Please provide to following details on the origin of this report.

Contracting Party	Canada
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Submission	
Signature of officer responsible for submitting national report:	
Date of submission:	29-08-2001

Please provide summary information on the process by which this report has been prepared, including information on the types of stakeholders who have been actively involved in its preparation and on material which was used as a basis for the report

The Canadian Forest Service of Natural Resources Canada, in collaboration with Provincial and Territorial authorities assembled the information contained in this report.

The contributions highlighted in the report are examples of actions made by the Canadian forest community at large. In that regard, numerous comments and examples refer to projects involving Indigenous communities, non-governmental organisations, industry and research institutions.

Copies of this report, as well as of Canada’s national report, will be available for consultation on the website maintained by the Biodiversity Convention Office of Environment Canada at the following address: http://www.bco.ec.gc.ca.

Decision IV/7 on Forest biological Diversity

1. What is the relative priority afforded to implementation of this decision by your country?					
a) High	X	b) Medium		c) Low	

2. To what extent are the resources available adequate for meeting the obligations and recommendations made?							
a) Good		b) Adequate		c) Limiting	X	d) Severely limiting	

3. Has your country assessed the status and trends of its forest biological diversity and identified options for its conservation and sustainable use? (Decision IV/7, paragraph 12)	
a) no	
b) assessment underway (please give details below)	X
c) assessment completed (please give details below)	
d) not relevant	

If a developing country Party or a Party with economy in transition -	
4. Has your country requested assistance through the financial mechanism for projects that promote the implementation of the focused work programme an forest biological diversity? (Decision IV/7, paragraph 7)	
a) no	
b) yes (please give details below)	

Programme element 1: Holistic and inter-sectoral ecosystem approaches that integrate the conservation and sustainable use of biological diversity, taking account of social and cultural and economic considerations

5. Has your country identified methodologies for enhancing the integration of forest biological diversity conservation and sustainable use into an holistic approach to sustainable forest management at the national level? (Work Programme, paragraph 13)	
a) no	
b) yes – limited extent (please give details below)	
c) yes – significant extent (please give details below)	X
d) not applicable	

6. Has your country developed methodologies to advance the integration of traditional forest-related knowledge into sustainable forest management, in accordance with Article 8(j)? (Work Programme, paragraph 14)	
a) no	
b) yes – limited extent (please give details below)	
c) yes – significant extent (please give details below)	X
d) not applicable	

7. Has your country promoted cooperation on the conservation and sustainable use of forest biological resources at all levels in accordance with Articles 5 and 16 of the Convention? (Work Programme, paragraph 15)	
a) no	
b) yes – limited extent (please give details below)	
c) yes – significant extent (please give details below)	X
d) not applicable	
8. Has your country promoted the sharing of relevant technical and scientific information on networks at all levels of protected forest areas and networking modalities in all types of forest ecosystems? (Work Programme, paragraph 17)	
a) no	
b) yes – limited extent (please give details below)	
c) yes – significant extent (please give details below)	X
d) not applicable	

Programme element 2: Comprehensive analysis of the ways in which human activities, in particular forest-management practices, influence biological diversity and assessment of ways to minimize or mitigate negative influences

9. Has your country promoted activities for an enhanced understanding of positive and negative human influences on forest ecosystems by land-use managers, policy makers, scientists and other relevant stakeholders) (Work Programme, paragraph 29)	
a) minimal activity	
b) yes – limited extent (please give details below)	
c) yes – significant extent (please give details below)	X
d) not relevant	
10. Has your country promoted activities to assemble management experiences and scientific, indigenous and local information at the national and local levels to provide for the sharing of approaches and tools that lead to improved forest practices with regard to forest biological diversity? (Work Programme, paragraph 30)	
a) minimal activity	
b) yes – limited extent (please give details below)	
c) yes – significant extent (please give details below)	X
d) not relevant	

11. Has your country promoted activities with the aim of providing options to minimize or mitigate negative and to promote positive human influences on forest biological diversity? (Work Programme, paragraph 31)	
a) minimal activity	
b) yes – limited extent (please give details below)	
c) yes – significant extent (please give details below)	X
d) not relevant	

12. Has your country promoted activities to minimize the impact of harmful alien species on forest biological diversity? (Work Programme, paragraph 32)	
a) minimal activity	
b) yes – limited extent (please give details below)	
c) yes – significant extent (please give details below)	X
d) not relevant	
13. Has your country identified means and mechanisms to improve the identification and prioritisation of research activities related to influences of human activities, in particular forest management practices, on forest biological diversity? (Work Programme, paragraph 33)	
a) minimal activity	
b) yes – limited extent (please give details below)	
c) yes – significant extent (please give details below)	X
d) not relevant	
14. Does your country hold research results and syntheses of reports of relevant scientific and traditional knowledge on key forest biological diversity issues and, if so, have these been disseminated as widely as possible? (Work Programme, paragraph 34)	
a) not relevant	
b) some relevant material, but not widely disseminated	
c) significant material that could be more widely disseminated (please give details below)	
d) yes - already widely disseminated (please give details below)	X
15. Has your country prepared case-studies on assessing impacts of fires and alien species on forest biological diversity and their influences on the management of forest ecosystems and savannahs? (Work Programme, paragraph 35)	
a) no – please indicate below whether this is due to a lack of available case-studies or for other reasons	
b) yes – please give below any views you may have on the usefulness of the preparation of case-studies for developing a better biological understanding of the problem and/or better management responses.	X

Programme element 3: Methodologies necessary to advance the elaboration and implementation of criteria and indicators for forest biological diversity

16. Has your country assessed experiences gained in national and regional processes, identifying common elements and gaps in existing initiatives and improving indicators for forest biological diversity? (Work Programme, paragraph 43)	
a) minimal activity	
b) yes – limited assessment made (please give details below)	
c) yes – significant assessment made (please give details below)	X
d) not relevant	
17. Has your country carried out taxonomic studies and inventories at the national level which provide for a basic assessment of forest biological diversity? (Work Programme, paragraph 43)	
a) minimal activity	
b) yes – limited assessment made (please give details below)	X
c) yes – significant assessment made (please give details below)	
d) not relevant	

If you have ticked any of the boxes in questions 5 to 17 above which invite you to provide further details, please do so here.

(Information can include descriptions of methodologies and of activities undertaken, reasons for success or failure, outcomes and lessons learned)

Decision V/17 on Forest Biological Diversity

3. As part of the multi-facetted approach used in Canada, some vertebrate species are being tested as indicators of long-term effects of forest management practices on wildlife populations and their habitats. (Mclaren et al 1998, The Forestry Chronicle 74:241-248). The Biodiversity Science Board, working with the Ecological Monitoring and Assessment Network (EMAN) has recently produced a set of biodiversity protocols for measuring and monitoring biodiversity in a number of ecosystems including forests.

The Committee on the Status of Endangered Species in Canada (COSEWIC) determines the national status of wild species suspected of being at risk in Canada. The degree of forest dependence is determined for each species. In general, provinces and territories also keep lists of forest-dependent species and some have issued status reports on forest biodiversity. To complement COSEWIC's work in listing species, the Recovery on Nationally Endangered Wildlife Committee (RENEW) prepares recovery plans for listed species.

In 2000, Canada released "Wild Species 2000", its first report on trends and status of species in Canada. The report is a collaborative effort, building on the contribution of data and knowledge from individuals, institutions and agencies across the country on 1,600 Canadian species, representing roughly 2% of the 70,000 described species in Canada. Approximately two-thirds of all

Canadian species are thought to occur in forest ecosystems. A substantial task remains in terms of describing and assessing thousands of species, in all ecosystems.

Part of the success in this project is attributable to public participation, through voluntary monitoring programs using volunteers, such as Frog Watch, Tree Watch, Worm Watch, all across the country.

The Canadian Forest Inventory Committee has developed a new format for the National Forest Inventory that will incorporate complete vegetation species. Instead of a periodic compilation of existing inventory information from across the country, the committee decided on a plot-based system of permanent observational units located on a national grid. The new plot-based National Forest Inventory (NFI) design will enhance the accuracy and timeliness of information on the extent and state of Canada's forests to establish the baseline of where the forests are and how they are changing over time.

Programme Element 1

1. The work carried out in Canada in this regard spans over many areas.

National Forest Strategy: Strategic directions 1 and 2 of Canada's National Forest Strategy deal with two aspects: multiple values of forest ecosystems; and, practicing stewardship in forest management.

Criteria and Indicators (C&I): conservation of biodiversity is one of the six criteria used under the Canadian Council of Forest Ministers (CCFM) C&I framework, and one of seven under the Montreal Process for C&I. Many provinces and territories have their own framework of C&I where biodiversity figures prominently. Local level indicators, including biodiversity, have been developed through the Model Forest Network.

Monitoring sites and experimental studies:
Montane Alternative Silviculture Systems (MASS) project.
Ecosystem Management by Emulating Natural Disturbance (EMEND)

2. The First Nation Forestry Program (FNFP) activities are in support of the spirit of Article 8(j) and two reports produced under this initiative are of particular interest:

Exploring the relationship between aboriginal peoples and the Canadian forest industry: some industry perspectives (March1998);

Traditional Ecological Knowledge within the Government of Canada's First Nation Forestry Program - A Case Study (March1999);

Information on the FNFP, including electronic copies of documents and reports can be accessed on the web at http://www.fnfp.gc.ca/fnfp_e.html.

Numerous activities of Canada's Model Forest Program (CMFP) are also in support of the spirit of Article 8(j). Four projects are of particular interest:

An Aboriginal-led model forest, the Waswanipi Cree Model Forest, was established in 1997 to explore approaches to sustainable forest management incorporating Aboriginal knowledge and perspectives.

The Long Beach Model Forest has been engaged in a multi-year project to document the meaning and practice of the Hahulthi – the traditional system of Ownership and resource management of the Nuu-chah-nulth people.
A process for translating and incorporating traditional ecological knowledge into GIS systems and computerized scenario planning processes is being undertaken by the McGregor Model Forest in partnership with the Lheidli T'enneh First Nation.

In 1999, the CMFN held a workshop on linking Traditional Ecological Knowledge and naturalized knowledge systems to criteria and indicators of sustainable forest management.

3. Cooperation, within Canada and on the international scene, takes many forms.

On the national scene, the Canadian Council of Forest Ministers and the Canadian Model Forest Network are two main conduits for generation and dissemination of information, as well as developing and implementing collaborative approaches and partnerships. Provinces and territories are also involved in projects within their respective jurisdictions, pursuing the same goals.

Internationally, Canada is actively engaged in intergovernmental processes and in bilateral activities. Knowledge and technologies are shared with developing countries through international development projects sponsored by the Canadian International Development Agency (CIDA) http://www.acdi-cida.gc.ca/index.htm. The International Model Forest Network (http://mf.ncr.forestry.ca/.) and the Sustainable Use of Biodiversity program of the International Development Research Centre (IDRC) (http://www.idrc.ca/research/xsub_e.html.) are two key instruments by which Canada delivers on its international collaboration commitments.

4. Canada is engaged in the sharing of technical and scientific information in many ways. Examples include federal/provincial/territorial collaboration in matters related to parks, including protected forest areas; work with non-governmental organizations (WWF-Canada; WRI; IUCN) on issues such as sharing of information and policy development; bilateral and multilateral science and technology projects (IUFRO; CIFOR); "twinning" between model forests in Canada and abroad.
Among the issues that stand to benefit most from increased collaboration are:
-defining, measuring and keeping track of "representativeness";

-establishing benchmark sites in protected areas for monitoring forest biodiversity with a view to enhancing our capacity to assess ecological integrity within and beyond protected boundaries.

Programme Element 2

1. There are a number of ways in which this is done in Canada. Examples include:

-Canada's State of the Forests Report, tabled annually before the Parliament of Canada; (http://www.nrcan.gc.ca/cfs-scf/national/what-quoi/sof/latest_e.html)

-Periodic reporting on C&I, the latest of which being Canada's National Status 2000, as well as our national contribution to the Montreal Process; (Error! Bookmark not defined.)

-Science and Technology activities undertaken by federal, provincial and territorial governments and members of the Canadian forest community; (http://www.nrcan.gc.ca/cfs-scf/national/what-quoi/science_e.html.)

-A study of landscape changes at six of Canada's Biosphere Reserves involved local stakeholders, ranging from youth to governments in an assessment of impacts on biodiversity and on management options. The report is found at (Error! Bookmark not defined.).

-Canada's engagement in the activities of the G8, ITTO and other international processes and institutions;

2. Examples include:

Forest Ecosystem Research Network of Sites (FERNS) Error! Bookmark not defined.

Workshops and seminars, including wide dissemination of the results, notably through websites, as well as public consultation mechanisms at various stages of planning, implementation and evaluation of forest management activities;

The Nicola Valley project: the forests of the Nicola Valley (British Columbia) provide a diverse range of social, cultural, economic, and environmental benefits. Maintaining this range of values within the ever increasing and changing demands of society remains a fundamental challenge. Research, and specifically community oriented research, is pivotal to answering this challenge. To this end, the Nicola Valley Forest Science Symposium and Collaborative Research Project have been undertaken.

Canada's Model Forest Program has been involved in numerous activities to develop and share approaches to improved forest practices. Many of these have been concerned with biodiversity and include alternative harvesting regimes, research projects, training for forest workers, monitoring methodologies, and communication material dissemination. Specific examples

include:

1. The Hayward Brook Watershed Study by the Fundy Model Forest;
2. The Western Newfoundland Model Forest's Sustainable Forest Management Training for Front-line Forest Workers Program;
3. The Harvest with Advanced Regeneration Protection (HARP) alternative harvesting system by the Lake Abitibi Model Forest;
4. Various posters and pamphlets by model forests and their partners.

3. One element of Canadian efforts in that regard is the dissemination of information and knowledge through publications, presentations, workshops, seminars and websites. Governments, Indigenous communities, non-governmental organisations, industry associations and research institutions have undertaken initiatives in that respect.

In other areas, governments have adopted legislation and regulations aimed at preventing negative impacts (measures to ensure fish habitat is preserved during road construction; public campaigns aimed at protecting some fragile plant communities - wild garlic is one example).

Another successful approach has been the establishment of monitoring programs implemented by volunteer organisations, in collaboration with government authorities. EcoWatch is the community (volunteer) environmental monitoring component of EMAN (Ecological Monitoring and Assessment Network of Environment Canada). Examples of such programs are

Amphibian Watch
Wormwatch (http://www.naturewatch.ca/english/wormwatch/.)
Frogwatch (http://www.eman-rese.ca/emanops/intro.html)
Treewatch (http://www.cciw.ca/ecowatch/mapping/intro.html)
Plantwatch (http://www.devonian.ualberta.ca/pwatch)
Smithsonian Institute Man and Biosphere(SI/MAB) plots have been established along the Escarpment for long-term monitoring of changes in forest biodiversity.
University of Waterloo students collect tree, herbaceous layer and shrub/sapling layer data during an Environmental Monitoring Field Course.

1. The Canadian Forest Service is involved in alien invasive issues at the national and international level, in co-operation with other federal government departments, provincial/territorial authorities and the private sector. In addition to the work related to phytosanitary measures and regulations, efforts are aimed at better understanding the role and impacts of alien invasive species on forest ecosystems.

Examples of activities include:

Federal Government Biosystematics Partnership;
Implementation activities under NAFC and NAPPO;
National Pest Forum Workshops, held annually (description);

A book assembling a series of scientific and technical papers on alien invasive species (forestry as well as other issues) in a Canadian context is currently under production by the CFS. The book will be released in the second half of 2002.
Development and testing of landscape level modeling of mountain pine beetle infestations, which allows scientists to examine the probable effect of different levels of management intensity in terms of area and numbers of trees killed by the beetle over a ten-year period. Although initially targeting native insect species, the approach and methodology can be applied to alien invasive species.

2. A number of mechanisms exist in Canada to address issues of priorisation of research activities in the forest sector, notably the CCFM S&T Working Group, NABFOR and FORCAST.

The Canadian Council of Forest Ministers (CCFM) Science & Technology Working Group was created to:

Provide opportunities for CCFM members to discuss forestry S&T priorities in relation to major policy, trade, economic environmental and social issues;
Address major issues related to future forestry S&T needs such as direction, partnership and funding;
Provide a forum for reviewing S&T data as a component of strategic agendas such as national forest strategies;
Develop S&T recommendations for the CCFM and CCFM Deputy Ministers on forestry issues, and priorities and opportunities in the forest sector;
Identify new S&T opportunities for cooperation and coordination.1

The National Advisory Board on Forest Research (NABFOR) advises the Minister of Natural Resources Canada (NRCan) on the science and technology (S&T) issues of importance to the forest sector. It provides broad-based advice on the status, needs, opportunities and priorities of forest research and S&T issues in Canada; and, related international S&T issues that are of interest to Canada. NABFOR's membership includes representation from governments, industry, academia, as well as from environmental Indigenous and local communities. More information can be found at http://www.nrcan-rncan.gc.ca/cfs-scf/science/policoord/nabfor/nabfor_e.html.

The Forest Coalition for the Advancement of Science and Technology (FORCAST) is a private sector, non-profit entity that champions the importance of adequately resourced science and technology (S&T) in the forest sector and facilitates coordination and communication among forest S&T providers and users. It promotes the coordination and alignment of forest science and technology with national, provincial and local priorities and objectives. More information on FORCAST is available at http://forcast.forest.ca/welcome.html.

3. There is a rich array of mechanisms and approaches being used in Canada to disseminate research results. Federal, provincial and territorial authorities place a high priority on communicating all types of findings and results to the public, reflecting the belief that effective public participation

requires current information. The means used include: articles in scientific and other specialised publications; technical reports and monographs; working papers; newsletters and the Internet. The private sector and non-governmental organisations also rely on these sorts of approaches.

The CFS developed Managing Knowledge at the Canadian Forest Service, a document that provides a foundation on which knowledge infrastructure can be built and put forward. It describes the technological, social, forestry, and organizational context that surround knowledge management. One of the CFS national networks is focused on how knowledge and information is synthesized (e.g. remote sensing information products). For more info, please consult http://www.nrcan-rncan.gc.ca/cfs-scf/science/resrch/conditions_e.html.

4. A number of case studies and background documents have been developed over time and are available from various organisations, including federal/provincial/territorial forest agencies; industry; non-government organisations; academia. However, a compilation of all cases studies produced in Canada is not available. People interested in specific topics currently have to conduct literature reviews.

While there is always an intrinsic value to case studies, the CFS and its partners generally try to address specific needs, over and above the informational function of such documents. For instance, some case studies may be aimed at fostering better policy formulation, while others will provide readers with an overview of the status of current knowledge on a specific issue. A certain measure of success has been obtained through the pairing of case studies and interactive processes such as workshops and seminars. This type of pairing allows for focused discussions to take place between experts, while ensuring that knowledge in the general public is catered to through mechanisms such as websites and mailing lists.

Programme Element 3

1. Canada has been very active in the development and implementation of criteria and indicators, including those for biodiversity in a forest context. A lot of progress has been made in the last twenty years, whereby provinces and territories are now implementing forest management efforts at large scales, compared to stand scale approaches used in the 1980’s. The creation of landscape ecology sections within government agencies is a reflection of this change. All provincial and territorial agencies are working on indicators and accumulating data on effects of forest use.

2. Please refer to question 3.

Endnote

Canada’s National Forest Strategy 1998-2003 sets an important context for assessing Canada’s progress in implementing the forest biodiversity programme of work.

This review indicates that Canadians at all levels devote significant efforts

and resources towards the implementation of the programme of work. While Canada is proud of its progress, it recognizes that more can be done both domestically and internationally. Key data and information covering a variety of data types and formats concerning forest biodiversity are dispersed throughout federal, provincial, territorial and municipal agencies and institutions. Moreover, the private, education and non-governmental sectors are also repository for important information. Canada's ability to report on progress could be greatly improved by the establishment of some key national initiatives. The development of the National Forest Information System by the Canadian Council of Forest Ministers is but one example of such national undertakings that will help achieve this goal.

While there is a wealth of information existing among all players, new information will be required to address future forest management challenges. Generating new information about forest ecosystems and forest biodiversity is difficult, for many reasons. The issues are very complex; the land base is huge and encompasses a vast array of ecosystems; shared jurisdiction in terms of environment and resource management calls for sophisticated cooperative mechanisms; the existence of simultaneous value systems influences the relative priority given to improve knowledge in the resource sectors.

Consistent with Canada's National Forest Strategy, Canada is pursuing a number of actions that will complement its commitment to implement the programme of work on forest biodiversity. Some examples include:

-completing a national classification of forest ecosystems; (questions 3,17)

-furthering the development and implementation of citizen engagement processes; (questions 5-6)

-considering innovative and more effective ways for countries to both provide and have improved access to technology; (questions 7)

-defining representativeness for protected areas; (question8)

-pursuing research on forest ecosystems, including their response to natural disturbances and to human activities, within the context of adaptive and mitigative management strategies; (questions 9,11,15)

-identifying and integrating best available knowledge of local ecological conditions as part of the planning process, including for harvesting systems and silvicultural activities; (question 10)

-furthering our understanding of the pathways and impacts of harmful alien species, at all levels; (question 12)

-increasing the openness and inclusiveness of processes for setting research priorities; (question 13)

-developing communication tools and approaches to heighten public awareness and knowledge of the forest, and enhancing the synthesis of information with

a view to filling the science-policy gap (providing information the public understands and can use); (question 14)

-reviewing Canada's framework for C&I, with a view to improve the relevance and efficiency of the framework for reporting on and assessing progress towards sustainable development; (question 16)

Many considerations, in addition to those highlighted under question 16, exist with regard to the Canadian Council of Forest Ministers Framework of Criteria and Indicators. These include:

-The CCFM C&I Framework provides a way to assess ecosystem, species and genetic diversity in forested systems;

-The CCFM C&I Framework includes indicators on the participation by aboriginal communities in sustainable forest management. In addition, provinces and territories encourage aboriginal involvement in their planning processes;

-A series of workshops and a binder describing experiences in local approaches to developing C&I for SFM were produced under Canada's Model Forest Network;

-The National Status 2000 C&I report and the 1997 CCFM technical report on C&I both provide scientific information on ecosystem, species and genetic diversity. These reports have been widely disseminated nationally and internationally and are available on the web.

-The CCFM is about to embark on a public review of its C&I framework. This review will improve the relevance and efficiency of the indicators for reporting on and assessing progress toward sustainable development.

More information on the CCFM C&I Framework can be found at:

http://www.NRCan.gc.ca:80/cfs/proj/ppiab/ci/indica_e.html - English

http://www.NRCan.gc.ca:80/cfs/proj/ppiab/ci/indica_f.html - French

The reader may also wish to consult Canada's 2001 national report on implementation of the CBD, as it contains information relevant to forest biodiversity and thus to Canada's implementation of the programme of work