support stewardship practices aimed at reducing environmental impacts and increasing the efficiency of natural resource development and use. In addition, GPS and GIS assist wildlife management, including the protection of species at risk. GPS can track the movement of wildlife, from individual animals to entire herds. GIS technology is used to map wildlife movements, as well as changes in wildlife habitat (e.g., wetlands and forests). This information is usefully applied in land use decision making to avoid land use practices that destroy or degrade wildlife habitat.

Natural Hazards and Emergencies

Natural disasters occur regularly in Canada, sometimes with devastating effects. They include earthquakes, floods, landslides, shifts in permafrost distribution, tornadoes, wildfires, and avalanches. Natural hazards constrain land use and economic development and jeopardize public safety. The earth sciences play a role in natural hazard monitoring, assessment, and research. They also contribute to mitigation policies, information services, and emergency response mapping.

In conjunction with partners across the country, the Government of Canada maintains and operates national networks, observatories, and surveillance programs on natural hazards and emergencies. These mechanisms provide risk assessments and information for policy, risk management, and mitigation advice. They are also used to alert appropriate provincial, national, and international agencies and the Canadian public to imminent dangers and assist in the response to disasters and emergencies by providing near real-time assessments of situations as they develop.

Knowledge of basic geological processes and conditions is essential to managing aquifers in a sustainable manner; assessing and addressing natural hazards, such as landslides and earthquakes; evaluating changes in environmental quality, such as those related to the release of metals in the environment; and studying the climate system, which is important for addressing climate change. Learn more at http//www.nrcan.gc.ca/gsc/index_e.html

Earth science organizations in Canada provide vital information for land use decision makers, including work related to slope stability, flooding, and permafrost. Geoscientists are studying landslides to determine their cause and effect with a view to identifying hazard areas and thereby contributing to safe land management practices in sensitive areas. For example, a major inventory of landslides has been compiled for most of Yukon. Because regions where a significant number of landslides have occurred are also the most susceptible to future landsliding, this compilation will help identify hazardous areas. It will be of benefit in the planning of transportation and pipeline routes and coastal facilities, and in the assessment of environmental risk.