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SUSTAINABLE FOREST MANAGEMENT IN CANADA: CLEAR POLICY – QUESTIONABLE PRACTICE

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DEFINING SUSTAINABLE FOREST MANAGEMENT

Sustainability is commonly held to be the primary goal of forest management in the 21st century.(1) The Canadian Forest Service states that sustainable forest management (SFM) is widely accepted to be:

> Management that maintains and enhances the long-term health of forest ecosystems for the benefit of all living things while providing environmental, economic, social and cultural opportunities for present and future generations.(2)

This paraphrase of the 1998 Canada Forest Accord is taken up again in the Canadian Standards Association's *CAN/CSA-Z809-02 Sustainable Forest Management: Requirements and Guidance*. This definition may be the most common one in Canada, but it is far from the only one in existence. The United Nations Forum on Forests (UNFF) provides the following working definition of SFM:

> … the stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfill, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems.

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(1) J. D. Briner, "Strong Policy Through National Consensus: Canada's Forestry Policy Experiment," in *Proceedings of the Conference on Policy Instruments for Safeguarding Forest Biodiversity – Legal and Economic Viewpoints. The Fifth International BIOECON Conference 15th-16th January 2004, House of Estates, Helsinki / Working Papers of the Finnish Forest Research Institute 1*, ed. P. Horne *et al.*, Finnish Forest Institute, Helsinki, pp. 131-142, on-line only: http://www.metla.fi/julkaisut/workingpapers/2004/mwp001-12.pdf.

(2) Canadian Forest Service, *The State of Canada's Forests: 2000-2001*, Ottawa, 2001, p. 38.

SFM is about striking a balance among all the different uses of the forest, while ensuring its continued ecological functioning so that the benefits (to all living things) and functions can continue into the future. While in theory this may seem simple enough, volumes of research and analysis and years of practical and empirical evidence show that the application of SFM is not at all simple.(3)

Numerous international and Canadian institutions, policies and frameworks are involved in defining, applying, legislating or otherwise regulating SFM, and some of these are described below. There is also important work being done on measuring, monitoring and reporting on SFM, despite ongoing debate over the definition of what is being evaluated. Canadian efforts to measure and monitor forest sustainability are relatively advanced, and are also described below. Despite the institutions, policies and monitoring efforts, however, there is considerable debate as to whether or not Canada's forests are managed in a sustainable manner. Typically, on one side is government which maintains SFM is being practised in Canada. On the other are non-governmental organizations which suggest there is much talk and little action.

INTERNATIONAL POLICIES AND INSTITUTIONS

Since the Earth Summit in 1992, when the *Statement on Forest Principles* was signed by world leaders, a succession of three organizations under the UN have worked toward an international agreement on SFM with limited success. The Intergovernmental Panel on Forests (IPF) and its successor, the Intergovernmental Forum on Forests (IFF), generated what are known as the IPF/IFF Proposals for Action. This set of some 270 statements is meant as a guideline for implementing SFM. However, adoption and implementation of the Proposals for Action have been slow and globally inconsistent. The third organization to address this file for the UN is the UNFF and it, too, is encountering seemingly insurmountable obstacles in achieving international agreement and action on SFM.(4)

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(3) An overview of the complexity of SFM can be found in W. L. Adamoicz and P. J. Burton, "Sustainability and Sustainable Forest Management," in *Towards Sustainable Management of the Boreal Forest*, ed. P. J. Burton *et al.*, NRC Research Press, Ottawa, 2003, pp. 41-64.

(4) Bill Mankin, *The IAF at the Crossroads: Tough Choices Ahead*, World Wildlife Fund International, Forests for Life Programme, Gland, Switzerland, September 2004.

CANADA'S NATIONAL STRATEGY FOR SUSTAINABLE FOREST MANAGEMENT

Canada is a forest nation. With nearly 300 million hectares of forests and another 92 million hectares of wooded land, Canada has the third-largest expanse of forested land of any country in the world, including 30% of the planet's boreal forest. Approximately half of the forests are likely to be subject to forest management, and sizeable areas are cut each year; in 2003, for example, 1 million hectares were harvested. The forests are at the heart of an $80-billion industry with over 370,000 person-years of employment annually; they entirely support more than 300 communities where at least 50% of the wages earned are from the forestry sector. Two-thirds of Canada's animal and plant species are forest-dwelling, and many Aboriginal and northern communities continue to depend on forests for their traditional cultures and way of life. For more Canadian forest and forestry statistics and information, see the Appendix.

Forests are a natural resource and therefore under the jurisdiction of provincial governments in Canada. Devolution agreements with territorial governments have given the territories increased control over their own forest resources as well. Federal involvement in forest management is through the national government's responsibilities for the economy, trade, international relations, science and technology, the environment, and federal and Aboriginal lands. With respect to the last item, it should be noted that jurisdiction over large areas of Aboriginal land is reverting to First Nations as various claims and treaties are being settled. Ninety-four per cent of Canada's forests are owned by the Crown (more than 70% by the provinces), with the remaining 6% largely in small, privately owned woodlots.

International challenges to implementing SFM have not kept Canada from going ahead domestically. Canada published its first truly national forest strategy in 1987, in which the approach was principally one of maximizing timber yields. Spurred on by the Brundtland Report,(5) Canada then implemented a new, much more consultative, multi-disciplinary, and in-depth approach to forest strategy development. The results of this approach were presented in 1992 with the first Canada Forest Accord (CFA) and a new National Forest Strategy, *Sustainable Forest Management: A Canadian Commitment*.(6) Sustainable forest management has been officially agreed to by the federal and all provincial and territorial governments as signatories to the CFA.(7) The accord has also been signed by numerous enterprises, industry associations,

(5) United Nations World Commission on Environment and Development, *Our Common Future* (the Brundtland Report), Oxford University Press, Oxford, 1987.

(6) A recent history of Canada's forest policy is presented in Briner (2004).

(7) The Government of Alberta has not signed the current accord (2003-2008), although it was a signatory to the 1992 and 1998 accords. The Government of Quebec is also a non-signatory participant in the implementation of the accord.

landowner groups, forestry associations, and environmental groups. The CFA enshrines the principles of SFM and outlines the signatories' commitments for implementing them.

The Canadian Council of Forest Ministers (CCFM) was created in 1985 as a voluntary body bringing together the federal, provincial and territorial ministers responsible for forest management across the country. By serving as a coordinating body for forest policy in Canada and through its cooperative and consultative approach, the CCFM has given overall direction to Canadian SFM. It developed the Canada Forest Accords and National Forest Strategies of 1992 and 1998, and established the National Forest Strategy Coalition (NFSC) to ensure continued and broad-based stakeholder participation in the NFS. This government-industry-citizen-academia coalition oversaw implementation and evaluation of the two first strategies and led the development of the current NFS. Membership in the NFSC consists principally of the organizations that have signed the CFA and are therefore committed to the National Forest Strategy.(8) The 2003 CFA has 65 signatories spanning governments, private woodlot groups, industries, professional forester associations, universities, and environmental and conservation groups.

The current (2003-2008) National Forest Strategy, *A Sustainable Forest: The Canadian Commitment*, defines actions and goals that will lead to sustainable forest management in Canada. These are grouped under eight broad themes:

- ecosystem-based management;
- sustainable forest communities;
- rights and participation of Aboriginal peoples;
- forest product benefits;
- knowledge and innovation for competitiveness and sustainability;
- the urban forest and public engagement in sustainability;
- private woodlots' contribution to sustainability; and
- reporting and accountability.

It is these themes that those involved in, or with a special interest in, forest management in Canada believe need attention in order to ensure the sustainable management of the forest resource.

(8) The governments of Quebec, Alberta and Nunavut are currently non-signatory participants in the NFSC.

MEASURING SUCCESS – CRITERIA AND INDICATORS AND THE NATIONAL FOREST INVENTORY

In order to determine the success of sustainable forest management, it is necessary to develop measures of forest sustainability. Again, challenges in achieving global agreement on measures of SFM have not kept Canada from forging ahead. The 1992 National Forest Strategy required the development of SFM Criteria and Indicators (C&I), which the CCFM published in 1995.(9) In 2003, the CCFM updated these C&I, which have been referred to as "the most broadly accepted Canadian forest values generated to date,"(10) and which conform to both the Montreal and Helsinki processes.(11)

The six criteria under the Canadian approach to SFM are:

- biological diversity;
- ecosystem condition and productivity;
- soil and water;
- role in global ecological cycles;
- economic and social benefits; and
- society's responsibility.

The criteria are evaluated using a total of 46 indicators. According to the CCFM, "the criteria represent forest values that Canadians want to enhance or sustain, while the indicators identify scientific factors to assess the state of the forests and measure progress over time."(12)

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(9) Canadian Council of Forest Ministers, *Defining Sustainable Forest Management: A Canadian approach to criteria and indicators*, 1996, out of print, http://www.ccfm.org/ci/framain_e.html. The current National Forest Strategy is available at http://nfsc.forest.ca/strategies/nfs5.pdf.

(10) Canadian Standards Association, *CAN/CSA-Z809-02 Sustainable Forest Management: Requirements and Guidance*, Mississauga, 2002, p. 2.

(11) Montreal Process: This Canadian international initiative was officially named the Working Group on Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests. It produced, in 1995, the *Santiago Declaration – Statement on Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests*, along with a set of seven criteria with indicators for each.

Helsinki Process: The pan-European Ministerial Conference on the Protection of Forests in Europe was initiated in preparation for the Earth Summit. By 1998, this conference had adopted a declaration regarding sustainable forest management as well as a set of C&I.

(12) CCFM, *Defining Sustainable Forest Management in Canada: 2003 Criteria and Indicators*, p. 1.

The first and only report on Canada's forests using these C&I was published in 2000 (based on the 1995 C&I). It is a compendium of Canadian forest information ranging from the number of hectares lost to forest fires to the economic spin-offs from Canadian forestry. The report is a view of Canadian forests and their management through the lens of the six criteria, but it offers no inferences or conclusions regarding the sustainability of Canadian forests except to suggest that the efforts by various governments to protect more land are positive.

A forest inventory that tracks the SFM indicators is an essential tool for successful monitoring and reporting on forest sustainability. The federal government produced Canada's Forest Inventory (CanFI) reports in 1986, 1991, 1994, and 2001.(13) The provincial governments, as managers of the natural resource within their jurisdiction, regularly collect the data and each generates its own inventory. The Government of Canada collects data for federal forests such as those on Department of National Defence or First Nations lands, and consolidates the data from each province and territory to create the national reports.(14) CanFI's shortcomings are well-known: it is a "snapshot of different-aged information, collected according to different standards";(15) it does not include information on rate or nature of change; and it cannot be used to make projections into the future or as a benchmark against which to compare future inventories.(16)(17) These limitations greatly diminish the availability and quality of data for assessing the sustainability of Canada's forest management.

In 1999, Natural Resources Canada published the framework for the new National Forest Inventory (NFI), which will report for the first time in 2006.(18) The NFI is designed with the flexibility to meet federal requirements for national and international reporting while allowing provinces to adapt the methods to meet additional needs of their own.(19) It is

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(13) The 2001 report updated the 1994 report to incorporate new data from Quebec.

(14) The last CanFI report used data from some 45 sources including provincial and territorial governments, federal departments, First Nation groups, private landowners, and timber harvesters.

(15) Mark D. Gillis *et al*., "Canada's National Forest Inventory: What can it tell us about old growth?" *Forestry Chronicle*, Vol. 79, No. 3, May/June 2003, pp. 421-428.

(16) J. Baker *et al.*, "A New National Forest Inventory for Canada: The need is now!" *Forestry Chronicle*, Vol. 72, 1996, pp. 276-279.

(17) Gillis *et al.* (2003).

(18) Natural Resources Canada, *A Plot-based National Forest Inventory Design for Canada: An interagency partnership project*, Victoria, 1999, http://www.pfc.forestry.ca/monitoring/inventory/canfi/docs/design2_e.pdf.

(19) Gillis *et al.* (2003).

plot-based, reproducible, and includes measurements of many non-timber parameters. This new format of the NFI is expected to provide a better inventory than CanFI for assessing the success of sustainable forest management in Canada.

OPPOSING VIEWS ON SUSTAINABLE FOREST MANAGEMENT IN CANADA

Generally, provincial and federal governments state that Canadian forests are managed in a way that is designed to ensure sustainability. However, this self-assessment may be viewed by some as biased. The independent panel of the NFSC that provided the final evaluation of the 1998-2003 National Forest Strategy concluded that while much work remained to be done, Canada is well on its way to achieving sustainable forest management. The panel felt that, because the NFS set such high standards, the reporting period had been a success even though it found only some, little, or no progress on the vast majority of indicators.(20)

In counterpoint to these claims stand the observations of non-governmental organizations (NGOs). Many NGOs have commented or reported on subjects related to forest sustainability, ranging from biodiversity to pollution and from harvesting levels to community dependence on the resource. Far fewer organizations have reported on the overall sustainability of Canada's forests, including environmental, economic, and social/cultural aspects. Those that have, generally give governments a failing grade with respect to sustainable forest management. They indicate that while government policies and even some legislation extol sustainable management, the operational reality does not reflect the stated goals.

A. Governments

An overview of recent federal and select provincial forest management policies, legislation and C&I implementation, presented below, suggests that there are sufficient grounds to claim that Canada's forests are managed in a sustainable manner and that monitoring and evaluation of forest sustainability, while relatively new, is improving. The government reports and efforts indicate that there may be threats to forest sustainability and some localized areas of non-sustainable management, but overall the situation is positive.

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(20) Independent Expert Panel, *A Final Evaluation of the National Forest Strategy*, prepared for the National Forest Strategy Coalition, October 2002, http://nfsc.forest.ca/background/2002final_e.htm.

The Canadian Forest Service (CFS) claims that Canada has found an appropriate balance among the numerous uses of its forests in the past, and that continuing to do so will ensure ongoing sustainability.(21) In 2001, the CFS devoted a large portion of its annual report on the state of Canada's forests to sustainable forest management, focusing on 12 specific case studies from across the country to show that "sustainable forest management is a reality in Canada."(22)

The British Columbia government takes pride in the province's North American leadership role in sustainable forest management certification (CSA, ISO, Forest Stewardship Council or other). In January 2003, British Columbia reported that nearly 70% of the timber harvested in the province came from operations that met ISO or other third-party standards.(23) The next year, the government published *The State of British Columbia's Forests, 2004*, as the first in a series of three reports designed to comprise a complete assessment of forest sustainability in the province.(24) The 2004 report suggests that the current state of forests in the province is sustainable from an environmental point of view, although pressures are threatening future diversity. The government assesses that the timber harvest is currently managed in a sustainable manner but that there will continue to be great local variability in this sustainability, resulting in potential booms in some areas and busts in others. The report highlights the fact that Aboriginal involvement in forest management has not been sufficient in the past, but is now improving. Finally, the government assesses its own legislation on sustainable forest management as good and improving, basing this assessment largely on proposed and already implemented simplifications of the regulatory and administrative burden for industry.

In the late 1990s, the Government of Alberta produced *The Alberta Forest Legacy – Implementation Framework for Sustainable Forest Management*; it also emphasized that Alberta's forests are managed sustainably in its 2001 publication *Management of Alberta's Forest Resource*. While the Alberta government already monitors many components of the

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(21) Natural Resources Canada (NRCan), *The State of Canada's Forests: 2002-2003*, Ottawa, 2003, p. 6, http://www.nrcan.gc.ca/cfs-scf/national/what-quoi/sof/sof03/pdf/Up_Front-e.pdf.

(22) Natural Resources Canada, *The State of Canada's Forests: 2000-2001*, Ottawa, 2001, p. 38, http://www.nrcan.gc.ca/cfs-scf/national/what-quoi/sof/sof01/pdf/Feature_Article.pdf.

(23) The Suzuki Foundation states that the only ecologically credible certification is the certification offered by the Forest Stewardship Council, as the others are all funded by industry. The majority of certified forests in British Columbia are ISO- or CSA-certified.

(24) British Columbia Minister of Forests, *The State of British Columbia's Forests, 2004*, Vancouver, 2004, http://www.for.gov.bc.ca/hfp/sof/pdf/sof.pdf.

province's environment, such as species at risk, the number of protected areas, and plant distribution, there does not appear to be any coordinated measure of forest sustainability or sustainable management; nor does the provincial government assess the sustainability of the forests.

The Ontario Ministry of Natural Resources (OMNR) refers to resource management in Ontario as "conserving the 'capital' while living off the 'interest.'"[25] More than a decade ago, the government passed into law the *Crown Forest Sustainability Act, 1994*. In *Forest Resource Assessment, Beyond 2000*, the Ontario government formally adopted a policy on ecological sustainability and presented steps for achieving its goal. However, it was not until 2002 that it produced a formal set of C&I, as well as an initial assessment, as part of the provincial *State of the Forest Report, 2001*. The report highlighted some areas of concern with respect to sustainability, such as the continued post-harvest regeneration of conifer-dominated forests into hardwood stands. It cited the limited number of management units where watersheds had been disturbed as a positive indicator of sustainability. As the 2001 report was the first to use the Sustainable Forest Management C&I, most information was presented as benchmarks for future reporting. On the final page of the summary of the 2001 report, the OMNR states:

> Is Ontario managing its forests sustainably? Within the limits of science, data sources and our knowledge of forest ecosystems, we believe so.

B. Non-governmental Organizations and Critics

1. Global Forest Watch Canada

In 2000, Global Forest Watch (GFW) Canada published a report entitled *Canada's Forests at a Crossroads*.[26] The organization notes that the results of the work were greatly affected by data limitations in terms of availability, reliability, age, and national

(25) Ontario Ministry of Natural Resources, *Overview of Ontario's Forests*, Toronto, 2003, http://ontariosforests.mnr.gov.on.ca/spectrasites/internet/ontarioforests/sustainableforests.cfm.

(26) Global Forest Watch Canada, *Canada's Forests at a Crossroads: An Assessment in the Year 2000*, Washington, D.C., 2000.

coherence. The authors underline in particular the lack of a consistent national forest inventory and the reliance on inventory parameters related strictly to timber values.(27)

GFW Canada drew conclusions, summarized below, in three broad areas:

1. *Forest Condition and Change Trends*: The overall rate of deforestation is low; but in species-rich southern forests, fragmentation and conversion to non-forest landscapes is extensive. The majority of Canada's forests are in close proximity to development. Even northern forests are being opened up to development and fragmented by transportation corridors. These trends will likely lead to loss of forest wilderness values and loss of habitat, especially for sensitive species. Forest ecosystem services such as water quality are also likely to be negatively affected.

2. *Forest Industry*: Current harvesting rates surpass regeneration. The majority of logging occurs in primary forests, which maximizes short-term returns at the expense of long-term production. The $11 billion in wages that the industry generates is especially important to the more than 330 communities where forestry represents more than 50% of the employment.

3. *Commitments and Legislation*: There are numerous indications that the Canadian government is moving toward managing forests for a number of environmental benefits rather than simply for timber purposes. However, implementation of new policies is likely less than satisfactory, and there is increasing reliance on industry to monitor its own activities.

Canada's Forests at a Crossroads paints a far less optimistic picture of the sustainability of Canadian forests than government publications, but GFW Canada's conclusion relating to Commitments and Legislation acknowledges that the report was presented at a time of change in forest management, assessment and reporting in Canada. While acknowledging that some positive changes are in the works, the authors appear sceptical with respect to full and proper implementation of these changes.

2. The Coastal Rainforest

The David Suzuki Foundation has been extensively involved in issues concerning temperate rainforests in coastal British Columbia. In April 2001, the Foundation was party to an agreement signed by government, industry, NGO and First Nations representatives in British Columbia that committed all parties to "explore how ecosystem based management could

(27) The new National Forest Inventory, scheduled to report for the first time in 2006, will address the first concern at least in part. The second concern would be alleviated by national implementation of SFM C&I.

be used to better manage B.C. ancient coastal rainforest."[28] In its 2004 and 2005 status reports, the Foundation harshly criticized the province's and industry's forestry planning and practices in the coastal rainforest, claiming poor implementation of the intent of the 2001 agreement and failure to move toward ecosystem-based management.[29] As evidence of unsustainable management, the reports cite the continued dominance of clear-cutting, the deforestation of stream banks, and the poor habitat quality of protected areas for species at risk.

3. The Boreal Forest

Boreal forest covers nearly 50% of the country's land mass, and its sustainability is therefore essential to the sustainability of Canadian forests as a whole. In 1999, the Standing Senate Committee on Agriculture and Forestry released a report entitled *Competing Realities: The Boreal Forest at Risk*. The report, prepared by the Subcommittee on the Boreal Forest, highlighted numerous threats to the sustainability of the boreal forest and made 35 recommendations to address them. Senator Nicholas Taylor captured the sustainable forest management message of the report at the time by stating that:

> The Subcommittee believes that we can and must develop strategies that can ensure the survival of our threatened boreal forest while still enhancing traditional forest use and preserving economic and industrial benefits.

In 2003, the Canadian Boreal Initiative (CBI) reported on progress toward achieving the six committee recommendations that it judged most important for conservation.[30] Overall, the CBI report was not favourable with respect to federal progress toward sustainable forest management. The authors found that, while the current (2003-2008) National Forest Strategy contains broad lines with respect to integrated forest-use planning, no practical steps

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(28) David Suzuki Foundation, *Canada's Rainforest – Status Report 2004 (Executive Summary)*, Vancouver, 2004, p. 1, http://www.canadianrainforests.org/resources/david_suzuki_foundation_canadian_rainforests_status_report_year_2_exec_summ.pdf.

(29) David Suzuki Foundation (2004), and David Suzuki Foundation, *Canada's Rainforest – Status Report 2005*, Vancouver, 2005, http://www.canadianrainforests.org/resources/david_suzuki_foundation_canadian_rainforests_status_report_year_3.pdf.

(30) Canadian Boreal Initiative, *The Boreal Forest at Risk: A Progress Report*, Ottawa, 2003, http://www.borealcanada.ca/pdf/cbi_2003_senate_report.pdf.

had been taken by the time of publication to implement them. The Canadian Council of Forest Ministers' *Forest 2020* project (under early development at the time) was seen by the authors as the first possible step toward implementation. The CBI also indicated that sustainability was threatened by both continued exploitation in "protected" areas and ongoing increases in accessibility (road construction). The CBI acknowledged that the increased promotion of forest certification was enhancing SFM in the boreal forest, and the report recognized "some progress" in the area of data collection, due mainly to the development of the new National Forest Inventory. It found "little progress," however, in the areas of wildlife and habitat conservation, and recognition of Aboriginal rights.

4. Quebec's Forests

In 2003, the Quebec government created the Commission d'étude sur la gestion de la forêt publique québécoise (the Coulombe Commission) with the mandate to examine forest management, the forest industry, public interests in the forest and other related issues, from economic, environmental, cultural, regional, social and numerous other perspectives.(31) The Coulombe Commission is likely one of the most extensive, thorough and unbiased assessments of forest management anywhere in Canada. The vision that the Commission ultimately formulated for Quebec's forests incorporates and elaborates on all three components of sustainable development.(32) While not specifically charged with determining whether Quebec forests are sustainable or managed in a sustainable manner, the Commission's report, published in December 2004, reveals that in the opinion of the Commission they are not.(33)

The summary of the Commission's report states that public forest management in Quebec is strongly focused on timber production even though ecosystem-based management appears to provide better returns in terms of environmental protection and long-term viability of forest industries. The Commission made the following recommendations with respect to SFM:

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(31) The Commission's full mandate is available in French on its Web site, http://www.commission-foret.qc.ca/mandat.htm.

(32) For the complete vision statement in the original French, see page 1 of the Final Report Summary, http://www.commission-foret.qc.ca/rapportfinal/Resume.pdf.

(33) Commission d'étude sur la gestion de la forêt publique québécoise, *Rapport Final*, Quebec, 2004, http://www.commission-foret.qc.ca/rapportfinal.htm.

1. that ecosystem-based management be at the core of public forest management in Quebec;

2. that the six SFM criteria developed by the CCFM be better incorporated into the provincial forests act through the identification of indicators specific to Quebec that will form the basis of regular public reports on progress toward SFM;

3. that the provincial forests act clearly state the necessity for integrated resource plans before an exploitation permit can be issued;

4. that the [Quebec] Minister [of Natural Resources, Wildlife, and Parks] ensure better coordination between the multiple-use goals and the goals of sustainable development in the province's public forests; and

5. that the Minister reduce the Annual Allowable Cut by 20%, as the current rate is not sustainable.

In March 2004, the Minister announced that, in accordance with the last recommendation above, the Annual Allowable Cut for the province would be decreased over the next two years.

LOOKING BEYOND CASE STUDIES: SUSTAINABLE FOREST MANAGEMENT AT THE NATIONAL LEVEL

Canada is seen by many as a world leader in sustainable forest management. There have been vast improvements since the early 1980s in terms of considering non-timber forest values, protection of some forested areas, and increased involvement of the broadest possible set of stakeholders in forest management decisions. Yet it is difficult to measure progress and evaluate success when criteria and indicators are so new and their use is sporadic. Sustainable forest management as theory is at the heart of forest policies and legislation in Canada, but the practical application of SFM remains less tangible. There are numerous local examples of sustainable forestry in practice across the country, but there are many cases where the forest and the economies, institutions and cultures that depend on it have been irreversibly changed or have disappeared altogether. Defining and assessing sustainable forest management at the national level remains, therefore, the real challenge.

APPENDIX

CANADA: A FOREST NATION

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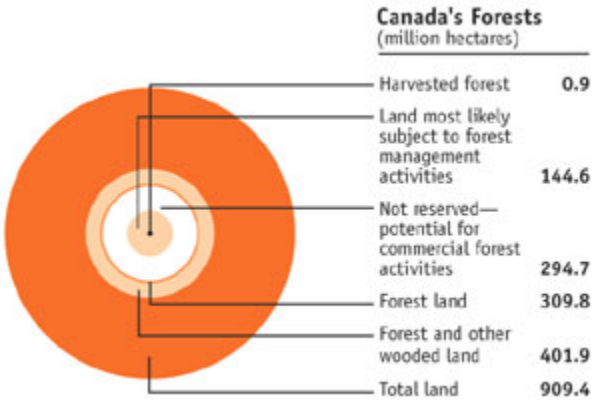
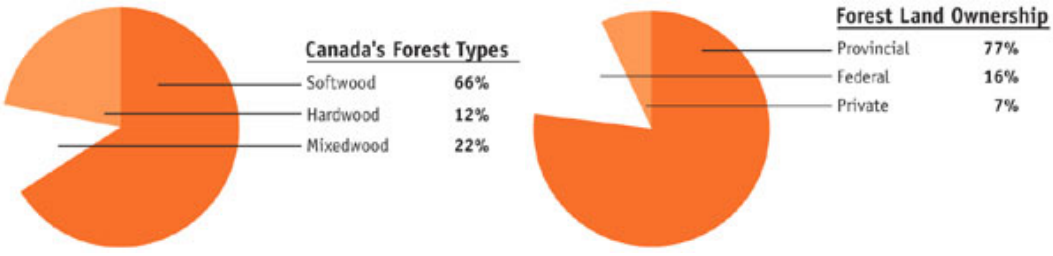
Excerpts From *The State of Canada's Forests, 2003-2004*
Published by the Canadian Forest Service of Natural Resources Canada

Statistics from Canada's Forest Inventory (CanFI 2001) tell us there are 401.9 million hectares of forest and other wooded land in Canada. The other wooded land makes up 23% of this area and includes treed wetland as well as land with slow-growing, scattered trees. Of the forest and other wooded land, the Crown owns 93%. The remainder is owned privately by some 425,000 land owners.



Eighty-seven percent is classified as stocked or supporting tree growth. Of this forest, about a third has been assessed as young, another third as mature or overmature, and a final third as uneven-aged or unclassified. In terms of forest type, 66% of Canada's forests are softwoods, 12% are hardwoods, and 22% are mixedwoods.



CANADA'S FOREST FACTS FOR 2003-2004

- Canada is steward to about 10% of the world's forests, 30% of the world's boreal forests, and 20% of the world's fresh water.

- There are about 400 million hectares of forests and other wooded land. The 92 million hectares of other wooded land consists of treed wetland as well as slow-growing and scattered-treed land.

- Canada has 309.8 million hectares of forest land; of this, 294.7 million hectares are not reserved and therefore potentially available for commercial forest activities.

- Of the 294.7 million hectares, 144.6 million are considered accessible and most likely to be subject to forest management activities.

- Of these 144.6 million, about 1 million hectares are harvested annually.

- There were 8218 recorded forest fires in Canada in 2003 with approximately 1.6 million hectares of forested land burned, a reduction of 1.2 million hectares from the previous year.

- Canada's forests are the backbone of an $81.8-billion forest industry.

- Forest products contributed almost $30 billion to Canada's positive trade balance, added over $33 billion to the gross domestic product (GDP), and generated $3.3 billion in new capital investments.

- Total value of forest product exports reached $39.6 billion.

- Direct employment in the forest sector increased by approximately 14 900 person-years to 376 300 in 2003.

- About two-thirds of Canada's estimated 140 000 species of plants, animals and micro-organisms live in the forest.

- The forest-related tourism industry is worth several billion dollars annually.

NATIONAL FOREST PROFILE

Total area	998.5 million ha
Land area	909.4 million ha
Forest and other wooded land	401.9 million ha

Forest Resource	
Ownership	
Provincial	77%
Federal	16%
Private	7%
Forest type	
Softwood	66%
Hardwood	12%
Mixedwood	22%
Annual allowable cut (2001)[a]	236.8 million m^3
Harvest (volume) Industrial roundwood (2002)[b]	189.2 million m^3
Harvest (area) Industrial roundwood (2002)	972 303 ha
Status of harvested Crown land (2001)[c]	
Stocked (87%)	16.2 million ha
Understocked (13%)	2.4 million ha
Forest regeneration on public land	16.2 million ha
Area defoliated by insects and beetle-killed trees (2002)[d]	18.2 million ha
Number of fires (2003)[e]	8 218
Area burned (2003)[e]	1.6 million ha

Non-Timber Forest Products	
Production value	
Maple products (2003)	31.3 million litres
Christmas trees (2001)	4.1 million
Wildlife pelts (minus seals) (2001)	1.0 million

Forest Industry	
Value of exports (2003)	$39.6 billion
Balance of trade (2003)	$29.7 billion
Contribution to GDP (gross domestic product) (2003)	$33.7 billion
Direct employment (2003)	376 300
New investments (2003)	$3.3 billion

a, b, c, d, e: See Notes on the Canadian Forest Service Web site (http://www.nrcan.gc.ca/cfs-scf/national/what-quoi/sof/sof04/notes_e.html).