

their relations and changes. Geomatics is the science and technology of collecting, analyzing, and applying geographic information. By bringing together expertise in surveying, mapping, remote sensing, geographic information systems (GIS), and the Global Positioning System (GPS), geomatics tools create detailed, yet understandable, pictures of the physical world and humankind's place in it.

Earth science information is used to support public sector activities, as well as investment decisions and operations by the private sector at home and overseas. In Canada, the earth sciences are characterized by partnerships, networks, and strategic alliances among governments, universities, and the private sector. The cooperative approach also extends to the international community. It is motivated by the increasingly complex nature of issues and the importance of synergy and collaboration in the national and international science and technology community, as well as by resource constraints.

The Government of Canada is responsible for maintaining a national coordinate system that serves as a reference for all mapping, charting, navigation, boundary demarcation, crustal information, and other georeferencing needs. Learn more at <http://www.geocan.nrcan.gc.ca>

SUSTAINABLE LAND AND RESOURCE MANAGEMENT

The earth sciences contribute to sustainable land and resource management by providing the basic knowledge and tools necessary to make wise land use decisions; by contributing to the sustainable development of Canada's agricultural, forestry, mining and energy, and groundwater resources; by providing insight into key environmental issues related to land resources, such as climate change, metals in the environment, and the conservation of biological diversity; and by improving the understanding of natural hazards as well as by mitigating the impact of natural hazards and emergencies. Efforts to enhance the capacity of Canada's Aboriginal and rural communities related to the earth sciences and related technologies also contribute to sustainable land management in Canada.



RADARSAT-2. Planned for a 2001 launch.

Applying Earth Sciences to Sustainable Development

Agriculture

Remote sensing has many useful applications in agriculture. It is used to assess crop type classification, crop condition assessment, and crop yield estimation and to map soil characteristics and soil management practices. Radar data collected by satellite are also useful to monitor drought or flooding events that can severely impact crop productivity. This information is valuable to decision makers and analysts within government agencies, grain marketing bodies, agricultural retailers, and insurance companies.

Remote sensing is the science of acquiring information about the earth's surface without actually being in contact with it. Learn more at <http://www.ccrs.nrcan.gc.ca>