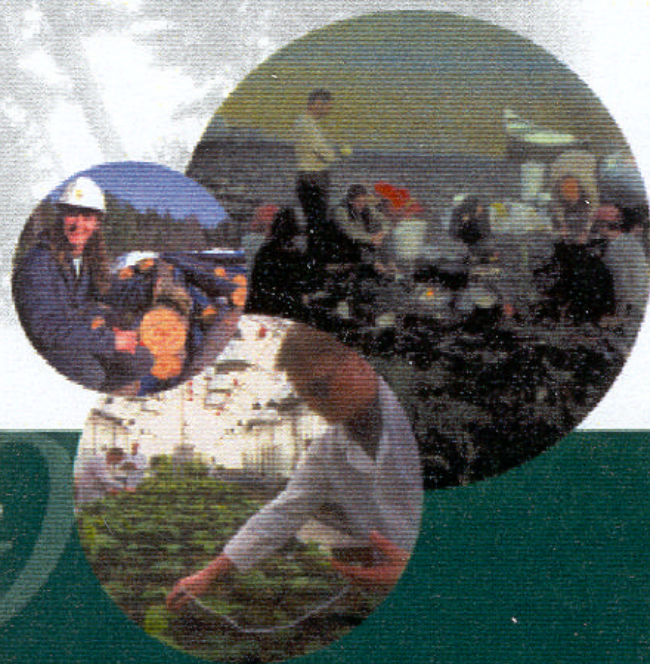


Sustainable Forest Management:
A Continued Commitment
in Canada



Monograph No. 9

Canada

SUSTAINABLE FOREST MANAGEMENT

A Continued Commitment in Canada

*A Canadian contribution to the land use dialogue at
the Eighth Session of the United Nations Commission
on Sustainable Development, April 24 to May 5, 2000*

Ottawa, Canada

2000

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Cat. No. E2-136/10-2000
ISBN 0-662-64829-3



Printed on recycled paper.

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Preface

At its eighth session in the spring of 2000, the United Nations Commission on Sustainable Development (CSD) will be reviewing global progress made with respect to Chapter 10 of Agenda 21, “Integrated Approach to the Planning and Management of Land Resources”. For Canada — the world’s second largest country in land mass — the issues associated with the sustainable development of land resources are intimately entwined with Canadian history, in addition to being pivotal to its future well-being. As a contribution to the land use dialogue, Canada has prepared a series of six monographs describing its experience and the challenges that remain in the integration of sustainable development.

Agriculture and forests will be particular themes at CSD 8. Canada is world famous for its prairie wheat, and sustainable agricultural practices, both within Canada and internationally, have global implications. Canada presents its experiences in its first monograph on sustainable agriculture. As with the prairies, images of vast Canadian forests and the rugged Canadian Shield rich in minerals are familiar Canadian icons. For this session of the CSD, Canada has updated monographs on forests and on minerals and metals originally prepared for the five-year review of Agenda 21 in 1997.

Canada, along with its circumpolar neighbours, faces extraordinary challenges in the sustainable development of its Arctic regions and is working to this end directly with Indigenous peoples and territorial governments, including the newest territory, Nunavut, which came into being on April 1, 1999. Along with fellow members of the Arctic Council, Canada is looking for means to ensure that the world has a better understanding of the impact of southern activities on the vulnerable Arctic environment. In this regard, a monograph addressing sustainable development and Indigenous peoples in the Canadian Arctic has been prepared.

Key to successfully implementing sustainable development policy is a clear understanding of the issues to be addressed. The role of science cannot be underestimated in this search for understanding. In this regard, Canada has developed two additional monographs. One provides an overview of the applications of earth sciences to the gathering and interpretation of scientific information to contribute to policy development. Finally, Canada concludes its monograph series for CSD 8 with a review of its experiences of an ecosystem approach to the development of sustainable development principles.

This monograph highlights the continued commitment Canada has made to sustainable forest management through key national, provincial, and local-level initiatives. In 1997, Canada published *Criteria and Indicators of Sustainable Forest Management*, a key document that described Canada’s ability to report on sustainability; the upcoming 2000 report measures Canada’s progress toward sustainable forest management. The work on criteria and indicators is ongoing and will be adapted to ensure that advances in science,

coupled with the increased understanding of the functioning of ecosystems, will be brought to bear on the challenges of sustainable forest management. As well, the monograph profiles the economic, environmental, and cultural contributions that Canada's forests make to Canadian society more broadly and the impact that forests have on global issues such as climate change.

For Canada, sustainable development is best represented as a journey, not a destination. The monographs described above, as well as the other monographs in the Sustainable Development in Canada Monograph Series, are milestones on this journey, and we invite you to join us and share our experiences.

SUSTAINABLE FOREST MANAGEMENT

A Continued Commitment in Canada

INTRODUCTION

This monograph provides a brief overview of the importance of forests to Canada's economy, environment, and communities, including Aboriginal peoples. Canada's efforts in sustaining its forests for current and future generations are described, and key national, provincial, and local-level initiatives are highlighted to demonstrate Canada's continued commitment to sustainable forest management. As a steward of 10 percent of the world's forests, Canada continues to play a key role in promoting and discussing the merits of legally binding mechanisms for the sustainability of forests worldwide.

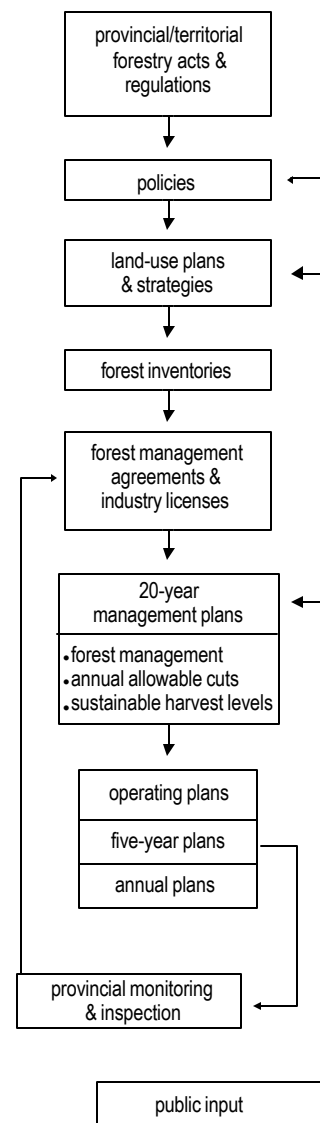
SUSTAINABLE FOREST MANAGEMENT IN CANADA

Forests are crucial to future generations of Canadians for the environmental, social, and economic values they represent. Canada's recognition of the multiple values of forests has raised a number of challenges and has ushered in a new era of forest management — one in which the knowledge of forest ecosystems is shared and consensus building is seen as the basis for decision making. The approach to forest management in Canada has evolved in response to unique conditions and to growth in knowledge and changes in public values.

Through the Canadian Council of Forest Ministers (CCFM), established in 1985, the 14 federal, provincial, and territorial ministers responsible for forests cooperate closely in national and international matters. The CCFM stimulates the development of policies and initiatives for the sustainable management of Canada's forests and the strengthening of the nation's forest sector.

The federal government's direct or shared roles in forestry focus on science and technology, international relations, trade and investment, industrial and regional development, national statistics, Aboriginal affairs, environmental regulations, and the management of federal lands.

FOREST MANAGEMENT PLANNING FRAMEWORK IN CANADA



A Renewed National Commitment to Sustain Canada's Forests

In 1998, Canadians renewed their commitment to sustainable forests nationwide by adopting a new five-year strategy aimed at bringing together the ecological, economic, social, and cultural aspects of forest conservation and use. The new National Forest Strategy (1998–2003) is a collective attempt (by governments, industry associations, environmental organizations, Aboriginal associations, and others) to develop a workable formula that reconciles the growing range of expectations placed on Canada's forests and forest managers; like its predecessor, it is the result of extensive public consultations organized by the CCFM.

The new strategy provides a framework that will guide the policies and actions of Canada's forest community into the new millennium. It builds on the many accomplishments of the previous strategy and addresses issues that have been identified as requiring special attention: for example, the need to complete an ecological classification of forest lands; the need to broaden the scope of forest inventories to include information on a wide range of forest values; the need to develop objective measures for testing and demonstrating sustainability under the national framework of criteria and indicators of



sustainable forest management; and the need to complete a network of protected areas that are representative of Canada's forests.

The commitment to continue to pursue the collective goal of sustainable forests nationwide was confirmed in 1998 by the signing of the second Canada Forest Accord, this time by a substantially larger number of governmental and nongovernmental forest community leaders. Signatories have prepared action plans containing specific initiatives to meet the commitments under their area of responsibility.

New Rules and Regulations

Today, each province has its own legislation, regulations, standards, and programs through which it allocates forest harvesting rights and management responsibilities. In addition, many provinces have legislation that requires public participation as part of the forest management planning process. The broad spectrum of forest users — the public, forest industries, Aboriginal groups, and environmental organizations — are consulted to ensure that recreational, cultural, wildlife, and economic values are incorporated into provincial forest management planning and decision making.

Across the country, new forest laws based on the principles of sustainability and stricter enforcement of policies and guidelines indicate that steps are being taken by an increasing number of provinces and territories in response to the demands of sustainable forest management. For example, Saskatchewan's new Forest Resources Management Act (April 1999) requires unprecedented levels of public involvement, multilevel planning, independent audits, and regular monitoring. Amendments to Nova Scotia's Forests Act will enable the government to apply sustainable forest management principles to forest management programs throughout the province. Alberta has developed a framework that reflects the public's desire to maintain its access to the wide range of benefits provided by sustainable forest ecosystems. In addition, a number of provinces have announced incentives to encourage the sustainability of private woodlots through tax rebates and financing for silvicultural activities and education.

Government agencies across Canada have, without exception, adopted a consultative approach to developing forest policy and routinely seek public views and work closely with industries, Aboriginal groups, and environmental groups to incorporate recreational, social, wildlife, and economic values into forest management planning and decision making.

Tenure Agreements

Harvesting of Canada's commercial forest land is carried out almost exclusively by private forest companies through lease agreements with the provincial governments. While the exact terms of these agreements vary, depending on the province and the lease's duration, tenure agreements generally impose strict requirements on forest companies — requirements that attempt to balance the commercial goals of the industry with the broader goals of government and the public.

Forestry Research

The Canadian Forest Service of Natural Resources Canada is the principal federal forest research organization in Canada, although a number of other federal departments, networks, and agencies (including the National Research Council, the Natural Sciences and Engineering Research Council, Environment Canada, Agriculture and Agri-Food Canada, and Industry Canada) support research relevant to forestry. In addition, at the national level, there are three cooperative industrial forest research institutes in Canada. FERIC (Forest Engineering Research Institute of Canada), Forintek Canada Corporation, and Paprican (Pulp and Paper Research Institute of Canada) are responsible for research in forest engineering, solid wood products, and pulp and paper, respectively. A number of companies also undertake research. Provincial research activities are generally of an applied nature, concerned with solving forest management problems and applying new technologies in forest operations.

CANADA'S FORESTS — A VAST AND COMPLEX RESOURCE

Throughout Canada's history, forests have played a significant role in its evolution and have shaped its identity. Forests enrich the lives of all Canadians. They moderate climate, filter air and water, and offer a place of sanctuary and recreation. In addition, forests support an economic sector that contributes substantially to the wealth of every province and territory, providing jobs for more than 1 in 16 Canadians and sustaining almost 340 communities.

Forests are a dominant feature of Canada's landscape, covering almost half the country. Canada's forest land base is not only immense, it is also extremely varied. There are eight forest regions in Canada, ranging from the towering coastal rainforests in British Columbia to the sparse and slow-growing forests at the Arctic tree line. An array of forest ecosystems provides diverse habitats for an estimated 140 000 species of plants (180 species of trees), animals, and micro-organisms.

Of the 417.6 million hectares of forests in Canada, 235 million hectares are considered "commercial forests" — capable of producing commercial species of trees as well as other nontimber benefits. Currently, 119 million hectares of these commercial forests are managed primarily for timber production, while the remaining area has not been accessed or allocated for timber. The noncommercial forest land is made up of open forests comprising natural areas of small trees, shrubs, and muskegs.

Forest Industries in Canada (1998)

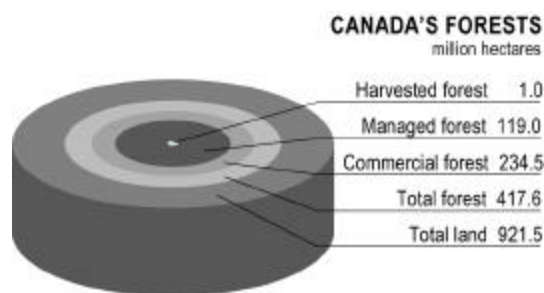
Value of exports: \$39.7 billion

Balance of trade: \$31.7 billion

Contribution to GDP: \$18.2 billion

*Employment: 384 000 direct jobs
493 000 indirect jobs*

Wages and salaries: \$11.2 billion



Roughly 0.4 percent of Canada's commercial forests are harvested each year. More than half of the area harvested is left to regenerate naturally, usually after some form of preparatory site treatment. Areas affected by fire, insects, and disease are also left to regenerate naturally.

Several harvesting systems are used in Canada. Clearcut harvesting (also called regeneration harvesting in other countries), which is used extensively in Canada's boreal forest region, encourages natural regeneration and typically produces stands of light-demanding species, such as jack pine, lodgepole pine, black spruce, trembling aspen, and white birch. Other forms of harvesting, such as partial cutting or shelterwood or selection cutting, may be used in forest regions where shade-tolerant species readily regenerate. Over the past 20 years, new information and a better understanding of forest ecosystems have led to changes in harvesting guidelines and to an emphasis on maintaining wildlife habitat, protecting soils, and retaining natural landscape patterns. For example, in 1998, a major forest company developed a new and cost-effective logging technique in its efforts to phase out clearcutting. The technique involves climbing a tree, cutting off the branches, painting the top to make it visible from the air, and cutting around the trunk deeply enough to enable a helicopter pilot to grapple the tree and snap it off before flying it to a roadside landing.

Some of Canada's forests are protected from harvesting by policies and legislation. For example, forests located on sensitive sites, such as those close to streams or on steep slopes, are protected from harvesting by forest management policies. Other forests are protected by legislation as part of Canada's commitment to preserve a network of areas that are representative of its land and freshwater. According to the Canadian Conservation Areas Database, in 1995, more than 7.6 percent of Canada's forests were located in protected areas. Since 1995, provinces have greatly increased the number of protected areas. Moreover, Canada restated its commitment to protected areas in its new National Forest Strategy.

The People's Forests

Ninety-four percent of Canada's forests are publicly owned. Under the Canadian constitution, the provinces were given ownership and legislative authority over most publicly owned forest land — 71 percent of Canada's total forest land.

The federal government's jurisdiction over forestry is based on its ownership of 23 percent of Canada's total forest land, most of it in the territories. (The federal government devolved responsibility for forest management to the Government of the Northwest Territories in 1986, and a similar transfer is being finalized with Yukon.)

Canada is unique in that the vast majority of its forests (94 percent) are publicly owned. On behalf of the public, provincial governments manage 71 percent of the nation's forests, while the federal and territorial governments manage approximately 23 percent. The remaining 6 percent are privately owned — the property of more than 425 000 landowners.

The complexity of forest management in Canada is growing as new forest values are identified for consideration in forest management planning.

Private Forests

Surveys show that the majority of Canadian woodlot owners do not harvest any wood from their land. Most simply enjoy the scenic beauty of their surroundings. Numerous woodlot owners use their forests for recreation. Some maintain trail systems for horseback riding, snowmobiling, skiing, snowshoeing, and hiking. Others fish, hunt, and trap on their property for leisure or for extra food and income. Some owners actively manage their woodlots to attract wildlife by creating brush piles for animal shelter, by building nesting boxes for birds, and by protecting the plants, fruits, and berries that animals feed on. More and more forest owners recognize the value and marketability of certain specialty forest products, such as wild mushrooms, essential oils, wild herbs, and medicinal plants.

Privately Owned Forests: A Valuable Asset

Individuals, families, communities, and forest companies own 6 percent of Canada's total forest land. These forests are generally productive and of high quality. Privately owned forests are the source of 19 percent of Canada's industrial roundwood production (i.e., logs, bolts, and pulpwood), and they are even more central to other forest products sectors, furnishing 77 percent of maple products, 79 percent of fuelwood and firewood, and virtually all of the nation's Christmas trees.

Private forest land also supports plant species and unique tree stands, harbours abundant fish and game, and protects and enriches agricultural land. The reasons for owning this land and the values in managing it are as individual and wide-ranging as the owners themselves. Some owners view their woodlot as a family legacy; others need it for fuelwood and lumber; and yet others value it for its beauty and tranquility.

Aboriginal Peoples' Traditional Forest-Related Ecological Knowledge

The past decade has witnessed increasing recognition of Aboriginal peoples' traditional forest-related ecological knowledge, more discussions of traditional and treaty Aboriginal rights, and more opportunities for First Nations to share in the management of forest resources and in the wealth they generate.

Canada's forests have played a key role in meeting the cultural, spiritual, and material needs of Aboriginal people. Canada recognizes that, through their enduring relationship with the land, Aboriginal people have gained an intimate knowledge of forests and can bring a special perspective to sustainable forest management in Canada.

Approximately 80 percent of Aboriginal communities are located within the forest regions of this country, and roughly 1.4 million hectares of reserve land are suitable for sustainable, consumptive resource use, such as timber management, hunting, trapping, fishing, and gathering herbs and medicinal plants. These forests are also used for nonconsumptive activities, such as recreational, spiritual, and cultural uses. The CCFM criteria and indicators (C&I) framework (discussed below) identifies the need to consider Aboriginal uses in forest management planning and to recognize Aboriginal and treaty rights. As well, provincial forest policies increasingly recognize the value of forest management approaches that integrate First Nation traditional knowledge and use of the forest.

First Nation Forestry Program

Although the forest lands on many of Canada's 2300 reserves are too small to support large-scale, long-term commercial forestry, they offer a foundation upon which First Nations can build technical capacity, develop on- and off-reserve business partnerships, maintain their spiritual and cultural connection with the land, and carry on their traditional use of the land base.

The First Nation Forestry Program (FNFP), a partnership program between First Nations and the federal government, was introduced in April 1996. The five-year program is aimed at improving the economic conditions in status First Nation communities by promoting increased First Nation involvement in the forest sector. The FNFP involves communities that are presently active in the forest sector, as well as those becoming more interested in the opportunities related to forestry activities both on- and off-reserve. The benefits are numerous. Youths and workers benefit by combining traditional skills with new concepts and technologies, and communities benefit as First Nations start up new businesses or enter into joint ventures.

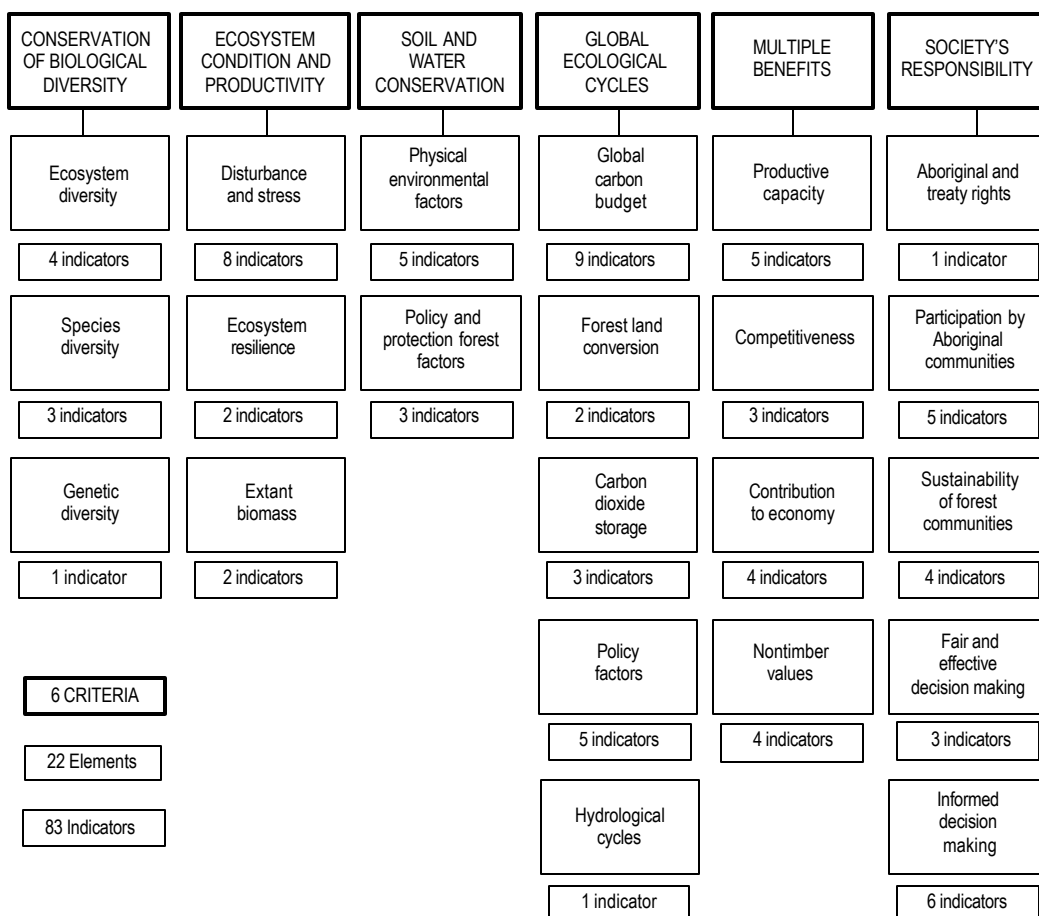
DEFINING AND MEASURING SUSTAINABLE FOREST MANAGEMENT

A National Framework

A significant initiative taken in response to the National Forest Strategy was the development of science-based criteria and indicators that could be used to define and measure Canada’s progress in the sustainable management of forests.

In 1993, the CCFM launched a public process to develop a framework for these indicators. This process led to the publication in 1995 of *Defining Sustainable Forest Management: A Canadian Approach to Criteria and Indicators*. This national framework identifies six criteria of sustainable forest management. These criteria recognize forests as ecosystems providing a wide range of environmental, economic, and social benefits to Canadians. (See chart below.)

CCFM CRITERIA AND INDICATORS FRAMEWORK



This was followed in 1997 by the publication *Criteria and Indicators of Sustainable Forest Management in Canada, Technical Report 1997*. This report describes Canada's capacity to measure sustainable forest management and outlines the data available for the six criteria. It led to a better understanding of Canada's strengths and weaknesses with respect to its capacity to measure forest sustainability.

A Dynamic Process to Measure Canada's Progress

The pursuit of sustainable forest management is a dynamic and evolving process. C&I are based on the best information available, and, as such, they are subject to continual revision and improvement. For example, several years have passed since the CCFM C&I framework was developed, and during that period, the capacities of information systems have increased, the approaches to forest inventories have changed, and the availability of data for some indicators has improved. Also, advances in science have increased Canada's understanding of systems and have influenced its concept of "sustainable forest management" and its ability to measure its progress toward that objective.

The CCFM has used the experience and knowledge gained from the preparation of Canada's first report to develop and approve an implementation plan for reporting in 2000. In addition, the CCFM has approved a review of the 83 indicators currently included in the C&I framework. The review is expected to result in recommendations as to which indicators will be retained for future reporting at the national level.

A task force charged with preparing the implementation plan has identified a core set of indicators, which it derived from the original 83 indicators by conserving indicators consistent with those found in other C&I processes, by combining similar indicators, and by focusing on indicators applicable at the national level. (In fact, nearly 70 indicators from the original framework will be reported on in 2000.)

To carry out the implementation plan and facilitate the production of the 2000 report, the task force established working Internet and file transfer protocol (FTP) sites. By providing templates for data submission and compilation, these sites have served to standardize the submission of data and information. And by linking the 75 technical contacts across Canada who are responsible for providing the information for the report with the 22 writers who are compiling the national perspectives for the indicators, the sites have stimulated discussion regarding definitions and reporting strategies and have promoted the sharing of information and ideas. The working Web site will also be used to identify sources of information and to archive information for future reporting.

Subnational-Level Indicators

Several provinces have adopted provincial sets of C&I, and many are preparing to incorporate C&I into their forest management planning. In addition, some provinces have taken steps to integrate C&I into their forest legislation. Quebec, for example, amended its legislation to include the six criteria from the CCFM C&I framework and has developed a framework of 60 indicators (many of which are similar to those in the CCFM framework) and expects to implement it over a three-year period. Ontario also has drafted a comprehensive set of indicators for use at the provincial level in evaluating and reporting on forest sustainability. In both of these provinces, the C&I have been integrated into forest legislation and policies.

In Newfoundland and Labrador, the government is drafting a 20-year forestry development plan that will contain specific references to a provincial set of C&I, and it is considering having the indicators integrated into legislation. Saskatchewan is developing indicators for forest ecosystem health, while New Brunswick has taken a slightly different approach. That province is developing a vision document for its forests that provides a framework for forest management and sets out policy goals, as well as explicit standards and objectives to be used in the development of forest management plans on Crown timber licences.

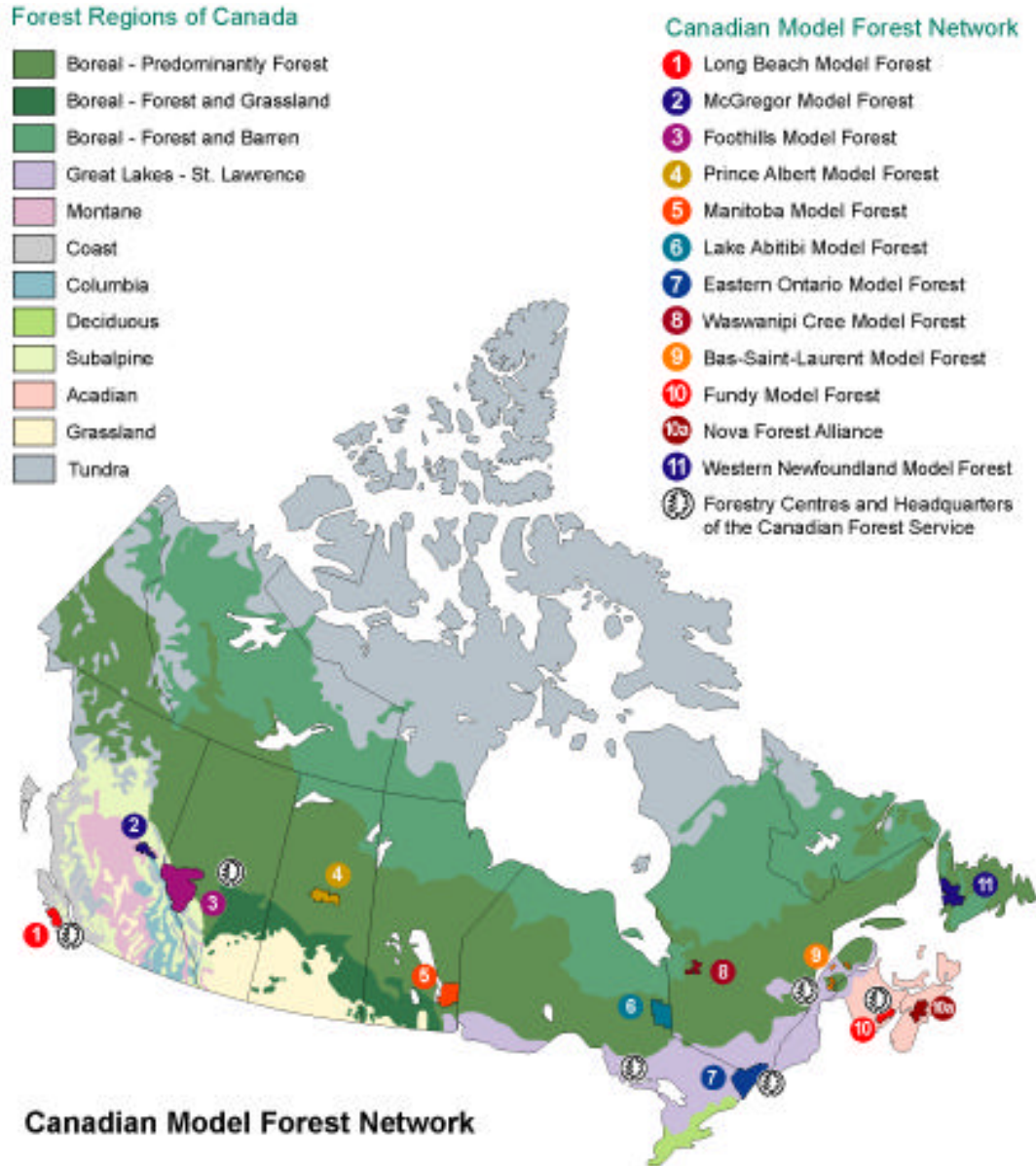
Canada will report on its progress toward sustainable forest management by releasing a C&I document in April 2000.

An Innovative Partnership to Define Local-Level Indicators

The Model Forest Program was established by Canada in 1992 to accelerate the implementation of new approaches to forest management through shared decision making. Each of Canada's 11 model forests is based on a partnership of groups and individuals possessing a broad range of forest values who collaborate in working toward their shared objective of sustainable forest management within the unique social, economic, and ecological conditions in their forest area. Together, the model forests cover more than 6 million hectares and represent the diverse ecologies of the major forest regions of Canada. As such, they serve as excellent field laboratories.

An important focus for each model forest in phase II of the program (1997–2002) was the establishment of processes for the development, testing, application, and monitoring of local-level indicators of sustainable forest management, based on the CCFM C&I framework. The guidelines for the indicators' development required that they be based on appropriate scientific attributes; be easily and readily

The Waswanipi Cree Model Forest, announced in September 1997, is a 209 000 hectare area northwest of Quebec City that will provide Aboriginal people with the opportunity to further develop approaches to sustainable forest management based on their values, beliefs, and traditions.



measured; demonstrate the best management practices available; be adaptive, replicable by others, and relevant on a temporal basis (reflecting links between changes in economic, social, and environmental circumstances); and be able to show trends in behaviour and attitudes.

The suites of local-level indicators can be used by each of the model forests to describe its progress toward sustainable forest management. In addition, a network-wide initiative is enabling the model forests to

share their experiences, expertise, and information and help each other achieve their own suites of local-level indicators. As of March 31, 1999, each model forest had developed a set of indicators. Although some sites are in the process of refining their initial master set of local-level indicators, several are beginning to develop protocols for monitoring and reporting the indicators.

Canada's Science and Technology Community Gets Involved

In 1997, participants at the National Forest Science and Technology Forum agreed that more and better information was needed to measure and report on progress toward sustainable forest management. The forest science and technology community met later that same year to draft an action plan to ensure that Canada's forest policies and practices integrate environmental, social, and economic values. The resulting *National Forest Science and Technology Course of Action (1998–2003)* was incorporated into the National Forest Strategy to meet the need for the sustainable development of the forest, the forest industry, and forest-based communities and to advance C&I for sustainable forest management.

September 1998 saw the creation of a forest industry research agency coalition (FORCAST) intended to facilitate the sharing and development of new technologies. (To date, 10 federal, provincial, and territorial governments and 13 nongovernmental stakeholder organizations have joined the private, nonprofit entity.) The *National Forest Science and Technology Course of Action* was distributed to the forest science community in February 1999, and FORCAST began championing its implementation.

As a forest nation, Canada is also participating in international efforts to build a common vision of sustainable forest management and is sharing its expertise in forest science and technology with developing nations.

Improving Canada's Knowledge of Its Forests: New Data Collection Systems

In establishing and reporting on the C&I framework, Canada has faced challenges in developing new approaches to data collection and management (particularly for nontimber values), in developing tools to measure social values, and in expanding its knowledge of forest ecosystems. With respect to new approaches to data collection and management, a number of initiatives have evolved in response to measuring sustainable forest management.

A new National Forest Inventory is being proposed that will be consistent nationally, provide change and trend estimates, be

Defining the Role of Forests within Climate Change

Over the past 100 years, average temperatures have been increasing, and according to the latest report by the Intergovernmental Panel on Climate Change, the earth's climate will likely continue to warm considerably over the next 100 years. The greatest impacts of warming temperatures are expected at the northern latitudes. Forests play an important role in climate change by recycling the earth's carbon. Changes in temperature and moisture are major factors determining the growth and productivity of forests, the range of tree species, and the range and frequency of fires, insects, and diseases.

Canada is a signatory to the United Nations Framework Convention on Climate Change (UNFCCC), which was adopted in 1992 at the Earth Summit. Its ultimate objective is "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system".

In 1995, Canada took steps to mitigate human causes of global warming by preparing the National Action Program on Climate Change (NAPCC), which encourages all sectors to explore cost-effective actions to limit the emissions of gases that trap heat in the atmosphere. The forest sector, for example, has reduced its greenhouse gas emissions by adopting energy-efficient processes and shifting to less carbon-intensive fuels.

The NAPCC also encourages research and development on climate change issues. To date, Canada's forest scientists have participated in research with the international community in reviewing and assessing knowledge regarding biomass burning, the global carbon cycle, and the socioeconomic impacts of climate change on forestry.

In December 1997, the Parties to the UNFCCC adopted a protocol to the Convention on Climate Change (the Kyoto Protocol) to limit emissions of six greenhouse gases.

In February 1998, subsequent to the Kyoto Protocol, the Government of Canada allocated \$50 million per year for the next three years to help lay a strong foundation for early action on climate change. Among the 16 committees, or tables, established as part of this process are the Forest Sector Table and the Sinks Table. The Forest Sector Table is made up of sector experts from the forest industries, environmental groups, labour groups, research organizations, academia, Aboriginal groups, and forest-dependent communities, as well as governments. The Forest Sector Table examined the potential for the forest sector to help reduce Canada's greenhouse gas emissions through fuel switching and energy efficiency.

The Sinks Table included experts from forest, agricultural, and wetland carbon sinks and sources. In conjunction with the Forest Sector Table, it looked at ways to enhance forest carbon sinks and reduce forest carbon sources that are associated with forest-related activities included in the protocol. A series of options were recommended by the tables in their options reports. These options are being reviewed by federal, provincial, and territorial governments for inclusion in Canada's National Implementation Strategy. Work on the strategy will continue throughout 2000.

Virtual Information – Canada's Forest Network

Canada's Forest Network (<http://www.forest.ca>) is an Internet guide to help Canadians as well as the worldwide Internet community access Canadian forest and forestry-related Web sites and Internet resources. Containing hundreds of site descriptions and links, as well as e-mail addresses, the network is a valuable source for finding Canadian forest products, services, organizations, events, issues, statistics, and publications.

Training for the Future

In July 1998, the Sustainable Forest Management–Network of Centres of Excellence (SFM-NCE) was renewed to 2002 with \$9 million in funding. Research and training are the main focus of the NCE, which is located at the University of Alberta. The research is directed toward improving Canada's forest-based economy through the development of knowledge, strategies, and technologies for the management and conservation of boreal forests. The interdisciplinary program gives students exposure to activities outside their strict academic discipline, which last year benefitted more than 200 students in the program.

compatible with ecological classification, and allow spatial and temporal reporting on multiple resource attributes. For the past decades, a forest inventory for Canada was prepared by rolling up data from provincial inventories based on definitions that were not always compatible. Approximately 30 percent of the indicators in the CCFM framework could be addressed in the national inventory. In addition, some nontimber values will be incorporated.

To complement the new inventory, a national forest information system has also been proposed as a national system for integrating and linking information on Canada's forests.

MOVING TOWARD DEFINING SUSTAINABILITY WORLDWIDE

As a country that accounts for 10 percent of the world's forest land and almost 20 percent of global trade in forest products, Canada's forest agenda is fundamentally connected to global economic and environmental systems. As a result, Canada has been an active participant in the global dialogue on key forest issues.

Canada is a member of the Montréal Process, which has evolved into a working group of 12 member countries (Argentina, Australia, Canada, Chile, China, Japan, Mexico, New Zealand, the Republic of Korea, the Russian Federation, the United States, and Uruguay) representing 90 percent of the world's boreal and temperate forests outside Europe plus some tropical forests. The 12 countries have developed a framework of internationally agreed-upon criteria and indicators for the conservation and sustainable management of temperate and boreal forests. Seven criteria and 67 indicators are included in this framework (see table below).

Montréal Process Criteria	Number of indicators
1. Conservation of biological diversity	9
2. Maintenance of productive capacity of forest ecosystem	5
3. Maintenance of forest ecosystem health	3
4. Conservation and maintenance of soil and water resources	8
5. Maintenance of forest contribution to global carbon cycles	3
6. Maintenance and enhancement of long-term multiple socioeconomic benefits to meet the needs of society	19
7. Legal, institutional, and economic framework for forest conservation and sustainable management	20

Representatives from the member countries have regular meetings and have published many documents, including a report on their progress in implementing criteria and indicators. The First Approximation Report of the Montréal Process was produced and presented at the World Forestry Congress in October 1997. A Web site has been developed to facilitate information sharing among member countries (<http://www.mpci.org>).

Canada also continues to work cooperatively with other international efforts to develop criteria and indicators for sustainable forest management, such as the pan-European and Tarapoto processes.

Conserving Biodiversity within Canada's Forests

Canada was the first developed nation at the 1992 Earth Summit to sign the Convention on Biological Diversity, which is intended to conserve ecosystem, species, and genetic diversity. Following Canada's ratification of the convention, federal, provincial, and territorial governments conducted broad-based consultations with industry, the scientific community, conservation groups, academia, and Aboriginal groups, which paved the way for the Canadian Biodiversity Strategy, released in 1995. The strategy includes a series of goals and directions for ecological planning and management and for the sustainable use of biological resources.

Federal, provincial, and territorial governments, in cooperation with members of the public and stakeholders, are pursuing the directions

Forest Stewardship Recognition Program

In 1999, 36 organizations and companies were recognized for their outstanding efforts in forest management and conservation by the Forest Stewardship Recognition Program (FSRP). Launched and supported by national and provincial associations as an Ontario pilot project in 1998, the FSRP promotes awareness and appreciation of good stewardship, sustainable forest practices, and biodiversity conservation. Award winners include a property owner who restored a marginal farm by planting more than 100 000 trees during the past 50 years and a forester who modified culverts at his company's stream crossings to allow easy passage for spawning fish.



set out in the strategy according to their policies, plans, priorities, and fiscal capabilities and have prepared or are preparing their own biodiversity strategies and action plans. These strategies and action plans are helping Canada to make progress in meeting its international biodiversity commitments. Moreover, Canadian commitments toward forest biodiversity are an integral part of the new National Forest Strategy.

Various activities have been initiated following the adoption of the Canadian Biodiversity Strategy. Some of these activities focus on capacity building and information dissemination. Examples include the Canadian Biodiversity Information Initiative, which facilitates communication on biodiversity data management, and the Forest Stewardship Recognition Program, sponsored by many groups and associations. In addition, national efforts are under way to improve the scientific knowledge for protecting Canada's forests from alien forest pests.

Global Dialogue on Forests

Forest issues transcend political and sectoral boundaries. They are interconnected with policies on the environment, agriculture, trade, energy, science and technology, economic growth, and development assistance. Moreover, the line often becomes blurred between issues that can be resolved at home and those that require international action.

Human needs, cultural activities, and socioeconomic priorities vary widely between countries and communities. In addition, forest types vary greatly throughout the world, and definitions of ecologically sound forest practices are at least as numerous as the forest types to which they apply.

After the United Nations Commission on Sustainable Development endorsed the proposals for action by the Intergovernmental Panel on Forests (IPF), heads of state at the United Nations General Assembly agreed on the need to continue the forest policy dialogue and decided to establish the Intergovernmental Forum on Forests (IFF) in 1997. Over its two-year mandate, the IFF undertook a program of work that covered three areas: promoting and facilitating implementation, monitoring, and review of the IPF's proposals for action; considering matters left pending from the IPF; and identifying possible elements of future international arrangements and mechanisms, such as a legally binding instrument on forests, and building global consensus. It reports to the eighth session of the Commission on Sustainable Development in April 2000 when a

Helping Developing Countries

Collaborative efforts to alleviate poverty in the developing world and to protect the environment benefit all countries by contributing to global health, prosperity, and stability. A fundamental goal of forest development assistance is to strengthen the developing country's capacity to manage its forests sustainably. For more than 30 years, through the Canadian International Development Agency (CIDA), Canada has been helping developing countries find sustainable solutions. Projects typically incorporate a range of activities, including forest resource assessment, community forestry, local industry development, the conservation of genetic diversity, and the halting of desertification. Training and education are core activities in every CIDA forest project. Since its forest development program was established in 1967, CIDA has helped more than 90 countries increase their people's forestry knowledge and their ability to develop solutions to local forest issues.

decision is expected on how the global community will deal with forest issues in the years to come.

A Neutral Forum to Discuss International Arrangements

Recognizing the need to make an informed decision on international arrangements and mechanisms and responding to requests for further deliberation on possible elements and functions of any future approach, Costa Rica and Canada formed the Costa Rica–Canada Initiative (CRCI) to support the work of the IFF in this area, providing a neutral, transparent, participatory, and representative forum to facilitate technical discussions. Participation was open to governments, intergovernmental institutions, nongovernmental organizations, Indigenous peoples, women’s groups, and the private sector. Attention was also paid to achieving balanced geographic representation and to reflecting the range of views.

The CRCI consisted of three stages: a meeting in San Jose, Costa Rica, February 22–26, 1999; eight regional meetings that took place between August and November 1999 in Argentina, Cameroon, Ecuador, Malaysia, Mexico, Spain, Turkey, and Zimbabwe; and a final meeting in Ottawa, Canada, December 6–10, 1999, to consolidate the results of regional meetings and produce a report for submission to IFF 4.

Participants expressed their appreciation for the CRCI and the process it established through extensive consultations at the regional and national levels. They noted the extent to which regional meetings raised the level of awareness on global forest issues and increased the involvement of many experts who would not otherwise have had the opportunity to learn from and participate in the dialogue. The large number of source documents that the CRCI initiated significantly contributed to increasing understanding worldwide of key forest issues. Experts were also grateful for the frank, open, and transparent exchange of information and views that occurred between regions, allowing them to take stock of the range of opinions and the areas of agreement that could provide the basis for further cooperation.

As with the other meetings held under the auspices of the CRCI, the discussions in Ottawa were attended by experts who participated in a personal capacity. As such, the report is not negotiated text and should not be interpreted as reflecting consensus. Rather, it reflects the range of views expressed. However, broad areas of agreement that emerged from regional meetings were noted: forest issues are not adequately

Consensus on what constitutes “sustainable forest management” can be reached only if there is a common understanding of the issues and objectives. For this reason, Canada is continuing to promote the need for an international convention on forests as the best means of dealing with sustainable forest management in a comprehensive and balanced way.

addressed in current arrangements, maintaining the status quo is not an option, and further action is required to improve the state of the world's forests.

Experts also agreed that the IFF process should end at IFF 4 with a clear decision on new future international arrangements and mechanisms and that such arrangements and mechanisms should provide a permanent action-oriented approach to the global forest policy dialogue, one that has the necessary legal authority and level of commitment.

SUMMARY

Canada is blessed with one of the largest forest covers of any country on earth, and Canadians cherish this important natural resource. Little more than 130 years have passed since Canada became a country. In this brief span of time, forestry in Canada has undergone changes that are as far-reaching as those experienced by society at large and has become a leader in promoting sustainable forest management.

For the past two decades, Canadians have been reassessing their views of forests and forest practices. In some cases, the debate has evoked deep emotions. Nevertheless, over a relatively short period of time, the conflicts regarding forest development and preservation have translated into a widespread dialogue involving communities, governments, and a range of interest groups at local, provincial, and national levels. The basis for this dialogue is the consensus that forests have multiple values and that solutions can only be found through new partnerships that strive to recognize differences in needs and personal values.

Today, Canada serves as a model for the practical application of sustainable forest management. Provincial governments play a particularly important role in implementing Canada's commitments regarding sustainable forest management. Initiatives range from establishing new models of public and community involvement to integrating forest management and land use planning and introducing legislation that stipulates the preservation of ecosystem values.

For its part, the forest industry has made sweeping changes in the way it operates. Examples include new forms of ecosystem management, silvicultural programs, community involvement, and efficient engineering and processing techniques. Professional and industry associations have developed codes of ethics, forest principles, and standards of practice. Many private forest owners have also adopted codes of practice.

THE PATH FORWARD

Canada's forest management practices and processes will need to continue to adapt to new knowledge and new demands. For example, the continued use and refinement of C&I should greatly improve the quality of information about forests and the impacts of forest management practices. As well, global discussions on forest issues such as climate change will ultimately impact how forests in Canada are viewed and managed.

With the support of the provinces and territories, industry, and academia, and in partnership with many other countries, Canada will continue to promote the need for an international forest convention as the best means of dealing with sustainable forest management in a comprehensive and balanced way. And with a renewed commitment to sustainable forest management, innovative partnerships, ongoing dialogue, and the most advanced technologies, Canada enters the new millennium knowing that it can confidently face tomorrow's forestry challenges.



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WEB SITES

Canada's Forest Network:

<http://forest.ca>

Canada's Model Forest Program:

<http://mf.ncr.forestry.ca>

Canada's National Forest Inventory:

<http://www.pfc.cfs.nrcan.gc.ca/landscape/inventory>

Canadian Council of Forest Ministers:

http://www.ccfm.org/home_e.html

Canadian Forest Service — Natural Resources

Canada:

<http://nrcan.gc.ca/cfs>

Canadian Model Forest Network:

http://www.modelforest.net/e/home_/indexe.html

Canadian Pulp and Paper Association:

<http://www.open.doors.cppa.ca>

Canadian Wood Council:

<http://www.cwc.ca/english/index.html>

Costa Rica–Canada Initiative:

<http://www.nrcan.gc.ca/cfs/crc>

Department of Foreign Affairs and International Trade:

<http://www.dfait-maeci.gc.ca>

Environment Canada:

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First Nation Forestry Program:

<http://www.fnfp.gc.ca>

Forest Engineering Research Institute of Canada:

<http://www.feric.ca:80/index.htm>

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Government of Alberta:

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Government of British Columbia:

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Government of Canada:

<http://www.gc.ca>

Government of Manitoba:

<http://www.gov.mb.ca>

Government of New Brunswick:

<http://www.gov.nb.ca>

Government of Newfoundland and Labrador:

<http://www.gov.nf.ca>

Government of the Northwest Territories:

<http://www.gov.nt.ca>

Government of Nova Scotia:

<http://www.gov.ns.ca>

Government of Nunavut:

<http://www.gov.nu.ca>

Government of Ontario:

<http://www.gov.on.ca>

Government of Prince Edward Island:

<http://www.gov.pe.ca>

Government of Quebec:

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Government of Saskatchewan:

<http://www.gov.sk.ca>

Government of Yukon:

<http://www.gov.yk.ca>

Indian and Northern Affairs Canada:

<http://www.inac.gc.ca>

Industry Canada:

<http://www.ic.gc.ca>

International Development Research Centre:

<http://www.idrc.ca/en>

International Institute for Sustainable Development:

<http://iisd1.iisd.ca>

The Montréal Process:

<http://www.mpci.org>

National Atlas of Canada Online:

<http://www.atlas.gc.ca>

Pulp and Paper Research Institute of Canada:

<http://www.paprican.ca>

United Nations Framework Convention on Climate Change:

<http://www.unfccc.de>