

*The Climate and Atmospheric Research Directorate of the Atmospheric Environment Service is responsible for monitoring the climate and for conducting research on the impacts of climate change and climate variability. The Directorate is continually seeking to improve upon global circulation models in order to increase our understanding of global change, thereby ensuring that decisions are supported by the best science available.*

The Canadian Global Change Program is the national focal point for global change activities in Canada. It represents a multidisciplinary network for co-ordinating research and communicating results, ideas, and recommendations to the policy and research communities.

Collaboration with urban agencies, such as the Federation of Canadian Municipalities, is also being undertaken to advance municipal environmental reporting and networks, and to develop urban sustainability indicators.

The federal Environmental Effects Monitoring program, which is being created in partnership with industry and provincial governments, will use an ecosystem approach to assess, predict, and mitigate the potential ecological impacts of effluent discharges from pulp and paper and mining operations on recipient aquatic ecosystems. These efforts are critical for establishing a scientific rationale for future policies supporting sustainable development.

Remote sensing techniques are important for the collection and interpretation of suitable environmental data since much of Canada is inaccessible for direct and continuous monitoring. The techniques to monitor bioproductivity of aquatic systems are being improved. Remote sensing will assist Canada in detecting changes in sustainability of natural resources.

## **Ecological Monitoring and Assessment Network**

Canada has established the co-operative multi-agency Ecological Monitoring and Assessment Network (EMAN), including the ecological science co-operatives mentioned in Part II, Section I. This is a broadly based network involving partners and agencies co-operating on various aspects of ecosystem research and monitoring. These partners traditionally have often not interacted in project planning, or in the integration, synthesis, and interpretation of their results.

EMAN uses a consultative process for setting goals, objectives, and deliverables for the network with a focus on understanding what is changing in Canadian ecosystems and why. This process also provides the framework for participation, sets standards and monitors their effectiveness, and facilitates communication within and among ecozones, and at national and international levels.

Four major issues (climate change, biodiversity change, toxic effects, and UV-B impacts) drive the network at the national level. The severity and impact of these issues varies with the ecozone, and in some, local issues may have greater priority, e.g., ecotourism effects. Thus, there is also an ecozone-level planning process for addressing local issues and priorities, which involves consultation with and feedback from local stakeholders. EMAN is co-operating with the Canadian interagency network, actively supporting environmental indicator development and national reporting programs.