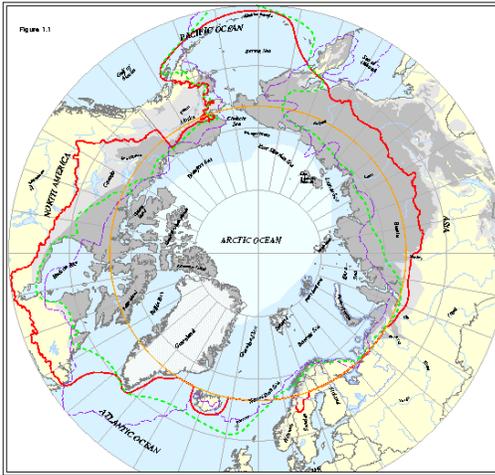


North-Arctic

The “north” generally includes both the Arctic and subarctic boreal regions of Canada, often delimited by the southern limit of permafrost. It is comprised of four distinct geographic and ethno-cultural areas: the Eastern Arctic (Nunavut and Nunavik in northern Quebec), the Western Arctic, the Boreal Forest and the Atlantic Coast. Internationally, Canada shares issues and opportunities with 8 circumpolar countries, and the north figures in the objectives and responsibilities of many southern-based interests as well.

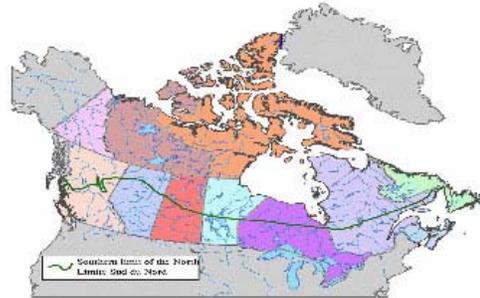


Courtesy of Northern View

The north is characterised by several different ecosystems, and by a variety of cultures and governance arrangements, including local, national, and multilateral. However, sparse settlement over vast areas, and the need to weave regional development and cultural (particularly aboriginal) strength and autonomy together are common throughout the north. Underlying region-specific northern issues are the global issues of climate warming, and the long range transport of southern environmental contaminants through ecosystems into northern residents' food.

The Speech from the Throne identified the north as an area of key priority. The government will work on

solutions for Aboriginal challenges through, for example, establishment of an independent Centre for First Nations Government and renewed funding for the Aboriginal Human Resources Development Strategy.¹ The Government also promised to “develop a Northern strategy, ensuring that economic development related to energy and mining is brought on-stream in partnership with northern Canadians, based on stewardship of [Canada’s] most fragile northern ecosystems”.²



Courtesy of NRCan

“Hot” Issues:

The northern issues that need to be addressed strategically can be grouped as follows:

- Social Issues: connectivity, health, education, culture and language, economic engagement.
- Environment and Development Issues: climate change; long range transport and biological concentration of pollutants; wildlife and habitat; sustainable exploration and management of economic resources.
- Political Issues: northern self-government and participation in regional, national and international governance; sovereignty, defence and security (Northern Passage).

¹ The Budget Speech 2004, p. 15 and Speech from the Throne, February 2, 2004, p. 10

² Speech from the Throne, February 2, 2004, p. 18

Key players:

Territorial Governments and planning bodies (Government of Nunavut <http://www.gov.nu.ca>, Nunavut Planning Commission <http://npc.nunavut.ca>, Governments of the Northwest Territories <http://www.gov.nt.ca>, and Yukon <http://www.gov.yk.ca>) are the central players in programs and projects involving sustainable northern development, whether social, economic or environmental.

Indian and Northern Affairs Canada (INAC) broad role in the North includes settling and implementing land claims, negotiating self-government agreements, advancing political evolution, protecting the environment and fostering leadership in sustainable development domestically and among circumpolar nations. <http://www.ainc-inac.gc.ca>

The **Canadian Polar Commission** (CPC) is Canada's lead agency in the area of polar research. It monitors, promotes and disseminates knowledge of the polar regions; contributes to public awareness of the importance of polar science to Canada; enhances Canada's international profile as a circumpolar nation; and recommends policy directions to government. <http://www.polarcom.gc.ca>

Natural Resources Canada (NRCan, <http://www.nrcan-rncan.gc.ca>) helps shape the contributions of the natural resources sector to the Canadian economy, society and environment. The Department promotes connectivity for geographic information applications (**GeoConnections**, <http://www.geoconnections.org>), and research into climate change and other issues by the **Canada Centre for Remote Sensing** (CCRS, <http://www.ccrs.nrcan.gc.ca>). NRCan's **Sustainable Communities Initiative** (SCI) builds capacity in rural, coastal, Aboriginal and northern communities that wish to take control of their future, by providing them with modern mapping technologies to make informed decisions for sustainable development. http://www.sci.gc.ca/text/bl_en.html

Environment Canada's (<http://www.ec.gc.ca>) mandate includes the quality of the natural environment, including water, air and soil quality, migratory birds and species at risk, Canada's water resources, meteorology, the Canada - US International Joint Commission relating to boundary waters, and federal environmental policies and programs. The **Meteorological Service of Canada** (MSC, <http://weatheroffice.ec.gc.ca>) and its branch the **Canadian Ice Service** (<http://www.cis.ec.gc.ca>), and the **Canadian Wildlife Service** (http://www.cws-scf.ec.gc.ca/index_e.cfm) have strong interest in the North. MSC maintains air quality research stations in the high arctic while the Ice Service is the leading authority for information about ice in Canada's navigable waters.

The **Department of National Defence** (DND) is responsible for Canada's military presence in the North, the protection of Canadian sovereignty and the defence of our coasts. <http://www.forces.gc.ca>

The **Canadian Coast Guard** (CCG), equipped with six ice-breaking ships, plays a vital role in the short summer transportation period when the ships focus on marking and clearing routes for supply ships, as well as other assistance that may be required. <http://www.ccg-gcc.gc.ca>

The **Royal Canadian Mounted Police** (RCMP) maintains units in most communities. <http://www.rcmp-grc.gc.ca>

The **Arctic Council** is an intergovernmental forum of the 8 circumpolar countries, with programs that address common concerns and challenges faced by the Arctic governments and the people of the Arctic. <http://www.arctic-council.org>

European Space Agency (ESA, <http://www.esa.int>), under the aegis of GMES, has begun to play a visible role as sponsor of "Northern View", a Canadian-led project to use space assets better in support of northern issues. <http://www.northernview.org>

Inuit Tapiriit Kanatami (ITK) is the most active and representative grouping of Inuit interests in Canada. <http://www.tapirisat.ca>

The **Inuit Circumpolar Conference** (ICC), an international non-profit organization, represents approximately 150,000 Inuit of Alaska, Canada, Greenland, and Chukotka (Russia). The ICC strengthens unity among Inuit, promotes Inuit rights and interests internationally, develops long-term policies that safeguard the Arctic environment, and seeks full Inuit partnership in the political, economic, and social development of circumpolar regions. <http://www.inuitcircumpolar.com>

Regional Development Corporations and Associations: for example, under land claim settlements (three major settlements and one agreement in principle), Inuit have formed Regional Associations to represent their interests, and Regional Development Corporations to manage natural resources.

The **Canadian Boreal Initiative** convenes a full range of conservation organizations, First Nations, industry and other interested parties to link science, policy and sustainable development activities in Canada's boreal forest. <http://www.borealcanada.ca>

Space and the North:

Space infrastructure, by virtue of its tremendous scope and reach, may offer excellent means to support northern objectives. However, the approaches that make space technology organizations successful in southern and mainstream areas continue to challenge their ability to link effectively with users for northern objectives. While progress is being made in adapting space applications to northern concerns through dedicated programs such as the European Space Agency's Northern View, much remains to be done. Some areas offering strong potential include:

- Social Issues: connectivity (broadband satellite access to Internet); telehealth, tele-education;
- Environment: climate change, environmental pollution, wildlife habitat mapping and wildlife monitoring;
- Development: resource management and exploration, transportation infrastructure (roads or airstrips);
- Sovereignty and defence: wide area surveillance and identification and tracking of vessels, mapping.



Environmental Mining Council in BC

Issues for the CSA:

- Increasing understanding among the space community of northern ways of life and decision-making, interests, capabilities, and needs, as they may relate to space technology;
- Increasing awareness among northern people and interests of space technologies' potential for helping address northern issues cost-effectively;
- Effective demonstration of the potentials, in partnership projects that will make real ongoing contributions to northern well-being;
- Working with northern governments, potential space technology users, and other organisations, to encourage development and implementation of the intermediate steps (e.g. broadband internet access, other capacity-building, agreement on standards for data sets) that are needed to enable space applications to fulfill their potential for the north;
- Benefiting from momentum for northern space applications that will be generated by the designation of 2007-08 as the 3rd International Polar Year;
- Need to make the business case for a substantial program to implement space technology and applications for the whole range of northern needs and interests.



Courtesy of Transport Canada

Related themes:

Biodiversity and Ecosystem Conservation
Climate Change & Variability
Coastal and Marine Ecosystems
Energy and Mineral Development
Environmental Factors Affecting Health
International Development
Security and Surveillance
Sustainable Forestry
Industry and Industrial Policy
Universities/Academia and R&D
Data Policy
Engaging EO Users

References:***Basic Information and Contacts:***

Athena Global, *Space and the North: Space Assets and Sustainable Development in the Canadian North*, unpublished, May 2004.

Summary Notes from the "Space & the North" Workshop, March 2004.

Latest update:

Indian and Northern Affairs Canada (INAC) http://www.ainc-inac.gc.ca/wn/index_e.html

Canadian Polar Information Network <http://www.polarcom.gc.ca/english/cpin/about.html>

Closer look:

YOUNG, Oran, *Emerging Priorities for Sustainable Development in the Circumpolar North*, A background paper prepared at the request of the Canadian Department of Indian Affairs and Northern Development for the Circumpolar Conference on Sustainable Development in the Arctic, Whitehorse, 10-12 May 1998. <http://www.dartmouth.edu/~arctic/articles/whitehorse.html>

Arctic Circle <http://arcticcircle.uconn.edu/NatResources/> a list of papers providing background as well as information on natural resource management, environment, northern development and global economy and the political dimension with regard to the Arctic.

Northern View (Space and the North): <http://www.northernview.org/>