

**Issue Scan: Technology and Innovative Service Delivery
Innovative Practices Report**



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***Environment Canada
Commercialization and Management Practices Branch
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Introduction

In the summer of this year, the Commercialization and Management Practices Branch (CAMP) was asked to conduct a study on behalf of Environment Canada's (EC) Citizen Engagement and Service Council. The focus of the study was to identify and raise awareness of how the Department is using technology and partnerships in innovative ways to support service delivery and citizen engagement. In particular, we looked at connectedness approaches that enhance information and knowledge flows between EC and citizens/communities.

All EC services and regions were included in the study scope. During the course of the study, we visited four of the Department's five regions and spoke with over one hundred managers, community outreach officers, information technology specialists and various other EC employees. As well, we held discussions with several federal departments regarding horizontal connectedness initiatives.

The study findings were presented to the Citizen Engagement and Service Council on 29 November 1999, and are contained in the deck titled *Issue Scan: Technology and Innovative Service Delivery in EC – Final Report*. This report is a second deliverable from the study supporting the overall findings of the deck. It provides brief descriptions of over fifty initiatives which demonstrate innovative approaches to using technology and/or partnerships to improve service delivery and/or citizen engagement.

The initiatives noted in this document were identified to us by departmental staff and are not the only innovative initiatives currently underway in EC or other departments. The highlighted initiatives are representative of emerging patterns in the way in which technology and partnerships are being employed by services, regions, and other government departments to enhance the flow of knowledge and information between the Department and citizens. Initiatives marked with an asterisk (*) are interdepartmental, the remainder are entirely or primarily departmental.

We have grouped the initiatives under four themes related to the overall objective of enhanced connectedness. These headings are:

- planning for connectedness;
- making information easy to find;
- developing tools for citizens; and
- organizing our effort.

As well, you will note that we have provided a contact name and telephone number for each initiative and, where available, the URL to allow you to visit the associated web site. The home organizations of external (non-EC) contacts are noted in parentheses.

1. Planning for Connectedness

Connectedness initiatives can evolve in a haphazard manner without being placed in the context the Department's broad communications and outreach objectives. In some instances, the focus of connectedness initiatives is not driven by business objectives, but rather a desire to experiment with new approaches to communications available through emerging technology. We noted several instances, however, where those designing initiatives had demonstrated a strategic approach to connecting with citizens and communities. The use of technology and partnerships was in the context of enabling functions in support of defined goals related to the effective exchange of knowledge and information with targeted audiences.

Beyond EC, there are several horizontal federal initiatives which facilitate and support multi-departmental connectedness. While the Department has participated in some of these initiatives, e.g. Service Canada and Canadian Rural Partnerships, they remain to a large extent an untapped source of support, expertise and funding.

AEP DATA ACCESS PROJECT

The AEP generates data in many forms including meteorological and hydrological measurements, research data sets and remote sensed data. As the holder of these data sets, AEP has a responsibility for its stewardship on behalf of all Canadians. The AEP is undertaking a broad review of the use and accessibility of its data looking to increase its value and benefits to Canada. The AEP data access project is examining the range of AEP data sets for determining what ways their accessibility can be enhanced. Of particular interest in this project are the data requirements of various target audiences including the academic/research community, private sector commercial enterprises and the general public.

Issues being addressed in this project include consideration of AEP data policies, review of access channels, the impact of cost recovery activities, partnership agreements for data collection and impact on international reporting obligations.

Contact: Joesph Shaykewich

(416) 739-4978

AEP DISSEMINATION STRATEGIES

A 1997 study on information dissemination systems included a recommendation to move away from owned and operated technologies. It called for the enhanced use of the Internet, especially to “reach out and touch” the target audiences and gradual migrate to digital “L-band” radio.

The AEP has concluded that it is at a significant crossroads with respect to many of its current dissemination systems. It is a priority to strategically evaluate and plan for the long term health of these systems or to migrate to other technologies/approaches. Issues being addressed include relationships with the media, the future of the ATAD network (automated telephone answering devices), and strategic use of the Internet.

Contact: Joesph Shaykewich (416) 739-4978

ATLANTIC COASTAL ACTION PROGRAM (ACAP)

The Atlantic Coastal Action Program (ACAP) is a means to empower local communities to address their own environmental and development challenges. ACAP involves thirteen sites across Atlantic Canada - two in Newfoundland, two in Prince Edward Island, four in Nova Scotia, and five in New Brunswick. Each site has formed an incorporated, non-profit organization with its own Board of Directors, and each site maintains a full-time paid coordinator and an office. While Environment Canada provides annual seed funding, community stakeholders contribute most of the resources through volunteer labour, in-kind contributions, and financial support.

In the past, the development of government-formulated coastal zone management plans has met with limited success since these plans were not community driven. The ACAP process represents a great step forward in the involvement of community interests. Indeed, the fundamental basis for ACAP is the recognition that local communities are the best and most effective proponents for effective action leading to sustainable development.

ACAP is notable because of its environmental and community-development successes achieved through the innovative use of partnerships, leveraging of EC funds, linking and coordinating efforts of all four business lines, and developing closer links between the newly enlarged network and EC scientists in order to strategically employ science to address ecosystem issues.

URL: http://www.ns.ec.gc.ca/community/acap/index_e.html

Contact: Larry Hildebrand (902) 426-9632

BIOSPHERE – ECOWATCH NETWORK

The Montreal Biosphere is dedicated to increasing knowledge of the environment and aquatic ecosystems, particularly those of the St. Lawrence River and the Great Lakes. While it is a key instrument in disseminating scientific knowledge, the Biosphere has the broader mission of changing attitudes and values and encouraging visitors to take action.

The Ecowatch Network is composed of individuals, schools, non-government organizations, municipalities and firms involved in conserving water and ecosystems. The Biosphere acts as a “warehouse/broker” for information collected by the Ecowatch Network and provides ecowatchers with access to the Network’s information system.

As a result of this systemic design, the Ecowatch Network benefits immeasurably from: the pooling of scientific information and popular experiences; the building and enrichment of databases on water in the St. Lawrence and the Great Lakes, as well as on their ecosystems.

The Biosphere has also undertaken to assist in the development/implementation of action proposals on their partners’ sites, rather than providing straight subsidies. According to the program leaders, this approach contributes immensely to increasing partner commitment vis-à-vis the environment. Demand for this type of service proved to be so popular that a moratorium was required after having reached a total of 70 projects in just two years.

URL: <http://biosphere.ec.gc.ca/cea/>

Contact: Thérèse Baribeau (514) 496-8279

*** CANADIAN RURAL PARTNERSHIPS (CRP)**

The CRP initiative ensures that federal programs, policies and activities provide a coordinated network of support to rural communities. It is being designed and implemented by an Interdepartmental Working Group, made up of representatives from 26 federal departments and agencies, and Rural Teams in each province and territory. The Rural Secretariat, situated within Agriculture and Agri-Food Canada, provides leadership and coordination for this cross-government approach.

New and innovative partnership arrangements between the federal government and rural Canada are also a priority. Pilot projects test new ways of responding to rural issues such as the need for better access to financial resources, better access to employment opportunities for youth and better program and service delivery in rural areas. Projects are undertaken on a partnership basis, with the CRP funds used to lever support from federal departments and agencies and

other rural stakeholders. A small, non-government advisory group provided advice and guidance as part of the selection process for pilot projects.

URL: <http://www.rural.gc.ca>

Contact: Kevin Donnelly (Human Resources and Development Canada)
(613) 759-7112

CEPA ENVIRONMENTAL REGISTRY

The Registry is a comprehensive on-line source of public documents related to activities under CEPA. It is a requirement of Bill C-32 which states “The Minister shall establish a registry, to be called the Environmental Registry, for the purpose of facilitating access to documents relating to matters under this Act”.

In responding to this legislative requirement, EC has taken a strategic approach which exploits communications opportunities with the public. The Registry is targeted to:

- better communicate achievements under CEPA
- increase public understanding
- better facilitate public participation in the consultation process

Included in the planned content of the Registry is the Act, Regulations, Guidelines/Codes of Practice, Substance Lists, Permits, Enforcement Policies, and related links. The Registry is becoming an important integrated portal for EC initiatives related to environmental protection.

At present a prototype registry has been developed with the expected launch of the Web site in March 2000.

Contact: Pat Wirth (819) 994-7470

ENVIRONMENT CANADA’S PRESENCE ON THE INTERNET

Environment Canada is committed to using the Internet strategically to meet its objectives. In February 1999, the Deputy Minister launched a process to develop a departmental Internet strategy and to renew the Green Lane. Developing a cohesive and integrated departmental presence on the Internet is a key objective of this strategy.

A study was commissioned by EC to contribute to this work. The results of the study has provided recommendations based on:

- guidance and analysis of feedback from the department
- analysis of feedback from external users of the Green Lane
- an evaluation of the Green Lane Web site

- a review of industry best practice Web sites
- the development of a new vision for the Green Lane

Key recommendations from the work to-date includes issues related to:

- aligning the Green Lane with the department's objectives
- developing a consistent, integrated approach to the management and presentation of the Green Lane
- focusing on the needs of users and target audiences

Contact: Paula Tozer (819) 953-3679

*** 5NR KNOWLEDGE INTEGRATION (KI) WORKING GROUP**

EC is a partner in the 1998-2001 Memorandum of Understanding on Science and Technology for Sustainable Development uniting participating departments in their management and coordination efforts. The 5NR departments are Fisheries and Oceans, Environment Canada, Health Canada, Natural Resources Canada, and Agriculture and Agri-Food Canada. The 5NR working groups, one of which is the KI working group, constitute an innovative way government departments are working together on government-wide horizontal goals.

The 5NR KI Working Group is focusing on the integration of science and technology data and information to help the federal government meet its priorities. Knowledge integration focuses on creating a culture of information sharing, development of tools to facilitate the generation, transfer and codification of knowledge to create improved S&T sustainable development outputs.

At present, the 5NR KI Working Group is in its formative stages focusing on confirming and building support for its vision and strategic objectives. The Working Group holds promise in terms of encouraging the better coordination and management of 5NR information assets on sustainable development. An immediate priority is the creation of a dynamic, transparent and interoperable infrastructure to enable knowledge workers to contribute and share expertise.

URL: <http://rn4nr.nrcan.gc.ca/index-f.htm>

Contact: Mary Anne Sharpe (819) 997-3729

*** GEOCONNECTIONS – CANADIAN GEOSPATIAL DATA INFRASTRUCTURE (CGDI)**

The GeoConnections – CGDI initiative is an intergovernmental (federal, provincial and territorial), private and academic effort with five major thrusts: expanded access to and usage of geospatial information; development of a common national data framework; development and adoption of common international standards; improved federal-provincial partnerships; and the

development of a policy environment to encourage the broadest possible use of geospatial information. In addition to economic and social benefits, geospatial information also provides vital information about a wide variety of environmental issues, such as global climate change or a local spill of hazardous chemicals.

CGDI will provide Canadians with common-window access to geospatial services and information through the Internet. It will also harmonize Canada's geospatial databases, including topographical maps, aerial photographs, satellite images, nautical charts and census maps. The GeoConnections program will allow the federal, provincial and territorial governments, along with the private and academic sectors, to work together to build the CGDI — ensuring fast, consistent and harmonized access to geospatial information and services. Opportunities to lever funding for data integration projects, like CIAN (see page 14), may be available under this initiative.

URL: <http://www.geoconnections.org/>

Contact: Mary Anne Sharpe (819) 997-3729

GEORGIA BASIN ECOSYSTEM INITIATIVE (GBEI) - COMMUNICATIONS STRATEGY

The GBEI is supported by a communications strategy whose primary thrust is to help build sustainable communities by transferring knowledge to decision-makers. The focus of current communications attention centres on the following themes: how science and knowledge can be effectively transferred to communities; exploration of opportunities for building on partners' networks; definition of roles in "education" programs; and how to best serve common clients.

A communications tool kit has been created which provides assistance through communication protocols, publishing and tracking guidelines, a reporting out methodology and a media relations strategy. A diverse number of approaches is being used to support knowledge transfer including partnerships with Science World, the Knowledge Network, Green Teams, the S&E Bulletin, and the media.

The GBEI Communications Strategy is a good example of a planned approach to building awareness, demonstrating the benefits of a cooperative approach and the strategic use of communications expertise in ensuring a citizen-centred approach to knowledge transfer.

Contact: Sande Petkau (604) 713-9524

MILLENNIUM ECO COMMUNITIES (MEC)

MEC is a recently developed web site located on the Green Lane. Its focus is providing community groups and citizens with single window access to environmental information, opportunities for exchange, and tools for action. A Service Canada pilot project currently underway will advance the MEC vision by supplementing EC's environmental resources with those of OGDs to create seamless access to the federal government's online environmental resources for communities. Part of this pilot project is described under the CIAN initiative noted elsewhere in this summary (see page 14). The remaining two aspects of the pilot project are the establishment of an easy and intuitive method of navigation based upon themes of interest to citizens and strengthened support and outreach to community sustainable development networks.

MEC has the potential to become a powerful destination portal for online environmental information sources. The progress of this initiative and its use of cutting edge technology should be followed closely to identify the potential for broader application of the concept/approach.

URL: <http://www.ec.gc.ca/eco/>

Contact: Pat Dolan (819) 953-4950

*** NOVA SCOTIA FEDERAL COUNCIL (NSFC)**

Like other federal councils existing in other provinces, the NSFC has become an important mechanism for integrating and coordinating the activities of the federal government in Nova Scotia. The Council, which is mandated to make a positive contribution to how the government operates at the federal level in the Province, plays a pivotal role in facilitating the broad-scale implementation of corporate initiatives at the regional level. Comprised of 56 department heads and senior federal managers in Nova Scotia, the purpose of the Council is to coordinate the communications and activities of Federal Departments operating in the Region.

A number of committees work towards providing a coordinated federal response to federal and provincial regional priorities. For example, the Federal Economic Development Coordinating Committee coordinates the actions of departments engaged in economic related activities such as the development of education/economy linkages; joint federal/provincial/ universities/private sector consultations on economic development matters; information economy and Native economic development. The Environment Committee coordinates the activities of Departments that relate to environmental issues and also coordinates federal initiatives with related provincial initiatives such as Federal / Provincial Harmonization; Environmental Legislation Data Base; and Environmental Industries and Greening of Government. The Human Resources

Committee is primarily concerned with internal human resource management issues that transcend individual departments. The Policy Committee monitors the federal government's policy agenda, and identify policy topics on which the Nova Scotia Federal Council may wish to offer advice, or express an opinion. The committee also works collaboratively with the other Atlantic Councils. The Y2K Committee was established to coordinate departmental cooperation regarding Y2K readiness.

URL: <http://lsss.ns.ec.gc.ca:8000/>

Contact: Larry Hildebrand (902) 426-9632

PRIMARY INTERVENTION ZONES (ZIP)

The ZIP program of the St. Lawrence Vision (SLV) 2000 Community Involvement project focuses on the participation of riverside communities to ensure the success of efforts to protect, conserve, restore and enhance the St. Lawrence. The climate of trust established by the ZIP program team with all the federal and provincial government partners enabled, for the first time ever on a local level, the synthesis of available knowledge on physicochemical, biological, socio-economical and human health aspects in each of the 14 areas of the St. Lawrence River under study.

One of the program's major accomplishments was the development by government representatives of a shared vision on the condition of each segment of the St. Lawrence, presented at a public consultation for local stakeholders. These consultations organized in cooperation with the ZIP committees established along the St. Lawrence and the Saguenay have enabled citizens and local stakeholders to set priorities in light of their needs and local initiatives.

This partnership is based on a framework agreement signed by the Canadian and Québec governments and Stratégies Saint-Laurent, a non-governmental organization coordinating the activities of the 13 ZIP Committees along the St. Lawrence. This agreement defines the roles and responsibilities of each partner in the achievement of results. The commitment of senior personnel is a major factor in fostering the commitment of the partners for the sustainable development of the St. Lawrence.

One innovative approach consists of organizing forums with agencies and the two levels of government in order to identify the scientific and technical assistance required by the ZIP Committees to implement their own ecological rehabilitation action plans.

URL: http://www.slv2000.qc.ec.gc.ca/slv2000/english/zip/zip_welcome.htm

Contact: Yolaine Saint-Jacques (514) 496-2898

*** SERVICE CANADA**

Service Canada is an initiative led by Treasury Board Secretariat that will involve departments and agencies in testing a number of ways to help Canadians get to the services they need faster, more conveniently, and more efficiently. It will help by “clustering” services—so Canadians will be able to find related services (like services for youth or seniors) in one place. It will also expand “one-stop” access to government services across all three main access channels - in-person, over the telephone, and electronically.

Service Canada is being phased-in across the country beginning this Fall. More than 40 full-service in-person sites will be added to existing departmental networks nation-wide. A number of pilot projects – including two led by EC – will also get underway to test new electronic service delivery options.

URL: http://www.tbs-sct.gc.ca/si-si/service_cnda/english/index_e.htm

Contact: Sue Axam (Treasury Board Secretariat) (613) 946-9917

*** SMART COMMUNITIES**

The federal government envisions Smart Communities as communities that use information technology in new and innovative ways to empower their residents, institutions and region as a whole. Smart Communities make the most of the opportunities that new technologies afford - for better health care delivery, for better education and training, and for growing businesses. Under Industry Canada’s lead, the government has committed to establishing a Smart Community Demonstration Project in each province, the North and an Aboriginal community by the year 2000.

Smart communities have the potential to allow citizens to harness the power of information and communications technologies to support the development of their skills/knowledge, access to government and other resources, citizen engagement, and collaboration. Participating in the international Smart Communities movement is an opportunity to show how community-led, information-based economic, social and cultural development can change the way Canada develops its communities and builds a stronger nation.

URL: <http://smartcommunities.ic.gc.ca/>

Contact: Industry Canada by e-mail: smartcom@cytheria.ic.gc.ca or by telephone: 1-800-575-9200

2. Implementing Connectedness

The following section is subdivided under the following headings: making information easy to find; developing tools for citizens; and organizing our effort.

2.a *Making Information Easy to Find*

Citizens often may not know where to go to find the government information they seek. This can be as much, or more, of a challenge over the Internet, as it is with traditional telephone access. As well, information overload is just as significant a barrier to finding relevant information, as is knowing where to look for information.

We observed many EC and interdepartmental initiatives focused on making environmental information and expertise more accessible and understandable. The value of partnerships and coordinated approaches is immense when trying to facilitate access to electronic information sources. The use of common standards and protocols for describing and organizing data allows the development of powerful search tools such as the 5NR departments' CanExplore.

We also noted several initiatives which use technology to make environmental information more understandable and relevant to citizens and communities. For example, the use of geographic information system (GIS) and multimedia technology to bring life to otherwise dry scientific data allows citizens to better appreciate complex environmental issues and, as a result, make informed decisions on related matters.

*** ATLANTIC COASTAL ZONE INFORMATION STEERING COMMITTEE (ACZISC)**

The Atlantic Coastal Zone Information Steering Committee (ACZISC) is a collaborative effort of 7 federal departments, the 4 Atlantic provinces, several private sector firms, the academic sector and assorted community and First Nations organizations. ACZISC has worked towards providing a shared regional information infrastructure for the purposes of enhanced information access and exchange and improved community-based decision-making. One of the key products is an electronic meta-database system, that currently contains in excess of 600 databases, listed and linked in a fully consistent format. ACZISC also encourages the development and adoption of standards regarding the management and use of coastal information.

The data collected and shared by ACZISC is used to support the a fact-based identification of priorities and development of strategies for Atlantic Coastal

Action Plan organizations and other non-profit and community groups throughout the region.

URL: <http://is.dal.ca/aczisc/aczisc>

Contact: Larry Hildebrand (902) 426-9632

*** BUSINESS ENVIRONMENTAL PERFORMANCE OFFICE (BEPO)**

BEPO is a web-based virtual office established to promote awareness among small and medium enterprises (SMEs) of the importance of environmental performance to profitability and competitiveness. Through a simple-to-use web interface, visitors are provided with access to sources of generic environmental information, industry-specific information and a resource centre allowing participation in on-line discussions. Federal government contact points are identified (by area of responsibility) for those requiring additional information regarding specific issues.

BEPO is an excellent example of how Internet technology and collaboration can provide users with integrated, customer-centred environmental information. The diverse objectives of the various partners (e.g. economic growth, environmental protection, corporate stewardship, etc.) are addressed creating a value proposition for Canada's SMEs.

URL: <http://virtualoffice.ic.gc.ca/BEPO/>

Contact: Anne Legault (819) 953-7970

CANADIAN BIODIVERSITY INFORMATION NETWORK (CBIN)

CBIN is a web site coordinated and maintained by the Biodiversity Convention Office at Environment Canada containing biodiversity information and data from across the country. Through its search capability, CBIN provides efficient and effective access to many types of information related to biodiversity from such sources as academia, industry, non-governmental organizations, governments, and interested individuals. In addition, the site offers the capability to host open-ended electronic discussion groups (forums).

CBIN is Canada's contribution to the international Clearing-house Mechanism (CHM) of the United Nations Convention on Biological Diversity (UNCBD). It demonstrates how Internet technology can be used to allow users to quickly and seamlessly find diverse sources of information related to their topics of interest.

URL: <http://www.cbin.ec.gc.ca>

Contact: Guy Rochon (819) 953-7626

CANADIAN POLLUTION PREVENTION INFORMATION CLEARINGHOUSE (CPPIC)

CPPIC is a web site linking Canadians to international sources information on pollution prevention. Its searchable index contains links to over 1000 documents from government, ENGO and private sources. Summaries of most of these are available to users without accessing the actual document and URLs are provided for those desiring direct access to the source. As well, the site provides information and links to other pollution prevention and related web sites.

CPPIC was created to meet the requirements of CEPA and demonstrates how an information sharing product can be designed to not only meet its legislative requirement, but also the broader public need for environmental information.

URL: <http://www.ec.gc.ca/cppic>

Contact: Anne Legault (819) 994-7977

*** CANEXPLORE**

CanExplore provides a one-stop search function of federal science and technology information resources related to sustainability. CanExplore currently indexes more than 200,000 documents in order to provide integrated access to information related to the sustainable use of natural resources. Users can search the resources of all four natural resource-based departments or select individual departments. As well, users can specify the language of the documents searched and select an advanced search option with Boolean search functionality.

Developed through a cooperative agreement between Agriculture and Agri-food Canada, Environment Canada, Fisheries and Oceans Canada, and Natural Resources Canada, CanExplore is an excellent example of how improved access to information can be brought about by technology and collaboration. It is intended to add Health Canada information resources to the index in the near future.

URL: <http://canexplore.gc.ca/>

Contact: Mary Anne Sharpe (819) 997-3729

*** COMMUNITY INFORMATION ACCESS NETWORK (CIAN)**

CIAN is a proof-of-concept project to illustrate how Environment Canada can provide information to communities using powerful new online tools that exploit current electronic holdings related to the environment and SD. This project was developed in partnership with Natural Resources Canada (NRCan),

Indian and Northern Affairs Canada, Resource Futures International Inc., and Intélec Géomatique through the Geomatics Development Program (NRCan).

A Service Canada pilot project now underway will take CIAN beyond proof-of-concept to the next level of implementation, ultimately creating a virtual gateway to better search and navigate the participants' data and information holdings and providing tools and the basic infrastructure for data holders to participate. In practice, this will mean that communities searching for information could identify their geographic area, indicate the type(s) of information of interest to them, browse through available maps and data sources, and integrate additional information from other data sources. Users could also view charts and graphs linked to map locations and search related online text. From the data providers' perspective, this would mean that they could describe on an easy-to-use form the information that they wish to share, upload their data and maps, provide any related hyper links and contact information, and make it available through a distributed and shared information gateway.

CIAN is a powerful demonstration of the potential offered by technology and partnerships to put integrated environmental information and data into the hands of Canadians.

URL: <http://209.217.88.19/iandev>

Contact: Mary Anne Sharpe (819) 997-3729

COMMUNITY PROGRAMS WEB SITE

The Atlantic Region's Community Programs web site provides direct access to various community programs being implemented in the Region. The site is designed to help groups create healthy, sustainable communities.

Linked sites include the Community Action program, Ecoaction 2000's community funding program, the Atlantic Coastal Action Program, Millennium Eco-communities, success stories, community development resources and links to other community development programs of OGDs and other sectors across the country. Environment Canada's science and community development experts are easily found by environmental subject, rather than being organized alphabetically by last name or branch.

URL: <http://www.ns.ec.gc.ca/community/home.html>

Contact: Wayne Eliuk (902)426-1930

* **CORDLINK**

CORDlink is the development of a digital library information clearinghouse for the Georgia Basin that is lead by Natural Resources Canada and EC through GeoConnections (see page 6). The initiative seeks to design, build and test the infrastructure for a digital library system that will serve as a regional node for accessing earth science information on the Canadian Cordillera (i.e. mountain range system).

Ultimately, CORDlink will provide scientific data and information in understandable and useable formats to support community-based stewardship initiatives and local government planning mechanisms in the Georgia Basin, provide for improved scientific exchange within and between disciplines, and provide a single access point for federal (and other) science and information.

URL: http://nrn1.nrcan.gc.ca/rn4nr/vwreport99/cordlink_e/index.htm

Contact: Murray Journey (NRCan) Sonia Talwar (NRCan)
(604) 666-1130 (604) 666-1131

ECOLOGICAL MONITORING AND ASSESSMENT INITIATIVE (EMAN)

The Ecological Monitoring and Assessment Network (EMAN) is a national network of monitoring and research sites characterized by long term, multi-disciplinary studies. Sites within a single eco-zone are loosely linked in an ecological framework. The network strives to facilitate cooperation and a holistic approach to ecological enquiry and ecosystem understanding. Ecological Science Cooperatives (ESCs) in the network promote connections among the network sites operating across the country. The network is highly decentralized and acts as a coordinating body, facilitating communications among participants and providing strategic direction.

EMAN is an inclusive network, (i.e. those who wish to participate are welcomed). It embraces all facets of ecological enquiry (including monitoring and research) and facilitates communication among its participants and interaction with international networks. The network promotes the use of environmental indicators and the production of issue and area-based assessments.

EMAN is designed to encourage scientists to concentrate their work at specific sites within an ecological framework using an ecosystem approach. It encourages participants to cooperate and share in the planning and executing of programs, to communicate information, and to synthesize and interpret results together. The decentralized, cooperative network via the EMCO office, promotes the integration and synthesis of monitoring data collected by different jurisdictions with the information coming from ecological experimentation and research. It also promotes broad distribution of results in the scientific literature

and especially in the popular media. As a result, Canadians are able to gain a better understanding of how the ecosystems function, change, and the reasons why.

An ecosystem approach to monitoring and research provides a practical approach for addressing environmental and sustainable development issues. It also promotes the means to digitally integrate existing and future ecological, social and economic databases and GIS analysis products on an ecosystem basis.

URL: <http://www.cciw.ca/eman/intro.html>

Contact: Hague Vaughan (905) 336-4410

ECOSYSTEM INFORMATION WEB SITE

The Pacific and Yukon Region's Ecosystem Information (Eco Info) web site offers a single window to information related to ecosystems in the region. The site provides links to various information sources related to state of the environment reporting, environmental indicators, and programs and reports on ecosystem science, monitoring and research. This site's simple-to-use interface allows users to skim a short preamble to each linked information source, thereby assisting them to quickly decide which sources are of the most interest to them.

The Eco Info web site demonstrates, in a very basic manner, how related information sources can be bundled together on a single site allowing interested users to easily find the information they seek.

URL: <http://www.ecoinfo.org/>

Contact: Vic Bartnik (604) 664-4007

ENVIRONMENTAL INDICATORS SERIES

The Pacific and Yukon Region's environmental indicators series presents a dynamic set of environmental indicators on priority issues for which EC maintains monitoring programs. The indicators describe the state of the environment for particular issues (e.g. nitrate levels in ground water, ozone thickness) in a scientifically concise and easily understood manner. To make this complex technical issue more understandable, links are provided to definitions/explanations of key terms and users can directly e-mail EC scientists with their questions.

These indicators demonstrate how environmental data can be enriched by integrating related data from other domains. For example, in discussing nitrate levels in freshwater (Abbotsford Aquifer) the indicator talks about what is happening (using monitoring data), why it is happening (using agricultural

data) and why it is important to residents (using Health Canada guidelines). Importantly, the site also presents what's being done to respond to the situation by describing and linking to the relevant initiatives of EC and its partners.

URL: http://ecoinfo.org/env_ind/default.htm

Contact: Vic Bartnik (604) 664-4007

ENVIRONMENTAL VALUATION REFERENCE INVENTORY (EVRI)

EVRI is a searchable database containing information on economists' studies on the value of various environmental assets, for example, outdoor recreation, clean air and clean water. It has a wide variety of potential applications, for example, in valuing the environment for national accounts, constructing sustainability indicators, and for cost-benefit analysis of projects that impact the environment. To perform these application, EVRI uses a relatively new research technique called benefits transfer, which allows values from various studies to be transferred by way of a sophisticated averaging process.

One of the most attractive features of the EVRI is a state-of-the-art Internet search engine. Using this, an analyst can quickly find relevant records of valuation studies. These records outline the environmental assets being studied and results, enabling a researcher to identify the best candidate studies for the transfer.

This database provides a good demonstration of how quality tools developed by EC can be used to support departmental priorities.

URL: <http://www.evri.ec.gc.ca/evri/>

Contact: Luis Leigh (613) 953-1170

FM WEATHER RADIO

Many remote northern areas of the Prairie and Northern Region (PNR) do not have access to levels of service similar to those provided in more populated areas in the South. Standard weather communication sources such as weather radio, ATADs, regular radio broadcasts and newsprint – which are generally taken for granted in the South – are not available at the same level to northern residents. A pilot project was launched in Iqaluit in February 1999 to broadcast weather information via the FM band. Unlike standard weather radio where a special receiver is needed, this initiative offers anyone with access to a standard FM radio the opportunity to access current weather and forecasts for the Iqaluit area. According to a recent survey, up to 80% of local residents have used this service.

The initiative provides another example of how EC can lever resources through partnerships. Funding for the pilot was provided by the National Search and Rescue Secretariat, while the FM license was sponsored by the Canadian Broadcasting Corporation.

Contact: Yvonne Bilan-Wallace (780) 951-8797

*** GEOREFERENCE ENVIRONMENTAL NETWORK FOR INFORMATION EXCHANGE (GENIE)**

The GENIE network uses the Internet to facilitate cooperation between the various players during an environmental emergency. Using a map common to all players, each partner may add the data at his disposal and make available to other bodies via the FTP server. The data in circulation may be in text format (weather forecasts, situation reports) or in the form of georeference mapping information (site of incident, modeling, environmental issues, environment protection missions, etc).

The innovative aspect of GENIE lies, among other things, in the use of a server that provides for the continual exchange of information among the partners; the Internet and FTP protocol are used to ensure data transfer. GENIE offers several advantages compared to conventional methods. It is much faster than the fax machine (which is most often subject to traffic jams during emergencies), more precise than the telephone, less cumbersome, more flexible, and much easier to use thanks to the information highway.

This project aroused the interest of several players, including the Atmospheric Environment Service and the Hydrology Division of Environment Canada, the Maurice-Lamontagne Institute, the Canadian Wildlife Service, Fisheries and Oceans Canada, Eastern Canada Response Corporation Ltd. (ECRC), and the Canadian Coast Guard.

GENIE enables players working at a distance from each other to establish an action plan in an effective, concrete and coherent fashion. Furthermore, by including specific clauses in its agreements, GENIE ensures that the risk associated with the system's dependence on partners' contributions is minimized.

URL: http://www.qc.ec.gc.ca/protect/english/emergency/genie/a_genie.htm

Contact: Claude Rivet (514) 283-2345

NATIONAL POLLUTANT RELEASE INVENTORY (NPRI)

The National Pollutant Release Inventory (NPRI) was created in 1992 to provide Canadians with information, through a publicly accessible database, on pollutants released to the environment (particularly providing access to

pollutant release information for facilities located in communities). In addition, the NPRI continues to support a number of environmental initiatives by providing information that assists governments and others to identify priorities for action, encourages industry to take voluntary measures to reduce releases, allows tracking of progress in reducing releases, and supports a number of regulatory initiatives across Canada.

The NPRI on-line query system gives everyone with access to the Internet the ability to search the entire NPRI database for all reporting years since 1994. With its simple query form and many helpful pick-lists, people can quickly and easily obtain detailed information on a single facility or find informative summaries based upon substance, location or industrial sector. This program helps strengthen Environment Canada's ability to meet sustainable development goals by improving the way it conducts and spreads scientific knowledge.

URL: <http://www.ec.gc.ca/pdb/npri/>

Contact: François Lavallée (819) 953-1656

SD CONNECTION

At present a concept, the SD Connection initiative is focused on integrating all SD knowledge holdings by creating an interactive IM/IT infrastructure to enhance collaboration among individuals and organizations working in this and related fields. The initiative is also aimed at providing greater public access to a wide range of SD information.

The key challenge to be addressed is the development of a coordinated approach to information management (identifying, organizing, searching, retrieving), and ensuring that information is relevant and in an appropriate format. Departments will have to agree on a framework that deals with the entire knowledge management process including content, a performance tracking system, and a common IT infrastructure. In this regard, the Federated Architecture Initiative led by Treasury Board will be an important contribution to the development of metastandards and search protocols.

Contact: Jeanne Andrews (819) 953-7659

SEVERE WEATHER WARNINGS

AES is currently exploring the feasibility of running a warning banner across the screens of all television channels in affected areas in the event of a severe near-term weather warnings (e.g. tornado, hail). A collaborative pilot project between AES and Pelmorex – owners of the Weather Network and Météomedia – is planned pending CRTC approval.

Severe weather warnings are currently broadcast via weather radio, provided to media outlets and posted on the Green Lane. The proposed initiative complements these existing approaches and provides a good example of a multichannel approach to information dissemination.

Contact: Basile Van Havre (819) 997-2677

SUSTAINABLE DEVELOPMENT INFORMATION SYSTEM (SDINFO)

SDinfo is an Internet-based system providing one-window access to sustainable development knowledge in the federal government. It allows departments and agencies to contribute information related to sustainable development and provides links and a search function for users to find information of interest. Of special interest is the ability of SDinfo to allow accredited contributors to submit their information online with the use of a password protection system.

Statistics on site use are tracked regularly. For example, during the month of June there were over 1,380 user sessions, each with an average duration of over seven minutes.

URL: <http://www.sdinfo.gc.ca/>

Contact: Jeanne Andrews (819) 953-7659

WATER SITE

This web site provides information on the nature of water, water policy and legislation, the management of water, and links to other water sites. Two interactive databases on the site rely on partnerships with non-profits and volunteer submissions from the general public and municipalities across the country. The Water Efficiency Experience Database (WEED), developed in partnership with the Canadian Water and Wastewater Association, encourages the exchange of information between interested parties. Volunteers can search the database and/or enter their own retrofitting, water pricing, and water audit experiences. Also, the Municipal Water Use Database (MUD) permits the use of an electronic form to collect and update information on water usage, wastewater treatment, and water pricing methods in Canadian municipalities.

URL: http://www.ec.gc.ca/water/e_main.html

Contact: Liz Lefrançois (819) 953-6161

WHISTLER VILLAGE RECREATION FORECAST

weatheroffice.com provides a customized forecast product to the producers of the Whistler Resort Guide. The forecast is posted on the Whistler.Net web site and is available free-of-charge to anyone with Internet access.

The initiative is cost-recovered and demonstrates how taking a business-like approach can allow EC to lever the resources necessary to address an unmet public demand (in this case, the demand for a customized forecast).

Contact: Bryan Jensen (604) 664-9033

2.b Developing Tools for Citizens

Electronic tools and products have an important role in support of improved decision making by citizens and communities. Scenario tools, prediction models and interactive applications all offer opportunities be better inform and engage Canadians in environmental issues. In the case of one such initiative, the Sustainability of Arctic Communities project, an Internet-based scenario tool allows users to assess the potential impact of factors such as tourism, oil development and climate change on people, caribou herds and the economy. Armed with such a tool, Arctic communities are better able to make informed decisions on matters which could impact on the sustainability of the communities and their resources.

ATLAS DES OISEAUX NICHEURS DU QUÉBEC (NESTING BIRDS OF QUÉBEC)

The Atlas des oiseaux nicheurs is an important tool that consolidates information on the various nesting birds of Québec. This initiative allowed local birdwatching enthusiasts to contribute directly to the gathering of data and photographs (nearly 1,000), and scientists from the private and public sectors to participate in the technical planning as well as a large part of the data analysis and writing. The tool was developed through an innovative partnership between the scientific community and birdwatching clubs and groups (over thirty by the end of the project) under the aegis of the Association québécoise des groupes d'ornithologues (Québec association of birdwatchers). The involvement and commitment of the Association's leaders were determining factors in the success of the project, which was subject to budgetary constraints. One of the major challenges was to develop a data validation approach that took into consideration the birdwatchers' varied expertise. To implement this tool, the EC staff had to demonstrate a great deal of creativity to maintain motivation and support over the several years spent completing the project.

The Atlas was built around the continuous requests for information received by EC from the public. In fact, the budget was allocated with the understanding that the product would satisfy some 50% of the requests for information to cover the costs of the project. This objective was greatly exceeded, since this tool considerably increased our ability to respond to our partners' questions.

The success of this initiative was due in part to the image EC adopted during production as a “supporter” of community projects rather than a receiver of community support—an approach very well received by both the communities and the media.

Contact: Jean Gauthier (418) 649-6132

AWED, AVIATION WEATHER DATABASE

An interactive system allowing pilots to obtain weather information during flight, AWeD meets the specific requirements of the client. The innovative aspects of the system are its interactivity, allowing the client to define meteorological products, and its wide accessibility provided by Web-based user-friendly software. The end result is automatically generated highly visual meteorological products that are not, however, interpreted by a meteorologist.

Challenges encountered during development included: understanding the specific needs of clients and users, developing the expertise to ensure compatibility with the different existing browsers, and ensuring adequate intellectual property management. The medium- and long-term challenge is to access real-time weather information from the cockpit.

Contact: Richard Verret (514) 421-4683

CLIMATE OBSERVERS ON LINE (COOL) / ONTAP

COOL is software that allows volunteer climate observers to submit their observations directly via the Internet. ONTAP is a computerized telephone system (with 1-800 access) that allow observers to submit their observations using the telephone keypad. Data entered under either of these options is fed into the same database and made available to forecast offices across the country twice daily.

These initiatives demonstrate how regional approaches can be adopted to address common challenges and how creating a win-win situation benefits collaborative efforts. Each of these initiatives was first developed in one region (COOL in PNR; ONTAP in Ontario) and then targeted for national roll-out. They both serve to reduce EC’s ongoing costs by eliminating the need for contracted data entry and allow forecasters improved access to real-time data. As well, observers choosing to use COOL have the opportunity to further their interest in weather conditions through the software’s ability to display and graph their data.

Contact: Jim Ross (COOL) (780) 951-8875

ELECTRONIC MEDIA TECHNOLOGY ANALYSIS – ST. LAWRENCE VISION 2000

This innovative approach to analyzing topics and key terms contained in the electronic coverage of the St. Lawrence Vision 2000 Action Plan helps determine the qualitative and quantitative importance of environmental issues.

Based on the results obtained, this approach allows Saint-Laurent Vision 2000 to identify areas requiring its intervention and determines the strategic orientation of Action Plan communications. Analysis results are disseminated to all the partners.

Contact: Françoise Lapointe (418) 648-5771

ENVIRONMENTAL ASSESSMENT QUERY TOOL

The EA Query Tool is a custom-designed electronic mapping program which enables rapid identification of protected areas, contaminated sites, important wildlife habitats, point pollution sources, monitoring stations and other features of interest within the vicinity of a proposed project. The system essentially allows the user to display the location of a proposed project on a map, in relation to environmental resource/sensitivity data.

This tool is being developed as useful, effective and user-friendly computer tool for staff involved in environmental assessment work. It is an object-oriented program that enables the user to quickly identify the exact location of the proposed project. Thanks to this tool, more GIS information is accessible and in a more user-friendly format, and turn around times have been shortened from 2 weeks to 4 days per assessment.

This application is user oriented. The user controls the progress, speed and level of information. Geo-Query incorporates all the skills and tools normally associated with a GIS application. This allows users with basic computer skills to focus on the essential environmental considerations within the immediate vicinity of the proposed project, without the need to learn how to use GIS software. The system also incorporates a database inventory providing information about the available databases.

URL: <http://www.ns.ec.gc.ca/assessment/index.html>

Contact: Geoff Howell (902) 426-4196

GEOSPATIAL INFORMATION SYSTEM (GSIS)

Using a Web-enabled format, the GSIS fully integrates several Centre St-Laurent researcher databases. Access to the GSIS is facilitated by ARCEXPLORER, free user-friendly software available on the Internet. As well, OGD (geospatial data

exchange software) will be used to provide universal access to geographical information, eliminating the need for conversion.

Challenges encountered during the project included: accessing/maintaining the expertise required to ensure that the GIS is compatible with the different existing commercial browsers, as well as metafile/metadata management and adequate intellectual property management. Access is currently limited to the Centre St-Laurent.

Contact: Marcel Houle (514) 496-2672

LEGAL SAMPLING CD-ROM

A legal sampling CD-ROM was developed by the Pacific Environment Science Centre. It provides information on the procedures required to collect and analyze samples so that they may be used as evidence in court to prove a violation of environmental protection legislation. The CD-ROM features an easy to use graphical interface, full motion video, and a searchable text index. It is finding a market with field officers from various government agencies and post-secondary schools and is available for sale on the Internet.

This initiative demonstrates both the potential of digital technology to educate/inform in a cost-effective manner and how a good idea driven by one or two individuals can meet with success.

URL: http://www.pesc.org/web_files/index.html

Contact: Stewart Yee (604) 924-2565

QUEST

QUEST (Quite Useful Ecosystem Scenario Tool) is a PC-based tool designed to allow users to define and explore future scenarios of the Lower Fraser Basin, located in British Columbia. Based strongly on the concept of sustainability, users create long term future scenarios of the region by making policy choices and seeing the environmental, social and economic consequences of their decisions.

As part of the Georgia Basin Ecosystem Initiative, EC is funding the expansion of the Lower Fraser Basin version of Quest to the entire Georgia Basin. It is anticipated that the expanded model can be used in interactive public participation scenario building exercises throughout the basin.

URL: <http://www.sdri.ubc.ca/research/quest.html>

Contact: Paul Kluckner (604) 664-9399

REMOTE SENSING AND SPATIAL ANALYSIS USED FOR WILDLIFE HABITATS AND TARGET SPECIES

The innovative use of geo-referencing tools improves the dissemination of quantitative information on territory occupation (wildlife habitat) and the development of visual tools that help to improve the management of target species (waterfowl, piping plover, Barrow's goldeneye, etc.) by the various partners.

Demand for this type of product proved to be considerable. The success of these products is closely linked to their ability to meet the needs of a wide range of partners, namely: Ducks Unlimited, various federal and provincial departments, the United States, Mexico, regional county municipalities, forestry agencies, Hydro-Québec, etc.

One major accomplishment has been the unique partnership with the Space Agency (without resorting to the private sector as an intermediary) established by EC, resulting in improved access to the Agency's remote sensing resources and considerable savings.

The challenges included managing intellectual property, utilizing new concepts of analysis (landscape analysis) and new technologies, as well as developing a database management structure. The implementation of programs dedicated to the use of new technologies on a permanent basis would help support the work carried out by EC-CWS.

URL: <http://www.qc.ec.gc.ca/faune/faune.html>.

Contact: Marcelle Grenier (418) 648-3437

STATE OF THE ENVIRONMENT CD-ROM

A State of the Environment (SOE) report for British Columbia was produced in a multimedia CD-ROM format. The CD-ROM – which is filled with colorful images, graphics, audio and video – contains the complete text of the report in a downloadable and printable format, lots of related URLs, and information on how to get involved. As the CD-ROM was produced from the original 1993 report, information updates for the B.C. SOE are available over the Internet. Graphics and text references provide the most recent data and current trends for the issues covered in the SOE CD-ROM.

The CD has been popular with provincial schools and is a prerequisite for a forestry course offered by the Knowledge Network. The development of this CD-ROM represents a cost-sharing partnership between EC, B.C.'s Ministry of Environment, Lands and Parks and the Knowledge Network.

URL: CD-ROM http://ecoinfo.org/soe/soe_bc/soe_bc1.html
Update http://ecoinfo.org/soe/soe_bc/update/update.html

Contact: Vic Bartnik (604) 664-4007

SUSTAINABILITY OF ARCTIC COMMUNITIES PROJECT

The goals of this project are to improve the ability of communities and scientists to discuss how community life may change in the future and how communities may be able to shape these changes to reflect community values. Both local (traditional) knowledge and the results of research are used to help explain how the most important elements of community life may change in the next 10 to 40 years. In particular, the following four forces of change are considered: climate change; oil development; tourism; and level of government spending. Computer-based tools such as the “possible futures model” allow citizens and communities to assess the likely impact of these changes on people, caribou herds and the economy.

This project demonstrates how science, policy and communities can be integrated to provide citizens with tools for informed decision-making around sustainability issues. The Sustainability of Arctic Communities Project also shows how external funds can be used to lever EC’s resources for increased impact. This project is funded primarily through the U.S. National Science Foundation with additional sponsorship from the Canadian Ecological Monitoring & Assessment Program (EMAN) and the U.S. Man and the Biosphere program.

URL: <http://www.taiga.net/sustain/index.html>

Contact: Joan Eamer (867) 667-3949

SUSTAINABLE COMMUNITY INDICATORS PROGRAM (SCIP)

SCIP is a software tool and web site developed by EC in conjunction with Canada Mortgage and Housing Corp. and the Federation of Canadian Municipalities. It is aimed at provincial, municipal and regional planners, environmental groups and community agencies. The software will allow communities to create, analyze, and report on sustainability indicators, while the web site will allow the exchange of indicators and other related information between communities.

SCIP helps citizens assess whether their communities are living sustainably and demonstrates the potential of web-based tools for permitting collaboration between communities. SCIP is due for release early in the year 2000 and subscriptions will be sold to help cover maintenance and upgrade costs.

URL: <http://www.crle.uoguelph.ca/indicators/>

Contact: Dennis O'Farrell
(819) 994-4854

Wayne Bond
(819) 994-6733

SUSTAINABLE COMMUNITY PLANNING (SCP) PROGRAM - DEMO WEB SITE

The SCP Web Site is being developed by the Prairies and Northern Region as a cost-effective delivery mechanism for the SCP program. The prototype site provides access to SCP program and sustainability information as well as examples of tools which could be incorporated to help identify and prepare community profiles, sustainable community development plans and implementation strategies.

The use of this web site is considered by the Prairies and Northern Region as one of the most efficient methods for providing Saskatchewan communities and organizations with ongoing access to sustainability information resources and tools needed to facilitate the desired understanding and corresponding development of community capacity.

The web site is structure as follows:

- SCP Program Information
- SCP Tools (includes community profiles, biodiversity data of the local wildlife and habitat, eco-efficiency tools)
- Sponsorships (information on funding opportunities)

URL: <http://www.its-canada.com/sustain>

Contact: Rick Slasor

(204) 983-7048

2.c Organizing Our Effort

In times of limited resources and rapidly changing citizen interfaces, it is important that EC organize itself to maximize the effectiveness and efficiency of its connectedness efforts. Without proper coordination, departmental organizations may adopt differing IM/IT standards and protocols resulting in an inability of information systems to “speak” with each other. Organizing for effective connectedness is a horizontal issue that requires bringing together expertise from across the Department. Scientists, outreach officers, IT specialists and communications specialists all need to be involved to ensure successful connectedness results.

EC DATA MANAGEMENT FRAMEWORK

As a science-based department, our data resources are a critical element of successful environmental programs and policies. An internal review conducted

in the mid-nineties established the need for a significant reaffirmation, renewal and redirection of many aspects of data management in EC. Consequently, a departmental team developed a framework for a new vision of EC's data management that included both policy and principles, as well as implementation guidelines. The overriding goal of the data management framework is to enable EC and Canadians to know better what EC environmental data exists, why and when it was collected, where it is stored and how to get to it.

EC's Executive Management Board approved the adoption of the policy and principles component of the data management framework as the Department's official draft policy in early 1998. The implementation guidelines component has not yet been officially approved. Subsequently, representatives from all EC regions met to form an ad hoc metadata committee (see following section).

Contact: Dave Goods (819) 953-1162

EC METADATA STRATEGY COMMITTEE

In late 1998, representatives from all EC regions met and formed an ad hoc committee to discuss a departmental metadata strategy. The committee recommended that: they be formally established to implement a metadata strategy; sub-committees be formed to investigate standards, tools and interoperability issues; they endorse the metadata section of the data management framework guidelines; and ways of linking metadata be explored and implemented as quickly as possible.

Contact: Janet Lamb (905) 336-4412

EC MONITORING WORKING GROUP

The EC Monitoring Working Group has been struck primarily in response to the Commissioner of the Environment and Sustainable Development's (CESD) May 1999 Audit of Federal Toxic Substances Programs. It will specifically address their recommendations from Chapter 3 (*Understanding the Risks from Toxic Substances: Cracks in the Foundation of the Federal House* and Chapter 4. *Managing the Risks of Toxic Substances: Obstacles to Progress*) that relate to improving the federal government's ability to detect and understand the effects of toxics.

The Environment Canada Monitoring Working Group will be the principal mechanism to plan and develop a departmental inventory, gap analysis and related strategic input to the finalization of a federal government (5 Natural Resource departments) action plan in response to all monitoring needs related to CESD recommendations.

In addition, the Working Group takes this opportunity to begin to address monitoring issues, in an integrated fashion. A number of other initiatives are

currently underway for which an integrated review and gap analysis of all of Environment Canada's monitoring activities would be very timely. These include the following:

- The Medium Term Policy Planning Process, where Environment Canada's DM is the lead on the paper on A Sustainable Development Agenda for Canada, which includes monitoring.
- The revised CEPA includes new statutory obligations where the Minister "*shall* establish, operate and maintain a system for monitoring environmental quality".
- The Treasury Board Program Integrity Exercise includes monitoring as one of the program specific issues.

The activities of this Working Group will be coordinated and integrated with those of their interdepartmental counterpart under the 5NR (5NR OAG Toxics Working Group), the latter being responsible for finalizing the Federal Action Plan in response to Chapter 3 Recommendations of the 1999 CESD Report.

Contact: Mike Wong (819) 997-1508

IM/IT STRATEGY

The IM/IT Strategy provides the framework by which Environment Canada enunciates its vision for IM/IT, its directional statements and its broad decision guidelines relating to IM/IT. Within this planning framework, the following three components will be developed, implemented and maintained:

a detailed **strategic plan**, which defines specific initiatives and timelines;

the **IM/IT Architecture**, which defines integrated policies, standards, and tools for all types of IM/IT assets, based on the high-level targets set in the strategic plan; and,

the **governance approach**, which outlines not only the roles and responsibilities in the development of the framework, but also will cover the roles, responsibilities and accountabilities for the on-going evolution of IM/IT within the Department.

Contact: Dave Goods (819) 953-1162

LINKS - THE LOGICAL INTEGRATED KNOWLEDGE SYSTEM

The Logical Integrated Knowledge System (LInKS) has been developed by EC's Atlantic Region as a means of providing easy access to information on people

and skills, projects, organizations, locations, business priorities and metadata holdings. LInKS is built using an advanced web-based architecture designed to provide a flexible interface to a living database compendium of ecological knowledge. LInKS is driven by two on-line databases, one of which controls the construction of resultant web pages and the other which stores the basic ecological knowledge entered by users.

The entire system has been designed to maintain ease of use and with a focus on providing up-to-date information to the users. In addition, the system has been designed to make extensive use of pop-up boxes to hold or display detailed information, which reduces an overload of information on the screen and extensive scrolling through long lists.

As the user selects up and down the chain, relevant information on keywords, projects, locations, organizations and metadata holdings will be retrieved from the database and automatically displayed. The underlying database structure provides the user with a much more effective way to move around the system. Most of the entries which are extracted from the database are automatically hyper linked and thus the user can move through the system merely by selecting any of these hyper linked entries. For example, by selecting “Biodiversity” from the Keyword Section, the user will get a listing of all people, projects and metadata records in the system which are related to Biodiversity

URL: <http://dartmouth4.dart.ns.ec.gc.ca/>

Contact: Geoff Howell (902) 426-4196

TELEPHONE MONITORING SYSTEM

Prairie and Northern Region has instituted a telephone monitoring system. The local telephone company (TELUS) provides data daily on every telephone call made to the following EC weather numbers in PNR: 1-900 national number; 1-888 PNR clients and 1-877 PNR premier service. This data facilitates the analysis of several factors, e.g. the number of calls, the duration of calls, the number of busy signals reached, the number of unanswered calls, the amount of time until answered, the number of retries, etc.

Telephone monitoring demonstrates one inexpensive, but effective way to increase the efficiency of EC’s front-line resources. Based upon the analysis of the monitoring data, staff can be reallocated to better meet the demand of peak call periods including adding additional lines on the fly.

Contact: Bill Hartman (403) 299-7806