, contamination, cumulative effects on ecosystems, and long-term subsurface uncertainty. These are interconnected challenges that require integrated, forward-looking analyses.

The expertise of Professional Geoscientists is essential for identifying, evaluating, and managing risks related to permafrost thaw, coastal erosion, flooding, landslides, groundwater depletion and contamination, seismicity, wildfire-related slope instability, and extreme weather events. The expertise is relied upon for assessing key financial uncertainties in resource reserves on projects affecting the public. The work of Professional Geoscientists supports both the prevention of harm and the long-term resilience of communities, infrastructure, and natural systems.

Professional Geoscientists work collaboratively with engineers, planners, other environmental professionals, economists, and Indigenous governments and communities. They provide the geoscientific foundation required for climate-resilient land-use planning, infrastructure design, asset management, and emergency preparedness. Their contributions help avoid costly failures, reduce lifecycle risks, and protect public and private investments.

Professional Geoscientists engage with Indigenous governments and communities in ways that respect Indigenous rights, consent, and self-determination. Where appropriate and with permission, they work in partnership to connect Indigenous knowledge systems with geoscience, supporting co-developed approaches to land stewardship, guardianship, resource co-management, and culturally informed decision-making.

Through their professional practice, Professional Geoscientists mitigate and manage risk associated with rapid environmental and societal change by:

- Conducting climate-informed hazard assessments to support the planning, approval, and regulation of major projects;
- Evaluating geotechnical and geoscientific risks associated with permafrost degradation, erosion, and ground instability affecting critical infrastructure such as transportation corridors, energy systems, pipelines, and northern community foundations;
- Supporting water security planning, including groundwater recharge assessment, source-water protection, drought resilience planning, and cumulative aquifer impact modelling;
- Carrying out environmental contamination assessments, contaminated-site investigation, remediation design, and long-term risk management;
- Designing and evaluating carbon capture and storage, carbon mineralization, and other natural climate solutions that rely on detailed subsurface characterization and risk analysis;
- Supporting mineral and energy resource development and transition across the full project lifecycle, including responsible exploration, uncertainty analysis, environmental impact assessment, lifecycle and closure planning, and post-closure monitoring;
- Contributing to emergency management, disaster response, and post-event analysis for flooding, landslides, earthquakes, wildfires, and other geohazards to support safe recovery and rebuilding;
- Informing land-use and regional planning in growing and constrained regions through assessment of soil and terrain stability, aggregate availability, subsurface conditions, and long-term environmental impacts; and,
- Partnering with Indigenous governments and communities to support land stewardship, resource co-management, and decision-making grounded in both Indigenous knowledge and geoscience.

Professional Geoscientists maintain and enhance their competency through mandatory continuing professional development and adherence to evolving standards of practice. Licensing and regulatory oversight ensure that those offering geoscience services to governments, industry, and the public are qualified to address complex, high-consequence decisions.

As Canada navigates accelerating climate impacts, major infrastructure investment, and resource system transformation, the early and appropriate involvement of licensed Professional Geoscientists is essential. Their expertise, exercised under enforceable professional and ethical standards, supports informed decision-making that reduces risk, protects communities, advances reconciliation, and builds long-term resilience and sustainability for all Canadians.

Call to Action

To realize a more resilient Canada, governments, Indigenous governments, regulators, industry leaders, and public institutions should intentionally and systematically integrate Professional Geoscientists into policy development, infrastructure planning, project approval, and regulatory oversight at the earliest stages of decision making. This includes requiring appropriately licensed Professional Geoscientists to lead or formally sign off on geoscientific assessments related to natural hazards, climate impacts, water security, subsurface and at-surface contaminant management plans, land use planning, resource development, remediation, and ensuring that their professional judgment is respected, independent, and clearly documented. Early engagement of regulated geoscience expertise reduces risk, avoids costly failures, and strengthens public confidence in decisions affecting communities and the environment.

Decisionmakers are further encouraged to support strong, independent geoscience regulation; invest in geoscience data, monitoring, and capacity; and foster collaborative, respectful partnerships among Professional Geoscientists, Indigenous governments and communities, engineers, planners, and other professionals. By doing so, Canada can better anticipate and manage the complex challenges associated with climate change, infrastructure renewal, and resource system transformation, while advancing reconciliation, safeguarding the public interest, and building long term resilience and sustainability for present and future generations.

Approved by Board of Directors : April 23, 2026