

PART II, SECTION III

SCIENCE FOR SUSTAINABLE DEVELOPMENT

Strengthening the Scientific Basis for Sustainable Management

In support of its commitment to sustainable development, Canada is promoting numerous scientific partnerships among federal departments and agencies, and with provincial and local governments, universities, industry, and Aboriginal groups. To that effect, deputy ministers from federal resource departments are elaborating plans for a consistent approach to science. A broad spectrum of Canada's efforts in research use an ecosystem approach, which includes the alliance of economic, social, and environmental criteria in decision making.

Canadian research and development provides the knowledge base required to tackle the major environmental issues facing Canada, from climate change and toxic contamination to biodiversity and ecosystem management. Activities include:

- research to detect environmental problems or assess the scale of issues such as climate change, contaminant levels in fish, and acid rain deposition effects
- scientific assessments to support regulation and monitor compliance at home and allow Canada to contribute constructively to international issues such as stratospheric ozone depletion and the conservation of forests and biodiversity
- research and monitoring to provide advice to Canadians, such as health and weather warnings
- economic research to address major issues such as full-cost accounting, inclusion of natural stock in gross domestic product calculations, and the development of economic instruments to manage environment and economy interactions
- social, economic, and scientific analyses to help create sustainable communities or model forests, e.g., where new practical approaches can be applied and tested to manage ecosystems and maintain biodiversity
- development of science-based indicators of progress toward sustainability

Consortia of all orders of government and of universities, communities, and the private sector have developed strategies to conserve and restore regional areas through a series of

To optimize quality of life and ecosystem stability and diversity in the long term, we must understand the functioning of natural ecosystems and be able to predict how they will react to stress. This requires observation, monitoring, experimentation, synthesis, and modelling.