

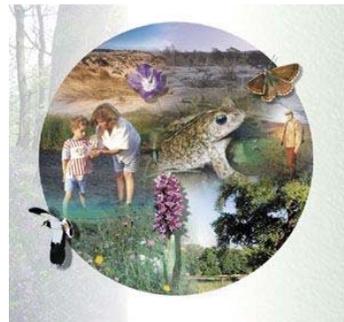
Biodiversity & Ecosystem Conservation

Biodiversity and ecosystems sustain each other. They are the living natural capital on which human beings, as one species among others, depend for existence and well-being. Biodiversity and ecosystems are the natural basis for the development of sustainable resource uses, including forestry, farms, renewable energy, urban land use, fisheries and other coastal & marine uses.

Canada's National Round Table on Environment & Economy has developed indicators to include natural capital along with Gross National Product (GNP) in Canada's official National Accounts.

Proactive programs to conserve biodiversity include research and management for wild populations and habitats, protected areas, large ecosystems such as Great Lakes, grasslands, forests, wetlands, deserts, major rivers and estuaries, oceans, and more sustainable resource practices. They also include planning, monitoring and enforcement related to land, sea and resource uses, environmental assessment, pollution and species at risk.

The need for conservation action is urgent, nationally and globally. The last two centuries have seen increasing rates of depletion of natural capital, with resulting changes increasingly evident even at global levels, such as climate change, large ecosystem fragmentation and degradation, and species extinctions. There is now a higher level of multilateral and national fora and talk for conservation, but the negative momentum is as yet only barely affected.



Courtesy of Wildlife UK

“Hot” issues:

Images of Earth from space have influenced perceptions for decades, but the technical capacity for practical conservation applications (high resolution, hyperspectral optical sensors, multipole radar, powerful and user-friendly interpretive applications, decreasing costs) is only now at the edge of a rapid increase, globally and in Canada.

The Canadian space sector has an advantage in certain space technology niches (e.g. radar sensing). The Canadian conservation sector is advanced in multi-partner programs, and respected by peers for know-how. There is a serious gap in common understanding and applications between these sectors.

Conservation issues that have to be addressed in the short, medium and long term include:

- species at risk – populations; habitats;
- protected areas – terrestrial/ marine;
- alien invasive species;
- public, community and private intellectual property in elements of natural capital, and in knowledge about it;
- climate change – temperature and moisture regimes – geographic shifts of ecosystem characteristics;
- bio-prospecting;
- pollution - toxic chemicals – bioaccumulation;
- marine species and ecosystems; boreal forest ecosystems and species;
- sustainability of resource uses and practices – alternatives; managing the material, energy and spatial efficiency of demands on biodiversity and ecosystems;
- natural capital in national accounts;
- ecological integrity, ecosystem management and resilience. – practical applications of the principles;
- characterising and dynamic mapping of ecosystems – terrestrial, freshwater and marine, coastal.

Key players:

International:

UNEP Secretariat for the Convention on Biological Diversity: The Convention sets out commitments for maintaining the world's ecological underpinnings as we go about the business of economic development, and establishes three main goals: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits from the use of genetic resources. <http://www.biodiv.org/default.aspx>

UNESCO World Heritage Convention: The Convention's primary mission is to define and conserve the world's heritage, by drawing up a list of sites whose outstanding values should be preserved for all humanity and to ensure their protection through a closer co-operation among nations. <http://whc.unesco.org>

The **Arctic Council** is a high-level intergovernmental forum that provides a mechanism to address the common concerns and challenges faced by the Arctic governments and the people of the Arctic. <http://www.arctic-council.org/index.html>

The **North American Commission for Environmental Cooperation (CEC)** is an international organization created by Canada, Mexico and the United States under the North American Agreement on Environmental Cooperation (NAAEC). The CEC was established to address regional environmental concerns, help prevent potential trade and environmental conflicts, and to promote the effective enforcement of environmental law. The Agreement complements the environmental provisions of the North American Free Trade Agreement (NAFTA). <http://www.cec.org/home/index.cfm?varlan=english>

Canadian:

Fisheries and Oceans Canada is the lead federal government department responsible for developing and implementing policies and programs in support of Canada's economic, ecological and scientific interests in oceans and inland waters. This mandate includes responsibility for the conservation and sustainable use of Canada's fisheries resources while continuing to provide safe, effective and environmentally sound marine services that are responsive to the needs of Canadians in a global economy. <http://www.dfo-mpo.gc.ca/index.htm>

Environment Canada's **Canadian Wildlife Service** is responsible for wildlife matters that are the responsibility of the federal government. This includes the protection and management of migratory birds and nationally important wildlife habitat, endangered species, research on nationally important wildlife issues, control of international trade in endangered species, and international treaties. http://www.cws-scf.ec.gc.ca/index_e.cfm

NRCan's **Canadian Forest Service** promotes the sustainable development of Canada's forests and competitiveness of the Canadian forest sector. http://www.nrcan-rncan.gc.ca/cfs-scf/index_e.html

Parks Canada protect and present nationally significant examples of Canada's natural and cultural heritage, and foster public understanding, appreciation and enjoyment in ways that ensure the ecological and commemorative integrity of these places for present and future generations. http://parkscanada.pch.gc.ca/default_flash.html

The **Ecological Monitoring and Assessment Network (EMAN)** is made up of linked organizations and individuals involved in ecological monitoring in Canada to better detect, describe, and report on ecosystem changes. <http://www.eman-rese.ca/eman>

Provincial, territorial agencies

Many NGOs, some private companies.

Related themes:

Climate change & Variability
Engaging EO Users
Data policy
Coastal and Marine Ecosystems
North/Arctic
Great Lakes – St-Lawrence

References:***Basic Information:***

European Centre for Nature Conservation <http://www.ecnc.nl>

The website of the Convention on Biological Diversity offers information on concepts, policy, and decisions. It has the careful diplomatic style of international agreements, but is information-rich <http://www.biodiv.org>

Latest update:

Conservation International <http://www.conservation.org/xp/CIWEB/home>

The International Institute for Sustainable Development (IISD) provides a detailed reporting and updating service on international meetings, negotiations and programs on biodiversity (and sustainable development), as well as clearly articulated viewpoints <http://www.iisd.ca/> and <http://www.iisd.org>

Closer look:

CWS-SARA Registry website http://www.sararegistry.gc.ca/default_e.cfm

Space and World Heritage: <http://whc.unesco.org/venice2002/news/space.htm>