Natural Resources Canada

1998-99 Estimates

A Report on Plans and Priorities

Approved

Ralph Goodale
Minister of Natural Resources Canada

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I Messages

A. Minister's Message

I am pleased to present the Report on Plans and Priorities for 1998-99 for Natural Resources Canada (NRCan). Our report provides a blueprint for ensuring that Canada's rich storehouse of natural resources continues to be a national anchor for economic stability and growth into the next century.

Canadians have a reputation as leaders in the sustainable development (SD) of our energy, forest, and mineral and metal resources, and in the geographical and geoscientific knowledge of our landmass. As Minister, I am committed to building and expanding on that reputation in service of a new, knowledge-based world economy.

In the next century, Canada must become the world's "smartest" resource developer: the most high tech, the most environmentally friendly, and the most productive. Innovation will be required if we are to be global leaders in introducing green technologies, adopting alternative and renewable resources, creating environmentally-sound and value-added industries, and increasing productivity to improve our international competitiveness while respecting our global environmental obligations.

Natural Resources Canada is taking action to boost Canada's competitiveness, and maintain the natural resources sector's contribution to trade and to meet environmental goals. The department's priorities in these areas are to: build a national consensus on key natural resources issues; launch a resource innovation initiative; promote resource investment; support trade; increase work opportunities; and address climate change. Additional resources allocated to climate change in the 1998 budget will help advance the development of the national and international actions on climate change.

The cornerstone to these actions is a commitment to strong partnerships with industry, educational institutions and other organizations to develop and commercialize new industrial processes and technologies. The impact will be felt by all Canadians, but none more strongly than by residents in the more than 500 communities – many of them rural and remote – that rely on the natural resources sectors for their existence.

NRCan's Sustainable Development Strategy was developed with extensive consultation and updated in response to commitments made in Kyoto. It outlines initiatives ranging from creating a Canadian Geospatial Data Infrastructure to redoubling efforts supporting energy efficiency and programs for developing renewable resources.

Canada's science and technology capabilities place it among the leaders in earth sciences, remote sensing, minerals and metals, forestry and energy efficiency. While the spotlight is often on mainline industries, NRCan is also developing action plans to strengthen downstream industries, widening the ripple effect of sustainable development to include value-added, knowledge-based, small and medium-sized enterprises.

This report outlines our flexible and adaptable capacity. Canada will be able to safeguard its role in natural resources development and environmental protection while guaranteeing itself a place in the mainstream of a global marketplace.

B. Management Representation Statement

To the best of my knowledge (and subject to the qualifications outlined below), the information:

- accurately portrays the Department's mandate, plans, priorities, strategies and expected key results;
- is consistent with Treasury Board policy, instructions and the disclosure principles contained in the *Guidelines for Preparing a Report on Plans and Priorities;*
- is comprehensive and accurate;
- is based on sound underlying departmental information and management systems; and
- I am satisfied as to the quality assurance processes and procedures used for the RPP's production.

The Planning, Reporting and Accountability Structure (PRAS) on which this document is based has been approved by Treasury Board Ministers and is the basis for accountability for the results achieved with the resources and authorities provided.

Simon Labrie
A/ADM, Corporate Services Sector,
NRCan

II Departmental Overview

A. Vision, Mission, Business and Operating Principles

Vision

For the next century, Canada must become the world's 'smartest' natural resource developer: the most high tech, the most environmentally friendly, the most productive.

Mission

NRCan will provide the leading-edge science, knowledge and expertise to position Canada as a world leader in the sustainable development of its land, energy, forest and mineral resources, and as a quality producer of resource-related products, technologies, research and services.

Business

NRCan advances the development of Canada's economy by providing expert scientific and economic knowledge to Canadians, and by promoting the SD and use of Canada's natural resources and the competitiveness of the energy, forest, mining, geomatic, and geoscience sectors. It is committed to good governance, to the delivery of high-quality products and services, to the protection of the health and safety of Canadians, and to partnerships with other private and public sector organizations. (Additional information can be found in Section III, Part B, and on NRCan's Internet home page located at http://www.nrcan.gc.ca).

Operating Principles

Respect, honesty, equity, fairness and integrity are the basis of our relationship with Canadian citizens, our clients and each other. NRCan's Operating Principles define the business standards, beliefs and values of our organization and state what we are striving to achieve. We value the commitment and dedication of the people who form our organization and we believe that:

Strong Leadership is Essential

We value leadership that provides a vision of the future and creates an environment of trust and respect. By example and involvement, leadership demonstrates a clear sense of direction, fosters teamwork, is accountable, and motivates and supports our organization in reaching its objectives.

People are Our Principal Strength

We work in a challenging and healthy environment that enables us to achieve our work goals and reach our full potential. We have the tools and opportunities to acquire the skills and expertise to perform our jobs, are encouraged to be innovative, and are recognized for our achievements.

Effective Planning Helps Us to Improve

We believe that planning is important in helping us to improve and in our ability to manage effectively and to measure our performance and the impact of our programs. Through continuous learning and improvement, measurement and evaluation, we deliver efficient and relevant programs that support government priorities and objectives and meet the needs of our clients and stakeholders.

Creativity and Innovation are Key to Our Future

We value and support creativity and innovation in the development of leading-edge science and technology, policies and programs, better practices and processes and improved service delivery. Creative thinking and innovative solutions help us meet the challenges we face.

The Canadian Public Interest is Paramount

We help our Minister, under law and the constitution, to serve the public good and enhance the economic, social and environmental well-being of Canada.

High Quality Service to Clients is Our Standard

We consult with our clients and stakeholders to ensure that we understand their needs and expectations, and that our programs are relevant and useful to them. In delivering the best value for the public funds entrusted to us, we seek excellence in delivering our products and services.

Effective Communication is a Shared Responsibility

We create an environment and provide the means for open, honest and transparent communication to encourage the sharing of timely information throughout our organization and with our clients and stakeholders.

Cooperation is the Foundation of Our Success

We believe cooperation is the foundation for meeting the challenges of the future. Through partnerships, teamwork and strategic alliances, we work together toward common goals both within and outside the organization.

B. External Factors Influencing the Program

The Environment that Shapes Our Business

Canada is a land rich in natural resources and natural beauty. Canadians are both the beneficiaries and the stewards of a land that enjoys 9 percent of the Earth's fresh water, 10 percent of its forests, 25 percent of its wetlands and the world's longest coastline.

Canadians increasingly understand our symbiotic relationship with nature, and the relationship between the environment and human activity. They are beginning to view SD as critical to our future decisions that integrate economic, social and environmental factors. NRCan is predominately a policy and science and technology (S&T) based department. Our operations as a department must therefore balance a number of issues and interests, including investing in knowledge for stable and sustainable employment, and pursuing innovation and leadership opportunities in the global knowledge-based economy. Taking an integrated approach, with an eye to the welfare of future generations, will pose problems and challenges, but will also reveal new opportunities.

In establishing our SD priorities, Canadians must decide, as a society, just what it is we want from our natural resources and what we are willing to do to ensure their sustainability. The following paragraphs highlight what NRCan believes to be the key issues and concerns of Canadians regarding the SD of natural resources. These issues were identified based on various consultations and analyses conducted in the past few years for such undertakings as the Whitehorse Mining Initiative (WMI), the National Forest Strategy (NFS), Criteria and Indicators for Sustainable Forest Management, climate change, and energy efficiency programs. The issues presented reflect what NRCan believes the Canadian public perceives to be the top priorities.

Making Better Decisions

Canadians increasingly want to have a voice in deciding what SD means and how it should be implemented. Communities are becoming directly involved in decision making about development, by participating in environmental assessments of resource projects or through joint initiatives with industry and governments. SD requires an integrated approach to issues, including organizations that have mandates in different disciplines and perspectives working together. This new reality is driving the need for strategically focused partnerships across government and between jurisdictions, and with industry and other stakeholders.

If Canadians are to play a meaningful role in SD decisions, they have a responsibility to be well-informed. This, in turn, implies that they must have easy access to all the facts required to make informed judgements. This includes a growing need for clear, concise information to gain a better understanding of the economic, social and environmental aspects of resource use and potential for development.

The natural resources sector has much to contribute to the knowledge-based economy and society of the 21st century. NRCan researchers and scientists are partners in building the knowledge base that is required to succeed in the evolving economy.

In the Speech from the Throne, the government committed to make “information and knowledge infrastructure accessible to all Canadians” and thus, “enable citizens to succeed in the global knowledge-based economy.” The development of the Canadian Geospatial Data Infrastructure (CGDI) will make geo-information accessible through the Information Highway for commercial purposes and community decision-making, and stimulate the creation of knowledge jobs in the geomatics industry across Canada. Infrastructure and knowledge assets such as those embodied in CGDI are critical to Canada’s pursuit for national and international success and leadership in the knowledge economy. As well, as represented on the Canadian Council of Forest Ministers (CCFM), NRCan is expanding Canada's National Forest Database Program (NFDP) to include “non-timber” forest values such as information on wildlife and recreational land.

Sustaining Growth and Investment

Canada’s wealth of natural resources is a significant contributor to our high standard of living. The energy, mineral and forest industries provide 750,000 high-paying jobs for Canadians. Another million people work for companies providing products and services to these industries, such as equipment manufacturers, consulting firms, investment dealers, the transportation industry and research groups.

The Organization for Economic Cooperation and Development (OECD) and the International Monetary Fund (IMF) have predicted that the Canadian economy will grow by roughly 3.7 percent in 1998 and that Canada will lead the G-7 countries in job growth this year. Due to the Asian crisis, these predictions have since been decreased by roughly three-quarters of one percent. The growth in the Canadian economy will continue to be export driven, as domestic demand remains weak due to slow personal income growth and unemployment. In 1996, the minerals and metals, energy, and forest industries contributed a combined total of more than $91 billion to Canada’s Gross Domestic Product (GDP) of $820.3 billion. These industries accounted for 37.7 percent of Canada’s exports and contributed $64.6 billion to our trade surplus. They also attracted new capital investments of more than $30 billion, which represents 23.2 percent of the Canadian total.

The mining sector is at the leading edge in introducing and utilizing new technologies. For instance, roughly 85 percent of the mining workforce today uses advanced technology. The use of technology has contributed to a 69 percent increase in labour productivity in mining in the decade ending in 1995. While these trends create jobs in knowledge and service industries, they can also lead to job losses when traditional skills are no longer needed.

The competitiveness and market access of Canada’s forest products is being eroded by the imposition of technical trade barriers and the emergence of low-cost competitors in export markets traditionally dominated by Canadian products. New environmental and social pressures are adding to the cost of forest practices. These challenges, coupled with timber supply constraints, are occurring at a time when Canada’s forest management practices are under growing public scrutiny. Increasingly, Canada’s access to foreign markets is being linked to its forest management performance.

The forest sector is faced with decreasing allowable annual cuts at a time when demand for fibre is increasing. Also, the public wants to preserve forest land for non-timber uses. More land is being withdrawn from commercial use for parks and protected areas, and unresolved Indian land claims are creating uncertainty for investors.

Key challenges for the forest sector, therefore, are to maintain Canada's national and international reputation as a sustainable forest nation by demonstrating that its forests are being managed sustainably, and by remaining competitive in the global economy by diversifying its markets and its products through a value-added approach.

Building Capacity in Rural and Remote Communities

Five hundred communities depend on natural resources as their primary source of jobs and livelihood. A challenge of SD is to promote the long-term viability of Canada's resource communities, many of which are located in rural and remote regions. Working with others, NRCan will work to ensure that the natural resource industries at the heart of the economic vitality of these communities remain competitive. NRCan is also well positioned and prepared to assist local communities in acquiring new knowledge and adapting and using new technology to increase community capacity to manage and benefit from the forest, mining, and energy resources. Aboriginal and northern communities are target client groups in this regard.

Assuring a Role for Aboriginal Peoples

Since time immemorial, Canada's land, forests and resources have met the cultural, spiritual and material needs of the Aboriginal people of Canada. The Aboriginal land ethic is deeply rooted in traditional cultural beliefs and embodies a view that land and its resources must be protected out of respect for past, present and future generations.

The SD of Canada's resources is very much linked to issues such as Aboriginal self-government, land claims, Aboriginal and treaty rights in traditional territories and the responsibility of the Crown for Indian lands. As these issues are resolved through agreements with governments, greater certainty will contribute to increased cooperation among governments, industry and Aboriginal people of Canada with respect to Canada's resources and land management. Increased efforts must also be made to ensure that Aboriginal communities benefit from resource development in terms of jobs and economic growth. Governments, the business sector, and community organizations are increasingly working to make development decisions inclusive of Aboriginals' traditional knowledge and concerns.

The department is developing, in consultation with other government departments, its contribution to the Department of Indian Affairs and Northern Development (DIAND) led "Gathering Strength: Canada's Aboriginal Action Plan". This plan will help provide the training, knowledge and technology that Canada's native people need to manage their own resources sustainably.

Increasing Work Opportunities

Demand for knowledge workers in natural resource and related industries is increasing. Young people, including recent graduates, need relevant and meaningful work experience and contacts to facilitate their transition to long-term employment in these industries. The department is committed to reducing youth unemployment – estimated at between 15 and 18 percent – by helping Canada's young people acquire experience and marketable skills.

Doubling NRCan's participation in the Science Horizons Internships program to 100 is one way of achieving this goal. NRCan laboratories and its world class scientific and technical personnel, is committed to providing relevant training and work experience to its students and new recruits through such programs as the Geomatics Professional Development Program, which emphasizes the acquisition of advanced skills and techniques for career advancement in the new economy.

Also, NRCan has implemented the First Nations Forestry Program to create jobs, encourage financially viable forestry operations, and enhance forest management skills among Canada's Aboriginal people. A training program for running district energy programs would have similar positive results.

Increasing Resource Innovation

Minerals, petroleum, and forests form the basis for most of the goods we use in our everyday lives, from the most common consumer products to the latest technologies for the information highway. The lumber to build our houses, metals to manufacture high-tech medical devices, and the oil and natural gas to heat our schools and offices, are all derived from our natural resources. The sustainable way to develop these products is to gain greater knowledge of environmental impacts throughout their life cycle, make better use of natural resources at every stage of production, and develop new products that reduce impacts on the environment. These knowledge, innovation, and higher value uses of natural resources are recognized and emphasized as the critical drivers for long-term economic growth, sustainable work opportunities, and a stable quality of life. Through strategically focused partnerships with provinces, territories, academia, and industry, NRCan is well-positioned to extend the power and reach of its leading-edge scientific knowledge and technology within the national innovation chain. For example, access to comprehensive geoscience knowledge is vital for the mining and hydrocarbon industries to compete aggressively in global capital markets. New, integrated technologies for better decision making in mineral exploration and environmental modeling and monitoring are already on users' desks, with greater precision of these tools just on the horizon.

Enhancing Trade and Markets

Canada, with its combination of technological excellence, resource management expertise, and environmental awareness, can benefit from growing economic opportunities in a way that meets our obligations as responsible stewards of significant portions of the earth's natural resources. NRCan will work to maintain and expand access to international markets for Canadian resource-based products, knowledge, technologies, and services through international trade agreements, Memoranda of Understanding, and by promoting exports of technical expertise and advice. In particular, Canada's recognized expertise in earth sciences research and technology development is a significant asset when competing internationally. Many resource-related companies are small and medium-sized enterprises that can benefit from federal expertise to

strengthen their innovation capacity and trade orientation to break into international markets. Specifically, NRCan is committed to provide focused international support to stakeholders in such areas as market intelligence, export marketing assistance, trade promotion, government-to-government dialogue, and brokering of contracts.

Maintaining a Healthy and Safe Environment

One challenge for SD is to minimize the impact of human activity on the environment to a level consistent with society's values and objectives while safeguarding our ecosystems.

A recent survey indicated that 64 percent of Canadians believe their health has been affected by pollution over the past few years. More and more, they recognize it is often easier and more cost-effective to prevent pollution and environmental degradation than to rehabilitate and correct damage after it has occurred. NRCan can play an important role in meeting this challenge by developing and promoting the transfer of environmental technologies.

Meeting Our Global Responsibilities

Canada's international obligations extend to formal agreements dealing with trade, scientific cooperation and the environment. For example, Canada is a signatory to a number of international agreements, including *Agenda 21* – a blueprint for SD, as well as conventions on biodiversity and climate change, and a voluntary statement of principles for sustainable forestry. The most recent example is the Third Conference of the Parties of the United Nations Framework Convention on Climate Change in Kyoto, and the upcoming Fourth Conference to be held in Buenos Aires in November, 1998.

Mitigating and Adapting to Climate Change

Canada is part of an international effort to understand climate change and to find solutions to global warming. NRCan, working with Environment Canada (EC) and the Department of Foreign Affairs and International Trade (DFAIT), is a leader among federal departments working to reduce greenhouse gas emissions. A federal Climate Change Secretariat, reporting to the Deputy Ministers of Natural Resources Canada and Environment Canada, was established in February 1998 to develop a national implementation strategy by the end of 1999 to permit the Government of Canada to follow up on climate change commitments made in Kyoto, Japan in December 1997. The development of this strategy will involve significant participation from other federal government departments, provinces and territories, industry, as well as other stakeholders. The department will devote $20 million per year towards funding its role in the climate change initiative, in addition to the $70 million per year it has already devoted to this initiative. As a result of the 1998 budget announcement on climate change, an additional $50 million per year for the next three years will be allocated to help build a strong foundation and encourage early action on climate change. The $50 million will be allocated by the interdepartmental committee of DMs based on advice from the Secretariat and direction from Ministers. Energy efficiency and conservation options in industrial processes, vehicles, commercial buildings and homes are central to this strategy. Energy production and use are by far the greatest source of Canada's greenhouse gas emissions. A combination of regulations, incentives and government leadership should show reductions in greenhouse gas emissions.

In the long term, however, renewable and alternative transportation fuels will likely hold the key to achieving Canada's reduction goals. The department will strive to enhance the availability and actual use of all forms of renewable and alternative energy sources, including solar, wind, geothermal and biomass energy.

NRCan will also encourage creative co-generation projects and their effective integration into power grids. In appropriate circumstances, direct energy initiatives may also be viable local options.

In keeping with this focus on alternative energy projects, Canada must be a leader in adaptive climate change R&D. Canada's researchers must remain on the cutting edge of innovation in a wide variety of public and private partnerships.

NRCan's scientists and researchers must look at the range of likely effects of climate change, especially at the regional level, to understand how society can adapt to them. Canada's geological records are invaluable in understanding past climate patterns and what that information can tell us about the future. As well, a Regional Climate Model is being developed to determine the effects of climate warming on forest fire activity in west-central Canada. NRCan, in partnership with international collaborators, will assess the impacts of global fire activity on atmospheric density and the global carbon budget. NRCan's scientific research will help the federal government reduce uncertainties and ensure that Canada's adaptive strategies are founded on sound science.

But government cannot achieve Canada's climate change commitments alone. Voluntary measures are still the best and most effective ways to achieve emissions goals. NRCan will work on strengthening, broadening and deepening all self-initiated actions that industry has undertaken on their own accord to reduce their greenhouse gas emissions.

Also, the department will focus on practical ways organizations can increase and accelerate the effects of their work. NRCan will help to ensure that businesses undertaking voluntary action on climate change are on a level playing field and are not competitively disadvantaged by their participation.

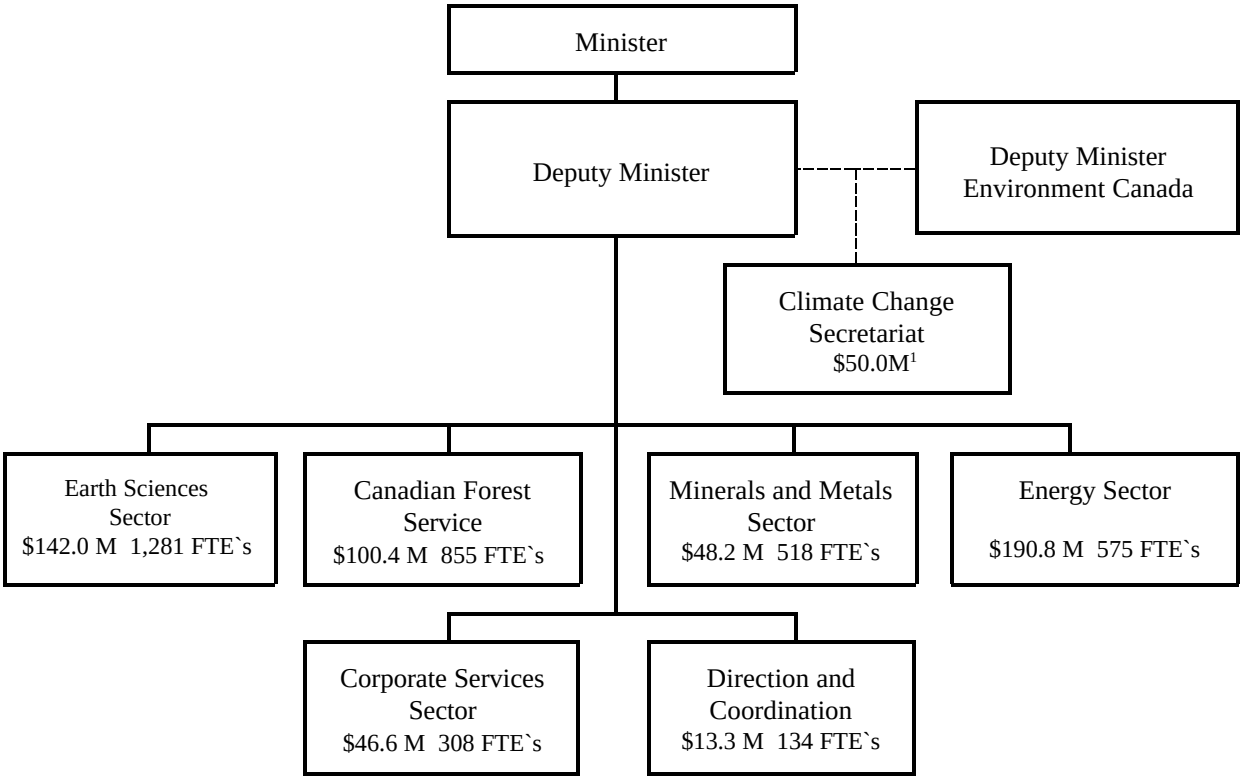
Good Governance

The issue of Canadian unity remains central to the government's agenda. Keeping Canada united will be pursued by way of good, relevant and active government with particular emphasis on partnerships and strategic alliances. Today's competitive global economy calls for the federal government to pursue new approaches to service delivery and client interaction. As a result, new forms of partnerships with Canadians, the private sector, academia and non-government organizations, including national consensus building mechanisms, are being identified and cultivated for the longer-term.

Meeting These Challenges

These are the issues and challenges as NRCan enters the 21st century. Section III describes the actions NRCan is undertaking to move forward.

C. 1998-99 Organization Chart and Resource Relationships



- The **Earth Sciences Sector** (ESS) provides the geoscience and geomatics knowledge base and infrastructure to support public policy decisions. It also offers NRCan's clients logistics support for polar science as well as the information, expertise and technologies they need to exploit domestic and foreign markets.

- The **Canadian Forest Service** (CFS) promotes the SD of Canada's forests and the competitiveness of the Canadian forest sector, for the well-being of present and future generations of Canadians. It delivers its S&T program through ten national science research networks operating out of five regional research centres and headquarters.

- The **Minerals and Metals Sector** (MMS) promotes the SD of Canada's minerals and metals resources industry by integrating economic, social and environmental objectives. It provides policy advice, S&T and commodity and statistical information to support decision making. It is also the federal government's primary source of expertise on explosives regulations and technology.

[1] The Climate Change Secretariat reports to the Deputy Ministers of NRCan and Environment Canada. The resources will be notionally allocated as follows: $40.0 million to NRCan; and $10.0 million to EC.

- The **Energy Sector** (ES) promotes the SD and safe and efficient use of Canada's energy resources through its policies, programs and S&T. It balances the potential economic, regional, international and environmental implications of Canada's energy production and use. It also provides technical knowledge and advice to the energy industry and to government. Its knowledge base helps the Canadian government formulate policies, implement regulations, enhance job and wealth creation and meet its international commitments.

- The **Corporate Services Sector** (CSS) provides central financial, administrative, information management and human resource services (note: approximately 50 percent of the Sector's financial resources relate to departmental facilities costs.)

- Under **Direction and Coordination**, there are the Executive Offices as well as a Strategic Planning and Coordination Branch, Legal Services, Communications Branch, and an Audit and Evaluation Branch.

D. Financial Spending Plan

($ millions)	1997-98* Planned Expenditures	**1998-99 Planned Expenditures**	1999-00 Planned Expenditures	2000-01 Planned Expenditures
Gross Planned Expenditures (excluding Non Budgetary)**	533.2	**543.4**	534.2	531.5
Less Revenue Credited to the Vote***	15.6	**19.6**	20.6	20.7
Net Planned Expenditures	517.6	**523.8**	513.6	510.8
Less: Revenue Credited to the Consolidated Revenue Fund****	15.1	**9.5**	5.8	5.7
Plus: Non-Budgetary	17.2	**37.9**	39.4	7.8
Plus: Cost of Services provided by other departments	26.5	**23.0**	N/A	N/A
Net Cost Natural Resources Canada	546.2	**575.2**	547.2	512.9

* 1997-98 Financial information includes items approved via the Supplementary Estimates A.

** Includes $40.0 million for the Climate Change Action Fund.

*** The vote netting authority was expanded to all elements (with some exclusions) of the department during the 1996-97 fiscal year. Therefore, there is a significant increase in the vote netting authority from 1996-97 to 1997-98 and future years.

**** Tables 6a) and 6b) on pages 51 and 52 provide additional details on revenue.

III Plans, Priorities and Strategies

A. Summary of Key Plans, Priorities and Strategies

NRCan with Net Planned Expenditures of $523.8 million in 1998-99	
provides Canadians with:	**as demonstrated by:**
Scientific research and transfer of new technologies to contribute to the wise and efficient use of our resources to reduce costs, and to protect the environment.	• Broader understanding of climate change issues, better coordination of S&T activities across departments, developing corrective measures, and assessing the impacts of climate change (e.g. geoscientific studies, forest ecosystems) • A revitalized interdepartmental Program of Energy Research and Development (PERD) for SD • Federal/provincial collaboration to increase efficiencies and deliver a more effective national geoscience program with economic and environmental benefits • Mitigation of the impacts of mining and mill effluents by reducing acidic drainage • Enhanced productivity of mining, ore processing and metal processing operations • Technologies developed and transferred to reduce greenhouse gas emissions, to control emissions from fossil and biomass fuels, and to improve forest management practices • Remote sensing in land resources use and minimization of effects of natural disasters • Increased understanding of forest ecosystem processes, biodiversity and forest health
A national knowledge infrastructure on Canada's land and resources – a rich database of technical, scientific, and economic information that the public can use to make informed decisions, supported by NRCan's expertise.	• Increased level of on-line access to information and statistics of national interest through databases for forest, minerals and metals, energy and energy-use industries • Improved responses to natural disasters in Canada through the increased understanding of geological hazards and forest fires • Improved geological database, both for resource industries and for environmental concerns, through the National Geoscience Mapping Program (NATMAP) • Targeted geological mapping programs conducted to enhance resource exploration activities • Geographically referenced databases allowing easy user access across Canada through the Canadian Geospatial Data Infrastructure (GeoExpress), and the Canadian Geoscience Knowledge Network • Real-time information from the Canadian Active Control System for satellite surveying for uses such as air navigation and safety as well as search and rescue missions • A reliable survey system on Canada Lands, and a well-defined and regulated international boundary between Canada and the United States

provides Canadians with:	**as demonstrated by:**
Sound national policies and regulations for areas under federal responsibility – to increase the contribution of natural resources to Canada's economy while protecting the environment, and the health and safety of Canadians.	• Integration of economic, environmental, and social factors (of importance to the natural resources sectors) into policy frameworks • Elaboration of the Safe Use Principle for minerals and metals, a federal policy framework to manage radioactive waste, a new *Nuclear Safety and Control Act*, and plain language explosives regulations • A national implementation strategy on climate change, developed by all responsible parties in consultation with stakeholders • A renewed National Forest Strategy • Increasing the level of participation in the Voluntary Challenge and Registry Program to limit greenhouse gas emissions • Promotion of an efficient and effective environmental regulatory regime for mining in Canada • Implementation of the federal Minerals and Metals Policy
The promotion of Canada's interests pertaining to natural resources and international commitments.	• Degree of access and sales of Canadian products, technologies, and services in global markets • Development of the terms and implementation of a protocol to the Framework Convention on Climate Change and the Global Convention on Biodiversity • Agreement on the development of a global forest convention • Degree of interest and understanding among foreign investors about the evolving regulatory and economic frameworks for investing in Canadian mining • Scientific analysis in support of Canada's claim to the Continental Shelf under the United Nations Convention on the Law of the Sea • Development and implementation of an international business strategy for maximizing global market opportunities in earth sciences • Memoranda of Understanding with other countries regarding international forestry initiatives • Degree of international acceptance of key concepts and approaches of the federal Minerals and Metals Policy

B. Details by Goal and Business Line

1. New Goals versus Business Lines

The table below shows the Goals and Business Lines used in internal and external planning and reporting documents (Business Plan, Performance Report, Report on Plans and Priorities, and the Department's Planning, Reporting and Accountability Structure [PRAS] document). Each Business Line relates to one or more Goals.

Goals*	Business Lines**
Policy Goals: 1. To enable Canadians to make balanced decisions regarding natural resources. 2. To sustain the economic and social benefits derived from natural resources for present and future generations. 3. To minimize the environmental impacts of natural resource development and use. 4. To effectively deliver federal responsibilities for surveys and mapping, and explosives. **Management Goal:** 5. To manage the department efficiently and effectively.	**Science and Technology** 1. To conduct scientific research in support of land use and resource development and to promote Canadian economic development through the exploitation of the resulting technology. **Knowledge Infrastructure** 2. To build, maintain and disseminate information from a national knowledge infrastructure in support of the management and SD of Canada's landmass, offshore regions and natural resources. **Developing Federal Policy and Regulations** 3. To ensure that federal policy and regulations enhance the contribution of natural resources to Canada's economy while protecting the environment, the stability of rural communities, and the health and safety of Canadians. **Promoting Canada's International Interests** 4. To promote global policies and agreements in areas of trade, environment and social policy, which advance Canadian objectives relative to natural resource stewardship, products, technologies and services.

* For a correlation between 1997-98 Goals and the new 1998-99 Goals see page 56.

** In addition, the department has three special-purpose business lines. These are: Corporate Management and Administration; Geomatics Canada Revolving Fund; and Sunset/Special Programs. For a more complete description of business lines, please refer to NRCan's PRAS.

2. Key Deliverables by Goal and Business Line

This section links each goal to its objectives and related performance indicators and presents key deliverables by business line within each goal. The indicators shown in this section are a further refinement of those presented in NRCan's *Sustainable Development Strategy* tabled in the House of Commons on December 10, 1997. It should be noted that a Business Line can contribute to more than one goal.

The goals and objectives presented in this document have been approved by the Departmental Management Committee (DMC). **However, the performance indicators are presently under review and, therefore, may be deleted or changed over the planning period.**

Policy Goal 1
To enable Canadians to make balanced decisions regarding natural resources.

Description

SD is about making better decisions. This requires open and balanced debates about the social, economic and environmental impacts of development. People need access to the best available scientific and community-based knowledge – in an easily understood format – on which to base their decisions. Sharing knowledge and expertise will improve dialogue among all parties and lead to better decision-making. NRCan's role is to influence the resource development decisions of federal and provincial governments as well as industry and consumers. It does so by providing balanced information and the latest scientific knowledge, by promoting consensus on key issues and actions, and by supporting innovative policies that actively promote SD.

Objectives	Draft Performance Indicators
1.1 Knowledge - Creating easily accessible and integrated knowledge on the state of Canada's landmass and natural resources, and the economic, environmental, and social dimensions of their use.	• User satisfaction with value, accessibility and quality of information (user surveys). • Public awareness of the importance and relevance of natural resources sectors and issues (survey).
1.2 Cooperation - Promoting greater national and international cooperation and consensus on SD issues, policies, goals and actions.	• Participation in, and results of, national and international multi-stakeholder approaches to SD issues (e.g. NFS, WMI, Model Forests).
1.3 Policy Climate - Developing and promoting fiscal, regulatory and voluntary approaches that encourage the SD of natural resources.	• Participation in, and results of, voluntary SD initiatives (e.g. Federal Buildings Initiative, Voluntary Challenge and Registry program, Accelerated Reduction and Elimination of Toxins).

Deliverables by Business Line for Policy Goal 1

Business Line: Science and Technology

1998-99:

- Monitoring of forest health in Canada will be improved by: completing an analysis of the 10-year Acid Rain National Early Warning System (ARNEWS); incorporating passive ozone monitoring as part of national forest health monitoring; and producing the First Forest Health Assessment Report describing the status of forest health across Canada and identifying deficiencies in current monitoring and reporting capabilities (NRCan - $116,000 estimated).

- PERD's management structure will be modified, and cooperation strengthened between federal departments and with industry, to better focus PERD's priorities and strategy and ensure better decision making in resource allocation.

- A major study will be initiated to identify emerging R&D opportunities, new technologies and current issues in the hydrocarbons area, including climate change related issues.

1999-2000:

- CGDI will be developed, in partnership with provinces and territories and other federal departments, to provide national access to geographic information. As well, technologies and decision-support systems will be developed to permit the integration of forest data into the CGDI. By 1999, the NRCan portion of the CGDI will be completed. Over the planning period, the Canadian Geoscience Knowledge Network (CGKN) will be developed utilizing CGDI for its geospatial components.

- A National Ecological Land Classification system for Canada will be completed, in collaboration with the provinces, to support the assessment and monitoring of Canada's forest biodiversity. Critical or "keystone" indicator species will be identified for benchmarking the diversity of species and ecosystems (NRCan - $300,000 annually).

- The Canadian Spatial Reference System (CSRS) will be enhanced as a globally consistent national standard using active control technologies, gravimetry and advanced geodetic concepts (NRCan - $3.7 million).

- A new method of conducting the Canadian National Forest Inventory will be developed, based on a national set of permanent plots combined with remote sensing, to obtain measures for 24 SD forest management indicators (NRCan - $205,000 annually).

Deliverables by Business Line for Policy Goal 1

Business Line: Knowledge Infrastructure

1998-99:

- Advanced forest information and prediction systems and predictive models will be transferred to forest sector clients. These systems and models integrate spatial data, remote sensing, field plot measurements and multiple forest values, and are capable of generating comprehensive data on forest management study areas (NRCan - $483,000 annually).

- The deployment of renewable energy technology projects will be accelerated in Canada's remote communities by assisting key stakeholders with the selection, development and implementation of reliable and cost-effective projects (NRCan - $1.9 million, Industry Canada - $1.0 million).

- Under the Canadian Council of Forest Ministers (CCFM), Canada's National Forest Database Program (NFDP) will be expanded to include aspects of non-timber values such as wildlife, recreation and amenity values, and a communications framework for Canada's Model Forest Program will be established (NFDP - $540,000 for 1998-99, NRCan's contribution to Canada's Model Forest Program - $8.1 million in 1998-99).

- *The State of Canada's Forests* report to be tabled in Parliament annually (NRCan - $250,000 annually).

- Formal agreements on geoscience coordination will be developed with Ontario, Newfoundland, Alberta and Saskatchewan. Collaborative geoscience projects with other provincial and territorial government geoscience agencies will be conducted under bilateral agreements. Specific joint projects will be developed with Quebec.

- The *Canadian Minerals Yearbook* and related documents, such as the *Non-ferrous Metals Outlook* and *Iron Ore Industry Statistics*, will be produced to provide stakeholders with key information for decision making in support of the SD of the minerals and metals industry.

- New or improved partnerships with industry other related sectors and OGD's will be established for sharing and/or disseminating minerals and mining information.

- The first national Commercial Buildings Energy Use Survey will be initiated to monitor building energy intensity and to assess the indirect effects of the new Commercial Building Incentive Program.

- A new Knowledge Initiative will be launched to better integrate and make public, accessible knowledge from across the department. By 1998, an inventory of knowledge holdings will be completed.

Deliverables by Business Line for Policy Goal 1

Business Line: Knowledge Infrastructure

1998-99 cont'd:

- Under the auspices of the Intergovernmental Working Group on the Mineral Industry, major reports will be produced on Canadian mineral exploration spending and on the competitiveness of the Canadian minerals and metals industry.

- A comprehensive review of Canada's regulatory regime for mining will be conducted in close partnership with other federal departments and agencies, provincial and territorial governments for the Mines Ministers Conference.

1999-2000

- A national forest monitoring system will be developed using low resolution (1-km) satellite data to investigate the role of these satellite data on carbon budget determination from anthropogenic (man-made) sources for the northern boreal forest (NRCan - $250,000).

Over the Planning Period:

- Major reports will be prepared and disseminated on the international competitiveness of Canada's mining taxation regimes relative to foreign jurisdictions under the auspices of the International and Domestic Resource Policy Community. The international investment community will be informed of the results of these studies through 25 Investment Seminars in major foreign financial/mining centres.

- A major National Energy Efficiency Conference will be hosted bringing together all major interest groups in Canada and international experts on energy efficiency issues. A report on the state of energy efficiency in Canada will be prepared and tabled at the conference.

- In conjunction with EC, the National Implementation Action Plan to meet Canada’s climate change challenge will be developed through consultations with provinces and stakeholders by the end of 1999-2000.

- Forest health will be reported on through annual and special reports describing rates of pollution and areas affected and degree of disturbance (e.g. insects, disease). "Inter-operability" between forest health databases and other forest-related databases and Geographic Information Systems (GIS) will be established (NRCan - $341,000 in 1998-99).

Deliverables by Business Line for Policy Goal 1

Business Line: Knowledge Infrastructure

Over the Planning Period cont'd:

- Under the CCFM, in conjunction with provinces and other partners, the Criteria and Indicators (C&I) Action Plan will be implemented to enable Canada to report on 6 criteria and 49 indicators of forest sustainability in the year 2000. Progress on the International Framework of the C&I will be reported through proposals such as, the co-production of a report on temperate and boreal forests with the Pan-European C&I Process.

Business Line: Developing Federal Policy and Regulations

1998-99:

- Implementation of the government's response to the report of the House Standing Committee on Natural Resources on streamlining the environmental regulatory regime for mining will be coordinated in collaboration with other departments and agencies.

- In cooperation with the Government of the Northwest Territories/Nunavut, a process for assessing the cumulative impact of proposed mining projects will be developed, based on the Northwest Territories Protected Areas Strategy for Land Use (NRCan - $50,000).

- In cooperation with the provinces, the Energy Chapter of the Agreement on Internal Trade (AIT) will be completed, which will include provisions for the transmission of cross-territory electricity and increase the efficiency of electricity markets across Canada.

- Under the auspices of the CCFM, an International Forestry Partnerships Program (IFPP) will strategically position Canada’s concept of sustainable forest management with European and U.S. decision makers to prevent the development of trade barriers in export markets and to reinforce market acceptance of forest products as an environmentally friendly, renewable choice (NRCan - $687,000 in 1998-99).

- As a member of the CCFM and the National Forest Strategy Coalition (NFSC), participate in developing and implementing Canada’s renewed five-year National Forest Strategy (NFS). NRCan’s commitment to implement the strategy will be confirmed with the re-signing of the Canada Forest Accord at the National Forest Congress in Ottawa during April/May 1998 (NRCan - $100,000 in 1998-99).

Deliverables by Business Line for Policy Goal 1

Business Line: Developing Federal Policy and Regulations

1999-2000:

- A series of major economic research reports will be prepared on issues such as: the impact of timber supply reductions in Canada and the U.S. on prices and lumber production; the importance of forests to Canadians for non-timber uses; and the policy-related challenges of climate change (NRCan - $260,000 in 1998-99).

Over the Planning Period:

- In response to the Kyoto negotiations on climate change and in cooperation with EC and others, a series of reports will be delivered on the feasibility of a national system of tradeable permits for greenhouse gas emissions.

- Under the aegis of the Intergovernmental Forum on Forests (IFF), a global consensus on the need for an international forest convention (preferably legally binding) will be built, and positions will be taken, to the eighth session of the Commission on SD in the year 2000 (NRCan - $200,000 in 1998-99).

Business Line: Promoting Canada's International Interests

1998-99:

- As follow-up to the 1997 Arequipa Declaration of the Mines Ministers of the Americas, a workshop on the Safe Use Principle will be co-hosted and the third annual meeting of APEC's Group of Experts on Mineral and Energy Exploration and Development (GEMEED) will be hosted, to promote international cooperation in the implementation of the SD of minerals and metals.

Over the Planning Period:

- Through the International Energy Agency's (IEA) Committee on Energy Research and Technology (CERT), solutions to global SD challenges will be developed by promoting international cooperation on energy research and development.

- Through representation on three IEA R&D working parties (energy efficiency, renewable energy, and fossil fuels), will ensure that Canada's sustainable challenges are addressed in the IEA's collaborative R&D implementing agreement.

- A long-term plan to establish the boundaries of the Canadian Continental Shelf will be developed to substantiate Canada's claim under the United Nations Convention on the Law of the Sea.

Policy Goal 2

To sustain the economic and social benefits derived from natural resources for present and future generations.

Description

The resource sector is a cornerstone of our economy – integral to job creation and community development. Maintaining a healthy economy while protecting the environment means we must make the most efficient use of natural resources. SD should result in resource-based industries that make fewer demands on the environment, create new economic opportunities and provide greater stability to Canadian communities. SD is also grounded in the reality that we must maintain our ability to compete on world markets and have assured access to those markets if Canadians are to continue to enjoy their high standard of living.

Objectives	Draft Performance Indicators
2.1 Growth and Investment - Creating economic opportunities and encouraging investment in innovative and higher-value uses of natural resources.	• Economic impact of NRCan S&T. • Employment levels and productivity in resource and resource-related industries. • Value-added in the natural resource sectors. • Capital investment in resource and resource-related industries.
2.2 Trade and Markets - Maintaining and expanding access to international markets for Canadian resource-based products, knowledge, technologies and services.	• Value ($) and percent of exports of resource-based products, technologies and services.
2.3 Communities - Building the capacity of Aboriginal, rural and northern communities to generate sustainable economic activity based on natural resources.	• Number of shared projects and funds leveraged with rural, Aboriginal and Northern communities. • Number and wages of Aboriginal peoples and northern residents employed in resource sectors. • Delivery of coordinated logistics services in partnership with other agencies.

Deliverables by Business Line for Policy Goal 2

Business Line: Science and Technology

1998-99:

- National and international wood product codes and standards to facilitate global access of Canadian wood products will be developed in conjunction with Forintek Canada Corp. (NRCan - $3.1 million for 1998-99).

- In partnership with Forintek and the provinces, launch a research and technology transfer program to manufacturers of secondary wood-products to enhance their capacity for value-added production (NRCan - $1.0M).

- The use of hyperspectral data will be demonstrated to identify mineral rich areas (similar to Voisey Bay) in Canada's Arctic in partnership with 10 mining companies (NRCan - $100,000).

- Technologies will be developed for improving recovery of precious metals from base metal refineries (NRCan - $50,000 cost recovered).

- Mining productivity and safety will be improved through development of new technology prototypes such as: an automated scraper, a semi-automated carrier for portable drills, an adapted and tested hydraulic jackleg drill, a robot monitor for detection and removal of debris in narrow veins, and a mining helmet for sound reduction and voice recognition (total cost is $1.47 million: $691,000 cost recovered to NRCan, NRCan - $220,000, partner contributions - $563,000).

- An expert system for improving mine ventilation will be demonstrated at NRCan’s experimental mine in Val-d’Or and that system will be optimized at an operating mine (total cost is $1.26 million: NRCan: $80,000 + $380,000 cost recovered, partner contributions - $800,000).

- Collaborative agreements will be established with partners to develop commercial scale technology for the mass propagation of superior seedlings through "single-cell" laboratory cultures (somatic embryogenesis) (NRCan - $58,400).

- Models will be developed for predicting the regional economic impacts of global market changes and forest policies (including land use changes) on forest-dependant communities (NRCan - $71,000).

- In support of the Base Metals Strategic Initiative, the release of comprehensive volumes on the modelling and metallogenesis of three particular types of base metal deposits, will provide a basis to industry for new and more precise exploration guidelines for these metals (copper, zinc and lead), and will help establish a more quantitative basis for assessing the resource potential of one of Canada's principal trading commodities (NRCan - $1.5 million).

Deliverables by Business Line for Policy Goal 2

Business Line: Science and Technology

1999-2000:

- Technology will be developed for intermetallic coatings on metallic components which will lead to increased service life (NRCan - $102,000).

- Techniques and an integrated risk-based methodology will be developed to ensure the integrity of in-service pressure vessels and piping (NRCan - $640,000).

- The 5-year Exploration Technology II (EXTECH II) project to address declining base metal reserves in the Bathurst, N.B. mining district by developing innovative, integrated and multi-disciplinary approaches to exploration will be completed. Several major products will be published in l999, including a geophysical atlas of all major deposits, GIS-type geoscience databases, and a special volume of *Economic Geology* describing the scientific findings (total 5-year cost is $3.6 million: NRCan - $2.6 million, ACOA - $l.0 million).

Over the Planning Period:

- Non-explosive rock breaking technology (electric pulse blasting) will be developed to improve mining efficiency and safety by, for example, eliminating the need to wait while harmful gases associated with traditional explosives are removed after each blast (total cost is $3.3 million: NRCan - $500,000 cost recovered, partner contributions - $2.75 million).

- New technologies will be developed to improve the structural reliability of pipelines such as an Electro Magnetic Acoustic Transducer (EMAT) system for crack detection and sizing, and Engineering Critical Assessment (ECA) technologies to determine critical crack size and crack driving force (NRCan - $2.2 million).

- Prototypes will be fabricated for a wide range of industry sectors such as: the optical, electronics, communications, environmental, medical, aerospace, automotive and consumer products markets, with emphasis on metal matrix composites, intermetallics, advanced ceramics and metal powder injection moulding (NRCan - $500,000).

- The genetic components of Canada's important commercial tree species will be defined to support applications of biotechnology to tree improvement programs and conduct field tests of genetically improved poplar, larch and spruce trees containing pest tolerant genes (NRCan- $195,200 annually).

- Technologies for less energy-intensive oil sands and heavy oil production, and upgrading, will be developed in cooperation with industry, provincial governments and academic partners through both consortia and one-on-one arrangements (NRCan - $7.4 million).

Deliverables by Business Line for Policy Goal 2

Business Line: Science and Technology

Over the Planning Period cont'd:

- Community Energy Systems (CES) and technologies will be developed and deployed to improve energy efficiency and allow better use of waste heat (NRCan - $1.0 million).

- A new definition of “waste” that will encourage the recycling of low risk, metal-containing materials will be developed and adopted for use in Canada and in international policies.

Business Line: Knowledge Infrastructure

1998-99:

- The North American Pulp and Paper (NAPAP) and the North American Solid Wood (NASW) models will be implemented in cooperation with the U.S. Forest Service (NRCan - $60,000 in 1998-99).

- A compilation of geoscience data will be delivered for targeted regions in NWT/Nunavut through a federal-territorial-Inuit supported program to stimulate mineral exploration in northern regions and assist local communities in understanding and managing their natural resources. By 1998, this compilation will be completed for northern Baffin Island and Melville Peninsula (joint funding - $370,000 over 2 years).

- Decision Support System (DSS) tools that incorporate optimal forest treatment, harvest scheduling and silviculture to reduce timber loss due to pests will be transferred to forest sector clients. This transfer includes the expansion and implementation of the Spruce Budworm DSS Protection Planning System (now operational in New Brunswick) to include land bases in Alberta and Quebec.

- Preliminary results of field and laboratory studies associated with a two-year multi-million dollar international research program in the field of gas hydrates will be produced. These studies provide critical information on geological controls on gas hydrate occurrence and distribution for determining the potential for future energy development and impacts to climate changes.

- Nunavut Tunngavik Inc. ($3.0 million), Council for Yukon First Nations ($3.9 million), and Sahtu Tribal Council ($2.1 million) land surveys will be completed for the settlement of native comprehensive land claims, specific native land claims and treaty land entitlements (NRCan - $9.0 million cost recovered annually).

Deliverables by Business Line for Policy Goal 2

Business Line: Knowledge Infrastructure

1998-99 cont'd:

- Under NATMAP, the Magdalen Basin, Nechako, and Oak Ridges projects reports and maps will be released addressing the national issues of: new resource potential in Atlantic Canada's basins; precious metal mineral deposits possibilities in central British Columbia; and groundwater resource utilization, waste disposal and resource management in urban areas.

- Yukon geoscience data from federal and territorial geoscience sources will be compiled and a geological map of the entire Yukon Territory (1:500,000) scale will be released to provide the latest knowledge on the geology and tectonic evolution of this region. These products will assist in targeting mineral exploration in the Yukon Territory where exploration expenditures have increased more than three-fold since 1994 (NRCan - $250,000).

1999-2000:

- Final compilations of geoscience data from the completed Shield Margin NATMAP project of northern Manitoba and Saskatchewan in support of exploration in this region will be released (a special issue of the *Canadian Journal of Earth Sciences* will be devoted to the scientific results) (NRCan - $l.2 million).

- In consultation with territorial, local governments and industry partners, the prospectiveness of selected Coal Bed Methane (CBM) targets will be established as a first step in identifying potential local sources of natural gas fuels as alternatives to the expensive fuels now used in remote northern communities (NRCan - $500,000, industry - $1.0 million).

- Methodologies will be developed for integrating “non-timber” values (e.g. wildlife, recreation, amenity values) into the forest resource management decisions of local communities, and local socio-economic indicators of SD forest management will be developed in collaboration with model forests and the Sustainable Forest Management (SFM) Network of Centres of Excellence (methodology development - $155,000 over the planning period).

Over the Planning Period:

- Under NATMAP, studies will be finalized to evaluate the mineral and petroleum resource potential of the Western Superior, Western Churchill, Greater Winnipeg, and Central Forelands projects and reports and maps of these study areas will be produced.

Deliverables by Business Line for Policy Goal 2

Business Line: Knowledge Infrastructure

Over the Planning Period cont'd:

- Cost-effective support will be provided for government and university Arctic research programs related to SD, environmental and traditional knowledge studies.

- In keeping with the government's strategic response to the Royal Commission on Aboriginal Peoples, self-sufficiency by Aboriginal peoples in land management will be enhanced through training and employment opportunities .

Business Line: Developing Federal Policy and Regulations

1998-99:

- An interim evaluation report on Canada's First Nation Forestry Program will be prepared to determine whether the program is fulfilling its primary objectives such as: improving the economic conditions of First Nation communities; enhancing the capacity of First Nations to develop viable forest-based businesses; and promoting new jobs and business opportunities (total program expenditures for 1998-99: NRCan - $1.75 million, DIAND - $3.25 million, First Nations and other partners - $2.5 million).

- A strategy to increase opportunities for Aboriginal participation in mining and auxiliary mining services (i.e. construction, transportation, etc.) will be developed. In addition, the understanding and use of traditional knowledge in environmental and land use development decision-making will be enhanced and partnerships with the provinces and territories, Aboriginal communities, DIAND, the industry and other stakeholders will be strengthened.

- An outlook for the future contribution of nuclear power to Canada will be developed including comparative costs, supply projections and environmental benefits.

Over the Planning Period:

- In cooperation with industry and all levels of government, a national strategy for value-added Canadian forest products will be developed by 1999 (NRCan - $320,000 for 1998-99).

- The SD of energy from Canada's offshore and frontier areas will be advanced including: improving health and safety through the promulgation of Offshore Occupational Health and Safety Regulations, maximizing Canadian benefits through the review of offshore oil and gas developments, and ensuring the integrity of survival/evacuation systems for frontier oil and gas exploration and development.

Deliverables by Business Line for Policy Goal 2

Business Line: Developing Federal Policy and Regulations

Over the Planning Period cont'd:

- "Mineral resource" certifications submitted by the mining industry to obtain favourable mining tax treatment under the Federal *Income Tax Act* and *Excise Tax Act* will be completed.

- By 2000, outstanding Canadian Exploration Incentives Program (CEIP) and Petroleum Incentive Program (PIP) cases will be resolved in a cost effective and equitable manner.

Business Line: Promoting Canada's International Interests

1998-99:

- Through active international negotiations, and in conjunction with other departments, NRCan will seek adoption of: i) an acceptable heavy metals protocol under the UN Convention on Long Range Transboundary Air Pollution (LRTAP), ii) acceptable protocols of accession to the World Trade Organization that reflect Canadian industry interests and other non-tariff items and, iii) an international sea-bed mining code under the Law of the Sea Convention.

- In conjunction with DFAIT, NRCan will seek to negotiate lower tariffs and eliminate unjustifiable non-tariff barriers for fertilizers as part of the APEC Early Voluntary Sector Liberalization.

- The Minister of Natural Resources, in cooperation with the DFAIT, will lead a team Canada international trade mission to safeguard and improve Canada's trade and investment position in natural resources. The emphasis will be on small and medium-sized companies.

- Trade opportunities for Canadian resource industries will be facilitated at the APEC Energy Ministers' Meeting in Okinawa, the meeting of the Energy Ministers of the G7, and the Energy Ministers' Meeting of the Hemispheric Energy Initiative (HEI).

- Key scientific data and socioeconomic forest products information will be provided in support of Canada's actions regarding forest products trade issues including: implementing the Canada/U.S. Softwood Lumber Agreement and addressing the Pinewood Nematode trade issue (NRCan - $820,000 in 1998-99).

- A proactive federal leadership role will be provided in earth sciences international market development through 30 incoming/outgoing geomatics and geoscience missions with federal, provincial and private industry participants to benefit Canadian jobs and industry.

Deliverables by Business Line for Policy Goal 2

Business Line: Promoting Canada's International Interests

1999-2000:

- An internationally recognized protocol for the classification of risks posed by metals in the aqueous environment will be finalized and approved (NRCan - $100,000 cost recovered, NRCan - $30,000 in-kind).

Over the Planning Period:

- Environmental management expertise in South American R&D organizations will be developed through CIDA-sponsored projects such as: the Canada-Brazil Project, the Canada-Argentina Project, and the Canada-Guyana Project (total cost is $6.65 million: NRCan - $1.5 million, $1.5 million cost recovered, CIDA - $3.65 million).

- The number of bilateral and international partnerships in forest fire science will be increased, NRCan information technologies for fire prediction and management will be transferred to international partners, and a common international agenda for addressing wildland fire events will be established.

- Private sector job opportunities will be developed in earth sciences through the implementation of an international business strategy for maximizing global markets.

- Canadian geomatics and geoscience capabilities, such as spatial reference infrastructure technologies, will be commercialized and internationally marketed, and partnerships and cooperative ventures to increase Canadian market exports will be initiated.

- In conjunction with other government departments and agencies, Atomic Energy of Canada Ltd.'s (AECL) international market prospects will be enhanced and/or contracts will be sought in a number of countries, including in particular, Turkey and Korea.

Policy Goal 3
To minimize the environmental impacts of natural resource development and use.

Description

The environment is constantly undergoing change – some of it as a result of natural processes, some caused by human activity. We know the environment can adjust to human and natural stresses, provided these stresses remain within the ecosystem's ability to adapt and renew itself. This puts the onus on us to develop natural resources in a way that respects and protects the integrity of natural ecosystems.

Objectives	Draft Performance Indicators
3.1 Climate Change - Helping limit and adapt to climate change.	• Greenhouse gas emissions to GDP ratio and compared to international commitments and other countries. • Trends in use of alternative and renewable energy. • Trends in energy efficiency by end use. • Greenhouse gas emissions from federal operations. • Greenhouse gas impacts from NRCan S&T.
3.2 Reduce Environmental Impacts - Promoting technologies and stewardship practices that reduce environmental impacts, conserve biodiversity, and increase the efficiency of resource development and use.	• Environmental impact (other than greenhouse gas) of NRCan S&T. • Trends in recycling of natural resources.
3.3 Safety and Well Being - Safeguarding Canadians from natural hazards and the risks associated with natural resource development and use.	• Impact of NRCan information and advice on the management of natural hazards. • Clean up of contaminated low level radioactive waste sites.

Deliverables by Business Line for Policy Goal 3

Business Line: Science and Technology

1998-1999:

- A Technology Futures Multi-Stakeholder Process will be established to identify promising technology options and assess their potential contributions to reducing emissions.

- A Regional Climate Model will be developed to determine the effects of climate warming on forest fire activity in west-central Canada. In partnership with international collaborators, the impacts of global fire activity on atmospheric density and the global carbon budget will be assessed (NRCan - $37,000).

- Through Phase II of the Thiosalts Consortium, technologies and strategies will be developed to better understand, measure and control thiosalts that, if released into the environment, can lead to potential acidification of streams (NRCan - $25,000 per year in-kind, consortium members - $150,000 per year, of which NRCan recovers approximately half).

- Protocols will be developed and an integrated report prepared on available biological, water and sediment monitoring and toxicity testing techniques to determine the impacts of mine effluent on Canada's aquatic systems (NRCan - $75,000).

- Under NRCan's Metals in the Environment (MITE) initiative, a report defining the spatial extent of the "footprint" of a major copper smelter in support of the *Canadian Environmental Protection Act* (CEPA), Priority Substance List 2 (PSL-2) will be published.

- New techniques in partial cutting systems that minimize negative impacts on soil fertility, regeneration, biodiversity and aquatic systems in montane and boreal forests will be developed and transferred to forest sector clients. Major, multi-disciplinary assessments of forest management systems that reduce risks of disease and pest outbreaks will be conducted (NRCan - $650,000).

- The new PERD Strategic Reserve will be implemented, both at the Task and program levels, to fund new R&D projects which are aligned with the priorities of the Energy Priority Framework and the PERD strategy.

- Ecozone-based forest regrowth (succession) models will be designed that can predict the effects from various human and natural interventions (e.g. fire, harvesting) on forest landscapes and vegetation. Initial databases on research sites of the Extended Concentration to Forest Ecophysiology and Productivity (ECOLEAP) program will be produced to improve the knowledge base on forest ecosystem processes (NRCan - $998,000).

Deliverables by Business Line for Policy Goal 3

Business Line: Science and Technology

1999-2000:

- A new program will be developed to investigate promising disposal technologies for the large volumes of sludge created from lime treatment plants. Lime treatment is currently the principal method for treating effluent from acid-generating mine wastes, and represents a large portion of acid mine drainage liability (consortium members - $500,000).

Over the Planning Period:

- Additional components on climate effects will be integrated into the national Carbon Budget Model of Canada's forests to improve estimates of the forest's contribution and role in the global carbon budget (NRCan - $83,000 for 1998-99). As well, the ability of Canada's forests to absorb carbon dioxide from the atmosphere will be mapped (NRCan - $350,000).

- New energy efficiency technologies and processes will be developed for reducing greenhouse gas emissions from energy production and use (NRCan - $8.4 million).

- Technologies will be developed to move Canada toward a more environmentally benign transportation system in conjunction with other departments, governments and the private sector (NRCan - $4.0 million).

- Cost-effective renewable energy technologies such as bioenergy, active solar, and earth energy systems will be developed with industry (NRCan - $8.4 million).

- Technologies will be developed and transferred to improve the energy efficiency of buildings in partnership with other government departments, agencies and the building industry (NRCan - $5.5 million).

- Industrial energy efficiency technologies will be developed to moderate the demand for energy and reduce environmental emissions of greenhouse gases and particulates (NRCan - $4.6 million).

- Biodiversity conservation strategies and ecological recovery plans will be developed for rare and threatened forest vegetation species, and guidelines will be established for genetic conservation in natural and managed forests (1998-99). Databases on the extent of forest biodiversity in protected areas will be developed in cooperation with provincial and other federal agencies (NRCan - $103,000 annually).

Deliverables by Business Line for Policy Goal 3

Business Line: Science and Technology

Over the Planning Period cont'd:

- The Forest Ecosystem Research Network of Sites (FERNS) will be expanded. These experimental sites provide a means for multi-disciplinary and multi-agency research on forest ecosystems and practices through collaboration with provincial and other research agencies and universities.

- In partnership with industry, technologies will be developed to significantly reduce the weight of automobiles, such as forming technologies for aluminum sheet metal applications; and a prototype will be developed for a lightweight rechargeable cell for electric or hybrid vehicles to create more energy-efficient automobiles (NRCan - $660,000).

- Efficacy and field tests will be completed to support registration and commercial use of several natural-based products as alternatives to chemical pesticides in forest protection programs. These programs include: a target-specific virus for management of spruce budworm, microbial competitors for controlling forest disease such as white pine blister rust, natural pathogens for control of competing vegetation in regenerating forests, and the use of natural elements to combat exotic (foreign) pests (NRCan - $697,000 annually).

- A research consortium (sponsored by CP, CN and BC Rail) will investigate and report on landslide hazards along the major transportation corridors of the B.C. Cordillera in order to examine trackbed failure for mitigating major disruptions to the national rail network.

- A new Post-MEND program to transfer field project technologies to reduce mine environment neutral drainage will be implemented by 1998 in partnership with the Mining Association of Canada.

- A major report will be prepared by 2000 on options to control the harmful effects of air emissions from copper and zinc smelters, as identified under the PSL-2 process, in collaboration with EC and other concerned federal agencies.

- New initiatives will be funded by PERD to: assess the formation and deposition of particulate emissions and their effects on health, assess the impacts of climate change on the energy sector, and enhance the cost and performance of renewable technologies such as the efficiency of turbines of small hydro applications.

Deliverables by Business Line for Policy Goal 3

Business Line: Science and Technology

Over the Planning Period cont'd:

- New initiatives will be developed by PERD in process integration, heat management, sensors, and control technologies. New hydrocarbon activities will also be initiated by PERD in environmental technologies for conventional oil and gas from fields operated by Canadian junior and intermediate companies who lack in-house R&D facilities.

Business Line: Knowledge Infrastructure

1998-99:

- Provincial-scale fire management decision support systems will be transferred for operational use in Quebec and western Canada. These systems incorporate fire prediction and behaviour to support effective response and resource allocation in the suppression of wildfires by provincial fire management agencies (NRCan - $81,000 annually).

- A natural geological hazards atlas will be produced summarizing information on natural hazards (e.g. earthquakes, landslides) in Canada.

- Ice movements and coastal changes in Antarctica using RADARSAT data will be mapped in collaboration with NASA, to better understand the impact of global climate change and to apply the experience gained to deal with changes in permafrost and glacier behaviour in Canada (NRCan - $80,000).

- An operational ocean information system will be demonstrated using a portable RADARSAT receiving station to monitor ice, oil spills and shipping in order to achieve significant improvements in disaster management response and cost savings in rescue and fisheries management (NRCan - $100,000).

1999-2000:

- Our scientific understanding of climate change and its impacts will be expanded by: providing geoscience data and expertise on climate change issues; completing the Palliser Triangle study in the southern Prairies; and providing information for the next phase of the Canada Country Study on Impacts and Adaptation Strategy.

Deliverables by Business Line for Policy Goal 3

Business Line: Knowledge Infrastructure

Over the Planning Period:

- Predictive models will be developed on the response of forest vegetation and ecosystems under different climate scenarios. These models will support the identification of potential mitigative and adaptive measures, such as utilizing drought resistant species and broad-scale forest management approaches (NRCan - $159,000).

- A departmental Climate Change Knowledge Base will be established. As one application of this Knowledge Base, a long-term strategy of adaption to the impacts of climate change will be developed.

Business Line: Developing Federal Policy and Regulations

1998-99:

- An Office of Energy Efficiency (OEE) will be established to deliver all of NRCan's new and existing energy efficiency initiatives, share information and knowledge about energy efficiency, and enhance NRCan's national and international leadership role on energy efficiency.

- The EnerGuide for Houses initiative will be introduced, which will provide homeowners with the facts they need to make informed decisions about energy efficiency (NRCan - $3.0 million).

- Energy Innovators Plus will be introduced to expand the Energy Innovators Program to allow more organizations to take action to reduce their energy operating costs and greenhouse gas emissions (NRCan - $3.0 million).

- The Commercial Building Incentive Program will be introduced to provide a fiscal incentive for new commercial buildings that achieve a high level of energy efficiency (NRCan - $10.0 million).

- The EnerGuide label for vehicles will be introduced to the marketplace to help consumers find the most fuel-efficient vehicle to meet their needs.

- Financial and institutional arrangements for the disposal of used nuclear fuel in Canada will be developed based on the recommendations of the federal environmental assessment report due in 1998.

Deliverables by Business Line for Policy Goal 3

Business Line: Developing Federal Policy and Regulations

1998-99 cont'd:

- Energy performance levels will be established for 14 new products under the *Energy Efficiency Regulations*: oil-fired furnaces, gas and oil-fired boilers, three-phase central air conditioners and heat pumps, packaged terminal air conditioners and heat pumps, large air conditioners, heat pumps and condensing units, automatic ice makers, compact clothes dryers, dehumidifiers, and transformers.

- In collaboration with major stakeholders, a voluntary rechargeable nickel-cadmium battery recycling program will be implemented within Canada.

- An industry-funded International Lead Management Centre (ILMC) will be further developed to reduce the risks to human health from exposure to lead.

- Efforts to improve the performance information on NRCan's energy efficiency initiatives will be expanded, the contribution made by these initiatives to Canada's greenhouse gas emissions limitation targets will be assessed, and this information will be incorporated into various reports to Parliament.

- Industry will be assisted to set energy efficiency performance targets by providing benchmarking reports and best practices information to industrial clients, comparing their energy efficiency to national and international averages.

1999-2000:

- Energy performance levels will be established for 6 new products under the *Energy Efficiency Regulations*: elliptical and bulged incandescent reflector lamps, exit signs, gas fireplaces, windows, and commercial clothes washers, and the energy performance levels will be increased for 4 other products: refrigerators, electric water heaters, gas furnaces, and fluorescent lamp ballasts. In addition, there will be a requirement under the *Regulations* for windows to display the EnerGuide label.

- The Atomic Energy Control Board regulations governing the nuclear industry with respect to health, safety and environmental protection will be updated.

Deliverables by Business Line for Policy Goal 3

Business Line: Developing Federal Policy and Regulations

2000-2001:

- Energy performance levels will be established for 11 new products under the *Energy Efficiency Regulations*: vending machines; refrigerated display cabinets; food service refrigerators; water coolers; commercial size gas, oil and electric water heaters; commercial size gas-fired and oil-fired boilers; combination space heating/water heating systems; and small pumps.

Over the Planning Period:

- In conjunction with the Low-Level Radioactive Waste Management Office, historic waste sites in Canada such as Port Hope, Fort McMurray and Surrey, B.C. will be cleaned up and rehabilitated.

- Protocols and scientific data will be developed for risk assessment and regulatory decisions related to genetic engineering of trees and biopesticides in collaboration with Agriculture and Agri-Food Canada (NRCan - $82,500 annually).

- A national implementation strategy on climate change will be developed by the federal government in consultation and partnership with the provinces, territories and stakeholders. The strategy will build public awareness and consciousness, and will encourage early action on climate change (NRCan - $40.0 million annually; EC - $10.0 million annually).

Business Line: Promoting Canada's International Interests

1998-99:

- Under APEC, lead the development of a process to harmonize testing methods for energy efficiency standards throughout the Asia Pacific region.

- To support Canada's commitments to the Comprehensive Test Ban Treaty (CTBT), seismic monitoring will be expanded to detect and discriminate underground nuclear explosions using designated sites in the Canadian National Seismograph Network. One of the first infra-sound monitoring stations (IMS) in the world will be installed at Lac DuBonnet, Manitoba (NRCan - $1.4 million annually).

Policy Goal 4

To effectively deliver federal responsibilities for surveys and mapping, and explosives.

Description

Environmental preservation, national defence, sovereignty, economic development – these issues call for an increasingly detailed knowledge of our country and its resources. NRCan provides many products and services that support the institutions of public governance, that is, good government as part of a strong economic and social fabric. It does so through legislation, regulations, codes and standards that reduce the health and safety risks associated with disasters and the development of resources. These products and services include: scientific research, regulation development and training which promote the safe production and use of explosives and pyrotechnics; aeronautical charts for air safety; maintaining a geodetic reference framework for surveying and mapping; legal surveys to support effective land management; air photos and topographical maps for search and rescue related activities and emergency planning; geographical and geological maps on our land and natural resources; national databases on resources and their use; earth observation data from remote sensing satellites for applications such as responding to the Manitoba flood disaster; logistics support for scientific research in the arctic; and geoscience information on hazards such as earthquakes; and environmental issues such as metals in the environment.

NRCan carries out the majority of its responsibilities in partnership with other government departments, provinces, territories and stakeholders. It has a primary role to play in acquiring, maintaining and distributing information and knowledge that provide powerful tools for Canadian resource industries and other knowledge-based industries.

Objectives	Draft Performance Indicators
4.1 Maintaining a national framework for geospatial positioning, mapping, and boundary maintenance.	• User satisfaction with relevant products and services (aeronautical charts, surveys). • Success of projects undertaken in partnership.
4.2 Promoting the safe use of explosives and pyrotechnics.	• Accident and incident rate in the explosives and pyrotechnic industries in Canada.

Deliverables by Business Line for Policy Goal 4

Business Line: Developing Federal Policy and Regulations

1998-99:

- New plain language explosives regulations will be passed and implemented.
- Explosives regulations will be evaluated and refined through the amendment process (NRCan - $50,000).
- Procedures for manufacturing and handling explosives and pyrotechnics will be improved (NRCan - $60,000).
- New and revised explosives safety manuals and standards will be released.

Business Line: Knowledge Infrastructure

1998-99:

- The National Topographic Database (NTDB) for change detection and data acquisition will be expanded by seeking new agreements with public and private sector agencies.
- The Canadian Spatial Reference System (CSRS) will be delivered in partnership with provincial and territorial governments and stakeholders to serve as a national standard of reference for positions (NRCan - $3.7 million).
- A “Trend Watch” database, an information gathering and analysis tool for better decision making by NRCan and its clients, will be implemented.

Over the Planning Period:

- Stakeholders access to the Canada Lands Survey Records (CLSR) will be implemented and automated through the commissioning of an Internet-based system exploiting the digitization of CLSR plans (NRCan - $100,000 annually).
- Aeronautical charts and publications will be revised and delivered to civil and military clients on an internationally agreed 56-day cycle to help ensure aviation safety in Canada.

Business Line: Promoting Canada’s International Interests

Over the Planning Period:

- Assist negotiations of international agreements, through “expert” advice to Canadian delegations, to increase controls over explosives in an effort to combat crime and terrorism.

Management Goal 5
To manage the department efficiently and effectively.

Description

NRCan is committed to good governance and the SD of Canada's natural resources. To implement this agenda, flexibility has to be an integral part of our corporate culture and structures. Today's dynamic of continual change gives rise to management and organizational challenges. These issues need to be identified and properly managed. Flexibility also requires a sound management and employee culture. The way the department deals with its employees, its accountability and its own performance must continue to be strengthened.

Proposed deliverables to address these management challenges are outlined below.

Objectives	Draft Performance Indicators
5.1 Managing resources responsibly.	• Employee satisfaction with NRCan management practices (survey, upward feedback). • Extent to which core organizational competencies are met (initially reporting on training and development). • Savings realized from streamlining administrative processes, innovative service delivery, electronic commerce, improved facilities management, and IT bulk purchasing and contracts (dollars, time).
5.2 Continuously improving NRCan products, services and operations*.	• Response to recommendations from audits, evaluations, and other studies of NRCan management and operations. • NRCan score on the National Quality Institute/TBS Quality Fitness Test. * *An indicator on policy capacity to be developed.*
5.3 Strengthening partnerships and transferring knowledge.	• Total funds and in-kind support leveraged by NRCan from shared S&T projects. • Uptake of NRCan-supported knowledge, technologies, and practices.
5.4 Continuously improving S&T management.	• Progress towards the implementation of NRCan's S&T Management Framework.

Objectives	Draft Performance Indicators
5.5 Promoting a stronger science culture*.	• Public awareness of the importance and relevance of NRCan's S&T. • Number of recipients and value of NRCan science training initiatives (grants, scholarships, co-op students and internships) * *An indicator on science capacity to be developed.*

Deliverables by Business Line for Management Goal 5

Business Line: Science and Technology

1998-99:

- As follow-up to the National Forest S&T forum held in June 1996, and in cooperation with the CCFM, a collective S&T Course of Action will be developed to respond to knowledge and research needs of Canada's renewed National Forest Strategy.

Over the Planning Period:

- Opportunities for advanced education of students in forest-related S&T in Canada will be enhanced by supporting up to 45 graduate students and post-doctorate fellowships through cost-shared NSERC/CFS/Industry Partnerships Program. Direct funding will be provided for graduate forestry studies through the CFS Graduate Supplements Program and "co-op" opportunities will be provided for 200 students across five Forestry Research Centres (NRCan - $2.7 million annually).

- Under the Geomatics Professional Development Program (GPDP), in 1998-99, 10 university graduates in the field of geomatics will be provided with training (NRCan - $500,000); and, by establishing new partnerships over the next five years, the number of program participants will be increased, reaching 16 candidates in the year 2001. The GPDP provides a unique opportunity to develop a pool of young geomatics experts for employment opportunities in the government and private sector's high technology areas.

Business Line: Corporate Management and Administration

1998-99:

- Phase II of the Integrated Procurement and Payment System (IPPS) will be implemented resulting in improved service delivery by decreasing turn-around time and minimizing human intervention and the use of paper (NRCan - $1.0 million).

Deliverables by Business Line for Management Goal 5

Business Line: Corporate Management and Administration

1998-99 cont'd:

- The state of comptrollership in NRCan will be reported on and a departmental action plan to respond to the Report from the Independent Advisory Panel on Modernization of Comptrollership in the Federal Government will be developed.

Over the Planning Period:

- An Information Management Framework will be developed as a key building block for the department's Knowledge Initiative in order to deliver information, both internally and externally, in a more integrated approach.

- An assessment of the Year 2000 impact on the department will be conducted and solutions will be implemented and monitored. These solutions will focus initially on three departmental Mission Critical Systems (i.e. Aeronautical Charting, Seismic Monitoring, Geomagnetic Monitoring) and other business-essential systems (e.g. NRCan - $170,000 for the departmental financial system in 1998-1999).

- An assessment of the management of IT hardware and software will be conducted to reduce cost of ownership, improve financial management of replacements and upgrades, and increase accountability for the assets (NRCan - $100,000 in 1998-99).

- In accordance with the Departmental Action Plan for La Relève and the S&T HR Blueprint for action, new HR management practices will be developed and implemented (e.g. implement a recruitment and rejuvenation strategy and the departmental learning priorities; provide HR Planning tools to identify successors for managerial levels; develop a directory of professional competencies, descriptors, position profiles and tools to assess and develop competencies; further develop the PeopleSoft HR information system; evaluate all broad-banded work descriptions using the Universal Classification System and prepare for conversion in 1999; implement a plan for complying with the Employment Equity Act; and produce a report card for monitoring the health of human resources management).

- Efficient use of natural resources will be increased by: implementing energy-saving measures to reduce greenhouse gas emissions and operating costs by a minimum of 18 percent over 1993-94 levels; demonstrating alternative fuel technologies within NRCan's fleet; implementing green construction techniques; implementing a pilot project to assist in the development of electricity from renewable energy sources; reducing solid wastes to 50 percent of 1988 levels and water consumption at 30 percent less than 1994 levels; and utilizing leading edge tools to raise the Environmental Management System to international standards.

Deliverables by Business Line for Management Goal 5

Business Line: Corporate Management and Administration

Over the Planning Period cont'd:

- Pending DMC approval of the Integrated Accommodation Project (IAP), an action plan will be prepared and implemented for: (i) a Real Estate Policy and its associated procedures; and (ii) an Accommodation Plan which will align the departmental real estate portfolio with program requirements.
- A major departmental review of administrative services (facilities management, procurement and security) will be conducted to increase efficiency and effectiveness of resource management.

C. Key Planned Reviews

S&T Management Framework – A formal evaluation of the Framework will be carried out in 1998-99 to assess whether the Framework met its objectives of increased accountability, improved client focus and enhanced management. The results should be available and reported in the Performance Report for the year ending March 31, 1999.

Value And Impact of Bedrock Geological Mapping – The study will examine and document the use and impact of bedrock geological mapping in Canada, its role in and impact on the development of mineral and energy resources as well as the management and planning of the built environment. Because of common interests, the study will be coordinated with the provinces and the U.S. Geological Survey.

Energy Efficiency Programs – Over the planning period, NRCan will review these programs through a set of related initiatives by sector/industry such as: equipment, buildings, industry, transportation, and alternative fuels. The evaluations will cover both the program and the R&D components, and will assess the extent to which objectives are clear, the success in achieving the objectives, the efficiency in the delivery of the programs and client feedback. The evaluations will also assist in better defining performance expectations and corresponding performance measures.

Legal Surveys Division – NRCan has, in consultation with the Minister's National Advisory Board on Earth Sciences, commissioned a comprehensive study involving leading academic institutions, professional organizations and private industry, on the Legal Surveys Division's mandated responsibilities and technology.

Canada's First Nation Forestry Program – An interim evaluation on Canada's First Nation Forestry Program will be conducted to determine whether the program is fulfilling its primary objectives of improving the economic conditions of First Nation communities; enhancing the capacity of First Nations to develop viable forest-based businesses; and, promoting new jobs and business opportunities.

CFS S&T Impact Studies – In order to better determine the outcomes of its research, CFS will be conducting a series of case studies on the economic and environmental impacts of a representative sample of CFS technologies. With input from the Audit and Evaluation Branch (AEB), this exploratory study will develop impact measures and a methodology appropriate to CFS and NRCan needs, and will involve 6 to 10 S&T projects in a range of research areas such as information systems, tree breeding programs, and improved harvesting practices.

Energy Impact Studies – With input from the AEB, the Energy Technology Branch will identify and measure the chief economic, social and environmental impacts of projects in three areas: consolidated mine tailings, high efficiency electric motors, and coke oven R&D.

D. Gross Planned Expenditures by Business Line for the Planning Period (Including Non-Budgetary)

($ millions)	1997-98* Planned Expenditures	**1998-99 Planned Expenditures**	1999-00 Planned Expenditures	2000-01 Planned Expenditures
Science and Technology	256.6	**214.1**	212.8	212.7
Knowledge Infrastructure	123.6	**134.7**	134.9	135.0
Developing Federal Policy and Regulations**	60.7	**131.5**	132.0	132.1
Promoting Canada's International Interests	9.2	**10.4**	10.4	10.4
Sunset/Special Programs	46.8	**52.5**	48.1	14.0
Corporate Management and Administration	52.4	**37.5**	36.2	35.8
Geomatics Canada Revolving Fund	1.1	**0.6**	(0.8)	(0.7)
Gross Planned Expenditures	550.4	**581.3**	573.6	539.3

* 1997-98 amounts have been adjusted to reflect the new NRCan Business Lines. 1997-98 financial information includes items approved via the Supplementary Estimates A.

** Includes $40.0 million for the Climate Change Action Fund

IV Supplementary Information

A. Financial Summary Tables

1. Spending Authorities – NRCan 1998-99 Planned Spending Figures

Financial Requirements by Authority ($ millions)

Vote		1997-98* Planned Expenditures	**1998-99 Planned Expenditures**
1	Operating expenditures**	409.5	**413.0**
5	Capital expenditures	13.4	**12.6**
10	Grants and contributions	44.8	**43.6**
(S)	Minister of Natural Resources - Salary and motor car allowance	0.1	**0.1**
(S)	Contributions to employee benefit plans	33.0	**41.1**
(S)	Canada/Nova Scotia Development Fund	3.9	**4.1**
(S)	Canada/Newfoundland Development Fund	7.0	**5.5**
(S)	Canada/Newfoundland Offshore Petroleum Board	1.4	**1.4**
(S)	Canada/Nova Scotia Offshore Petroleum Board	0.7	**0.7**
(S)	Payments to the Nova Scotia Offshore Revenue Account	1.4	**0.5**
(S)	Payments to the Newfoundland Offshore Petroleum Resource Revenue Fund	0.1	**0.2**
(S)	Geomatics Canada Revolving Fund	1.1	**0.6**
(S)	Nova Scotia Fiscal Equalization Offset Payments	1.2	**0.4**
	Total Budgetary	517.6	**523.8**
L15	Loan to Nordion International Inc. for the construction of two nuclear reactors and related processing facilities to be used in the production of medical isotopes	17.2	**37.9**
	Total Natural Resources Canada	534.8	**561.7**

* 1997-98 Financial information includes items approved via the Supplementary Estimates A.

** Includes $40.0 million for the Climate Change Action Fund.

2. Departmental Summary of Standard Objects of Expenditures

($ millions)	1997-98* Planned Expenditures	**1998-99** Planned Expenditures**
Personnel		
Salaries and Wages	212.7	**195.8**
Contributions to employee benefit plans	34.0	**42.1**
Other Personnel costs	6.2	**4.1**
Subtotal Personnel	252.9	**242.0**
Goods and Services		
Transportation and communications	18.5	**22.5**
Information	12.9	**12.6**
Professional and special services***	125.3	**143.5**
Rentals	6.0	**9.1**
Purchased repair and maintenance	7.2	**8.9**
Utilities, materials and supplies	18.6	**22.9**
Other subsidies and payments	8.1	**6.1**
Construction and/or acquisition of machinery and equipment	27.0	**23.5**
Subtotal Goods and Services	223.6	**249.1**
Total Operating	476.5	**491.1**
Capital ****	13.4	**12.6**
Transfer Payments		
Voted	44.8	**43.6**
Statutory	15.7	**12.9**
Total Transfer Payments	60.5	**56.5**
Total Gross Expenditures	550.4	**560.2**
Less:		
Revenue credited to the Geomatics Canada Revolving Account	17.2	**16.8**
Revenue credited to the vote	15.6	**19.6**
Net Budgetary Expenditures	517.6	**523.8**
Non-budgetary (loans and investments)	17.2	**37.9**
Total Natural Resources Program	534.8	**561.7**

* 1997-98 Financial information includes items approved via the Supplementary Estimates A.

** A recent change in government reporting practices results in the inclusion of Minor Capital in the Operating Vote

*** Includes $40.0 million for the Climate Change Action Fund.

**** Capital contains budgetary expenditures for investment in: the acquisition of land, building and engineering structures ans works; the acquisition or creation of other capital assets considered essential to ongoing program delivery; and major alterations, modifications, or renovations that extend the use of capital assets or change their performance or capability.

3. Planned Expenditure Details by Business Line for 1998-99

($ millions)	FTE	Budgetary				Statutory Items *	Non-budgetary Loans and Investments	Gross Planned Expenditures	Less: Revenue Credited to the Vote	**Net Planned Expenditures**
		Operating	Capital	Grants and Contributions	Gross Voted					
Science and Technology	1,492	187.7	6.9	19.5	214.1	--	--	214.1	14.8	**199.3**
Knowledge Infrastructure	1,094	122.6	2.6	9.5	134.7	--	--	134.7	3.0	**131.7**
Developing Federal Policy and Regulations**	544	113.2	2.6	13.5	129.3	2.2	--	131.5	1.8	**129.7**
Promoting Canada's International Interests	93	10.0	0.4	--	10.4	--	--	10.4	--	**10.4**
Sunset/Special Programs	6	2.7	0.1	1.1	3.9	10.7	37.9	52.5	--	**52.5**
Corporate Management & Administration	442	37.5	--	--	37.5	--	--	37.5	--	**37.5**
Geomatics Canada Revolving Fund	--	17.4	--	--	17.4	--	--	17.4	16.8	**0.6**
Total Planned Expenditures	3,671	491.1	12.6	43.6	547.3	12.9	37.9	598.1	36.4	**561.7**
Other Revenues and Expenditures										
Revenue Credited to the Consolidated Revenue Fund ***										**9.5**
Estimated Cost of services provided by Other Departments ****										**23.0**
Net Cost Natural Resources Canada	3,671	491.1	12.6	43.6	547.3	12.9	37.9	598.1	36.4	**575.2**

* Does not include contributions to employee benefit plans and Minister's allowance which are allocated to operating expenditures or non-budgetary items.

** Includes $40.0 million for the Climate Change Action Fund.

*** Figure 6 a) and 6 b) on pages 51 and 52 provide additional details on revenue.

**** Services provided without cost by other departments include the following:

Charges for government payments to employee insurance plan	13.2
Charges for accommodation provided by Public Works and Government Services Canada	9.0
Department of Justice Costs	0.3
Workers' Compensation Costs	0.5
Total	23.0

4. Responsibility for Planned Spending by Sector and Business Line for 1998-99

	Sector						
($ millions)	Earth Sciences	Forest	Mineral and Metals	Energy	Corporate Services	Direction and Coordination*	**Total NRCan**
Science and Technology	24.2	65.8	29.0	85.5	9.6	--	**214.1**
Knowledge Infrastructure	99.1	19.6	6.1	1.7	8.2	--	**134.7**
Developing Federal Policy and Regulations**	16.3	10.9	7.2	53.2	3.9	40.0	**131.5**
Promoting Canada's International Interests	1.8	4.1	2.1	1.8	0.6	--	**10.4**
Sunset/Special Programs	--	--	3.8	48.6	0.1	--	**52.5**
Corporate Management and Administration	--	--	--	--	24.2	13.3	**37.5**
Geomatics Canada Revolving Fund	0.6	--	--	--	--	--	**0.6**
Total	**142.0**	**100.4**	**48.2**	**190.8**	**46.6**	**53.3**	**581.3**

* Direction and Coordination includes: Executive Offices, a Strategic Planning and Coordination Branch, Legal Services, a Communications Branch, and an Audit and Evaluation Branch.

** Includes $40.0 million for the Climate Change Action Fund.

5. Details of Transfer Payments by Business Line

Grants and contributions make up 11.5 % of the budgetary expenditures of the department. The figure below summarizes all grants and contributions planned expenditures.

($ millions)	1997-98* Planned Expenditures	**1998-99 Planned Expenditures**	1999-00 Planned Expenditures	2000-01 Planned Expenditures
Grants				
Science and Technology	0.2	**0.2**	0.2	0.2
Knowledge Infrastructure	0.2	**0.2**	0.2	0.2
Developing Federal Policy and Regulations	0.2	**0.1**	0.1	0.1
Promoting Canada's International Interests	--	**--**	--	--
Sunset/Special Programs	--	**--**	--	--
Corporate Management & Administration	0.1	**0.1**	0.1	0.1
Geomatics Canada Revolving Fund	--	**--**	--	--
Total Grants	0.7	**0.6**	0.6	0.6
Contributions				
Science and Technology	26.2	**19.2**	18.2	17.8
Knowledge Infrastructure	1.5	**9.5**	9.4	9.3
Developing Federal Policy and Regulations	6.8	**15.5**	18.3	19.3
Promoting Canada's International Interests	--	**--**	--	--
Sunset/Special Programs	25.3	**11.7**	8.7	6.1
Corporate Management & Administration	--	**--**	--	--
Geomatics Canada Revolving Fund	--	**--**	--	--
Total Contributions	59.8	**55.9**	54.6	52.5
Total Grants and Contributions	60.5	**56.5**	55.2	53.1

* 1997-98 Financial information includes items approved via the Supplementary Estimates A.

6. Revenues

Revenue received is deposited to the Consolidated Revenue Fund and is not available to finance activity expenditures with the exception of the Geomatics Canada Revolving Fund. However, revenue credited to the vote is available to offset expenditures up to 125% of the amount of revenue printed in the Main Estimates. Revenue is shown by Class (Table 6.a) and by Business Line (Table 6.b).

6. a) Details of Revenue by Class

($ millions)	1997-98* Planned Revenue	**1998-99** Planned Revenue**	1999-00 Planned Revenue	2000-01 Planned Revenue
Privileges, licenses and permits	14.8	**10.7**	7.0	7.0
Return on investments	1.3	**--**	--	--
Proceeds from sales	0.8	**1.3**	1.3	1.3
Services and service fees	12.5	**15.7**	16.7	16.8
Refunds of previous years' expenditures	--	**--**	--	--
Adjustments to Payables at Year End	--	**--**	--	--
Provision of departmental services to the Geomatics Canada Revolving Fund **	1.1	**1.1**	1.1	1.0
Revenue credited to the Geomatics Canada Revolving Fund ***	17.2	**16.8**	15.4	16.4
Miscellaneous	0.2	**0.3**	0.3	0.3
Total Revenue	47.9	**45.9**	41.8	42.8
Less available for respending:				
Revenue credited to the vote	15.6	**19.6**	20.6	20.7
Geomatics Canada Revolving Fund ***	17.2	**16.8**	15.4	16.4
Revenue Credited to the Consolidated Revenue Fund	15.1	**9.5**	5.8	5.7

* As per 1997-98 Annual Reference Levels Update.

** These amounts are taken from the Pro-Forma Statements presented in the Geomatics Canada Transitional Business Plan.

*** This amount represents the actual cash received by the Revolving Fund and consequently does not take into account the receivables.

6. b) Details of Revenue by Business Line

($ millions)	1997-98* Planned Revenue	**1998-99** Planned Revenue**	1999-00 Planned Revenue	2000-01 Planned Revenue
Science and Technology	0.3	**0.6**	0.6	0.6
Knowledge Infrastructure	0.3	**--**	--	--
Developing Federal Policy and Regulations	2.9	**2.9**	2.9	2.9
Promoting Canada's International Interests	--	**--**	--	--
Sunset/Special Programs**	10.4	**4.9**	1.2	1.2
Corporate Management & Administration	1.2	**1.1**	1.1	1.0
Geomatics Canada Revolving Fund	--	**--**	--	--
Revenue Credited to the Consolidated Revenue Fund	15.1	**9.5**	5.8	5.7

* As per 1997-98 Annual Reference Levels Update.

** The Energy Activity excludes revenues related to the Newfoundland and Nova Scotia offshore activities for which offsetting statutory payments will be made to the respective provinces. Offshore revenues are estimated to total $1.5 million in 1997-98, $2.1 million in 1998-99, $2.3 million in 1999-2000, and $2.1 million in 2000-2001.

7. Geomatics Canada Revolving Fund Summary

This Fund was established under *Appropriation Act No. 3* in 1993-94 for the purpose of carrying out the operation of the revenue-generating activities of Geomatics Canada. At that time, the Fund received a continuing non-lapsing authority from Parliament to make payment from the Consolidated Revenue Fund, not to exceed $8 million at any time.

The Fund's revenue-generating activities consist of three elements: products, services, and consulting. These activities provide an increasing volume of products and services to various clients. These products and services are suitable for industry distribution, value added services and help strengthen the geomatics industry on the international market.

In 1998-99, the Fund's revenue will increase by 5 percent from 1997-98. This is mainly attributable to the product activity. Products such as digital data from aeronautical charting and custom aeronautical charts will be the main contributors to this forecasted growth.

In 1997-98, Geomatics Canada undertook a re-structuring of the distribution of the topographic maps. In order to better serve its existing dealership, a new category of large regional distributors was created. A large regional distributor will assume responsibility for managing a network of dealers and servicing their needs. This initiative should have a positive impact on revenues in 1998-99 by increasing market penetration and decreasing the operating expenses.

The consulting activity has been identified as the area of greatest international growth potential. According to the international strategy, this activity is linked to the government's desire to pursue export opportunities in support of the Canadian domestic industry. This activity will generate a significant increase of revenues in the Fund over the next three-year period.

Geomatics Canada is committed to provide quality products and services to the Canadian geomatics industry and all other clients while respecting government rules and directives concerning the management of the Fund. For the coming years, the positive financial position of the Fund will be maintained.

7.a) Revolving Fund Statement of Operations and Changes in Financial Position

($ millions)	1997-98 Planned Expenditures	**1998-99 Planned Expenditures**	1999-00 Planned Expenditures	2000-01 Planned Expenditures
Revenues				
Products	10.1	**11.0**	11.2	11.4
Services	3.5	**2.9**	3.1	3.3
Consulting	2.4	**2.9**	3.4	3.5
Total revenues	16.0	**16.8**	17.7	18.2
Expenditures (includes cost of goods sold)	15.6	**16.4**	17.2	17.6
Operating Surplus (deficit)	0.4	**0.4**	0.5	0.6
Changes in Working Capital	(1.7)	**(1.0)**	0.5	0.2
Capital acquisitions	(0.2)	**(0.3)**	(0.5)	(0.4)
Other items	0.4	**0.3**	0.3	0.3
Cash requirements	(1.1)	**(0.6)**	0.8	0.7

7. b) Projected Use of Geomatics Canada Revolving Fund Authority

($ millions)	
Authority April 1, 1994	**8.0**
Drawdown:	
• Anticipated Use at end of fiscal year 1997-98	3.2
• Estimated Use for 1998-99	0.6
Anticipated Authority Balance at the end of fiscal year 1998-99	**4.2**

8. Outstanding Loans

($ millions)	Balance April 1, 1998	Receipts and Other Credits	Payments and Other Charges	Balance March 31, 1999
Atomic Energy of Canada Ltd.				
Housing	0.2	0.1	--	0.1
Gentilly II Nuclear Power Station	10.5	1.0	--	9.5
Hibernia Development Project	132.0	--	--	132.0
Nordion International Inc.	14.9	--	37.9	52.8

B. Correlation between 1997-98 and 1998-99 Policy Goals

During 1997-98, NRCan adopted a *Sustainable Development Strategy* and, as a result, revised its Policy Goals from nine to four in order to better reflect this new focus.

1997-98 Policy Goals	1998-99 Policy Goals
1. To integrate economic, environmental and social factors into Canadians' decisions regarding natural resources. 2. To provide the information on the Canadian land and resources needed for informed decision-making.	1. To enable Canadians to make balanced decisions regarding natural resources.
3. To expand the potential for economic growth and job creation based on the sustainable development of Canada's natural resources. 4. To help aboriginal communities manage their natural resources 5. To maintain and expand access to foreign markets for resource-based products, technologies and services.	2. To sustain the economic and social benefits derived from natural resources for present and future generations
6. To encourage efficient resource development and use and to minimize the environmental impact of resource development. 7. To work with Canadians to achieve our international climate change commitments. 8. To protect the health and safety of Canadians.	3. To minimize the environmental impact of natural resource development and use.
9. To deliver federal responsibilities in partnership with provincial and territorial governments and stakeholders.	4. To effectively deliver federal responsibilities for surveys and mapping, and explosives.

C. List of Statutes and Regulations

Acts for which the Minister of NRCan is the Responsible Minister:

Arctic Waters Pollution Prevention Act
Atomic Energy Control Act
Canada Oil and Gas Operations Act
Canada Lands Surveys Act
Canada Petroleum Resources Act
Canada-Newfoundland Atlantic Accord Implementation Act
Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act
Canadian Wheat Board Act
Canadian Home Insulation Program Act [(1)]
Canadian Exploration Incentive Program Act [(1)]
Canadian Exploration and Development Incentive Program Act [(1)]
Canadian Ownership and Control Determination Act
Cape Breton Development Corporation Act
Cooperative Energy Act
Department of Natural Resources Act
Energy Supplies Emergency Act
Energy Monitoring Act
Energy Administration Act
Energy Efficiency Act
Explosives Act
Forestry Act
Hibernia Development Project Act
Home Insulation (N.S. and P.E.I.) Program Act [(1)]
International Boundary Commission Act
National Energy Board Act
Nuclear Safety and Control Act [(2)]
Nuclear Liability Act
Oil Substitution and Conservation Act
Petroleum Incentives Program Act [(1)]
Resources and Technical Surveys Act

Regulations Currently in Force:

Canada Lands Surveys Examination Regulations . . . . . SOR/79-657, as amended
Lands Surveys Tariff . . . . . CRC, Vol. XI, c. 1021
Report on the State of Canada's Forests Regulations SOR/95-479
Forestry Timber Regulations SOR/94-118
Energy Efficiency Regulations SOR/94-651

1 Act is in force but dormant.
2 Act has received Royal Assent but will come into force on a day when an Order of the Governor in Council is fixed.

Statutes, Regulations, and Amendments to existing Regulations under consideration:

Modernization of Explosives in Plain Language

Public and worker health and safety continue to be the top priority of NRCan as it carries out its principal duty of administering the Canadian Explosives Act regulations. This program is delivered through a licensing and compliance inspection program of manufacture, importation, sale, purchase, possession, and storage of explosives and pyrotechnics in Canada.
Legal Authority: Explosives Act, R.S. , 1985, c. E
Contact: Dave McCulloch, ERD/MTB/MMS, Department of Natural Resources Canada, 15 - 580 Booth Street, Ottawa, ON, Canada K1A 0E4 Tel.: (613) 995-8995 Fax: (613) 995-0480 Internet: dmccullo@NRCan.gc.ca

Energy Efficiency Performance Levels and EnerGuide Label Regulations

In 1998-99, NRCan will set energy performance levels for 14 new products under the Energy Efficiency Regulations: Oil-Fired Furnaces, Gas and Oil-Fired Boilers, Three-Phase Central Air Conditioners and Heat Pumps, Packaged Terminal Air Conditioners and Heat Pumps, Large Air Conditioners, Heat Pumps and Condensing Units, Automatic Ice Makers, Compact Clothes Dryers, Dehumidifiers, and Transformers.
Legal authority: Energy Efficiency Act, sections 20 and 25
Contact: Valerie Whelan, Office of Energy Efficiency, Tel.: (613) 947-1207; Fax: (613) 943-1590;
E-mail: vwhelan@nrcan.gc.ca

Petroleum Occupational Safety and Health Regulations - Newfoundland and Nova Scotia

The offshore Accord Acts exclude the application of Part IV of the Canada Labour Code. It is necessary to develop separate regulations for the safety and inspection of all petroleum operations in the offshore areas, similar to the Oil and Gas Occupational Safety and Health (OSH) Regulations promulgated under Part IV of the Canada Labour Code.
Legal authority: Canada-Newfoundland Atlantic Accord Implementation Act and Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act
Contact: Michael Hnetka, Advisor Regulations, Frontier Lands Management Division, Natural Resources Canada, 580 Booth Street, Ottawa, Ontario, K1A 0E4. Tel.: (613) 992-2916; Fax: (613) 943-2274.

Frontier Lands Division and Minimum Area Regulations
Newfoundland and Nova Scotia Offshore Area Division and Minimum Area Regulations

The portions of the Canada Oil and Gas Land Regulations dealing with land division and survey were based on the 1927 North American Datum (NAD) pursuant to the Territorial Lands Act and the Public Lands Grants Act. New regulations are being produced to reflect technological advances achieved with a new satellite survey system, NAD, 1983 which provides more accurate surveying methods.
Legal authority: Canada Petroleum Resources Act and Canada-Newfoundland Atlantic Accord Implementation Act and Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act
Contact: H. Dabaghi, Advisor, Frontier Lands Management Division, Natural Resources Canada, 580 Booth Street, Ottawa, Ontario, K1A 0E4. Tel.: (613) 995-0137; Fax: (613) 943-2274.

Frontier Lands Registration Regulations - Amendments
Newfoundland Offshore Area Registration Regulations - Amendments
Nova Scotia Offshore Area Registration Regulations

The Canada Petroleum Resources Act allows for regulations for the registration and filing of documents related to petroleum interests, including the registration of encumbrances. The proposed amendments will ensure that the English and French versions correspond.
Legal authority: Canada Petroleum Resources Act and Canada-Newfoundland Atlantic Accord Implementation Act and Canada-Nova Scotia Petroleum Resources Accord Implementation Act
Contact: H. Dabaghi, Advisor, Frontier Lands Management Division, Natural Resources Canada, 580 Booth Street, Ottawa, Ontario, K1A 0E4. Tel.: (613) 995-0137; Fax: (613) 943-2274.

Newfoundland and Nova Scotia Offshore Area Petroleum Operations Regulations - Amendments

These regulations set out requirements for obtaining an operating licence and authorization for exploratory or development work, and for reporting an oil spill in the Newfoundland offshore. The proposed amendments will increase the fee for obtaining a licence. The increase will depend on the type of operation and will cover costs required to issue such licences and authorizations.
Legal authority: Canada-Newfoundland Atlantic Accord Implementation Act and Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act
Contact: Michael Hnetka, Advisor, Frontier Lands Management Division, Natural Resources Canada, 580 Booth Street, Ottawa, Ontario, K1A 0E4. Tel.: (613) 992-2916; Fax: (613) 943-2274.

Canada Lands Surveyors Act

This proposed Act establishes the Association of Canada Lands Surveyors as a self-governing association and substitutes it for the Board of Examiners established under the Canada Lands Surveyors Act as the authority responsible for the examination, admission and qualifications of candidates for commissions as Canada Lands Surveyors.
Contact: A.M. MacLeod, Legislative Advisor, Legal Surveys Division, Natural Resources Canada, 615 Booth Street, Ottawa, Ontario K1A 0E9. Tel.: (613) 995-4572; Fax.: (613) 995-9191. Internet: almcleo@nrcan.gc.ca.

Canada Lands Surveyors Regulations

Regulations will be introduced once the proposed act has been promulgated and will deal with aspects such as: membership in the Association of Canada Lands Surveyors; the composition of committees and the governing body of the Association; and the academic qualifications, experience and financial requirements necessary for the issuance and maintenance of a commission as a Canada Lands Surveyor, etc.
Legal Authority: Canada Lands Surveyors Act (proposed)
Contact: A.M. MacLeod, Legislative Advisor, Legal Surveys Division, Natural Resources Canada, 615 Booth Street, Ottawa, Ontario K1A 0E9. Tel.: (613) 995-4572; Fax.: (613) 995-9191. Internet: almcleo@nrcan.gc.ca.

Lands Surveys Tariff - Amendments

This tariff sets fees to be charged for copies of maps, plans, field notes and other records or documents related to surveys under the Canada Lands Surveys Act. This initiative will amend fees to reflect the present cost of materials and to provide a charge for services.
Legal Authority: Canada Lands Surveys Act, section 4
Contact: A.M. MacLeod, Legislative Advisor, Legal Surveys Division, Natural Resources Canada, 615 Booth Street, Ottawa, Ontario K1A 0E9. Tel.: (613) 995-4572; Fax.: (613) 995-9191. Internet: almcleo@nrcan.gc.ca.

Environmental Studies Research Fund Regions Regulations - Amendments

The Canada Petroleum Resources Act requires regions to be prescribed in regulations for the imposition of levies to fund environmental studies. Due to the moratorium on Georges Bank and the resolution of the boundary dispute between Canada and France over St. Pierre and Miquelon, some of the 31 regions in the regulations must be redefined. These amendments would exclude Georges Bank and the settled international boundary resolution from levies. Industry would no longer be required to pay levies in these areas.
Legal authority: Canada Petroleum Resources Act
Contact: Tim Shanks, Advisor, Frontier Lands Management Division, Natural Resources Canada, 580 Booth Street, Ottawa, Ontario, K1A 0E4. Tel.: (613) 992-8286; Fax: (613) 943-2274.

Newfoundland Oil and Gas Spill and Debris Liability - Amendments

The Canada-Newfoundland Atlantic Accord Implementation Act imposes absolute liability, up to "an applicable limit," on an operator for damages incurred as a result of a spill or debris in the area where oil and gas operations are being conducted. The cause of, liability for and amount of any losses or damage in excess of the applicable limit must be proven in court. The proposed amendments will determine the applicability of absolute liability and the associated limits of liability that may be prescribed under the Act.
Legal authority: Canada-Newfoundland Atlantic Accord Implementation Act
Contact: Tim Shanks, Advisor, Frontier Lands Management Division, Natural Resources Canada, 580 Booth Street, Ottawa, Ontario, K1A 0E4. Tel.: (613) 992-8286; Fax: (613) 943-2274.

Canada Oil and Gas Land Regulations - Amendments

These regulations prescribe a regime for the administration of oil and gas rights on frontier lands, which was used extensively until the early 1980s. Canadian ownership requirements in these regulations will be revoked to ensure consistency with oil and gas legislation.
Legal authority: Territorial Lands Act; Federal Real Property Act
Contact: H. Dabaghi, Advisor, Land Management and Revenues, Frontier Lands Management Division, Natural Resources Canada, 580 Booth Street, Ottawa, Ontario, K1A 0E4. Tel.: (613) 995-0137; Fax: (613) 943-2274.

Newfoundland and Nova Scotia Offshore Area Petroleum Drilling and Production Regulations

The Offshore Petroleum Drilling Regulations and the Offshore Area Petroleum Production and Conservation Regulations will be combined to update technical requirements resulting from technological changes and the promulgation of other regulations, and to remove overlap and duplication. These proposed regulations will enhance worker safety, protect the environment during all phases of oil and gas activities and will streamline the regulatory process.
Legal authority: Canada-Newfoundland Atlantic Accord Implementation Act and Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act
Contact: Michael Hnetka, Advisor, Regulations, Frontier Lands Management Division, Natural Resources Canada, 580 Booth Street, Ottawa, Ontario, K1A 0E4. Tel.: (613) 992-2916; Fax: (613) 943-2274.

Newfoundland and Nova Scotia Offshore Area Petroleum Diving Regulations (Major Revisions)

The Offshore Area Petroleum Diving Regulations will be revised to update technical requirements resulting from technological changes and the promulgations of other regulations. The regulations will also update administrative requirements resulting from operational changes, will enhance worker safety, protect the environment during all phases of oil and gas activities and ultimately streamline the regulatory process.
Legal authority: Canada-Newfoundland Atlantic Accord Implementation Act and Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act
Contact: Michael Hnetka, Advisor, Regulations, Frontier Lands Management Division, Natural Resources Canada, 580 Booth Street, Ottawa, Ontario, K1A 0E4. Tel.: (613) 992-2916; Fax: (613) 943-2274.

D. Contacts for Further Information

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E. Internet Addresses

Headquarters and Sector Sites:

Natural Resources Canada Home Page	http://www.nrcan.gc.ca
Canadian Forest Service (Headquarters)	http://www.nrcan.gc.ca/cfs
Earth Sciences Sector	http://www.nrcan.gc.ca/ess
Energy Sector	http://www.es.nrcan.gc.ca
Minerals and Metals Sector	http://www.nrcan.gc.ca/mms
Corporate Services Sector	http://www.nrcan.gc.ca/css/css-pe.htm
Legislative/Regulatory Information	http://www.nrcan.gc.ca/dmo/spcb/regiss_e.html

Earth Sciences Sector Sites:

Aeronautical Charts	http://www.ccrs.nrcan.gc.ca/linc/ps/paper/aero/indexe.html
Canadian Centre for Remote Sensing	http://www.ccrs.nrcan.gc.ca/ccrs/homepg.pl?e
Centre for Topographic Information - Sherbrooke	http://www.ccg.nrcan.gc.ca
Earthquake Hazards	http://www.seismo.nrcan.gc.ca/welcome.html
Geodetic Survey	http://www.ccrs.nrcan.gc.ca/linc/ps/digital/geo/indexe.html
Geological Survey of Canada	http://www.nrcan.gc.ca/gsc
Geophysical Data Centre	http://www.gdcinfo.agg.nrcan.gc.ca/gdc/gdc0eng.html
Legal Surveys Division	http://www.geocan.nrcan.gc.ca/lsd
National Air Photo Library	http://www.geocan.nrcan.gc.ca/napl-pna
National Atlas Information Services	http://www-nais.ccm.nrcan.gc.ca
National Atlas on Schoolnet	http://www-nais.ccm.nrcan.gc.ca/shoolnet/
National Geomagnetic Services	http://www.geolab.nrcan.gc.ca/geomag
NATMAP	http://www.nrcan.gc.ca/gsc/cpdnew/natmap_e.html
Polar Continental Shelf Project	http://www.nrcan.gc.ca/ess/pcsp/pcsp.htm
Topographical Map Service	http://www.geocan.nrcan.gc.ca/topo/index.html

Canadian Forestry Sector Sites:

CFS Atlantic Forestry Centre	http://www.fcmr.forestry.ca
CFS Great Lakes Forestry Centre	http://www.glfc.forestry.ca
CFS Laurentian Forestry Centre	http://www.cfl.forestry.ca
CFS Northern Forestry Centre	http://www.nofc.forestry.ca
CFS Pacific Forestry Centre	http://www.pfc.cfs.nrcan.gc.ca

Minerals and Metals Sector Sites:

Biominet	http://www.nrcan.gc.ca/mets/biominet/
Canadian Explosives Research Laboratory	http://www.nrcan.gc.ca/mms/explosif/incerle.htm
Canadian Certified Reference Materials Project (CCRMP)	http://www.nrcan.gc.ca/mets/ccrmp
CANMET Information Centre	http://www.es.nrcan.gc.ca/msd/cic/cicintro.htm
CANMET Mining and Mineral Sciences Laboratory - Bells Corners	http://www.nrcan.gc.ca/mms/canmet-mtb/bells/encorpge.htm
Economic and Financial Analysis Division	http://www.nrcan.gc.ca/mms/efab/
Experimental Mine (Val-d'Or)	http://www.nrcan.gc.ca/mms/canmet-mtb/valdor/menu_e.htm
Explosives Regulatory Division	http://www.nrcan.gc.ca/mms/explosif/
Mine Environment Neutral Drainage (MEND)	http://www.nrcan.gc.ca/mets/mend/
Minerals and Metals - A World to Discover	http://www.nrcan.gc.ca/mms/school/e_mine.htm
Mineral Technology Branch	http://www.nrcan.gc.ca/mms/canmet-mtb/homeeng.htm
Minerals and Mining Statistics Division	http://www.nrcan.gc.ca/mms/efab/mmsd/
Mining Tax World	http://www.nrcan.gc.ca/ms/efab/fad/
National Mining Week	http://www.miningweek.org/
Tax Legislation and Mineral Resources Division	http://www.nrcan.gc.ca/mms/efab/tlmr/

Energy Sector Sites:

CANMET Information Centre	http://www.es.nrcan.gc.ca/msd/cic/cicintro.htm
Climate Change - Voluntary Challenge and Registry	http://www.vcr-mvr.ca
Energy Efficiency Programs	http://www.eeb-dee.nrcan.gc.ca
Natural Gas Division	http://www.es.nrcan.gc.ca/erb/ngd/homepage/home.html
Office of Energy Research and Development	http://www.es.nrcan.gc.ca/WWW-data/new/oerd.htm

F. Topical Index