Environmental Paper Procurement

Review of Forest Certification Schemes in Canada

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with information current to 31st December 2006

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January 2008 Revision of the Report

This final version of the *Environmental Paper Procurement - Review of Forest Certification Schemes in Canada* was revised in January 2008 to clarify information about dates applicable to statements in the original report. There was a possibility of confusion among readers as the research work for this report was conducted in the fall of 2006 and finalized in early 2007. The information presented in the February 2007 version was up to date as of the 31st December 2006, with the reported figures reflecting the situation in October 2006. This is still true for the January 2008 revision, however, for clarity, dates have now been added to the report in lieu of expressions such as “at present” or “in the last year”.

In certain instances, fuller text from the standards has been added to allow a reader to drawn his/her own conclusions, in addition to reading the opinion of the authors. This final report also contains several corrections. The full list of additions and corrections is presented below. Minor editorial changes have also been made.

All modifications from the original February 2007 version of the report are in green text, using strike-though to show deletions.

Description of addition or correction	Page
Modified description of the SFI certification process to reflect the change from the Sustainable Forest Board to the SFI inc, and the progressive separation from AF&PA since 2000.	5, 6, A13, A14, A18
Corrected date of accreditation requirement for certifying bodies (from 2006 to 2005)	5, 6, 8, A14, A18, A27
Corrected date of auditor certification requirement (from 2005 to 2002)	5, 6, 8, A14, A27
Corrected information concerning the public availability of short summary audit reports.	5, A13, A18
Removed reference to American Tree Farm System.	7, A19, A25
Added description of ENGO support.	A3
Added description of ENGO participation in standard development.	A3
Corrected the reference concerning the use of genetically modified organisms.	A8
Added conditions for protection of high conservation value forest.	A21
Modified reference for exclusion of fibre from forest converted to plantations.	A22

EXECUTIVE SUMMARY

Publishers select the most appropriate paper that meets the needs of the publication. Various factors are considered in deciding on the quality of the paper to be used and of course, cost plays a significant role. Recently, some specific publications have selected environmental papers, but publishers and printers still struggle in developing corporate procurement frameworks to address this practice.

The demand for a strategy to guide media companies in this area led to the present close examination of the forest certification schemes in operation in Canada. This includes the schemes of:

- the Forest Stewardship Council;
- the Canadian Standards Association; and
- the Sustainable Forestry Initiative.

A fourth scheme, the Programme for the Endorsement of Forest Certifications was also reviewed.

This report presents the findings and conclusions of that review.

ÉEM inc finds that a sustainable forest is most likely to exist under an FSC certification. A CSA certification can be acceptable but further knowledge of the forest and management practices is required to be sure that the environmental performance of the forest is adequately defined and managed. The SFI Program is weaker with respect to forest management practices and the lack of independence in the certification process in the past means that it is still struggling with credibility issues. Some improvements have been made, but implementation of these will take time.

Availability and cost are key concerns when discussing certified papers. This has not been explored in this review beyond comparing the annual allowable cut of the forests under the different schemes.

With a better understanding of sustainable forestry and the certification schemes, media companies may be able to develop an approach to greening the paper procurement process. Using fibre from certified forests is but one environmental aspect of paper procurement. The use of recycled fibre is paramount.

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1 OBJECTIVE OF THE STUDY

The objective of the study was to find the commonalities and differences between the certification schemes in operation in Canada to form a basis for making informed decisions about which environmental papers to promote in media company operations.

Our growing need for paper and other forestry products has put a great strain on forests, both in Canada and around the globe. After the much-publicized destruction of the rainforest in the early 1990s, numerous groups came together in an attempt to create a certification scheme to ensure that the wood we use comes from properly managed forests.

Good forest management also plays a key role in the combat of climate change since a growing forest absorbs CO_2 into its wood. This is eventually released as the tree decomposes at the end of its natural life, or as the paper decomposes in the landfill site.

The forest management standards set a series of requirements, guidelines and targets aimed at ensuring the sound environmental management of forest. Forest operators can then be certified against a specific standard.

To track the fibre from forest to end product, pulp and paper producers, paper brokers and printers may apply for Chain-of-Custody certifications, for which further standards have been developed.

The three organizations with forest management standards used in Canada are:

- the Forest Stewardship Council (FSC),
- the Canadian Standards Association (CSA) and,
- the Sustainable Forest Initiative (SFI).

A fourth organization, the Programme for the Endorsement of Forest Certifications (PEFC) is also in operation, but this group endorses certifications delivered by the other schemes and does not operate its own, as described later.

The study did not investigate cost and availability of papers in the Canadian marketplace under the different schemes, but aimed to understand:

- the environmental benefits or shortfalls of the different schemes;
- the rigour of the certification process;
- the uptake of the schemes in Canada;
- the perception of the public;
- the meaning and reliability of the product labels.

2 METHOD

ÉEM inc conducted a desktop study of the certification schemes using information available to the public as well as information provided directly by certification bodies. The principal types of information reviewed were:

- the official versions of the standards against which certifications are given for each of the schemes;
- additional information on the website of each certification scheme;
- various certification tracking websites;
- forestry legislation in various provinces;
- forest industry association websites;
- forest protection advocacy websites;
- various NGO forest protection campaign websites; and
- public information from other organizations undertaking similar reviews, such as the UK government

A detailed bibliography of the information consulted is presented in Section 7 of this report.

To compare the different schemes, criteria were developed to cover:

- the reach of the certification schemes;
- the forest management aspects;
- the independence and transparency of the organization;
- the certification process and auditing.

Under these criteria, pertinent extracts of the standards have been presented, along with discussion and conclusions.

The findings are presented in the detailed table in Appendix A of the report, with highlights in Section 3. Further discussion and conclusions are presented in Sections 4 and 5 respectively.

2.1 Limitations of the study

As mentioned above, the study did not look into the cost and availability of the papers under the different schemes. Similarly, the study was limited to the environmental aspects of forest management and did not assess the social aspects, such as the rights of indigenous peoples on the forested land. This is a weakness of the study as the social impact of forest management is often closely related to the forest's health and productivity.

Secondly, the study was limited to a review of available documentation. Although this included some case study reports from persons visiting the forests, little of the available documentation answers the question, Has the implementation of the forest management practices required by the scheme resulted in a sustainable forest?

3 RESULTS

The findings of the study have been presented in the detailed table in Appendix A. Highlights of the findings are presented in this section.

3.1 Uptake of the Schemes in Canada

~~At present~~ As of October 2006, the three schemes cover approximately 84% of the working forests of Canada, totaling an area of 125 million hectares of forests. CSA certifications cover 62% of certified land, followed by SFI with 26 % and FSC with 14%.

In January 2002, the Forest Products Association of Canada required that all lands under its members' management must be certified by one of the three schemes. This goal is near being achieved.

3.2 Forest Management

3.2.1 Requirements for forest management

The three schemes include elements to address the key issues for forest management such as:

- Maximum clear-cut area
- Reforestation
- Pesticide Use
- High Conservation Value Areas
- Wildlife Habitat

However, the approach of the three schemes in addressing these is different:

The FSC has an umbrella standard (Principles and Criteria), which is combined with regional standards so that specific requirements are set out for these elements. Forest management standards have been developed by FSC Canada for the Maritimes, British Columbia and the National Boreal. A further standard is being finalized for Great Lakes/ St Lawrence (areas just south of the boreal forest). These ensure that regional differences in climate and forest type are taken into consideration.

Under CSA, the standard itself defines a system to be used to ensure forest management is adequately addressed, but does not set performance standards. Performance for the forest must be defined with the input of local interested parties in the form of a forest management plan for each forest area. There can be great variation in the forest management plans as a result of the differing local interested parties. If there are no forest or ecosystem protection advocates active in the area, the forest management plan may be less rigorous and may not offer significant improvement over legislative requirements in Canada. Equally, the standards set may be just as rigorous as the FSC

Similarly, an ISO14001 certification indicates that a company has implemented systems to support a commitment to regulatory compliance and continuous improvement, but does not guarantee that the environmental performance of the company is good.

regional standards.

The SFI standard uses a set of Principles, Objectives, Performance Measures and Indicators. Program Participants must apply all relevant portions of the standard, including those indicators defined as "core indicators". Program Participants must address core indicators either by demonstrating conformance with the indicator or, with the concurrence of the verifier, substituting another indicator that more appropriately provides evidence of conformance with the performance measure. The indicators are both systems-based and performance-based. It must be noted that the performance-based indicators tend to be similar to the minimum requirements of the forestry legislation in Canada.

The PEFC is a European based organization that operates worldwide. It assesses certification schemes in different countries to see if they meet the standards of the PEFC. It does not deliver certificates to forests operators. However, products from a forest certified under a scheme endorsed by PEFC can carry the PEFC trademark.

Two other elements of forest management are expressly prohibited by FSC but are ~~not~~ weakly addressed by CSA or SFI:

- Forest conversion from natural forest to plantation
- Genetically modified trees.

3.2.2 Annual Allowable Cut

Although not an indicator of sustainability, and perhaps over simplistic, the annual allowable cut rate[1], (measured in m^3/hectare) for a forest area is one means of comparing the different schemes[2].

Using this indicator, it can first be seen that although the three schemes cover approximately 84% of the working forests of Canada, they only account for approximately 50% of the annual allowable cut. A significantly larger portion of the forest is allowed to be cut in uncertified forests (4.45 m^3/hectare) than in certified forests (average 0.84m^3/hectare).

There are also great differences in the annual allowable cut between the three certification schemes. Much less cutting is allowed in an FSC-certified forest (0.43 m^3/hectare), compared to a CSA-certified forest (0.75 m^3/hectare). SFI-certified forests average three times more cutting than FSC forests, at a cut rate of 1.27 m^3/hectare.

3.2.3 Summary

In summary,

- The FSC standard has rigorous forest management criteria, adapted to regional forest types. Strengths include the protection of ecologically important forests and the banning of the conversion of natural forests into plantations.

[1] A figure for wood harvested would be better for this comparison but is not readily available. The annual allowable cut has been used as a reasonable substitute.
[2] Note that regional differences in the forest types may also influence the allowable cut rate.

- Under the CSA standard, the forest management practices can vary greatly between certified forests. This is because it depends on the development of a forest management plan for each certified forest. While this flexibility can be seen as a positive adaptive approach, the forest management plan can vary from being similar to the current forestry legislation to considerably better, usually as a result of the number of forest advocates in the area. The CSA standard does not address forest conversion into plantations, or protection of high conservation value areas and wildlife habitat, other than those protected by government.
- The new 2005 version of the SFI standard, which is compared here, makes significant improvements on its previous edition, but still lacks rigour with regards to some forest management issues. When examined closely, the wording of the standard allows for largesse in the interpretation. The conversion of forests into plantations and protection of high value areas is not forcefully addressed. The recent changes to the standard have improved it but many participants have yet to ~~upgrade~~ be audited to the new requirements, at the time of writing of this report.
- The PEFC has endorsed the CSA and SFI certification schemes, so weaknesses described in those systems also apply to PEFC.

3.3 Certification Process and Organizational Aspects

3.3.1 Certification process

FSC has a transparent certification process, where findings and corrective action requests (CARs) are made public. There is an appropriate degree of separation between the FSC organization and the organization being certified. Strict legal compliance is required.

The CSA process is less transparent as findings and CARs are not made public, but this is not unusual for certification schemes. There is an appropriate degree of separation between the CSA and the organization being certified, and there is an additional degree of separation in the use of accredited registrars. Strict legal compliance is required.

~~The SFI process is less transparent, as findings and CARs are not made public, but this is not unusual for certification schemes.~~ In the past, there was~~is~~ little separation between the American Forest and Paper Association (AF&AP), the Sustainable Forest Board and the organization being certified. The additional degree of separation in the use of registrars is critical in this set up and the accreditation of the registrar becomes important. This only became mandatory with the 2005-2009 version of the standard. Note that the PEFC endorsement of the SFI Program was contingent on the development of a new accreditation standard specifically for the SFI forestry standard rather than the more general environmental management system standard that was required in the 2005-2009 SFIS, The ANSI-ASQ National Accreditation Board (ANAB) finalized the accreditation for this scheme in December 2005 and the principal certification bodies obtained accreditation in the last quarter of 2006. ~~This is only just being implemented in the last year~~. ~~Many certificates were issued before this became mandatory~~. Strict legal compliance is not required. Short audit report summaries are made public.

3.3.2 Organizational Aspects

The FSC is administered by a balanced board representing both industry and environmental and social agendas.

The CSA standard is administered in a similar fashion to all its other standards, with no particular industry bias.

The SFI program was~~is~~ designed by members of the American Forest and Paper Association (AF&PA) for its members and is overseen by the Sustainable Forestry Board (SFB). In various stages over the years since 2000, the SFB has separated from the AF&PA and became responsible for the standards updates. In its latest form, the SFI Inc. came into being on the 1st January 2007. The AF&PA is no longer responsible for the standard's implementation and label use, although participation in the SFI Program is still a requirement for membership in the AF&PA. The SFB, which had a strong industry weighting in the past now has a more balanced board. In view of the strong historical link between the group developing the standard and the organization's requesting certification, integrity in the certification process is important. As mentioned above, accreditation of certification bodies has only been required since January 2005. ~~with no independent accreditation (at present)~~[3]~~.~~ Individual certification of auditors has been required since 2002.

The PEFC organization has a strong industry bias.

It should be noted, that it is in the best interests of all three schemes to certify as many forests as possible (without compromising its credibility).

3.4 Labelling and Chain of Custody Certifications

The chain of custody standards are now similar under each of the schemes, although minor differences exist. They all require that the amount of fibre from the certified forest be suitably tracked and verified. They allow for two methods:

- Direct Tracking System. A pulp mill separates certified fibre from other fibre and labels the paper produced as certified fibre. If mixed with non-certified fibre, the ratio of the mix is expressed as a percentage on the label.
- Volume Credit Accounting System. A pulp mill buys 70% of its fibre over a defined period from certified forests, with the remainder from non-certified forest. It can then label 70% of the paper produced as being 100% from a certified forest, with the rest unlabelled.

Note that the same volume credit accounting system can be used by paper-brokers and printers with chain of custody certifications.

Although the methods are the same in all schemes, there are subtle differences, such as:

- the way other fibre is included in the calculations (post-consumer recycled fibre, pre-consumer recycled fibre, other neutral sources, such as agricultural residues, etc;
- required minimum content, and

[3] ~~Accreditation of registrars (certification services) by the American National Standards Institute Standards Council of Canada will be required starting late 2006~~. [Footnote deleted as better described in the main text]

- application of labels to forest certified under other certification schemes.

As the chain of custody (COC) certifications and product labelling have been in place for over a decade, the FSC labelling is widely recognized by buyers of forest products. At the consumer level, this recognition may be limited. All the FSC papers have a minimum of 70% fibre representing fibre from an FSC-certified forest (or recycled alternative), usually more. In the coming update to the COC Standard, the labels will be clearer.

The non-FSC paper that carries the FSC Controlled Wood name (no label) assures buyers that the fibre is not only from a legal source, but also not from a forest converted to a plantation or a high conservation value forest (unless those value have been protected), which is stronger than the SFI or PEFC claims, which focus on the legal aspect and the protection of a list of biodiversity hotspots only.

CSA certification is recognized in the Canadian marketplace, but has yet to be taken up by large paper producers. The CSA labels are straightforward and guarantee a 70% content of fibre representing certified fibre from a CSA forest (not counting recycled alternatives).

SFI Fibre Source labelling has been in use for some time but does not speak to the content from an SFI certified forest and cannot be relied on. The new COC standards and the new percent content labels are judged reliable but few companies are yet certified to use them. They are available for fibre representing fibre coming from an SFI certified forest~~., or a forest certified under the American Tree Farm System (ATFS), a system not assessed in this review~~ [Changed in late October 2006, after the initial research for this report].

The PEFC label can be relied upon to ensure that the fibre comes from certified forests through a certified chain of custody, with a minimum content of fibre representing fibre from a certified forest of 70%. For Canada, this means CSA or SFI-certified forests. Weaknesses in the forest certification system diminish the meaning of the label.

3.5 Overall Assessment

3.5.1 FSC

FSC has widespread recognition as a forestry standard among consumers, NGOs and business. Although it makes no claims to sustainability, it is the scheme that is most likely to result in a sustainable forest through rigorous performance based standards for forest management.

The COC and labelling system is well established and will shortly be improved for clarity.

FSC papers have a minimum 70% fibre representing the fibre from an FSC forest[4] (or alternative recycled material) and are guaranteed not to come from illegal harvesting, from forests converted to plantations, or from high conservation value forests unless those values have been protected.

[4] ~~Under a volume credit accounting system, described in section 3.4, it is said that fibre comes from a certified forest where it would be more accurate to say that it represents fibre from a certified forest, since batches of certified and non-certified fibre are mixed. In this report, this subtlety has not been emphasized~~.[Footnote deleted as detail added to main text for all schemes.]–Under current FSC labeling rules, the volume credit accounting system can only be used where at least 10% of the mixed fibres are from FSC certified forests.

3.5.2 CSA

CSA is a widely recognized and respected label, but the label has not yet been widely applied to final products. CSA has certified a large amount of land in Canada.

A significant weakness to the standard is that performance for forest management is defined for each forest and requirements can vary greatly between certified forests. The CSA certification can be relied upon to guarantee compliance to regulatory requirements, but for further performance criteria, the forest management plan of the particular forest must be reviewed. Without further knowledge of the forest and the local management practices, it is not possible to ensure that the cut areas are reasonable, that high conservation areas are being preserved and that natural forest is not being converted to plantations.

CSA labelled papers have a minimum 70% of fibre representing fibre from a CSA certified forest (not counting recycled alternatives). They are guaranteed not to come from illegal harvesting but there is no protection for high conservation value forests unless protected by law, especially in the portion coming from non CSA-certified forests.

3.5.3 SFI

Prior to the 2005 enhancements to the standard, the requirements with respect to forest management were weak, ill-defined and weakly implemented. Some improvements have been made but performance is still only loosely defined by the standard. Also in the past, self-accreditation by forest operators was allowed. Up until ~~very recently~~ 2005, accreditation by an independent body, of companies providing certification services was not required. The certification of auditors has only been required since ~~2005~~ 2002. For these reasons, the SFI Program has lacked credibility and had a bad reputation amongst NGOs.

SFI labels are widely used but these tend to be the old-style labels (Fibre Sourcing) that do not speak to the content from an SFI certified forest. The new COC standards and the new percent content labels are not ~~yet~~ in widespread use in Canada, as of November 2006.

3.5.4 PEFC

Through endorsement of numerous forest certification schemes, the PEFC label is becoming widely recognized, although its COC system was only established in 2004.

The PEFC has endorsed the CSA and SFI certification schemes in Canada, so any weaknesses in forest management described in those systems also apply to PEFC. This is why key NGOs reject PEFC.

There may be a trend for operators sourcing from CSA-certified forests or SFI-certified forests to adopt PEFC labelling, rather than the CSA or SFI label, especially for international trade.

4 DISCUSSION

Although the three forest management certification schemes in operation in Canada aim to result in sustainable forestry, it is clear that the standards differ greatly in their requirements on how this should be achieved.

Unfortunately, there are few on-the-ground studies to produce evidence for comparing how effective the three forest management systems are in achieving this goal. Opinions must therefore be based on a comparison of the requirements under the different schemes and an assessment of the rigour of the certification process.

There can also be considerable variation in the forest management practices within the same scheme. This is particularly true of the CSA scheme, where a forest management plan is developed for each forest to be certified. This means that a whole-hearted endorsement of the scheme cannot be made but that CSA-certified forest in particular areas may have the same performance requirements as an FSC forest in the area.

There are numerous areas to be studied when discussing the sustainability of a forest and this review has not covered all of these. However, along with ensuring the sustainability of forest tracts, three important principles should be respected:

- High conservation value forests should be protected;
- Conversion from natural forests to plantations should be avoided; and
- Illegal logging should not be condoned.

5 CONCLUSION

In conclusion, ÉEM inc finds that a sustainable forest is most likely to exist under an FSC certification. A CSA certification can be acceptable but further knowledge of the forest and management practices is required to be sure that the environmental performance of the forest is adequately defined and managed. The SFI Program is weaker with respect to forest management practices and the lack of independence in the certification process in the past means that it is still struggling with credibility issues. Some improvements have been made, but implementation of these will take time.

Availability and cost are key concerns when discussing certified papers. This has not been explored in this review.

With a better understanding of sustainable forestry and the certification schemes, publishers and printers will be able to develop an approach to greening their paper procurement. However, using fibre from certified forests is but one environmental aspect of paper procurement. The use of recycled fibre is paramount.

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7 ABBREVIATIONS

AAC	Annual Allowable Cut
AF&PA	American Forest and Paper Association
COC	Chain of Custody
CSA	Canadian Standards Association
FSC	Forest Stewardship Council
GMOs	Genetically Modified Organisms
NGOs	Non-Government Organizations
SFI	Sustainable Forestry Initiative
SFM	Sustainable Forest Management

APPENDIX A
DETAILED TABLE OF FINDINGS
Figures collected in October 2006

	FSC	CSA	SFI	PEFC
	Forest Stewardship Council FSC-STD-01-001 version 4	**Canadian Standards Association CZ CAN/CSA-Z809**	**Sustainable Forestry Initiative**	**Programme for the Endorsement of Forest Certification schemes**
Last Updated	**Principles and Criteria**: 2002 **Forest Management Standards:** National Boreal (2004) British Columbia (2005) Great Lakes, St. Lawrence, Laurentian (under development) Maritimes (1999, under revision) **Chain of Custody Standards :** 2004 + earlier policy documents	**Sustainable Forest Management: Requirements and Guidance:** May 2003	**Sustainable Forestry Initiative Standard (SFIS) 2005–2009:** 2005	**PEFC Technical Document :** Established 2002 Last updated: 2006 **PEFC Annex 3: Basis for Certification Schemes and their Implementation:** Established 2002 Last updated: 2006 PEFC is a European based organization that operates worldwide. It assesses certification schemes in different countries to see if they meet the standards of the PEFC. It does not deliver certificates to forests. However, products from a forest certified under a scheme endorsed by PEFC can carry the PEFC trademark. In Canada, PEFC has certified both CSA and SFI as having met their requirements. Many of the recent (2005) changes in the SFI standard are due to their application for approval under PEFC. FSC would not apply for a PEFC endorsement as it wishes to promote its own trademark and does not want to be associated with some of the other schemes that PEFC has approved.
Range of Application	Worldwide	Canada	United States and some areas in Canada	Worldwide

	FSC	CSA	SFI	PEFC
Uptake of the certification schemes				
Total land area worldwide covered by certifications	75 million hectares	74 million hectares	52 million third-party certified hectares (Canada and USA)	187 million hectares (Sum of all the endorsed certification schemes)
Total Land Area in Canada covered by certifications. Canada's wood supply comes from 144.6 million hectares of working forest. See Note 1.	20 million hectares	74 million hectares	31 million hectares	Sum of CSA and SFI-certified forests
Distribution of the certificates between the 3 schemes in Canada (by forest area) Total: 119.8 million hectares	14%	62%	26%	N/A
% of working forest in Canada covered by certificates (by area) Total: 84%. See Notes 2 and 3.	14%	51%	21%	N/A
Amount of wood harvested in 2004 under each certification scheme Total Canadian Harvest 2004: 840 448 hectares.	This figure is not readily available. The allowable annual cut has been given instead, as this is the closest information available. See below.			N/A
Allowable Annual Cut (AAC) under each certification scheme	7,307,437 m^3	54,410,912 m^3	39,496,331 m^3	N/A
% of the total ACC under the	4%	26%	19%	N/A

	FSC	CSA	SFI	PEFC
certification schemes Total ACC 2004 for Canada: 205.6 million m^3				
ACC per hectare (using 2004 data)	0.43 m^3/hectare	0.75 m^3/hectare	1.27 m^3/hectare	N/A
Note	This figure is telling since it shows a) that although 84% of the working forest in Canada operates under certificates, those certified forests only supply 50% of the wood harvested (using ACC as an approximation) b) that much less wood is cut in an FSC forest than an SFI forest (the nature and the purpose of the forest may explain some of this difference but it raises questions about the long term sustainability of the forests.			N/A
Required or voluntary	In January 2002, Forest Products Association of Canada required that all lands under its members' management must be certified by one of the three internationally recognized standards in use in Canada: Canadian Standards Association (CSA), Forest Stewardship Council (FSC), and Sustainable Forestry Initiative (SFI).	In January 2002, Forest Products Association of Canada required that all lands under its members' management must be certified by one of the three internationally recognized standards in use in Canada: Canadian Standards Association (CSA), Forest Stewardship Council (FSC), and Sustainable Forestry Initiative (SFI).	In January 2002, Forest Products Association of Canada required that all lands under its members' management must be certified by one of the three internationally recognized standards in use in Canada: Canadian Standards Association (CSA), Forest Stewardship Council (FSC), and Sustainable Forestry Initiative (SFI). Required for membership in the American Forest and Paper Association	N/A
Key supporters	Supported by many large international social and environmental NGOs, at the exclusion of other certification schemes. Growing industry and retailer support.	Sectors of the Canadian forest industry.	Major American forest industry players, mandatory certification for membership of the American Forest and Paper Association (AF&PA). Some environmental NGO support.	Supported by forestry industry and some government organizations setting procurement standards (UK).
Key rejecters	None.	Numerous NGOs claim that the standard must be improved to guarantee a sustainable forest. The Alberta government favours FSC certification over CSA.	Standard was originally written without significant input from ENGOs. Some ENGO input into the 2005 version. Rejected as lately as October 2005 by key conservation NGOs.	NGOs that reject CSA and SFI obviously reject the PEFC, which endorses these schemes.

	FSC	CSA	SFI	PEFC
Quality of Forest Management				
Standards for logging practices	One set of principles and criteria, defined in FSC-STD-01-001, are used, then specific forest management standards are used in different areas of the country to address local forest issues. In Canada, forest management standards have been developed for the Maritimes, British Columbia and the National Boreal. A further standard is being finalized for Great Lakes/ St Laurence (areas just south of the boreal forest)	The organization being certified has to use the system described in the standard for the management of the forest, but the standard does not set specific performance criteria (System-based standard). Instead, the performance for the forest must be defined with the input of local interested parties in the form of a forest management plan for each forest area. There can be great variation in the forest management plans as a result of the differing local interested parties. If there are no forest or ecosystem protection advocates active in the area, the forest management plan may be less rigorous. In Canada, the performance is measured using the Canadian Council of Forest Ministers' (CCFM) set of Criteria and Indicators of Sustainable Forest Management in Canada	The standard uses a set of Principles, Objectives, Performance Measures and Indicators. Program Participants must apply all relevant portions of the standard, including those indicators defined as "core indicators". Core indicators are those indicators that are integral to conformance with the SFIS. All Program Participants must address core indicators either by demonstrating conformance with the indicator or, with the concurrence of the verifier, substituting another indicator that more appropriately provides evidence of conformance with the performance measure. Substitution of core indicators may only be done when a specific core indicator is N/A due to local conditions, circumstances or scope or scale of the operation. The indicators are both systems-based and performance-based. A number of important changes were made to the standard in 2005. SFI Program Participants already certified are in the process of ~~implementing~~ being audited against the changes.	N/A
Cut Rate	Principle 5.6 : The rate of harvest of forest products shall not exceed levels that can be permanently sustained.	CSA SFM Element 5.1: Manage the forest sustainably to produce an acceptable and feasible mix of both timber and non-timber benefit.	Objective 1. To broaden the implementation of sustainable forestry by ensuring long-term harvest levels based on the use of the best scientific information	N/A

	FSC	CSA	SFI	PEFC
		CSA SFM Element 2.2: Conserve forest ecosystem productivity and productive capacity by maintaining ecosystem conditions that are capable of supporting naturally occurring species.	available. Performance Measure 1.1. Program Participants shall ensure that long-term harvest levels are sustainable and consistent with appropriate growth and yield models and written plans.	
Note	See note about ACC per hectare above			N/A
Maximum Clear-cut area	Standards for cutting are elaborated in the forest management standards. Example from the National Boreal Forest Management Standard: This indicator takes the approach that harvest disturbances should be made to approximate some of the important structural characteristics of natural disturbances. These characteristics include irregular boundaries and inclusions of significant levels of standing residual trees - both living and dead. This harvest approach includes a more holistic perception of a disturbance mosaic, which includes not only areas that have actually been cut, but also inclusions of uncut forest (insular residual), peninsular residual patches, other cuts in close proximity, and forest separating cuts. This more holistic view calls for a level of retention ranging from 10-50%, based on the pre-industrial condition (PIC) analysis. The exception to this approach for residual retention allowed for	No specific limits are set. The following must be met: CSA SFM Element 2.1 Forest Ecosystem Resilience. Conserve ecosystem resilience by maintaining both ecosystem processes and ecosystem conditions. CSA SFM Element 2.2 Forest Ecosystem Productivity. Conserve forest ecosystem productivity and productive capacity by maintaining ecosystem conditions that are capable of supporting naturally occurring species.	Objective 5. To manage the visual impact of harvesting and other forest operations. Performance Measure 5.2. Program Participants shall manage the size, shape, and placement of clear-cut harvests. Indicators: 1. Average size of clear-cut harvest areas does not exceed 120 acres, except when necessary to respond to forest health emergencies or other natural catastrophes. 2. Documentation through internal records of clear-cut size and the process for calculating average size. Performance Measure 5.3. Program Participants shall adopt a green-up requirement or alternative methods that provide for visual quality. Indicators: 1. Program implementing the green-up requirement or alternative methods. 2. Harvest area-tracking system to demonstrate compliance with the green-up requirement or alternative methods.	N/A

	FSC	CSA	SFI	PEFC
	small cuts (average of 5% residual) was developed for cuts so small that it was impractical to consider them as a disturbance mosaic.		3. Trees in clear-cut harvest areas are at least 3 years old or 5 feet high at the desired level of stocking before adjacent areas are clear-cut, or as appropriate to address operational and economic considerations, alternative methods to reach the performance measure are utilized by the Program Participant.	
Discussion on clear cutting and large scale cuts	The standard goes further than limiting clear-cut areas by describing how the area should be cut, with suitable retained features, such as insular and peninsular patches, areas around streams and rivers, corridors between forested areas, etc.	Some provinces regulate block cut areas. Essentially, the standard requires no more than the provincial regulatory requirements and the inclusion of the concerns of local interested parties, although specific forest may have developed forest management plans with better performance requirements.	Some provinces regulate block cut areas. ~~Essentially, the standard relies on the provincial regulatory requirements.~~ The maximum set here, which is for an average of the cuts, is similar to the ~~typical~~ some regulatory limits.	N/A
Reforestation	Principle 6.3 Ecological functions and values shall be maintained intact, enhanced, or restored, including: a) Forest regeneration and succession….	CSA SFM Element 7.3.6.6 Designing and Evaluating Strategies Sustainable forest management strategies for most defined forest areas are complex sets of actions that include timber-related actions such as road-building, timber harvests, regeneration treatments, and protection activities, as well as other actions such as providing opportunities for recreation. In this Standard, a strategy refers to the entire collection of actions that would need to be implemented to achieve all the targets.	Objective 2. To ensure long-term forest productivity and conservation of forest resources through prompt reforestation, soil conservation, afforestation, and other measures. Performance Measure 2.1. Program Participants shall reforest after final harvest, unless delayed for site-specific environmental or forest health considerations, through artificial regeneration within two years or two planting seasons, or by planned natural regeneration methods within five years.	N/A
Note	By law, all forests harvested on Canada's public lands must be replaced. Forest managers replace these harvested areas using either natural or artificial regeneration.			N/A

	FSC	CSA	SFI	PEFC
Pesticides	Principle 6.6: Management systems shall promote the development and adoption of environmentally friendly non-chemical methods of pest management and strive to avoid the use of chemical pesticides. World Health Organization Type 1A and 1B and chlorinated hydrocarbon pesticides; pesticides that are persistent, toxic or whose derivatives remain biologically active and accumulate in the food chain beyond their intended use; as well as any pesticides banned by international agreement, shall be prohibited. If chemicals are used, proper equipment and training shall be provided to minimize health and environmental risks.	In the public participation process, interested parties shall have opportunities to work with the organization to I) identify and select values, objectives, indicators and targets, based on the CSA SFM elements and any other elements of relevance to the defined forest area; ii) develop alternative strategies to be assessed; iii) assess alternative strategies and select the preferred one; iv) review the SFM plan; v) design monitoring programs, evaluate results, and recommend improvements; and vi) discuss and resolve any issues relevant to SFM in the defined forest area; The kinds of issues referenced in Item a) vi) may include, but are not limited to, topics such as timber harvest practices, **pesticide use**, species at risk, genetic engineering, and sites of special significance.	Objective 2. To ensure long-term forest productivity and conservation of forest resources through prompt reforestation, soil conservation, afforestation, and other measures. Performance Measure 2.2. Program Participants shall minimize chemical use required to achieve management objectives while protecting employees, neighbors, the public, and the forest environment. Indicators: 1. Minimized chemical use required to achieve management objectives. 2. Use of least-toxic and narrowest-spectrum pesticides necessary to achieve management objectives. 3. Use of pesticides registered for the intended use and applied in accordance with label requirements. 4. Use of integrated pest management where feasible. 5. Supervision of forest chemical applications by state-trained or certified applicators. 6. Use of best management practices appropriate to the situation; for example, a. Notification of adjoining landowners or nearby residents concerning applications and chemicals used; b. appropriate multilingual signs or oral warnings; c. control of public road access during and immediately after applications; d. designation	N/A

	FSC	CSA	SFI	PEFC
			of streamside and other needed buffer strips; e. use of positive shutoff and minimal-drift spray valves; f. aerial application of forest chemicals parallel to buffer zones to minimize drift; g. monitoring of water quality or safeguards to ensure proper equipment use and protection of streams, lakes, and other water bodies; i. appropriate storage of chemicals; j. filing of required state reports; or k. use of methods to ensure protection of threatened and endangered species.	
Discussion on pesticides	Although there is no ban on the use of chemical pesticides, FSC principle is more strongly worded than the other schemes.	This element is essentially not addressed, thereby relying on local regulations.	It largely encourages the company to follow the local laws with regards to chemical pesticides management.	N/A
Genetically modified trees	Principle #6 6.8 Use of biological control agents shall be documented, minimized, monitored and strictly controlled in accordance with national laws and internationally accepted scientific protocols. Use of genetically modified organisms shall be prohibited. Although in the standard, it is not clear if this applies just to the biological control agents, or to the trees as well, the FSC website confirms that the use of genetically modified trees is not permitted http://www.fsccanada.org/Forests.htm	In the public participation process, interested parties shall have opportunities to work with the organization to i) identify and select values, objectives, indicators and targets, based on the CSA SFM elements and any other elements of relevance to the DFA; ii) develop alternative strategies to be assessed; iii) assess alternative strategies and select the preferred one; iv) review the SFM plan; v) design monitoring programs, evaluate results, and recommend improvements; and vi) discuss and resolve any issues relevant to SFM in the DFA; The kinds of issues referenced in Item a) vi) may include, but are not limited to, topics such as timber harvest practices,	~~No mention of genetically modified trees in the standard. In the 2002 – 2004 SFI Standard and Verification Procedures, it states:~~ ~~4.1.2.1.6 Program Participants that utilize genetically improved seedlings, including those derived through biotechnology, shall use sound scientific methods and follow all appropriate federal and state regulations and other internationally applicable protocols.~~ Performance Measure 2.5. Program Participants that utilize improved planting stock, including trees derived through biotechnology, shall use sound scientific methods and follow all applicable laws and international protocols.	N/A

	FSC	CSA	SFI	PEFC
		pesticide use, species at risk, **genetic engineering**, and sites of special significance.	Indicator: 1. Program for appropriate research, testing, evaluation, and deployment of improved planting stock, including trees derived through biotechnology.	
Forest conversion from natural forest to plantation	Principle #6 6.102 Forest conversion to plantations or non-forest land uses shall not occur, except in circumstances where conversion: a) entails a very limited portion of the forest management unit; and b) does not occur on high conservation value forest areas; and c) will enable clear, substantial, additional, secure, long term conservation benefit across the forest management unit.	This element is not addressed in the standard.	This element is not directly addressed in the standard. Indeed, the practice is allowed, as evidenced by the information listed in section 4.1 of the Interpretations Questions & Answers For The 2005- 2009 Sustainable Forestry Initiative® Standard (SFIS). Restraint around the practice would be the respect of Objective 4. Objective 4. To manage the quality and distribution of wildlife habitats and contribute to the conservation of biological diversity by developing and implementing stand- and landscape-level measures that promote habitat diversity and the conservation of forest plants and animals, including aquatic fauna. Performance Measure 4.1. Program Participants shall have programs to promote biological diversity at stand and landscape levels. Indicators: 1. Program to promote the conservation of native biological diversity, including species, wildlife habitats, and ecological or natural community types, at stand and landscape levels.	N/A

	FSC	CSA	SFI	PEFC
High Conservation Value Areas	Principle #9: Maintenance of high conservation value forests Management activities in high conservation value forests shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach. Principle 6.2 Safeguards shall exist which protect rare, threatened and endangered species and their habitats (e.g., nesting and feeding areas). Conservation zones and protection areas shall be established, appropriate to the scale and intensity of forest management and the uniqueness of the affected resources. Inappropriate hunting, fishing, trapping and collecting shall be controlled. Further requirements are elaborated in the regional forest management standards. Definition: High Conservation Value Forests are those that possess one or more of the following attributes: a. forest areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, endangered species, refugia); and/or large landscape level forests, contained within, or containing the management unit, where viable populations	CSA SFM Element 1.4 Protected Areas and Sites of Special Biological Significance Respect protected areas identified through government processes. Identify sites of special biological significance within the defined forest area and implement management strategies appropriate to their long-term maintenance.	Objective 6 – Manage lands of ecologic, geologic, cultural or historic significance in a manner that recognizes their special qualities. Performance Measure 6.1. Program Participants shall identify special sites and manage them in a manner appropriate for their unique features. Indicators: 1. Use of existing natural heritage data and expert advice in identifying or selecting sites for protection because of their ecologically, geologically, historically, or culturally important qualities. 2. Appropriate mapping, cataloging, and management of identified special sites. Objective 4, To manage the quality and distribution of wildlife habitats and contribute to the conservation of biological diversity by developing and implementing stand- and landscape-level measures that promote habitat diversity and the conservation of forest plants and animals, including aquatic fauna. Performance Measure 4.1. Program Participants shall have programs to promote biological diversity at stand and landscape levels. Indicators: 1. Program to promote the conservation of native biological diversity, including species, wildlife habitats, and ecological or natural community types, at stand	N/A

	FSC	CSA	SFI	PEFC
	of most if not all naturally occurring species exist in natural patterns of distribution and abundance b. forest areas that are in or contain rare, threatened or endangered ecosystems c. forest areas that provide basic services of nature in critical situations (e.g. watershed protection, erosion control) d. forest areas fundamental to meeting basic needs of local communities (e.g. subsistence, health) and/or critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).		and landscape levels. 2. Program to protect threatened and endangered species. 3. Plans to locate and protect known sites associated with viable occurrences of critically imperiled and imperiled species and communities. Indicator 6. Support of or participation in plans or programs for the conservation of old-growth forests in the region of ownership. Note: Does not specify that the plans or programs should maintain old-growth forests in their natural state. Note: The definitions of threatened and endangered species and critically imperiled and imperiled species and communities are considered narrow. The concept of *Forests with Exceptional Conservation Value* is described in the *2005-2009 Sustainable Forestry Initiative Standard Guidance Document*. This is incorporated into the SFIS as: • PM4.1, indicator 3 above, • under the procurement section, as a call for procurement provisions to address biodiversity hotspots and major tropical wilderness areas outside of the United States and Canada.	
	[Text has been added to the above section to allow the reader to compare the wording in each standard and judge the extent of the protection for high conservation value forest].			

	FSC	CSA	SFI	PEFC
Wildlife Habitat	Principle 6.3 Ecological functions and values shall be maintained intact, enhanced, or restored, including: a) forest regeneration and succession, and b) genetic, species, and ecosystem diversity. Principle 6.2 Safeguards shall exist which protect rare, threatened and endangered species and their habitats (e.g., nesting and feeding areas). These critical habitats are also addressed through the High Conservation Value assessment .	CSA SFM Element 1.1 Ecosystem Diversity Conserve ecosystem diversity at the landscape level by maintaining the variety of communities and ecosystems that naturally occur in the defined forest area. CSA SFM Element 1.2 Species Diversity Conserve species diversity by ensuring that habitats for the native species found in the defined forest areas are maintained through time. CSA SFM Element 1.3 Genetic Diversity Conserve genetic diversity by maintaining the variation of genes within species.	Objective 4. To manage the quality and distribution of wildlife habitats and contribute to the conservation of biological diversity by developing and implementing stand- and landscape-level measures that promote habitat diversity and the conservation of forest plants and animals, including aquatic fauna. Performance Measure 4.2. Apply knowledge, gained through research, science, technology, and field experience to manage wildlife habitat and contribute to the conservation of biological diversity. Indicator 3: Plans to locate and protect known sites associated with viable occurrences of critically imperiled and imperiled species and communities.	N/A
Discussion on general forest management	The FSC standard has rigorous forest management criteria, adapted to regional forest types. Strengths include the protection of ecologically important forests and the banning of the conversion of natural forests into plantations.	Under the CSA standard, the forest management practices can vary greatly between certified forests. This is because it depends on the development of a forest management plan for each certified forest. While this flexibility can be seen as a positive adaptive approach, the forest management plan can vary from being similar to the current forestry legislation to considerably better, usually as a result of the number of forest advocates in the area.. The CSA standard does not address forest conversion into plantations, or protection of high conservation value areas and wildlife habitat, other than those protected by government.	The new 2005 version of the SFI standard, which is compared here, makes significant improvements on its previous edition, but still lacks rigour with regards to some forest management issues. When examined closely, the wording of the standard allows for largesse in the interpretation. The conversion of forests into plantations and protection of high value areas is not forcefully addressed. The recent changes to the standard have improved it but many participants have yet to ~~upgrade~~ be audited to the new requirements, at the time of writing of this report.	The PEFC has endorsed the CSA and SFI certification schemes, so weaknesses described in those systems also apply to PEFC.

	FSC	CSA	SFI	PEFC
Organization				
Governance	Membership/ board of directors, with equal voting power for an environmental, economic and social chamber. Centrally controlled, endorsement of national working groups, standards and certification bodies.	The CSA is a national association for many different types of standards, not limited to the forest industry. The board of directors is made up of 27 members.	Organization originally set up and led by the American Forest and Paper Association (AF&PA). The SFI program ~~is~~was overseen by the Sustainable Forestry Board, which is responsible for maintaining and enhancing the SFI Standard and verification procedures. The Sustainable Forestry Board consists of: • 5 members from the forest, paper and wood products industry (members of AF&PA) • 5 members from nonprofit environmental/ conservation organizations • 5 members from other stakeholder groups including but not limited to county, state and federal agencies, logging professionals and organized labor, scientific and academic groups, forest product consumers and non-industrial forest landowners. The Sustainable Forestry Board was replaced by SFI inc. on January 1st, 2007, with a slightly different board composition. The AF&PA is no longer responsible for the standard's implementation and label use, although participation in the SFI Program is still a requirement for membership in the the AF&PA..	All members of the programme form part of the PEFC Council that is administered and managed by a Board of Directors. Members are representatives of the schemes that have been endorsed as well as other schemes, not endorsed. There are also extraordinary members, which, at present include various forest product industry organizations. The Board of Directors comprises the Chairman of the PEFC Council, the two Vice-Chairmen and 2-10 members who are elected by the General Assembly (Members and extraordinary members) for an election period of three years. The constitution of the Board members should aim to reflect the major interested parties who support the PEFC, the geographical distribution of the members, the diversity of their annual cutting categories and an appropriate gender balance.
Transparency	Standards and Claim/Logo report summaries with all Corrective Action Requests (CARs) are made public for each forest assessment and audit. (CARs are	Standards and the result of the assessment or audit are made available. CARs are not made public. The public can raise issues of non-conformance, which are	Standards and list of participating companies are made public. ~~CARs are not made public, only "findings"~~ Short summary audit reports are made public. The	Reports of assessments of certifications applying for endorsement are made publicly available.

	FSC	CSA	SFI	PEFC
	issued by auditors when a practice is observed that does not meet the FSC standards or may lead to a future non-conformance)	then directed to the CSA Board who examines the problem internally.	public can raise issues of non-conformance, which are then directed to the Sustainable Forestry Board who examines the problem internally. [The Sustainable Forestry Board was replaced by SFI inc. on January 1st, 2007]	
Discussion on the governance of the organization.	The FSC is administered by a balanced board representing industry, environmental and social agendas.	The CSA standard is administered in a similar fashion to all its other standards, with no particular industry bias.	The SFI program ~~is~~was designed by members of the AF&PA for its members and is overseen by the Sustainable Forestry Board(SFB). In various stages over the years since 2000, the SFB has separated from the AF&PA and became responsible for the standards updates. In its latest form, the SFI Inc. came into being on the 1st January 2007. The AF&PA is no longer responsible for the standard's implementation and label use, although participation in the SFI Program is still a requirement for membership in the AF&PA The SFB, which had a strong industry weighting in the past now has a more balanced board. In view of the strong historical link between the group developing the standard and the organization's requesting certification, integrity in the certification process is important. As mentioned below, accreditation of certification bodies has only been required since January 2005. ~~with no independent accreditation (at present)~~. Individual certification of auditors has been required since 2002.	The organization has a strong industry bias.

	FSC	CSA	SFI	PEFC
Quality of certification process				
Audit process	FSC develops the standard the FSC Accreditation Unit accredits auditors that meet the FSC auditor qualification criteria. The auditors verify conformance and submit their report for approval to the FSC. The FSC approves the certification.	CSA develops the standard. The Standards Council of Canada, or other, accredits firms offering certification services (registrar). Auditors must be certified by the Canadian Environmental Auditing Association (CEAA) in forestry management. The auditors verify conformance, recommend certification and then the registrar issues the certification for the forest. The accreditation body verifies the certification services of the registrar periodically.	Sustainable Forestry Board develops the standard. The Standards Council of Canada or the American National Standards Institute accredit firms offering certification services (~~this is new~~ since 2005). Auditors must be certified by the Canadian Environmental Auditing Association (CEAA) in forestry management (Canada) or by Register Accreditation Board (RAB) (USA).The auditors verify conformance, recommend certification and then their firm issues the certification for the forest If the forest owner wishes to make public statements about the certification (and use the logo), the audit report must be submitted to the auditors verify conformance and submit their report to the Sustainable Forestry Board for public posting. The accreditation body verifies the certification services periodically. Note that in the past, participants could choose to self-declare that they meet the SFI standard. Now, participants must be third-party certified to use the SFI label. In 2004, 86% of the land enrolled has been third-party certified. See Note 4. [The Sustainable Forestry Board was replaced by SFI inc. on January 1st, 2007]	N/A
Auditor Qualifications	Auditors must be accredited by the FSC Accreditation Unit to meet the specific FSC criteria	Auditors must be certified by the Canadian Environmental Auditing Association (CEAA) in forestry management (Canada).	Auditors must be certified by the Canadian Environmental Auditing Association (CEAA) in forestry management (Canada) or by	N/A

	FSC	CSA	SFI	PEFC
			Register Accreditation Board (RAB) (USA).	
Audit intensity	An initial certification audit is followed by annual audits.	An initial certification audit addresses all elements of the standard. Annual surveillance audits are then required that need not address all elements. Recertification, looking at all elements, is required. The frequency for re-certification is defined by the registrar and is typically done every 3 years.	An initial certification audit addresses all elements of the standard. Annual surveillance audits are then required that need not address all elements. Recertification, looking at all elements, is required every 5 years. Alternatively, after the initial certification audit, continuous certification can be obtained using the annual surveillance audits, as long as all elements of the standard are covered to the appropriate scale and scope in each consequent five year period. Annual audits may not be more than 18 months apart.	N/A
100% compliance with the standard	FSC and FSC-accredited certification organizations will not insist on perfection in satisfying the standard's principles and criteria. However, major failures in any individual Principles will normally disqualify a candidate from certification, or will lead to decertification. These decisions will be taken by individual certifiers, and guided by the extent to which each Criterion is satisfied, and by the importance and consequences of failures. Some flexibility will be allowed to cope with local circumstances.	Accredited registrars require that an organization meet the SFM requirements to achieve certification. While minor nonconformances do not necessarily prevent certification, major nonconformances will normally disqualify an organization from certification or lead to de-certification. These decisions are made by individual registrars, who are guided by the importance and consequences of non-conformances.	Certification can be awarded as soon as any major non-conformances to the standard have been closed, even if minor non-conformances are still open, as long as the lead auditor has approved the corrective action plans.	N/A

	FSC	CSA	SFI	PEFC
100% compliance with legislation	Principle #1: Compliance with laws and FSC Principles Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory, and comply with all FSC Principles and Criteria.	7.5.1.6 Legal Compliance Compliance with legal requirements is a critical part of the SFM requirements.	~~From SFI Website~~: Definition section of SFIS 2005-2009 Although conformance with laws is the intent, auditors are directed to look for a spirit and general record of compliance rather than isolated or unusual instances of deviation.	N/A
Is the standard successful in ensuring that the forest is managed sustainably? See Note 5	As noted above, the allowable cut rate (m3 /hectare) in an FSC forest is much lower than in the other forests, which speaks to the long term sustainability of the forest (this figure is also influenced by the type of forest). - A report by the Rainforest Alliance and its certification body, Smart Wood, has statistically demonstrated an improvement in forests that have obtained FSC certification. See Note 6. The highest environmental impact is the preservation of high conservation value forest. - A detailed series of case studies presented in the 2003 report *On The Ground* examined numerous FSC, CSA, and SFI certified forests. See Note 8. Though not flawless, FSC forest management resulted in a significant improvement of the health of the forest over the other certification schemes. - Other reports such as those from the World Wildlife Fund have demonstrated substantial improvement at FSC managed forests. See Note 7.	Since the standard describes a system to be used and performance is actually defined locally for each forest certification, it is difficult to measure the environmental impact of the standard from public information as it varies so greatly between forests. One measure is the allowable cut rate, which, for CSA-certified forests as a group, is 1.7 times that of the total for FSC-certified forest in Canada. This figure may also be influenced by the type of forest. A detailed series of case studies presented in the 2003 report On The Ground examined numerous FSC, CSA, and SFI certified forests. See Note 8. Most of the CSA forests were not managed in a sustainable fashion and did not present a marked improvement over local laws.	Little to no case studies proving that SFI certification results in a sustainable forest. One measure is the allowable cut rate, which, for SFI-certified forests as a group, is 2.5 times that of the total for FSC-certified forest in Canada. This figure may also be influenced by the type of forest. A detailed series of case studies presented in the 2003 report On The Ground examined numerous FSC, CSA, and SFI certified forests. See Note 8. Most of the SFI forests were not managed in a sustainable fashion and did not present a marked improvement over local laws. In some cases the forest management did not conform to local laws. Numerous NGO websites present damning pictures of SFI managed forests but these have not been presented in this review.	N/A

	FSC	CSA	SFI	PEFC
Claim of Sustainability (See Note 10)	No claim of sustainability is made. Forests are referred to as "well managed"	No claim of sustainability is made	Claims of sustainability are made on all labels.	Claims of sustainability are made on some labels.
Discussion on the certification process and its transparency.	FSC has a transparent certification process, where findings and corrective action requests (CARs) are made public. There is an appropriate degree of separation between the FSC organization and the organization being certified. Strict legal compliance is required.	The CSA process is less transparent as findings and CARs are not made public, but this is not unusual for certification schemes. There is an appropriate degree of separation between the CSA and the organization being certified, and there is an additional degree of separation in the use of accredited registrars. Strict legal compliance is required.	~~The SFI process is less transparent, as findings and CARs are not made public, but this is not unusual for certification schemes.~~ In the past, there was~~is~~ little separation between the American Forest and Paper Association (AF&AP), the Sustainable Forest Board and the organization being certified. The additional degree of separation in the use of registrars is critical in this set up and the accreditation of the registrar becomes important. This only became mandatory in the 2005-2009 version of the standard. Note that the PEFC endorsement of the SFI Program was contingent on the development of a new accreditation standard specifically for the SFI forestry standard rather than the more general environmental management system standard that was required in the 2005-2009 SFIS, The ANSI-ASQ National Accreditation Board (ANAB) finalized the accreditation for this scheme in December 2005 and the principal certification bodies obtained accreditation in the last quarter of 2006. ~~This is only just being implemented in the last year~~. ~~Many certificates were issued before this became mandatory~~. Strict legal compliance is not required. Short audit report summaries are made public.	N/A

	FSC	CSA	SFI	PEFC
Chain of Custody and Product Labelling - how can a product buyer know that the fibre in the product came from a certified forest?				
Chain of Custody Certification Description	Paper producers attest to the FSC content of the papers they produce by certifying their papers according to one of the classifications described below. As long as the content of FSC fibre meets the minimum requirements, these are FSC-certified papers. To use the FSC logo on a document, it can only be applied by a printer that has an FSC chain of custody certification, and be on FSC-certified paper. Chain of custody certification is available for wood processing facilities, pulp & paper mills, paper brokers and printers. Publishers can be assured that the paper comes from an FSC forests if they request FSC-certified paper from a certified printer. Note that a certified printer can also print on non-certified paper, depending on the order. The requirements to be met by the producers are described in FSC-STD-40-004 (version 1.0) FSC chain of custody standard for companies supplying and manufacturing FSC-certified products Labels must meet the requirements of: FSC-STD-40-201 (version 2.0) FSC on-product labelling requirements	Chain of custody is the tracking of forest products originating from a certified forest area through all phases of ownership, transportation and transformation from the forest of origin to the end consumer. CSA PLUS 1163 outlines the minimum requirements for a chain of custody, which recognizes forest products, originating from a registered forest. Once an organization has implemented the chain of custody requirements outlined in CSA PLUS 1163 they may choose to "qualify" their chain(s) of custody through an independent third party qualification audit by CSA. The next option for an organization that has been successfully qualified is to become licensed to apply the CSA SFM Mark to certified forest products. The CSA SFM Mark distinguishes the product as having originated from a forest registered to the SFM standard. CSA is currently harmonizing its requirements with those of the PEFC.	SFI now offers two distinct systems for labelling. Since the logo and overall look of the labels is similar, confusion has arisen. The wording on the label must be carefully read to ensure that fibre from an SFI certified forest is being selected. % FROM SFI FORESTS: The first system uses the chain-of-custody approach, where fibre is tracked back to the SFI-certified forest (~~or to a forest certified by the American Tree Farm Association)~~[Changed in late October 2006, after initial research for this report.]. This method came out late in 2004 and fulfills the PEFC COC requirements. FIBRE SOURCING: The second system allows labels to be applied to products where the fibre has been sourced through a fibre sourcing system that has been third party audited but where the fibre need not come from a SFI-certified forest. It can come from any other acceptable source, such as: agricultural, neutral (reclaimed/recycled), conversion sources, and other credible sources. These include fibre that originates from non-U.S. or non-Canadian sources and comes from forest plantations or other well-managed forests that are harvested a) in compliance with generally accepted sustainable forestry practices and b) in a	Where an organization has been certified as having an appropriate COC system by an endorsed certification scheme, the organization can apply to PEFC for a license to apply the PEFC logo.

	FSC	CSA	SFI	PEFC
			manner that does not constitute illegal logging practices as defined in the SFI Standard. Both labelling systems are available to the primary producer (this will say CERTIFIED PARTICIPANT and to secondary producers (these will say PARTICIPATING MANUFACTURER, PARTICIPATING PUBLISHER, or PARTICIPATING PRINTER).	
Established since	**FSC-STD-40-201 FSC on-product labelling requirements.** Established 1993. Last updated: November 2004 (version 2) **FSC-STD-40-004 (version 1.0) FSC chain of custody standard for companies supplying and manufacturing FSC-certified products.** Established: Oct 2004. **FSC-STD-40-004 (version 2.0) FSC Standard for Chain of Custody Certification.** Under development. Due 2007. These replace earlier policies, established in 2000.	**CSA PLUS 1163 Chain of Custody for Forest Products Originating from a Defined Forest Area Registered to CSA Standard CAN/CSA-Z809**: Established 2001 **Specifications for Use of the CSA SFM Mark**: Established 2003	**SFI Chain of Custody of Forest Based Products Requirements Standard**. Established April 15, 2005 **SFI Label Use & Fibre Sourcing Requirements**: Established January 2006, revised October 2006 **Rules for Use of Sustainable Forestry Initiative Product Labels** Established January 2001. Last Updated April 2005 to include percent content labels.	**PEFC Technical Document:** Established 2002 Last updated: 2006 **PEFC Annex 4: Chain of Custody of Forest Based Products - Requirements:** Established: 2004 Last updated: 2006 **PEFC Annex 5: PEFC Logo Use Rules:** Established 2002 Last updated: 2006
Uptake of the CoC certification scheme in Canada See note 9	Total: 236 COC Certificates in Canada Pulp Processing: 10 Facilities (6 Companies) Paper Brokers: 6 Printers: 75	Total: 42 COC Certificates in Canada	1 company in Canada has obtained the new CoC certification ~~to date~~ as of October 2006.	36 chain-of-custody certificates awarded in Canada. These would have been awarded by CSA or SFI. Note that generic COC certifications can also be obtained from auditing firms such as PricewaterhouseCoopers, KPMG and QMI. These are currently recognized by SFI and PEFC. To date, there are no licensed logo users in Canada or the US

	FSC	CSA	SFI	PEFC
Paper Labelling Process	Under FSC, two practices can be used: • Physical separation of the FSC fibre from any other fibre, or; • Control of all non-FSC sources. The product labelling for each is different and reflects the amount of fibre from the certified forest in the product label. See below.	Two practices can be used: inventory control and accounting of certified wood flows or physical separation of certified wood.	Two practices can be used: inventory control and accounting of certified wood flows or physical separation of certified wood.	The PEFC Logo can be used on-product if the sum of the contents of PEFC certified raw material and PEFC recycled raw material, which are verified by the chain of custody, exceeds the minimum threshold of 70 %. Claims in the form of defined statements can be added, but these are optional.
Prohibitions	Prohibits the use of sources that are illegally harvested and derived from high conservation value forest unless those values are protected.	Prohibits use of sources that are illegally harvested and controversial sources. These are defined as wood or wood raw material from illegal or unauthorized harvesting such as harvesting in forest areas protected by law. Also, wood or wood raw material from forest areas officially published by government authorities (or the body with the legal authority to do so) as planned to become strictly protected by law, without the government authorities (or the body with the legal authority to do so) giving permission to harvest.	Prohibits use of sources that are illegally harvested. Non-acceptable sources: Sources are non-acceptable unless they meet the criteria set out in the SFI Label Use & Fibre Sourcing Requirements for one of the following: (1) independently third-party certified sources; (2) neutral sources; (3) conversion sources (wood produced from land conversion to non forest uses); (4) agricultural sources (e.g. cotton or other non-wood fibres and biomass farm wood fibre legally classified as agricultural by state or local government and agricultural residues.); or (5) other credible sources. (Wood or wood fibre that originates from non-U.S. or non-Canadian sources and comes from forest plantations or other well-managed forests that are harvested: a) in compliance with generally accepted sustainable forestry practices; and b) in a manner that does not constitute illegal logging practices as defined in the SFI Standard.)	3.6.1 The organization shall establish adequate measures to ensure that the certified products do not include raw material from controversial sources. 3.6.2 The organization shall require from all suppliers of the forest based raw material, which is not classified as certified raw material, at least a signed self declaration that the supplied raw material does not originate from a controversial source. The organization, which has signed contracts with its suppliers, shall include such a declaration in the contracts.

	FSC	CSA	SFI	PEFC
Labels	1) **FSC 100%** label This type of paper is made from fibre where 100% of the fibre comes from certified forests. That is, virgin or fibre wood which originates from an FSC-certified forest and is sold as 'pure material' by the holder of a valid FSC chain of custody or joint forest management and chain of custody certificate (FSC Pure). There are ~~currently~~ no papers that can carry the 100% pure logo, as of October 2006.	1) **CSA 100% From a Certified Forest** label In this approach, fibre is received from a certified forest and clearly marked or physically segregated or otherwise identified as originating from a certified forest and remains clearly identifiable as certified throughout transportation, handling, processing and printing.	1) Logo plus claim: 100% of the fibre used in this product comes from forests independently certified to the SFI Standard. For primary producer, the label will also say CERTIFIED PARTICIPANT. For secondary producers, the label will also say PARTICIPATING MANUFACTURER, PARTICIPATING PUBLISHER, or PARTICIPATING PRINTER. All participants require COC certification for this label to be used.	1) Logo plus claim: From sustainably managed forest. To use the PEFC logo and this claim on a final product, it must contain over 100% PEFC endorsed certified forest, where the certified fibre has been physically separated from any other fibre throughout the custody chain.
	2) **FSC Mixed Sources** label This type of paper is made from mixed sources of fibre. Recycled fibre can be added. Fibre can also come from non-certified forest, but must be controlled, meaning it can't come from: • Areas of social conflict and illegal logging; • Genetically modified trees; • Forest with high-conservation values which are threatened by forest management activities; and • Forests being converted from natural and semi natural forest to plantations or non- forest use. ~~Large scale conversions that replace native tree species with faster growing non-native species~~. The % claim on certified or creditable content must be carried forward through the chain of custody of the products as they are transformed and potentially mixed. This is done on the	2) **Minimum 70% Content From a Certified Forest** label Average Percentage System for Composite Products Input / Output System (% in = % out) The input/output system is based on the premise that the total batch of products can be labelled with the CSA SFM Mark when the amount of certified wood based raw material in the input batch meets or exceeds the set minimum average threshold of 70% (by volume or by weight). In addition, none of the wood based raw material (including the remaining input percentage of wood-based-raw material) shall have come from controversial sources.. POLICY FOR NEUTRAL WOOD/FIBRE CONTENT	2) Logo plus claim: At least xx% of the fibre used in this product line comes from forests independently certified to the SFI Standard. For primary producer, the label will also say CERTIFIED PARTICIPANT. For secondary producers, the label will also say PARTICIPATING MANUFACTURER, PARTICIPATING PUBLISHER, or PARTICIPATING PRINTER. All participants require COC certification for this label to be used. The percentage can be calculated in the same 2 ways described for the FSC scheme. However, there are no minimum requirements to be eligible for the volume credit system.	2) Logo plus claim: Promoting sustainable forest management. To use the PEFC logo and this claim on a final product, it must contain over 70% fibre representing fibre from a PEFC endorsed certified forest. The percentage can be calculated in the same 2 ways described for the FSC scheme. However, there are no minimum requirements to be eligible for the credit system.

	FSC	CSA	SFI	PEFC
	product invoices. An FSC MIXED label can be put on the final product if, according to the calculation method: - if a **threshold calculation** method is used, 70% of the fibre must come from an FSC certified forest (or acceptable recycled alternatives). The FSC% is usually specified on the label as well (it must be on the invoices). The threshold calculation method simply takes a rolling average of the FSC content of the product over a specific period. This average then applies to all the products in the product group. - if a **volume credit** system is used (%in=%out), the FSC MIXED label is affixed to a certain percentage of the products produced in product group, according to the percentage of fibre that came from an FSC forest. The remaining products are sold without an FSC label (or with the FSC Controlled Wood name only, making it a non-FSC paper). This implies that the portion of the product with the FSC MIXED label represents 100% fibre from FSC-certified forests (or recycled alternatives). At present, to be eligible to use this system, at least 10% of the fibre purchased for the product group must be from FSC certified forests.	The paper may also contain neutral wood or fibre, which includes non-wood material (e.g. agricultural fibre and rags), starch, pigments and wood harvested from urban forestry. This neutral category is excluded from the determination of certified percentage. CSA does not set any limit for neutral wood or fibre. POLICY FOR RECYCLED WOOD/FIBRE CONTENT Recycling is considered to be an essential element for sustainable development. Therefore CSA International does not set any limit for recycled wood or fibre, which includes post consumer wood and fibres, and reclaimed pre-consumer by-products from processes in manufacture where these are not traceable to virgin wood sources. Recycled wood or fibre is excluded from the determination of certification percentage. CSA International is developing a policy to make provisions for recycled wood/fibre.		

	FSC	CSA	SFI	PEFC
	These requirements should be greatly clarified in the new version of the CoC standard expected to be released in 2007. Under the FSC logo, a statement must appear. The 3 possible statements are: • Product group from well-managed forests and recycled wood or fibre • Product group from well-managed forests, and other controlled sources • Product group from well-managed forests, controlled sources and recycled wood or fibre. Alongside the FSC logo, the Mobius loop with percentage of post consumer recycled content specified within the symbol, where applicable, may be stated, but this is optional. Also optional, the label on the final product may specify the quantity (%) representing fibre from an FSC certified forest. In summary, an FSC MIXED label means at least 70% of the fibre represents fibre that comes from an FSC source or from an acceptable recycled fibre source. The label also means that none of the fibre has come from high conservation value forests (unless those values are protected), from forests converted to plantations or that contain GMO trees.			

	FSC	CSA	SFI	PEFC
Recycled Paper	3) **FSC Recycled** label This type of paper is made from 100% recycled paper, where at least 85% is post-consumer. The remainder may be pre-consumer reclaimed material. Post-consumer fibre is reclaimed from a product after that product has been used for its intended end-use purpose by individuals or businesses, and has reached the end of its useful life for that end-use.	No labelling available at present	3) 100 Percent Recovered fibre Label 100 percent of the fibre used in this product line is recovered fibre. There are no requirements respecting the proportions of post-consumer or pre-consumer recovered fibre.	3) Logo plus claim: Promoting sustainable forest management and recycling. If recycled material is used in the product, the PEFC logo can be used in conjunction with a recycling mobius logo indicating the percentage (xx%) of certified recycled content. Post-consumer and pre-consumer recovered fibre are separated and treated differently in the calculations.
Other	4) **FSC Controlled Wood** label This type of paper does not come from an FSC-certified forest but it comes from controlled sources that are not: • Areas of social conflict and illegal logging; • Genetically modified trees; • High-conservation value forests (unless values are protected); and • Large-scale conversions, which replace native tree species with faster growing non-native species. It is used to label the portion of the batch that does not qualify for a FSC Mixed label. See above. To use the label, manufacturers must be qualified against the FSC Standard for Controlled Wood.	No equivalent	4) **Fibre Sourcing** Logo plus claim: Fibre in this product meets the sourcing requirements of the SFI Standard. This type of paper does not necessarily come from an SFI-certified forest but it comes from a procurement system designed to keep out non-acceptable sources of fibre, which targets illegal logging. There is a maximum percentage of neutral or recycled fibre that can be included in the product. These sourcing labels cannot be used with a %figure as they can be by licensees that are do not have COC certification. Before 2005, this was the only type of labelling available under SFI.	
Discussion on paper labelling and CoC certifications	As the chain of custody (COC) certifications and product labelling have been in place for over a decade, the FSC labelling is widely recognized by buyers of forest products. At the consumer	CSA certification is recognized in the Canadian marketplace, but has yet to be taken up by large paper producers. The CSA labels are straightforward and guarantee a 70% content of fibre	SFI Fibre Source labelling has been in use for some time but does not speak to the content from an SFI certified forest and cannot be relied on. The new COC standards and the new	The PEFC label can be relied upon to ensure that the fibre comes from certified forests through a certified chain of custody, with a minimum content of fibre representing fibre from a

	FSC	CSA	SFI	PEFC
	level, this recognition may be limited. All the FSC papers have a minimum of 70% fibre representing the fibre from an FSC-certified forest (or recycled alternative), usually more. In the coming update to the COC Standard, the labels will be clearer. The non-FSC paper that carries the FSC Controlled Wood label assures buyers that the fibre is not only from a legal source, but also not from a high conservation value forest (unless those values are protected), which is stronger than the SFI or PEFC claims, which focus on the legal aspect only.	representing certified fibre from a CSA forest (not counting recycled alternatives).	percent content labels are judged reliable but few companies are yet certified to use them. They are available for fibre coming from an SFI certified forest.~~, or a forest certified under the American Tree Farm System (ATFS), a system not assessed in this review~~ [Changed in October 2006, after initial research for this report].	certified forest of 70%. For Canada, this means CSA or SFI.

	FSC	CSA	SFI	PEFC
Conclusion:	FSC has widespread recognition as a forestry standard among consumers, NGOs and business. Although it makes no claims to sustainability, it is the scheme that is most likely to result in a sustainable forest through rigorous performance based standards for forest management. The COC and labelling system is well established and will shortly be improved for clarity. FSC papers have a minimum 70% fibre representing fibre from an FSC forest (or alternative recycled material) and are guaranteed not to come from illegal harvesting or high conservation value forests (unless those values are protected).	CSA is a widely recognized and respected label, but the label has not yet been widely applied to final products. CSA has certified a large amount of land in Canada. A significant weakness to the standard is that performance for forest management is defined for each forest and requirements can vary greatly between certified forests. The CSA certification can be relied upon to guarantee compliance to regulatory requirements, but for further performance criteria, the forest management plan of the particular forest must be reviewed. Without further knowledge of the forest and the local management practices, it is not possible to ensure that the cut areas are reasonable, that high conservation areas are being preserved and that natural forest is not being converted to plantations. CSA labelled papers have a minimum 70% fibre representing fibre from a CSA certified forest (not counting recycled alternatives). They are guaranteed not to come from illegal harvesting but there is no protection for high conservation value forests in the portion coming from non CSA-certified forests.	Prior to the 2005 enhancements to the standard, the requirements with respect to forest management were weak, ill-defined and weakly implemented. Some improvements have been made but performance is still only loosely defined by the standard. Also in the past, self-accreditation by forest operators was allowed. Up until ~~very recently~~2005, accreditation by an independent body, of companies providing certification services was not required. The certification of auditors has only been required since ~~2005~~2002. For these reasons, the SFI Program has lacked credibility and had a bad reputation amongst NGOs. SFI labels are widely used but these tend to be the old-style labels (Fibre Sourcing) that do not speak to the content from an SFI certified forest. The new COC standards and the new percent content labels are not yet in widespread use, as of October 2006..	Through endorsement of numerous forest certification schemes, the PEFC label is becoming widely recognized, although its COC system was only established in 2004. The PEFC has endorsed the CSA and SFI certification schemes in Canada, so any weaknesses in forest management described in those systems also apply to PEFC. This is why key NGOs reject PEFC. There may be a trend for operators sourcing from CSA-certified forests or SFI-certified forests to adopt PEFC labelling, rather than the CSA or SFI label, especially for international trade.

NOTES

	Note	Source
1	309.8 million hectares are forest land, while 92 million hectares of other wooded land consist of treed wetland, as well as slow-growing scattered trees. 144.6 million hectares are considered accessible and most likely to be subject to forest management activities Note also that 93% of forested land in Canada is crown land	Forest Products of Canada http://www.fpac.ca/en/sustainability/forest/ The State of Canada's Forests 2003-2004, Natural Resources Canada
2	By the end of 2006, FPAC members will have an area equivalent to Sweden, Finland and Norway combined certified, accounting for some 3/4 of Canada's working forest. FPAC members are responsible for 75% of the working forests in Canada.	Canadian Sustainable Forestry Certification Coalition http://www.certificationcanada.org/english/status_intentions/status.php
3	The figure of 84% is derived by adding all the areas of forests covered by a certificate. It does not take into account that a particular forest may be certified under more than one scheme. The incidence of this is thought to be low.	
4	SFI 10th Annual Progress Report	http://www.afandpa.org/Content/NavigationMenu/Environment_and_Recycling/SFI/External_Review_Panel/External_Review_Panel.htm
5	In Canada, performance is measured using the Canadian Council of Forest Ministers' (CCFM) set of Criteria and Indicators of Sustainable Forest Management in Canada.	http://www.ccfm.org/ci/rprt2005/C&I_e.pdf http://www.ccfm.org/current/ccitf_e.php
6	Deanna Newsom and Daphne Hewitt (2005), *The Global Impacts of SmartWood Certification,* TREES Program, Rainforest Alliance.	www.rainforestalliance.org
7	World Wildlife Fund website	http://www.panda.org/about_wwf/what_we_do/forests/our_solutions/responsible_forestry/news/index.cfm?uNewsID=22050
8	Amanda Tan (2003), *On the Ground* Forest Certification: Green Stamp of Approval or Rubber Stamp of Destruction? Note that there is strong bias in the presentation of this report but the underlying data collection and evaluation is deemed reliable.	www.goodwatch.org
9	From Certified Wood Search	www.certifiedwoodsearch.org
10	**"The concepts involved in sustainability are highly complex and still under study. At this time there are no definitive methods for measuring sustainability or confirming its accomplishment. Therefore, no claim of achieving sustainability shall be made"** ISO 14021 - Environmental labels and declarations -- Self-declared environmental claims (Type II environmental labelling) (1999) paragraph 5.5	http://www.iso.org